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- 1.787 netty-resolver-dns 4.1.100.Final**
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- 1.788 netty-codec-http 4.1.100.Final**
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- 1.789 json-java 20231013**
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- 1.790 activation 2.1.2**
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- 1.791 lz4 1.9.3**
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**1.815 protobuf-java 3.18.3**  
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**1.816 amazon-kinesis-producer 0.14.11**  
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# 1.1 libjpeg 6b

## 1.1.1 Notifications :

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## 1.1.2 Available under license :

The Independent JPEG Group's JPEG software

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README for release 6b of 27-Mar-1998

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Serious users of this software (particularly those incorporating it into larger programs) should contact IJG at [jpeg-info@uunet.uu.net](mailto:jpeg-info@uunet.uu.net) to be added to our electronic mailing list. Mailing list members are notified of updates and have a chance to participate in technical discussions, etc.

This software is the work of Tom Lane, Philip Gladstone, Jim Boucher, Lee Crocker, Julian Minguillon, Luis Ortiz, George Phillips, Davide Rossi, Guido Vollbeding, Ge' Weijers, and other members of the Independent JPEG Group.

IJG is not affiliated with the official ISO JPEG standards committee.

### DOCUMENTATION

#### ROADMAP

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This file contains the following sections:

OVERVIEW        General description of JPEG and the IJG software.  
LEGAL ISSUES    Copyright, lack of warranty, terms of distribution.  
REFERENCES     Where to learn more about JPEG.  
ARCHIVE LOCATIONS    Where to find newer versions of this software.  
RELATED SOFTWARE    Other stuff you should get.  
FILE FORMAT WARS    Software \*not\* to get.  
TO DO            Plans for future IJG releases.

Other documentation files in the distribution are:

User documentation:

install.doc     How to configure and install the IJG software.

usage.doc      Usage instructions for cjpeg, djpeg, jpegtran,  
                 rdjpgcom, and wrjpgcom.  
\*.1            Unix-style man pages for programs (same info as usage.doc).  
wizard.doc     Advanced usage instructions for JPEG wizards only.  
change.log     Version-to-version change highlights.  
Programmer and internal  
documentation:  
libjpeg.doc    How to use the JPEG library in your own programs.  
example.c      Sample code for calling the JPEG library.  
structure.doc   Overview of the JPEG library's internal structure.  
filelist.doc    Road map of IJG files.  
coderrules.doc Coding style rules --- please read if you contribute code.

Please read at least the files install.doc and usage.doc. Useful information can also be found in the JPEG FAQ (Frequently Asked Questions) article. See ARCHIVE LOCATIONS below to find out where to obtain the FAQ article.

If you want to understand how the JPEG code works, we suggest reading one or more of the REFERENCES, then looking at the documentation files (in roughly the order listed) before diving into the code.

## OVERVIEW

=====

This package contains C software to implement JPEG image compression and decompression. JPEG (pronounced "jay-peg") is a standardized compression method for full-color and gray-scale images.

JPEG is intended for compressing "real-world" scenes; line drawings, cartoons and other non-realistic images are not its strong suit. JPEG is lossy, meaning that the output image is not exactly identical to the input image. Hence you must not use JPEG if you have to have identical output bits. However, on typical photographic images, very good compression levels can be obtained with no visible change, and remarkably high compression levels are possible if you can tolerate a low-quality image. For more details, see the references, or just experiment with various compression settings.

This software implements JPEG baseline, extended-sequential, and progressive compression processes. Provision is made for supporting all variants of these processes, although some uncommon parameter settings aren't implemented yet. For legal reasons, we are not distributing code for the arithmetic-coding variants of JPEG; see LEGAL ISSUES. We have made no provision for supporting the hierarchical or lossless processes defined in the standard.

We provide a set of library routines for reading and writing JPEG image files, plus two sample applications "cjpeg" and "djpeg", which use the library to

perform conversion between JPEG and some other popular image file formats. The library is intended to be reused in other applications.

In order to support file conversion and viewing software, we have included considerable functionality beyond the bare JPEG coding/decoding capability; for example, the color quantization modules are not strictly part of JPEG decoding, but they are essential for output to colormapped file formats or colormapped displays. These extra functions can be compiled out of the library if not required for a particular application. We have also included "jpegtran", a utility for lossless transcoding between different JPEG processes, and "rdjpgcom" and "wrjpgcom", two simple applications for inserting and extracting textual comments in JFIF files.

The emphasis in designing this software has been on achieving portability and flexibility, while also making it fast enough to be useful. In particular, the software is not intended to be read as a tutorial on JPEG. (See the REFERENCES section for introductory material.) Rather, it is intended to be reliable, portable, industrial-strength code. We do not claim to have achieved that goal in every aspect of the software, but we strive for it.

We welcome the use of this software as a component of commercial products. No royalty is required, but we do ask for an acknowledgement in product documentation, as described under LEGAL ISSUES.

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The Unix configuration script "configure" was produced with GNU Autoconf. It is copyright by the Free Software Foundation but is freely distributable. The same holds for its supporting scripts (config.guess, config.sub, ltconfig, ltmain.sh). Another support script, install-sh, is copyright by M.I.T. but is also freely distributable.

It appears that the arithmetic coding option of the JPEG spec is covered by patents owned by IBM, AT&T, and Mitsubishi. Hence arithmetic



coding cannot

legally be used without obtaining one or more licenses. For this reason, support for arithmetic coding has been removed from the free JPEG software. (Since arithmetic coding provides only a marginal gain over the unpatented Huffman mode, it is unlikely that very many implementations will support it.) So far as we are aware, there are no patent restrictions on the remaining code.

The IJG distribution formerly included code to read and write GIF files. To avoid entanglement with the Unisys LZW patent, GIF reading support has been removed altogether, and the GIF writer has been simplified to produce "uncompressed GIFs". This technique does not use the LZW algorithm; the resulting GIF files are larger than usual, but are readable by all standard GIF decoders.

We are required to state that

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## REFERENCES

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We

highly recommend reading one or more of these references before trying to understand the innards of the JPEG software.

The best short technical introduction to the JPEG compression algorithm is Wallace, Gregory K. "The JPEG Still Picture Compression Standard", Communications of the ACM, April 1991 (vol. 34 no. 4), pp. 30-44. (Adjacent articles in that issue discuss MPEG motion picture compression, applications of JPEG, and related topics.) If you don't have the CACM issue handy, a PostScript file containing a revised version of Wallace's article is available at <ftp://ftp.uu.net/graphics/jpeg/wallace.ps.gz>. The file (actually a preprint for an article that appeared in IEEE Trans. Consumer Electronics) omits the sample images that appeared in CACM, but it includes corrections and some added material. Note: the Wallace article is copyright ACM and IEEE, and it may not be used for commercial purposes.

A somewhat less technical, more

leisurely introduction to JPEG can be found in

"The Data Compression Book" by Mark Nelson and Jean-loup Gailly, published by M&T Books (New York), 2nd ed. 1996, ISBN 1-55851-434-1. This book provides good explanations and example C code for a multitude of compression methods including JPEG. It is an excellent source if you are comfortable reading C code but don't know much about data compression in general. The book's JPEG sample code is far from industrial-strength, but when you are ready to look

at a full implementation, you've got one here...

The best full description of JPEG is the textbook "JPEG Still Image Data Compression Standard" by William B. Pennebaker and Joan L. Mitchell, published by Van Nostrand Reinhold, 1993, ISBN 0-442-01272-1. Price US\$59.95, 638 pp. The book includes the complete text of the ISO JPEG standards (DIS 10918-1 and draft DIS 10918-2). This is by far the most complete exposition of JPEG in existence, and we highly recommend it.

The

JPEG standard itself is not available electronically; you must order a paper copy through ISO or ITU. (Unless you feel a need to own a certified official copy, we recommend buying the Pennebaker and Mitchell book instead; it's much cheaper and includes a great deal of useful explanatory material.) In the USA, copies of the standard may be ordered from ANSI Sales at (212) 642-4900, or from Global Engineering Documents at (800) 854-7179. (ANSI doesn't take credit card orders, but Global does.) It's not cheap: as of 1992, ANSI was charging \$95 for Part 1 and \$47 for Part 2, plus 7% shipping/handling. The standard is divided into two parts, Part 1 being the actual specification, while Part 2 covers compliance testing methods. Part 1 is titled "Digital Compression and Coding of Continuous-tone Still Images, Part 1: Requirements and guidelines" and has document numbers ISO/IEC IS 10918-1, ITU-T T.81. Part 2 is titled "Digital Compression and Coding of Continuous-tone Still Images, Part 2: Compliance testing" and has document numbers ISO/IEC IS 10918-2, ITU-T T.83.

Some extensions to the original JPEG standard are defined in JPEG Part 3, a newer ISO standard numbered ISO/IEC IS 10918-3 and ITU-T T.84. IJG currently does not support any Part 3 extensions.

The JPEG standard does not specify all details of an interchangeable file format. For the omitted details we follow the "JFIF" conventions, revision 1.02. A copy of the JFIF spec is available from:

Literature Department  
C-Cube Microsystems, Inc.  
1778 McCarthy Blvd.  
Milpitas, CA 95035  
phone (408) 944-6300, fax (408) 944-6314

A PostScript version of this document is available by FTP at <ftp://ftp.uu.net/graphics/jpeg/jfif.ps.gz>. There is also a plain text version at <ftp://ftp.uu.net/graphics/jpeg/jfif.txt.gz>, but it is missing the figures.

The TIFF 6.0 file format specification can be obtained by FTP from <ftp://ftp.sgi.com/graphics/tiff/TIFF6.ps.gz>. The JPEG incorporation scheme found in the TIFF 6.0 spec of 3-June-92 has a number of serious problems.

IJG does not recommend use of the TIFF 6.0 design (TIFF Compression tag 6). Instead, we recommend the JPEG design proposed by TIFF Technical Note #2 (Compression tag 7). Copies of this Note can be obtained from <ftp.sgi.com> or from <ftp://ftp.uu.net/graphics/jpeg/>. It is expected that the next revision of the TIFF spec will replace the 6.0 JPEG design with the Note's design. Although IJG's own code does not support TIFF/JPEG, the free libtiff library uses our library to implement TIFF/JPEG per the Note. libtiff is available from <ftp://ftp.sgi.com/graphics/tiff/>.

## ARCHIVE LOCATIONS

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The "official" archive site for this software is <ftp.uu.net> (Internet address 192.48.96.9). The most recent released version can always be found there in directory [graphics/jpeg](ftp://ftp.uu.net/graphics/jpeg/). This particular version will be archived as <ftp://ftp.uu.net/graphics/jpeg/jpegsrc.v6b.tar.gz>. If you don't have direct Internet access, UUNET's archives are also available via UUCP; contact [help@uunet.uu.net](mailto:help@uunet.uu.net) for information on retrieving files that way.

Numerous Internet sites maintain copies of the UUNET files. However, only <ftp.uu.net> is guaranteed to have the latest official version.

You can also obtain this software in DOS-compatible "zip" archive format from the SimTel archives (<ftp://ftp.simtel.net/pub/simtelnet/msdos/graphics/>), or on CompuServe in the Graphics Support forum (GO CIS:GRAPHSUP), library 12 "JPEG Tools". Again, these versions may sometimes lag behind the <ftp.uu.net> release.

The JPEG FAQ (Frequently Asked Questions) article is a useful source of general information about JPEG. It is updated constantly and therefore is not included in this distribution. The FAQ is posted every two weeks to Usenet newsgroups [comp.graphics.misc](news:comp.graphics.misc), [news.answers](news:news.answers), and other groups. It is available on the World Wide Web at <http://www.faqs.org/faqs/jpeg-faq/> and other [news.answers](news:news.answers) archive sites, including the official [news.answers](news:news.answers) archive at [rtfm.mit.edu: ftp://rtfm.mit.edu/pub/usenet/news.answers/jpeg-faq/](ftp://rtfm.mit.edu/pub/usenet/news.answers/jpeg-faq/). If you don't have Web or FTP access, send e-mail to [mail-server@rtfm.mit.edu](mailto:mail-server@rtfm.mit.edu) with body  
send [usenet/news.answers/jpeg-faq/part1](news:usenet/news.answers/jpeg-faq/part1)  
send [usenet/news.answers/jpeg-faq/part2](news:usenet/news.answers/jpeg-faq/part2)

## RELATED SOFTWARE

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Numerous viewing and image manipulation programs now support JPEG. (Quite a

few of them use this library to do so.) The JPEG FAQ described above lists some of the more popular free and shareware viewers, and tells where to obtain them on Internet.

If you are on a Unix machine, we highly recommend Jef Poskanzer's free PBPLUS software, which provides many useful operations on PPM-format image files. In particular, it can convert PPM images to and from a wide range of other formats, thus making cjpeg/djpeg considerably more useful. The latest version is distributed by the NetPBM group, and is available from numerous sites,

notably <ftp://wuarchive.wustl.edu/graphics/graphics/packages/NetPBM/>.

Unfortunately PBPLUS/NETPBM is not nearly as portable as the IJG software is; you are likely to have difficulty making it work on any non-Unix machine.

A different free JPEG implementation, written by the PVRG group at Stanford, is available from <ftp://havefun.stanford.edu/pub/jpeg/>. This program is designed for research and experimentation rather than production use; it is slower, harder to use, and less portable than the IJG code, but it is easier to read and modify. Also, the PVRG code supports lossless JPEG, which we do not. (On the other hand, it doesn't do progressive JPEG.)

## FILE FORMAT WARS

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Some JPEG programs produce files that are not compatible with our library. The root of the problem is that the ISO JPEG committee failed to specify a concrete file format. Some vendors "filled in the blanks" on their own, creating proprietary formats that no one else could read.

(For example, none of the early commercial JPEG implementations for the Macintosh were able to exchange compressed files.)

The file format we have adopted is called JFIF (see REFERENCES). This format has been agreed to by a number of major commercial JPEG vendors, and it has become the de facto standard. JFIF is a minimal or "low end" representation. We recommend the use of TIFF/JPEG (TIFF revision 6.0 as modified by TIFF Technical Note #2) for "high end" applications that need to record a lot of additional data about an image. TIFF/JPEG is fairly new and not yet widely supported, unfortunately.

The upcoming JPEG Part 3 standard defines a file format called SPIFF. SPIFF is interoperable with JFIF, in the sense that most JFIF decoders should be able to read the most common variant of SPIFF. SPIFF has some technical advantages over JFIF, but its major claim to fame is simply that it is an official standard rather than an informal one. At this point it is unclear whether

SPIFF will supersede JFIF or whether JFIF will remain the de-facto standard. IJG intends to support SPIFF once the standard is frozen, but we have not decided whether it should become our default output format or not. (In any case, our decoder will remain capable of reading JFIF indefinitely.)

Various proprietary file formats incorporating JPEG compression also exist. We have little or no sympathy for the existence of these formats. Indeed, one of the original reasons for developing this free software was to help force convergence on common, open format standards for JPEG files. Don't use a proprietary file format!

TO DO

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The major thrust for v7 will probably be improvement of visual quality. The current method for scaling the quantization tables is known not to be very good at low Q values. We also intend to investigate block boundary smoothing, "poor man's variable quantization", and other means of improving quality-vs-file-size performance without sacrificing compatibility.

In future versions, we are considering supporting some of the upcoming JPEG Part 3 extensions --- principally, variable quantization and the SPIFF file format.

As always, speeding things up is of great interest.

Please send bug reports, offers of help, etc. to [jpeg-info@uunet.uu.net](mailto:jpeg-info@uunet.uu.net).

## 1.2 javax-inject 1

### 1.2.1 Available under license :

Apache License

Version 2.0, January 2004

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## 1.6 antlr 4.1

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Found in path(s):

- \* /opt/cola/permits/117146987\_1695288958.0418987/0/hppc-0-7-1-sources-jar/com/carrotsearch/hppc/BitUtil.java
- \*
- /opt/cola/permits/117146987\_1695288958.0418987/0/hppc-0-7-1-sources-jar/com/carrotsearch/hppc/BitSet.java
- \* /opt/cola/permits/117146987\_1695288958.0418987/0/hppc-0-7-1-sources-jar/com/carrotsearch/hppc/BitSetIterator.java

## 1.9 commons-collections 3.2.2

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/*
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 * Expert Group and released to the public domain, as explained at
 * http://creativecommons.org/publicdomain/zero/1.0/
 */
```

Found in path(s):

```
* /opt/cola/permits/139083674_1695305409.8868513/0/jsr166e-1-1-0-sources-2-
jar/com/twitter/jsr166e/CountedCompleter.java
* /opt/cola/permits/139083674_1695305409.8868513/0/jsr166e-1-1-0-sources-2-
jar/com/twitter/jsr166e/ForkJoinWorkerThread.java
* /opt/cola/permits/139083674_1695305409.8868513/0/jsr166e-1-1-0-sources-2-
jar/com/twitter/jsr166e/ThreadLocalRandom.java
* /opt/cola/permits/139083674_1695305409.8868513/0/jsr166e-1-1-0-sources-2-
jar/com/twitter/jsr166e/LongAdder.java
* /opt/cola/permits/139083674_1695305409.8868513/0/jsr166e-1-1-0-sources-2-
jar/com/twitter/jsr166e/ForkJoinTask.java
* /opt/cola/permits/139083674_1695305409.8868513/0/jsr166e-1-1-0-sources-2-
jar/com/twitter/jsr166e/Striped64.java
* /opt/cola/permits/139083674_1695305409.8868513/0/jsr166e-1-1-0-sources-2-
jar/com/twitter/jsr166e/ForkJoinPool.java
```

# 1.11 securesm 1.0

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```

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Found in path(s):

- \* /opt/cola/permits/139087998\_1695305412.205601/0/v1-0-tar-gz/seuresm-1.0/src/main/java/org/elasticsearch/ThreadPermission.java
- \*
- /opt/cola/permits/139087998\_1695305412.205601/0/v1-0-tar-gz/seuresm-1.0/src/test/java/org/elasticsearch/TestThreadPermission.java
- \* /opt/cola/permits/139087998\_1695305412.205601/0/v1-0-tar-gz/seuresm-1.0/src/main/java/org/elasticsearch/SecureSM.java
- \* /opt/cola/permits/139087998\_1695305412.205601/0/v1-0-tar-gz/seuresm-1.0/src/test/java/org/elasticsearch/TestSecureSM.java

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```
<project xmlns="http://maven.apache.org/POM/4.0.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://maven.apache.org/POM/4.0.0 http://maven.apache.org/maven-v4_0_0.xsd">
  <modelVersion>4.0.0</modelVersion>
  <groupId>org.elasticsearch</groupId>
  <artifactId>seuresm</artifactId>
  <version>1.0</version>
  <packaging>jar</packaging>
  <name>Elasticsearch SecureSM</name>
  <description>SecurityManager implementation that works around design flaws in Java</description>
  <inceptionYear>2015</inceptionYear>

  <parent>
    <groupId>org.sonatype.oss</groupId>
    <artifactId>oss-parent</artifactId>
    <version>7</version>
  </parent>

  <licenses>
    <license>
      <name>The Apache Software License, Version 2.0</name>
      <url>http://www.apache.org/licenses/LICENSE-2.0.txt</url>
      <distribution>repo</distribution>
    </license>
  </licenses>

  <scm>
    <connection>scm:git:git@github.com:elastic/seuresm.git</connection>
    <developerConnection>scm:git:git@github.com:elastic/seuresm.git</developerConnection>
    <url>https://github.com/elastic/seuresm</url>
  </scm>
```

```
<properties>
  <project.build.sourceEncoding>UTF-8</project.build.sourceEncoding>
  <maven.compiler.source>1.7</maven.compiler.source>
  <maven.compiler.target>1.7</maven.compiler.target>
</properties>

<dependencies>
  <dependency>
    <groupId>junit</groupId>
    <artifactId>junit</artifactId>
    <version>4.11</version>
    <scope>test</scope>
    <exclusions>
      <exclusion>
        <groupId>org.hamcrest</groupId>
        <artifactId>hamcrest-core</artifactId>
      </exclusion>
    </exclusions>
  </dependency>
</dependencies>

<build>
</build>
</project>
```

Found in path(s):

\* /opt/cola/permits/139087998\_1695305412.205601/0/v1-0-tar-gz/seuresm-1.0/pom.xml

## 1.12 jeromq 0.3.5

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## 1.13 httpcore-nio 4.4.6

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## 1.14 netty 3.10.6.Final

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jar/org/intellij/lang/annotations/Pattern.java  
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jar/org/intellij/lang/annotations/Language.java  
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jar/org/intellij/lang/annotations/PrintFormat.java  
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jar/org/intellij/lang/annotations/RegExp.java  
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- \* /opt/cola/permits/173667507\_1695324641.7896898/0/annotations-13-0-sources-jar/org/jetbrains/annotations/NonNls.java
- \*

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- \* /opt/cola/permits/173667507\_1695324641.7896898/0/annotations-13-0-sources-jar/org/jetbrains/annotations/NotNull.java
- \*

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## 1.17 hdrhistogram 2.1.9

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jar/org/HdrHistogram/AtomicHistogram.java
```

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* /opt/cola/permits/174180979_1651176763.07/0/hdrhistogram-2-1-9-sources-  
jar/org/HdrHistogram/RecordedValuesIterator.java
```

```
* /opt/cola/permits/174180979_1651176763.07/0/hdrhistogram-2-1-9-sources-  
jar/org/HdrHistogram/DoubleRecorder.java
```

```
* /opt/cola/permits/174180979_1651176763.07/0/hdrhistogram-2-1-9-sources-  
jar/org/HdrHistogram/ShortCountsHistogram.java
```

```
* /opt/cola/permits/174180979_1651176763.07/0/hdrhistogram-2-1-9-sources-  
jar/org/HdrHistogram/EncodableHistogram.java
```

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jar/org/HdrHistogram/HistogramLogReader.java
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```
*
```

```
/opt/cola/permits/174180979_1651176763.07/0/hdrhistogram-2-1-9-sources-  
jar/org/HdrHistogram/DoublePercentileIterator.java
```

```
* /opt/cola/permits/174180979_1651176763.07/0/hdrhistogram-2-1-9-sources-  
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jar/org/HdrHistogram/DoubleHistogram.java
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jar/org/HdrHistogram/HistogramIterationValue.java
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jar/org/HdrHistogram/AllValuesIterator.java
```

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jar/org/HdrHistogram/DoubleLinearIterator.java
```

```

* /opt/cola/permits/174180979_1651176763.07/0/hdrhistogram-2-1-9-sources-jar/org/HdrHistogram/Histogram.java
* /opt/cola/permits/174180979_1651176763.07/0/hdrhistogram-2-1-9-sources-
jar/org/HdrHistogram/AbstractHistogram.java
*
/opt/cola/permits/174180979_1651176763.07/0/hdrhistogram-2-1-9-sources-
jar/org/HdrHistogram/ConcurrentHistogram.java
* /opt/cola/permits/174180979_1651176763.07/0/hdrhistogram-2-1-9-sources-jar/org/HdrHistogram/Version.java
* /opt/cola/permits/174180979_1651176763.07/0/hdrhistogram-2-1-9-sources-jar/org/HdrHistogram/Recorder.java
* /opt/cola/permits/174180979_1651176763.07/0/hdrhistogram-2-1-9-sources-
jar/org/HdrHistogram/DoubleRecordedValuesIterator.java
* /opt/cola/permits/174180979_1651176763.07/0/hdrhistogram-2-1-9-sources-
jar/org/HdrHistogram/LogarithmicIterator.java
* /opt/cola/permits/174180979_1651176763.07/0/hdrhistogram-2-1-9-sources-
jar/org/HdrHistogram/HistogramLogProcessor.java
* /opt/cola/permits/174180979_1651176763.07/0/hdrhistogram-2-1-9-sources-
jar/org/HdrHistogram/SingleWriterDoubleRecorder.java
* /opt/cola/permits/174180979_1651176763.07/0/hdrhistogram-2-1-9-sources-
jar/org/HdrHistogram/AbstractHistogramIterator.java
* /opt/cola/permits/174180979_1651176763.07/0/hdrhistogram-2-1-9-sources-
jar/org/HdrHistogram/DoubleAllValuesIterator.java
*
/opt/cola/permits/174180979_1651176763.07/0/hdrhistogram-2-1-9-sources-
jar/org/HdrHistogram/IntCountsHistogram.java
* /opt/cola/permits/174180979_1651176763.07/0/hdrhistogram-2-1-9-sources-
jar/org/HdrHistogram/SynchronizedDoubleHistogram.java
* /opt/cola/permits/174180979_1651176763.07/0/hdrhistogram-2-1-9-sources-
jar/org/HdrHistogram/PercentileIterator.java
* /opt/cola/permits/174180979_1651176763.07/0/hdrhistogram-2-1-9-sources-
jar/org/HdrHistogram/SingleWriterRecorder.java
* /opt/cola/permits/174180979_1651176763.07/0/hdrhistogram-2-1-9-sources-
jar/org/HdrHistogram/ConcurrentDoubleHistogram.java
* /opt/cola/permits/174180979_1651176763.07/0/hdrhistogram-2-1-9-sources-
jar/org/HdrHistogram/SynchronizedHistogram.java
* /opt/cola/permits/174180979_1651176763.07/0/hdrhistogram-2-1-9-sources-
jar/org/HdrHistogram/DoubleLogarithmicIterator.java
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jar/org/HdrHistogram/AbstractHistogramLogReader.java
*
/opt/cola/permits/174180979_1651176763.07/0/hdrhistogram-2-1-9-sources-
jar/org/HdrHistogram/LinearIterator.java
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package org.HdrHistogram;

final class Version {

public static final String version="\$VERSION\$";

public static final String build\_time="\$BUILD\_TIMES\$";

}

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## 1.25 failureaccess 1.0.1

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## 1.28 grep 2.20-3.el7

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Version 3, 29 June 2007

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Other contributors include:

- \* Jon Hartlaub (first versions of streaming reader/writer; unit tests)
- \* Cedrik Lime: parallel LZF implementation

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## 1.46 python-chardet 2.2.1-3.el7

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## 1.47 shadow 4.6-5.el7

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not-a-legal-formal-parameter-tuple.scala:2: error: not a legal formal parameter.

Note: Tuples cannot be directly destructured in method or function parameters.

```
Either create a single parameter accepting the Tuple2,  
or consider a pattern matching anonymous function: `{ case (a, b) => ... }`  
val x: ((Int, Int) => Int) = (((a, b)) => a)  
      ^
```

not-a-legal-formal-parameter-tuple.scala:3: error: not a legal formal parameter.

Note: Tuples cannot be directly destructured in method or function parameters.

```
Either create a single parameter accepting the Tuple2,  
or consider a pattern matching anonymous function: `{ case (param1, param2) => ... }`  
val y: ((Int, Int, Int) => Int) = (((a, !!)) => a)  
      ^
```

not-a-legal-formal-parameter-tuple.scala:4: error: not a legal formal parameter.

Note: Tuples cannot be directly destructured in method or function parameters.

```
Either create a single parameter accepting the  
Tuple3,  
or consider a pattern matching anonymous function: `{ case (param1, ..., param3) => ... }`  
val z: ((Int, Int, Int) => Int) = (((a, NotAPatternVariableName, c)) => a)  
      ^
```

three errors found

```
{% if site.thisScalaVersion != site.latestScalaVersion %}  
<div class="version-notice">This is the specification of a previous version of Scala. See the <a href="{{  
site.baseurl}}/../{{ site.latestScalaVersion }}/">Scala {{ site.latestScalaVersion }} spec</a>.</div>  
{% endif %}
```

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## 1.61 python-urlgrabber 3.10-10.e17

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## 1.64 cryptsetup 2.0.3-6.el7

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<https://github.com/apache/maven-plugin-tools/tree/maven-plugin-tools-3.5.1/maven-plugin-annotations>

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woodstox-core-asl  
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<https://repo1.maven.org/maven2/org/apache/santuario/xmlsec/1.5.8/xmlsec-1.5.8-sources.jar>

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Found in path(s):

```
* /opt/ws_local/PERMITS_SQL/1041687624_1590960580.15/0/feign-core-8-15-1-sources-jar/feign/Types.java
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\* /opt/ws\_local/PERMITS\_SQL/1041687624\_1590960580.15/0/feign-core-8-15-1-sources-jar/feign/SynchronousMethodHandler.java

\* /opt/ws\_local/PERMITS\_SQL/1041687624\_1590960580.15/0/feign-core-8-15-1-sources-jar/feign/InvocationHandlerFactory.java

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\* /opt/ws\_local/PERMITS\_SQL/1041687624\_1590960580.15/0/feign-core-8-15-1-sources-jar/feign/codec/Encoder.java

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\* /opt/ws\_local/PERMITS\_SQL/1041687624\_1590960580.15/0/feign-core-8-15-1-sources-jar/feign/auth/BasicAuthRequestInterceptor.java

\* /opt/ws\_local/PERMITS\_SQL/1041687624\_1590960580.15/0/feign-core-8-15-1-sources-jar/feign/RetryableException.java

\*

/opt/ws\_local/PERMITS\_SQL/1041687624\_1590960580.15/0/feign-core-8-15-1-sources-jar/feign/ReflectiveFeign.java

\* /opt/ws\_local/PERMITS\_SQL/1041687624\_1590960580.15/0/feign-core-8-15-1-sources-jar/feign/codec/ErrorDecoder.java

\* /opt/ws\_local/PERMITS\_SQL/1041687624\_1590960580.15/0/feign-core-8-15-1-sources-jar/feign/Logger.java

\* /opt/ws\_local/PERMITS\_SQL/1041687624\_1590960580.15/0/feign-core-8-15-1-sources-jar/feign/Request.java

\* /opt/ws\_local/PERMITS\_SQL/1041687624\_1590960580.15/0/feign-core-8-15-1-sources-jar/feign/codec/EncodeException.java

\* /opt/ws\_local/PERMITS\_SQL/1041687624\_1590960580.15/0/feign-core-8-15-1-sources-jar/feign/codec/StringDecoder.java

\* /opt/ws\_local/PERMITS\_SQL/1041687624\_1590960580.15/0/feign-core-8-15-1-sources-jar/feign/Retryer.java

\* /opt/ws\_local/PERMITS\_SQL/1041687624\_1590960580.15/0/feign-core-8-15-1-sources-jar/feign/codec/DecodeException.java

\* /opt/ws\_local/PERMITS\_SQL/1041687624\_1590960580.15/0/feign-core-8-15-1-sources-jar/feign/Util.java

\*

```
/opt/ws_local/PERMITS_SQL/1041687624_1590960580.15/0/feign-core-8-15-1-sources-
jar/feign/auth/Base64.java
* /opt/ws_local/PERMITS_SQL/1041687624_1590960580.15/0/feign-core-8-15-1-sources-
jar/feign/FeignException.java
* /opt/ws_local/PERMITS_SQL/1041687624_1590960580.15/0/feign-core-8-15-1-sources-jar/feign/Client.java
* /opt/ws_local/PERMITS_SQL/1041687624_1590960580.15/0/feign-core-8-15-1-sources-
jar/feign/MethodMetadata.java
* /opt/ws_local/PERMITS_SQL/1041687624_1590960580.15/0/feign-core-8-15-1-sources-jar/feign/Response.java
* /opt/ws_local/PERMITS_SQL/1041687624_1590960580.15/0/feign-core-8-15-1-sources-jar/feign/Feign.java
* /opt/ws_local/PERMITS_SQL/1041687624_1590960580.15/0/feign-core-8-15-1-sources-
jar/feign/RequestInterceptor.java
* /opt/ws_local/PERMITS_SQL/1041687624_1590960580.15/0/feign-core-8-15-1-sources-jar/feign/Contract.java
* /opt/ws_local/PERMITS_SQL/1041687624_1590960580.15/0/feign-core-8-15-1-sources-jar/feign/Target.java
```

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```
* /opt/ws_local/PERMITS_SQL/1041687872_1590954410.55/0/feign-jackson-8-15-1-sources-
jar/feign/jackson/JacksonDecoder.java
* /opt/ws_local/PERMITS_SQL/1041687872_1590954410.55/0/feign-jackson-8-15-1-sources-
jar/feign/jackson/JacksonEncoder.java
```

## 1.68 guice-multibindings 4.2.2

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# 1.70 jedis 3.3.0

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\* /opt/ws\_local/PERMITS\_SQL/1047560748\_1590497249.67/0/jedis-3-3-0-sources-  
jar/redis/clients/jedis/util/RedisInputStream.java

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jar/redis/clients/jedis/util/MurmurHash.java

# 1.71 guice 4.2.3

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* /opt/ws_local/PERMITS_SQL/1057884735_1592369590.28/0/re2j-1-3-sources-  
jar/com/google/re2j/CharClass.java  
* /opt/ws_local/PERMITS_SQL/1057884735_1592369590.28/0/re2j-1-3-sources-jar/com/google/re2j/RE2.java  
* /opt/ws_local/PERMITS_SQL/1057884735_1592369590.28/0/re2j-1-3-sources-jar/com/google/re2j/Parser.java  
* /opt/ws_local/PERMITS_SQL/1057884735_1592369590.28/0/re2j-1-3-sources-jar/com/google/re2j/Inst.java  
* /opt/ws_local/PERMITS_SQL/1057884735_1592369590.28/0/re2j-1-3-sources-jar/com/google/re2j/Regexp.java  
* /opt/ws_local/PERMITS_SQL/1057884735_1592369590.28/0/re2j-1-3-sources-jar/com/google/re2j/Machine.java  
* /opt/ws_local/PERMITS_SQL/1057884735_1592369590.28/0/re2j-1-3-sources-jar/com/google/re2j/Prog.java  
* /opt/ws_local/PERMITS_SQL/1057884735_1592369590.28/0/re2j-1-3-sources-  
jar/com/google/re2j/PatternSyntaxException.java  
* /opt/ws_local/PERMITS_SQL/1057884735_1592369590.28/0/re2j-1-3-sources-  
jar/com/google/re2j/MachineInput.java  
*  
/opt/ws_local/PERMITS_SQL/1057884735_1592369590.28/0/re2j-1-3-sources-jar/com/google/re2j/Unicode.java  
* /opt/ws_local/PERMITS_SQL/1057884735_1592369590.28/0/re2j-1-3-sources-jar/com/google/re2j/Utils.java  
* /opt/ws_local/PERMITS_SQL/1057884735_1592369590.28/0/re2j-1-3-sources-  
jar/com/google/re2j/Compiler.java
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\* /opt/ws\_local/PERMITS\_SQL/1057884735\_1592369590.28/0/re2j-1-3-sources-jar/com/google/re2j/Matcher.java

## 1.73 error\_prone\_annotations 2.3.4

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\* /opt/ws\_local/PERMITS\_SQL/1059106420\_1592475238.99/0/error-prone-annotations-2-3-4-sources-1-jar/com/google/errorprone/annotations/ForOverride.java

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/opt/ws\_local/PERMITS\_SQL/1059106420\_1592475238.99/0/error-prone-annotations-2-3-4-sources-1-jar/com/google/errorprone/annotations/SuppressPackageLocation.java

\* /opt/ws\_local/PERMITS\_SQL/1059106420\_1592475238.99/0/error-prone-annotations-2-3-4-sources-1-jar/com/google/errorprone/annotations/IncompatibleModifiers.java

\* /opt/ws\_local/PERMITS\_SQL/1059106420\_1592475238.99/0/error-prone-annotations-2-3-4-sources-1-jar/com/google/errorprone/annotations/CanIgnoreReturnValue.java

\* /opt/ws\_local/PERMITS\_SQL/1059106420\_1592475238.99/0/error-prone-annotations-2-3-4-sources-1-

jar/com/google/errorprone/annotations/CompileTimeConstant.java  
\* /opt/ws\_local/PERMITS\_SQL/1059106420\_1592475238.99/0/error-prone-annotations-2-3-4-sources-1-  
jar/com/google/errorprone/annotations/concurrent/LazyInit.java  
\* /opt/ws\_local/PERMITS\_SQL/1059106420\_1592475238.99/0/error-prone-annotations-2-3-4-sources-1-  
jar/com/google/errorprone/annotations/RequiredModifiers.java  
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jar/com/google/errorprone/annotations/DoNotCall.java  
\* /opt/ws\_local/PERMITS\_SQL/1059106420\_1592475238.99/0/error-prone-annotations-2-3-4-sources-1-  
jar/com/google/errorprone/annotations/concurrent/GuardedBy.java  
\*  
/opt/ws\_local/PERMITS\_SQL/1059106420\_1592475238.99/0/error-prone-annotations-2-3-4-sources-1-  
jar/com/google/errorprone/annotations/OverridingMethodsMustInvokeSuper.java  
\* /opt/ws\_local/PERMITS\_SQL/1059106420\_1592475238.99/0/error-prone-annotations-2-3-4-sources-1-  
jar/com/google/errorprone/annotations/CheckReturnValue.java  
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/opt/ws\_local/PERMITS\_SQL/1059106420\_1592475238.99/0/error-prone-annotations-2-3-4-sources-1-jar/com/google/errorprone/annotations/concurrent/LockMethod.java

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\* /opt/ws\_local/PERMITS\_SQL/1059106420\_1592475238.99/0/error-prone-annotations-2-3-4-sources-1-jar/com/google/errorprone/annotations/CompatibleWith.java

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/opt/ws\_local/PERMITS\_SQL/1059106420\_1592475238.99/0/error-prone-annotations-2-3-4-sources-1-jar/com/google/errorprone/annotations/RestrictedApi.java

\* /opt/ws\_local/PERMITS\_SQL/1059106420\_1592475238.99/0/error-prone-annotations-2-3-4-sources-1-jar/com/google/errorprone/annotations/MustBeClosed.java

\* /opt/ws\_local/PERMITS\_SQL/1059106420\_1592475238.99/0/error-prone-annotations-2-3-4-sources-1-jar/com/google/errorprone/annotations/FormatMethod.java

## 1.74 jaxb-api 2.4.0-b180830.0359

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size: 8388608, sector size: 512, PT: dos, offset: 446, id=0x8f8378c0

---

#1: 32 7648 0x83  
#2: 7680 8704 0xa5  
#5: 7936 4864 0x7 (freebsd)  
#6: 12544 3584 0x7 (freebsd)

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Initialize empty image

f1c9645dbc14efddc7d8a322685f26eb bsd.img

Create new DOS partition table

57e721e38d1266c2df055067c18f2cf9 bsd.img

---layout-----

\_\_ts\_dev\_\_: 10 MB, 10485760 bytes, 20480 sectors

Units = sectors of 1 \* 512 = 512 bytes

Sector size (logical/physical): 512 bytes / 512 bytes

I/O size (minimum/optimal): 512 bytes / 512 bytes

Disk label type: dos

Disk identifier: 0x00000001

| Device | Boot | Start | End | Blocks | Id | System |
|--------|------|-------|-----|--------|----|--------|
|--------|------|-------|-----|--------|----|--------|

Create 1st primary partition

ada64ace122978d00d1d1c0e5ee45d26 bsd.img

---layout-----

\_\_ts\_dev\_\_: 10 MB, 10485760 bytes, 20480 sectors

Units = sectors of 1 \* 512 = 512 bytes

Sector size (logical/physical): 512 bytes / 512 bytes

I/O size (minimum/optimal): 512 bytes / 512 bytes

Disk label type: dos

Disk identifier: 0x00000001

| Device      | Boot | Start | End  | Blocks | Id | System |
|-------------|------|-------|------|--------|----|--------|
| __ts_dev__1 |      | 2048  | 4095 | 1024   | 83 | Linux  |

```
Create 2st primary partition
1bebf87248e05d6e4e62b749da65d023
bsd.img
Set 2nd partition type
2d8e8dff51a88a045db233418dd73fbe bsd.img
```

```
---layout-----
__ts_dev__: 10 MB, 10485760 bytes, 20480 sectors
Units = sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disk label type: dos
Disk identifier: 0x00000001
```

| Device      | Boot | Start | End   | Blocks | Id | System  |
|-------------|------|-------|-------|--------|----|---------|
| __ts_dev__1 |      | 2048  | 4095  | 1024   | 83 | Linux   |
| __ts_dev__2 |      | 4096  | 20479 | 8192   | a5 | FreeBSD |

```
-----
Create default BSD
2e1cee529cb59c9341afef0443f196a1 bsd.img
```

```
---layout-----
```

Changes will remain in memory only, until you decide to write them.  
Be careful before using the write command.

Command (m for help):

BSD disklabel command (m for help):

4 partitions:

| #  | start | end   | size   | fstype | [fsize | bsize | cpg] |
|----|-------|-------|--------|--------|--------|-------|------|
| c: | 4096  | 20479 | 16384  | unused | 0      | 0     |      |
| d: | 0     |       |        |        |        |       |      |
|    | 16064 | 16065 | unused | 0      | 0      |       |      |

BSD disklabel command (m for help):

Command (m for help):

```
-----
b5c121c2091b2ff26b880551feac7112 bsd.img
```

```
---layout-----
```

Changes will remain in memory only, until you decide to write them.  
Be careful before using the write command.

Command (m for help):

BSD disklabel command (m for help):

4 partitions:

| #  | start | end   | size  | fstype | [fsize | bsize | cpg] |
|----|-------|-------|-------|--------|--------|-------|------|
| a: | 4096  | 6144  | 2049  | 4.2BSD | 0      | 0     | 0    |
| c: | 4096  | 20479 | 16384 | unused | 0      | 0     |      |
| d: | 0     | 16064 | 16065 | unused | 0      | 0     |      |

BSD disklabel command (m for help):

Command (m for help):

-----

Changes will remain in memory only, until you decide to write them.  
Be careful before using the write command.

Command (m for help):

BSD disklabel command (m for help):

|   |           |                |        |         |          |      |       |
|---|-----------|----------------|--------|---------|----------|------|-------|
| 0 | unused    | 5              | 4.1BSD | 9       | 4.4LFS   | d    | boot  |
| 1 | swap      |                |        |         |          |      |       |
|   | 6         | Eighth Edition | a      | unknown | e        | ADOS |       |
| 2 | Version 6 | 7              | 4.2BSD | b       | HPFS     | f    | HFS   |
| 3 | Version 7 | 8              | MS-DOS | c       | ISO-9660 | 10   | AdvFS |
| 4 | System V  |                |        |         |          |      |       |

BSD disklabel command (m for help):

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## 1.76 yum-utils 1.1.31-54.el7\_8

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```

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```
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```

```
<signature of Ty Coon>, 1 April 1989  
Ty Coon, President of Vice
```

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## 1.77 activation 1.1.1

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# 1.78 t-digest 3.2

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Found in path(s):

```
* /opt/ws_local/PERMITS_SQL/1091220915_1600449900.56/0/t-digest-3-2-sources-1-
jar/com/tdunning/math/stats/FloatHistogram.java
* /opt/ws_local/PERMITS_SQL/1091220915_1600449900.56/0/t-digest-3-2-sources-1-
jar/com/tdunning/math/stats/AVLGroupTree.java
*
/opt/ws_local/PERMITS_SQL/1091220915_1600449900.56/0/t-digest-3-2-sources-1-
jar/com/tdunning/math/stats/Sort.java
* /opt/ws_local/PERMITS_SQL/1091220915_1600449900.56/0/t-digest-3-2-sources-1-
jar/com/tdunning/math/stats/TDigest.java
* /opt/ws_local/PERMITS_SQL/1091220915_1600449900.56/0/t-digest-3-2-sources-1-
jar/com/tdunning/math/stats/IntAVLTree.java
* /opt/ws_local/PERMITS_SQL/1091220915_1600449900.56/0/t-digest-3-2-sources-1-
jar/com/tdunning/math/stats/Histogram.java
* /opt/ws_local/PERMITS_SQL/1091220915_1600449900.56/0/t-digest-3-2-sources-1-
jar/com/tdunning/math/stats/MergingDigest.java
* /opt/ws_local/PERMITS_SQL/1091220915_1600449900.56/0/t-digest-3-2-sources-1-
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* /opt/ws_local/PERMITS_SQL/1091220915_1600449900.56/0/t-digest-3-2-sources-1-
jar/com/tdunning/math/stats/Simple64.java
* /opt/ws_local/PERMITS_SQL/1091220915_1600449900.56/0/t-digest-3-2-sources-1-
jar/com/tdunning/math/stats/AbstractTDigest.java
*
/opt/ws_local/PERMITS_SQL/1091220915_1600449900.56/0/t-digest-3-2-sources-1-
jar/com/tdunning/math/stats/AVLTreeDigest.java
```

## 1.79 jctools-core 3.1.0

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```
<project xmlns="http://maven.apache.org/POM/4.0.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://maven.apache.org/POM/4.0.0 http://maven.apache.org/maven-v4_0_0.xsd">
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```

```
<groupId>org.jctools</groupId>
```

```
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```

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```

```
<description>Java Concurrency Tools Core Library</description>
```

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```

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<dependencies>
```

```
<dependency>
```

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```

```

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</dependency>

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<version>${junit.version}</version>
<scope>test</scope>
</dependency>

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<groupId>com.google.guava</groupId>
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</dependency>
</dependencies>
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</configuration>
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<artifactId>maven-bundle-plugin</artifactId>
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</instructions>
</configuration>
</plugin>
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```

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    </goals>
  </execution>
</executions>
</plugin>
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  <groupId>org.apache.maven.plugins</groupId>
  <artifactId>maven-javadoc-plugin</artifactId>
  <version>3.1.1</version>
  <configuration>
    <additionalOptions>
      <additionalOption>-Xdoclint:none</additionalOption>
    </additionalOptions>
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  </configuration>
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      <goals>
        <goal>jar</goal>
      </goals>
    </execution>
  </executions>
</plugin>
</plugins>
</build>

<distributionManagement>
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    <name>jctools-jctools</name>
    <url>https://api.bintray.com/maven/jctools/jctools/jctools-core/;publish=1</url>
  </repository>
</distributionManagement>

<url>https://github.com/JCTools</url>
<inceptionYear>2013</inceptionYear>

<licenses>
  <license>
    <name>Apache
    License, Version 2.0</name>
    <url>http://www.apache.org/licenses/LICENSE-2.0.txt</url>
    <distribution>repo</distribution>
  </license>

```

```
</licenses>

<scm>
  <url>https://github.com/JCTools/JCTools</url>
  <connection>scm:git:https://github.com/JCTools/JCTools</connection>
  <tag>HEAD</tag>
</scm>

<developers>
  <developer>
    <url>https://github.com/nitsanw</url>
  </developer>
  <developer>
    <url>https://github.com/mjpt777</url>
  </developer>
  <developer>
    <url>https://github.com/RichardWarburton</url>
  </developer>
  <developer>
    <url>https://github.com/kay</url>
  </developer>
  <developer>
    <url>https://github.com/franz1981</url>
  </developer>
</developers>

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  <maven>3.5.0</maven>
</prerequisites>

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  <java.version>1.6</java.version>
  <java.test.version>1.8</java.test.version>

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  <maven.compiler.target>${java.version}</maven.compiler.target>
  <maven.compiler.testSource>${java.test.version}</maven.compiler.testSource>
  <maven.compiler.testTarget>${java.test.version}</maven.compiler.testTarget>

  <hamcrest.version>1.3</hamcrest.version>
  <junit.version>4.12</junit.version>
  <guava-testlib.version>21.0</guava-testlib.version>
</properties>
</project>
```

Found

in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/META-INF/maven/org.jctools/jctools-core/pom.xml

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\* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/spec/Ordering.java

\* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/atomic/SpSCUnboundedAtomicArrayQueue.java

\* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/atomic/SpmcAtomicArrayQueue.java

\*

/opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/MessagePassingQueueUtil.java

\* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/atomic/MpmcAtomicArrayQueue.java

\* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/util/UnsafeJvmInfo.java

\* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/atomic/LinkedQueueAtomicNode.java

\* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/SpSCLinkedQueue.java

\* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/MpscUnboundedXaddArrayQueue.java

\* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/spec/Preference.java

\* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/atomic/MpscAtomicArrayQueue.java

\*

/opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/MessagePassingQueue.java

\* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/SupportsIterator.java



\* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/MpmcUnboundedXaddArrayQueue.java

\* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/MpscGrowableArrayQueue.java

\* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/atomic/BaseSpSCLinkedAtomicArrayQueue.java

\* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/atomic/AtomicQueueFactory.java

\* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/MpmcArrayQueue.java

\*

/opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/atomic/SpSCAtomicArrayQueue.java

\* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/atomic/SpSCLinkedAtomicQueue.java

\* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/SpMCArrayQueue.java

\* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/maps/AbstractEntry.java

\* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/MpmcUnboundedXaddChunk.java

\* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/MpscChunkedArrayQueue.java

\* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/maps/NonBlockingHashMapLong.java

\* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/atomic/MpscChunkedAtomicArrayQueue.java

\*

/opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/ConcurrentSequencedCircularArrayQueue.java

\* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/util/UnsafeLongArrayAccess.java

\* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/MpscBlockingConsumerArrayQueue.java

\* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/atomic/BaseMpscLinkedAtomicArrayQueue.java

\* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/maps/NonBlockingHashMap.java

\* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/BaseMpscLinkedArrayQueue.java

\* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/atomic/MpscGrowableAtomicArrayQueue.java

\*

/opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/maps/NonBlockingIdentityHashMap.java

\* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/BaseLinkedQueue.java

\* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-

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jar/org/jctools/util/InternalAPI.java
* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
jar/org/jctools/maps/NonBlockingHashSet.java
* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
jar/org/jctools/util/Pow2.java
* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
jar/org/jctools/queues/spec/ConcurrentQueueSpec.java
* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
jar/org/jctools/queues/atomic/SpSCChunkedAtomicArrayQueue.java
* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
jar/org/jctools/maps/ConcurrentAutoTable.java
*
/opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
jar/org/jctools/queues/MpscUnboundedXaddChunk.java
* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
jar/org/jctools/queues/atomic/MpscUnboundedAtomicArrayQueue.java
* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
jar/org/jctools/queues/LinkedQueueNode.java
* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
jar/org/jctools/queues/SpSCUnboundedArrayQueue.java
* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
jar/org/jctools/util/PortableJvmInfo.java
* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
jar/org/jctools/queues/ConcurrentCircularArrayQueue.java
* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
jar/org/jctools/maps/NonBlockingSetInt.java
*
/opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
jar/org/jctools/queues/atomic/BaseLinkedAtomicQueue.java
* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
jar/org/jctools/queues/atomic/SequencedAtomicReferenceArrayQueue.java
* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
jar/org/jctools/queues/MpscLinkedQueue.java
* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
jar/org/jctools/util/UnsafeRefArrayAccess.java
* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
jar/org/jctools/queues/MpscCompoundQueue.java
* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
jar/org/jctools/queues/SpSCChunkedArrayQueue.java
* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
jar/org/jctools/queues/SpSCArrayQueue.java
* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
jar/org/jctools/queues/atomic/AtomicReferenceArrayQueue.java
*
/opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
jar/org/jctools/queues/QueueFactory.java
* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
jar/org/jctools/queues/MpscArrayQueue.java

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\* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/util/UnsafeAccess.java  
\* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/MpscUnboundedArrayQueue.java  
\* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/atomic/SpSCGrowAtomicArrayQueue.java  
\* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/IndexedQueueSizeUtil.java  
\* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/atomic/MpscLinkedAtomicQueue.java  
\*  
/opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/SpSCGrowArrayQueue.java  
\* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/util/RangeUtil.java  
\* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/package-info.java  
\* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/BaseSpSCLinkedArrayQueue.java

## 1.80 Iz4 1.8.3-1.e17

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Upstream-Contact: Yann Collet <Cyan4973@github.com>

Source: <https://github.com/lz4/lz4>

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Theodore Ts'o <tytso@mit.edu> on Sat Mar 15 15:33:37 EST 2003

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```
#  
# This is a Makefile stub which handles the creation of BSD shared  
# libraries.  
#  
# In order to use this stub, the following makefile variables must be defined.  
#  
# BSDLIB_VERSION = 1.0  
# BSDLIB_IMAGE = libce  
# BSDLIB_MYDIR = et  
# BSDLIB_INSTALL_DIR = $(SHLIBDIR)  
#
```

```
all:: image
```

```
real-subdirs:: Makefile  
@echo " MKDIR pic"  
@mkdir -p pic
```

```
BSD_LIB = $(BSDLIB_IMAGE).so.$(BSDLIB_VERSION)  
BSDLIB_PIC_FLAG = -fpic
```

```
image: $(BSD_LIB)
```

```
$(BSD_LIB): $(OBJS)  
(cd pic; ld -Bshareable -o $(BSD_LIB) $(LDFLAGS_SHLIB) $(OBJS))  
$(MV) pic/$(BSD_LIB) .  
$(RM) -f ../$(BSD_LIB)  
(cd ..; $(LN) $(LINK_BUILD_FLAGS) \  
`echo $(my_dir) | sed -e 's;lib/;;'`/$(BSD_LIB) $(BSD_LIB))
```

```
install-shlibs install:: $(BSD_LIB)
@echo " INSTALL_PROGRAM $(BSDLIB_INSTALL_DIR)/$(BSD_LIB)"
@$(INSTALL_PROGRAM) $(BSD_LIB) \
$(DESTDIR)$ (BSDLIB_INSTALL_DIR)/$(BSD_LIB)
@-$(LDCONFIG)
```

install-strip: install

install-shlibs-strip:: install-shlibs

```
uninstall-shlibs uninstall::
$(RM) -f $(DESTDIR)$ (BSDLIB_INSTALL_DIR)/$(BSD_LIB)
```

```
clean::
$(RM)
-rf pic
$(RM) -f $(BSD_LIB)
$(RM) -f ../$(BSD_LIB)
```

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This is the Debian GNU/Linux prepackaged version of the translation files of the EXT2 file system utilities. The EXT2 utilities were written by Theodore Ts'o <tytso@mit.edu> and Remy Card

<card@masi.ibp.fr>.

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Index: tdbsa/tdb.c

-----  
--- tdbsa.orig/tdb.c

+++ tdbsa/tdb.c

@@ -4,11 +4,11 @@ Rev: 23371

Last Changed Date: 2007-06-06 20:14:06 -0400 (Wed, 06 Jun 2007)

\*/

/\*

- Unix SMB/CIFS implementation.
- + trivial database library - standalone version
  
- trivial database library - private includes
- 
- Copyright (C) Andrew Tridgell            2005
- + Copyright (C) Andrew Tridgell            1999-2005
- + Copyright (C) Jeremy Allison            2000-2006
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Gadi Oxman, August 1995

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Theodore Ts'o

23-June-2007

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This package was added to the e2fsprogs debian source package by Theodore Ts'o <tytso@mit.edu> on Sat Mar 15 15:33:37 EST 2003

It is part of the main e2fsprogs distribution, which can be found at:

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## 1.83 cpio 2.11-28.el7

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## 1.85 sed 4.2.2-7.e17

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In 1995, Guido continued his work on Python at the Corporation for National Research Initiatives (CNRI, see <http://www.cnri.reston.va.us>) in Reston, Virginia where he released several versions of the software.

In May 2000, Guido and the Python core development team moved to BeOpen.com to form the BeOpen PythonLabs team. In October of the same year, the PythonLabs team moved to Digital Creations (now Zope Corporation, see <http://www.zope.com>). In 2001, the Python Software Foundation (PSF, see <http://www.python.org/psf/>) was formed, a non-profit organization created specifically to own Python-related Intellectual Property. Zope Corporation is a sponsoring member of the PSF.

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| Release        | Derived from | Year      | Owner      | GPL-compatible? (1) |
|----------------|--------------|-----------|------------|---------------------|
| 0.9.0 thru 1.2 |              | 1991-1995 | CWI        | yes                 |
| 1.3 thru 1.5.2 | 1.2          | 1995-1999 | CNRI       | yes                 |
| 1.6            | 1.5.2        | 2000      | CNRI       | no                  |
| 2.0            | 1.6          | 2000      | BeOpen.com | no                  |
| 1.6.1          | 1.6          | 2001      | CNRI       | yes (2)             |
| 2.1            | 2.0+1.6.1    | 2001      | PSF        | no                  |

|       |           |           |     |     |
|-------|-----------|-----------|-----|-----|
| 2.0.1 | 2.0+1.6.1 | 2001      | PSF | yes |
| 2.1.1 | 2.1+2.0.1 | 2001      | PSF | yes |
| 2.2   | 2.1.1     | 2001      | PSF | yes |
| 2.1.2 | 2.1.1     | 2002      | PSF | yes |
| 2.1.3 |           |           |     |     |
| 2.1.2 | 2002      | PSF       | yes |     |
| 2.2.1 | 2.2       | 2002      | PSF | yes |
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| 2.2.3 | 2.2.2     | 2003      | PSF | yes |
| 2.3   | 2.2.2     | 2002-2003 | PSF | yes |
| 2.3.1 | 2.3       | 2002-2003 | PSF | yes |
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| 2.3.5 | 2.3.4     | 2005      | PSF | yes |
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| 2.4.1 | 2.4       | 2005      | PSF | yes |
| 2.4.2 | 2.4.1     | 2005      | PSF | yes |
| 2.4.3 | 2.4.2     | 2006      | PSF | yes |
| 2.4.4 | 2.4.3     | 2006      | PSF | yes |
| 2.5   | 2.4       | 2006      | PSF | yes |
| 2.5.1 | 2.5       | 2007      | PSF | yes |
| 2.5.2 | 2.5.1     | 2008      | PSF | yes |
| 2.5.3 | 2.5.2     | 2008      | PSF | yes |
| 2.6   | 2.5       | 2008      | PSF | yes |
| 2.6.1 | 2.6       | 2008      | PSF | yes |
| 2.6.2 | 2.6.1     | 2009      | PSF | yes |
| 2.6.3 | 2.6.2     | 2009      | PSF | yes |
| 2.6.4 | 2.6.3     | 2009      | PSF | yes |
| 2.6.5 | 2.6.4     | 2010      | PSF | yes |
| 2.7   | 2.6       | 2010      | PSF | yes |

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In 1995, Guido continued his work on Python at the Corporation for National Research Initiatives (CNRI, see <http://www.cnri.reston.va.us>) in Reston, Virginia where he released several versions of the software.

In May 2000, Guido and the Python core development team moved to BeOpen.com to form the BeOpen PythonLabs team. In October of the same year, the PythonLabs team moved to Digital Creations (now Zope Corporation, see <http://www.zope.com>). In 2001, the Python Software Foundation (PSF, see <http://www.python.org/psf/>) was formed, a non-profit organization created specifically to own Python-related Intellectual Property. Zope Corporation is a sponsoring member of the PSF.

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| 0.9.0 thru 1.2 |              | 1991-1995 | CWI        | yes                 |
| 1.3 thru 1.5.2 | 1.2          | 1995-1999 | CNRI       | yes                 |
| 1.6            | 1.5.2        | 2000      | CNRI       | no                  |
| 2.0            | 1.6          | 2000      | BeOpen.com | no                  |
| 1.6.1          | 1.6          | 2001      | CNRI       | yes (2)             |
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| 2.1.1          | 2.1+2.0.1    | 2001      | PSF        | yes                 |
| 2.2            | 2.1.1        | 2001      | PSF        | yes                 |
| 2.1.2          | 2.1.1        | 2002      | PSF        | yes                 |
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```
<one line to give the program's name and a brief idea of what it does.>  
Copyright (C) 19yy <name of author>
```

```
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version 2 of the License, or  
(at your option) any later version.
```

```
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```
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```

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```
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`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

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If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

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When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object

file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute

the object code for the work under the terms of Section 6.

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a)

Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

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## 1.96 libdb-utils 5.3.21-25.el7

### 1.96.1 Available under license :

No license file was found, but licenses were detected in source scan.

/opt/cola/permits/1110807414\_1680601714.3027513/0/libdb-5-3-21-25-el7-src-zip/libdb-5.3.21-25.el7.src/libdb-5.3.21-25.el7.src.cpio: binary file matches

Found in path(s):  
\* /bin/grep

## 1.97 qrencode-libs 3.4.1-3.el7

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```
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under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, your program's commands might be different; for a GUI interface, you would use an "about box".

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## 1.104 curl 7.29.0-59.el7\_9.1

### 1.104.1 Available under license :

License Mixing with apps, libcurl and Third Party Libraries

=====  
libcurl can be built to use a fair amount of various third party libraries, libraries that are written and provided by other parties that are distributed using their own licenses. Even libcurl itself contains code that may cause problems to some. This document attempts to describe what licenses libcurl and the other libraries use and what possible dilemmas linking and mixing them all can lead to for end users.

I am not a lawyer and this is not legal advice!

One common dilemma is that GPL[1]-licensed code is not allowed to be linked with code licensed under the Original BSD license (with the announcement clause). You may still build your own copies that use them all, but distributing them as binaries would be to violate the GPL license - unless you accompany your license with an exception[2]. This particular problem was addressed when the Modified BSD

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libcurl <http://curl.haxx.se/docs/copyright.html>

Uses an MIT (or Modified BSD)-style license that is as liberal as possible. Some of the source files that deal with KRB4 have Original BSD-style announce-clause licenses. You may not distribute binaries with krb4-enabled libcurl that also link with GPL-licensed code!

OpenSSL <http://www.openssl.org/source/license.html>

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GnuTLS <http://www.gnutls.org/>

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yassl <http://www.yassl.com/>

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axTLS <http://axtls.sourceforge.net/>

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c-ares <http://daniel.haxx.se/projects/c-ares/license.html>

(Used for asynchronous name resolves) Uses an MIT license that is very

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zlib [http://www.gzip.org/zlib/zlib\\_license.html](http://www.gzip.org/zlib/zlib_license.html)

(Used for compressed Transfer-Encoding support) Uses an MIT-style license that shouldn't collide with any other library.

krb4

While nothing in particular says that a Kerberos4 library must use any particular license, the one I've tried and used successfully so far (kth-krb4) is partly Original BSD-licensed with the announcement clause. Some of the code in libcurl that is written to deal with Kerberos4 is Modified BSD-licensed.

MIT Kerberos <http://web.mit.edu/kerberos/www/dist/>

(May be used for GSS support) MIT licensed, that shouldn't collide with any other parts.

Heimdal <http://www.pdc.kth.se/heimdal/>

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fbopenssl

(Used for SPNEGO support) Unclear license. Based on its name, I assume that it uses the OpenSSL license and thus shares the same issues as described for OpenSSL above.

libidn <http://josefsson.org/libidn/>

(Used for IDNA support) Uses the GNU Lesser General Public License [3]. LGPL is a variation of GPL with slightly less aggressive "copyleft". This license requires more requirements to be met when distributing binaries, see the license for details. Also note that if you distribute a binary that includes this library, you must also include the

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OpenLDAP <http://www.openldap.org/software/release/license.html>

(Used for LDAP support) Uses a Modified BSD-style license. Since libcurl uses OpenLDAP as a shared library only, I have not heard of anyone that ships OpenLDAP linked with libcurl in an app.

libssh2 <http://www.libssh2.org/>

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## 1.105 guava 30.1-jre



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jar/com/google/common/eventbus/SubscriberRegistry.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/eventbus/Dispatcher.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/base/MoreObjects.java

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/opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/util/concurrent/ListenerCallQueue.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/math/Quantiles.java

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jar/com/google/common/eventbus/Subscriber.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/util/concurrent/TrustedListenableFutureTask.java

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  - \* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/Java8Usage.java
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- \* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/reflect/TypeToken.java
- \* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/FluentFuture.java
- \*
- \*/opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/AggregateFuture.java
- \* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/TimeLimiter.java
- \* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/AbstractCatchingFuture.java
- \* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/AbstractTransformFuture.java
- \* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/UncheckedTimeoutException.java
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\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/CollectionFuture.java

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\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/escape/CharEscaper.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/io/PatternFilenameFilter.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/GwtFuturesCatchingSpecialization.java

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\*

/opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/TimeoutFuture.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/ImmediateFuture.java

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```
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/hash/HashingInputStream.java
*
/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/base/VerifyException.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/eventbus/SubscriberExceptionHandler.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/AbstractTable.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/util/concurrent/Runnables.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/base/Verify.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/eventbus/SubscriberExceptionContext.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/FilteredMultimapValues.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/io/CharSequenceReader.java
*
/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/Utf8.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/util/concurrent/WrappingScheduledExecutorService.java
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jar/com/google/common/collect/JdkBackedImmutableMap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/BaseImmutableMultimap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/JdkBackedImmutableBiMap.java
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jar/com/google/common/collect/IndexedImmutableSet.java  
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Found in path(s):  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/hash/package-info.java  
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\* the License.  
\*/  
/\*  
\* This following method is a modified version of one found in  
\* <http://gee.cs.oswego.edu/cgi-bin/viewcvs.cgi/jsr166/src/test/tck/AbstractExecutorServiceTest.java?revision=1.30>  
\* which contained the following notice:  
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\*/

\* Other contributors include Andrew Wright, Jeffrey Hayes, Pat Fisher, Mike Judd.

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Found in path(s):

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/MoreExecutors.java

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Found in path(s):

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/FilteredKeySetMultimap.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/FilteredKeyListMultimap.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/AllEqualOrdering.java

\*

/opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/TransformedListIterator.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/FilteredMultimap.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/FilteredEntrySetMultimap.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/SortedMultisetBridge.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/CompactLinkedHashSet.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/CompactLinkedHashMap.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/FilteredSetMultimap.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/CompactHashMap.java

```

*
/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/AbstractSortedKeySortedSetMultimap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/ImmutableEnumMap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/UnmodifiableSortedMultiset.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/util/concurrent/ForwardingBlockingDeque.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/ForwardingImmutableList.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/ForwardingBlockingDeque.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/ForwardingDeque.java
*
/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/TransformedIterator.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/ForwardingImmutableMap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/TreeTraverser.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/CompactHashSet.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/DescendingMultiset.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/FilteredEntryMultimap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/RangeMap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/ForwardingNavigableSet.java
*
/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/TreeRangeMap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/DescendingImmutableSortedSet.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/AbstractMultimap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/RegularImmutableAsList.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/EvictingQueue.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/ForwardingNavigableMap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/ForwardingImmutableSet.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-

```

jar/com/google/common/collect/AbstractNavigableMap.java

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\* Holder for extra methods of {@code Objects} only in web. Intended to be empty for regular

\* version.

\*/

Found in path(s):

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-

jar/com/google/common/base/ExtraObjectsMethodsForWeb.java

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\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-

jar/com/google/common/collect/ImmutableMapEntry.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-

jar/com/google/common/collect/MultimapBuilder.java



\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/io/MoreFiles.java

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\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ImmutableEntry.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/Tables.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/thirdparty/publicsuffix/PublicSuffixPatterns.java

\*

/opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/Serialization.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/StandardTable.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ImmutableListMultimap.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/PeekingIterator.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/RegularImmutableMap.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ImmutableMultiset.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/SingletonImmutableBiMap.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/RegularImmutableBiMap.java

\*

/opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ImmutableBiMap.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-

jar/com/google/common/collect/ImmutableSortedSet.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/collect/ImmutableMapValues.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/collect/Collections2.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/collect/ImmutableMapEntrySet.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/collect/ImmutableCollection.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/collect/Table.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/collect/EmptyImmutableListMultimap.java  
\*  
/opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/collect/CollectPreconditions.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/collect/HashBasedTable.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/collect/ImmutableMultimap.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/collect/Platform.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/collect/TreeBasedTable.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/collect/StandardRowSortedTable.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/collect/ImmutableMap.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/collect/Range.java  
\*  
/opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/collect/UnmodifiableIterator.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/collect/ImmutableMapKeySet.java  
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\*/  
/\*\*  
\* Holder for web specializations of methods of { @code Shorts }. Intended to be empty for regular  
\* version.  
\*/

Found in path(s):

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/primitives/ShortsMethodsForWeb.java

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\* This method was rewritten in Java from an intermediate step of the Murmur hash function in  
\* <http://code.google.com/p/smhasher/source/browse/trunk/MurmurHash3.cpp>, which contained the  
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jar/com/google/common/base/SmallCharMatcher.java

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\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ImmutableRangeSet.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/math/LinearTransformation.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/io/CharSink.java  
\*  
/opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/hash/LongAddable.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/SmoothRateLimiter.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/FilteredKeyMultimap.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/reflect/Parameter.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/io/ByteSink.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/io/Closer.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/math/Stats.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/html/package-info.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/math/PairedStatsAccumulator.java  
\*  
/opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/reflect/Element.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/io/CharSource.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/reflect/package-info.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/reflect/ImmutableTypeToInstanceMap.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/math/StatsAccumulator.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/escape/package-info.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-

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jar/com/google/common/reflect/MutableTypeToInstanceMap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/hash/SipHashFunction.java
*
/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/reflect/TypeCapture.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/cache/LongAddable.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/io/ByteSource.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/hash/ChecksumHashFunction.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/reflect/Invokable.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/util/concurrent/RateLimiter.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/base/StandardSystemProperty.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/hash/AbstractByteHasher.java
*
/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/reflect/AbstractInvocationHandler.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/io/BaseEncoding.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/reflect/TypeToInstanceMap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/math/PairedStats.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/cache/LongAddables.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/util/concurrent/ListenableScheduledFuture.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/hash/LongAddables.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/CartesianList.java
*
/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/io/FileWriteMode.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/reflect/ClassPath.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/xml/package-
info.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/ImmutableRangeMap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/util/concurrent/ServiceManager.java

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```
*/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/graph/AbstractBaseGraph.java
*/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/graph/BaseGraph.java
*/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/graph/Traverser.java
*/
/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/util/concurrent/ClosingFuture.java
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 */
```

```
*/
```

```
/*
```

```
 * This method was rewritten in Java from an intermediate step of the Murmur hash function in
 * http://code.google.com/p/smhasher/source/browse/trunk/MurmurHash3.cpp, which contained the
```

```
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```

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* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/Hashing.java
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```

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* the License.
```

```
*/
```

```
/**
```

```
* Outer class that exists solely to let us write { @code Partially.GwtIncompatible } instead of plain
* { @code GwtIncompatible }. This is more accurate for { @link Futures#catching }, which is available
* under GWT but with a slightly different signature.
```

```
*
```

```
* <p>We can't use { @code PartiallyGwtIncompatible } because then the GWT compiler
wouldn't recognize
```

```
* it as a { @code GwtIncompatible } annotation. And for { @code Futures.catching }, we need the GWT
* compiler to autostrip the normal server method in order to expose the special, inherited GWT
* version.
```

```
*/
```

Found in path(s):

```
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/util/concurrent/Partially.java
```

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```

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*
```

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  - \* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/ImmutableGraph.java
  - \* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/SuccessorsFunction.java
  - \*
  - /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/MutableNetwork.java
  - \* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/ImmutableNetwork.java
  - \* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/Graphs.java
  - \* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/io/InsecureRecursiveDeleteException.java
  - \* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/Graph.java
  - \* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/io/RecursiveDeleteOption.java
  - \* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/PredecessorsFunction.java
  - \* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/MutableGraph.java
  - \*
  - /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/Network.java
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jar/com/google/common/reflect/Reflection.java  
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jar/com/google/common/util/concurrent/AtomicDoubleArray.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/hash/LongAdder.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/cache/LongAdder.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/cache/Striped64.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/hash/Striped64.java  
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\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-

jar/com/google/common/io/FileBackedOutputStream.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/primitives/Shorts.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/primitives/Doubles.java  
\*  
/opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/util/concurrent/SequentialExecutor.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/base/CharMatcher.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/collect/FluentIterable.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/primitives/Booleans.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/primitives/Chars.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/net/PercentEscaper.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/base/Joiner.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/primitives/Floats.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/util/concurrent/ListenableFutureTask.java  
\*  
/opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/escape/UnicodeEscaper.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/primitives/Bytes.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/io/MultiReader.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/base/Stopwatch.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/base/Converter.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/primitives/Longs.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/primitives/Ints.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/base/internal/Finalizer.java  
\*  
/opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/net/InetAddresses.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/escape/Escaper.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/thirdparty/publicsuffix/TrieParser.java

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jar/com/google/common/collect/ForwardingSetMultimap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/MinMaxPriorityQueue.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/AbstractSequentialIterator.java
*
/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/ForwardingListMultimap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/RowSortedTable.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/ForwardingSortedSetMultimap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/ForwardingImmutableCollection.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/UnmodifiableListIterator.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/SortedMapDifference.java
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jar/com/google/common/collect/SortedMultisets.java

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jar/com/google/common/collect/DenseImmutableTable.java

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jar/com/google/common/util/concurrent/ForwardingFuture.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/primitives/UnsignedBytes.java

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jar/com/google/common/net/HostSpecifier.java

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jar/com/google/common/util/concurrent/AbstractExecutionThreadService.java

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jar/com/google/common/util/concurrent/JdkFutureAdapters.java

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jar/com/google/common/primitives/SignedBytes.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/annotations/GwtIncompatible.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/SparseImmutableTable.java  
 \* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/net/UrlEscapers.java  
 \* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/cache/ReferenceEntry.java  
 \*  
 /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/MapMakerInternalMap.java  
 \* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/reflect/TypeResolver.java  
 \* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/escape/Platform.java  
 \* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/MapMaker.java  
 \* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/escape/ArrayBasedUnicodeEscaper.java  
 \* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/cache/CacheBuilder.java  
 \* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/Cut.java  
 \* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/io/ByteArrayDataInput.java  
 \*  
 /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/SettableFuture.java  
 \* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/Callables.java  
 \* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/Service.java  
 \* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/AbstractIdleService.java  
 \* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/ForwardingFluentFuture.java  
 \* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/Platform.java  
 \* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/io/ByteArrayDataOutput.java  
 \* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/html/HtmlEscapers.java  
 \*  
 /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/escape/ArrayBasedEscaperMap.java  
 \* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/io/LineProcessor.java  
 \* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/xml/XmlEscapers.java  
 \* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-

```
jar/com/google/common/collect/RegularImmutableTable.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/util/concurrent/ForwardingListenableFuture.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/annotations/GwtCompatible.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/io/ByteProcessor.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/escape/ArrayBasedCharEscaper.java
*
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/net/InternetDomainName.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/util/concurrent/AbstractService.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/base/Splitter.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/cache/LocalCache.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/escape/Escapers.java
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*/
/**
* Not supported. <b>You are attempting to create a map that may contain a non-{@code Comparable}
* key.</b> Proper calls will resolve to the version in {@code ImmutableSortedMap}, not this dummy
* version.
*
* @throws UnsupportedOperationException always
* @deprecated <b>Pass a key of type {@code Comparable}
to use {@link
* ImmutableSortedMap#of\(Comparable, Object\).</b>
*/
```

Found in path(s):

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ImmutableSortedMapFauxverideShim.java  
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/\*\*

\* Holder for web specializations of methods of { @code Floats }. Intended to be empty for regular  
\* version.

\*/

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\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/primitives/FloatsMethodsForWeb.java  
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\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ComputationException.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/DiscreteDomain.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ImmutableClassToInstanceMap.java  
\*  
/opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ImmutableSortedSetFauxverideShim.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ImmutableTable.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ImmutableAsList.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ArrayTable.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ForwardingTable.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/TableCollectors.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ImmutableEnumSet.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/RegularImmutableSortedSet.java  
\*  
/opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ImmutableSortedMap.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/SingletonImmutableList.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/SingletonImmutableTable.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ImmutableSetMultimap.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ComparisonChain.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/RegularImmutableList.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/AbstractIndexedListIterator.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/EmptyImmutableSetMultimap.java  
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\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/collect/ContiguousSet.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/util/concurrent/Monitor.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/net/package-  
info.java  
\*  
/opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/collect/SortedLists.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/util/concurrent/ForwardingBlockingQueue.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/base/Ascii.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/base/Strings.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/annotations/package-info.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/primitives/package-info.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/util/concurrent/Atomics.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/base/Equivalence.java  
\*  
/opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/annotations/Beta.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/util/concurrent/ThreadFactoryBuilder.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/util/concurrent/ListeningExecutorService.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/util/concurrent/UncaughtExceptionHandler.java  
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\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/AtomicLongMap.java  
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\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/CommonMatcher.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/CommonPattern.java  
\*  
/opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/JdkPattern.java  
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\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/MutableValueGraph.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/AbstractGraph.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/AbstractUndirectedNetworkConnections.java  
\*  
/opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/MoreCollectors.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/ImmutableValueGraph.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/ElementOrder.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/ValueGraphBuilder.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/HashMultimapGwtSerializationDependencies.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/NetworkConnections.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/Comparators.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/GraphConstants.java  
\*  
/opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/ForwardingGraph.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/AbstractNetwork.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/EdgesConnecting.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/GraphBuilder.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/UndirectedMultiNetworkConnections.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-

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jar/com/google/common/graph/EndpointPairIterator.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/graph/ForwardingValueGraph.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/graph/AbstractValueGraph.java
*
/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/graph/EndpointPair.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/graph/DirectedNetworkConnections.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/ImmutableMultisetGwtSerializationDependencies.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/graph/StandardMutableNetwork.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/graph/UndirectedNetworkConnections.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/graph/ValueGraph.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/graph/StandardMutableValueGraph.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/graph/UndirectedGraphConnections.java
*
/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/graph/ForwardingNetwork.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/graph/MultiEdgesConnecting.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/RangeGwtSerializationDependencies.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/LinkedHashMapMultimapGwtSerializationDependencies.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/ArrayListMultimapGwtSerializationDependencies.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/graph/StandardValueGraph.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/graph/DirectedGraphConnections.java
*
/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/graph/StandardNetwork.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/CollectCollectors.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/graph/MapRetrievalCache.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/graph/DirectedMultiNetworkConnections.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/graph/GraphConnections.java

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* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/graph/AbstractGraphBuilder.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/graph/NetworkBuilder.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/graph/MapIteratorCache.java
*
```

```
/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/graph/AbstractDirectedNetworkConnections.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/graph/StandardMutableGraph.java
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```
*/
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/**
```

```
* Holder for web specializations of methods of { @code Doubles}. Intended to be empty for regular
* version.
```

```
*/
```

Found in path(s):

```
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/primitives/DoublesMethodsForWeb.java
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/\*\*  
\* Holder for web specializations of methods of { @code Ints}. Intended to be empty for regular  
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\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/primitives/IntsMethodsForWeb.java

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jar/com/google/common/collect/ImmutableSortedAsList.java

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Found in path(s):

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/CollectSpliterators.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ImmutableBiMapFauxverideShim.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/package-info.java

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Found in path(s):

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/io/Resources.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/Predicates.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/Function.java

\*

/opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/Throwables.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/eventbus/AsyncEventBus.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/primitives/Primitives.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/FinalizableWeakReference.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/ExecutionList.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/eventbus/DeadEvent.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/io/Files.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/eventbus/package-info.java

```

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/util/concurrent/package-info.java
*
/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/io/LineReader.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/util/concurrent/AbstractFuture.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/base/Predicate.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/base/package-info.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/base/Preconditions.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/base/FinalizableSoftReference.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/base/FinalizableReferenceQueue.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/base/Objects.java
*
/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/base/Charsets.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/eventbus/Subscribe.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/io/MultiInputStream.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/io/Flushables.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/base/Supplier.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/base/FinalizableReference.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/Interners.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/io/Closeables.java
*
/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/eventbus/EventBus.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/base/FinalizablePhantomReference.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/io/LineBuffer.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/base/Suppliers.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/io/package-
info.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-

```



```
jar/com/google/common/util/concurrent/DirectExecutor.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/EnumMultiset.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/HashBiMap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/eventbus/AllowConcurrentEvents.java
*
/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/io/LittleEndianDataInputStream.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/base/Defaults.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/io/CountingOutputStream.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/util/concurrent/ListenableFuture.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/base/AbstractIterator.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/base/Functions.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/io/CountingInputStream.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/io/LittleEndianDataOutputStream.java
*
/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/io/CharStreams.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/io/ByteStreams.java
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```
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
```

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jar/com/google/common/hash/LittleEndianByteArray.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/util/concurrent/AsyncCallable.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/hash/FarmHashFingerprint64.java
*
/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/io/ReaderInputStream.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/hash/MacHashFunction.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/ConsumingQueueIterator.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/util/concurrent/CombinedFuture.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/util/concurrent/Platform.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/util/concurrent/InterruptibleTask.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/util/concurrent/AggregateFutureState.java
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* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/graph/IncidentEdgeSet.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/CompactHashing.java
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- \* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ImmutableSet.java
- \* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/AbstractMultiset.java
- \* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ForwardingMapEntry.java
- \*
- /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/AbstractIterator.java
- \* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/Sets.java
- \* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ForwardingMultiset.java
- \* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/Multimaps.java
- \* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/BiMap.java
- \* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/Multisets.java
- \* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ForwardingQueue.java
- \* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ForwardingConcurrentMap.java
- \*
- /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ReverseNaturalOrdering.java
- \* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/SortedSetMultimap.java
- \* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/NullsFirstOrdering.java
- \* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/SingletonImmutableSet.java
- \* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/EnumHashBiMap.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
 jar/com/google/common/collect/Multiset.java  
 \* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
 jar/com/google/common/collect/ForwardingListIterator.java  
 \* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
 jar/com/google/common/collect/Ordering.java  
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 /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
 jar/com/google/common/collect/TreeMultimap.java  
 \* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
 jar/com/google/common/collect/LinkedListMultimap.java  
 \* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
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 \* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
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 \* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
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 jar/com/google/common/collect/AbstractListMultimap.java  
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 jar/com/google/common/collect/Multimap.java  
 \* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
 jar/com/google/common/collect/Iterators.java  
 \* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
 jar/com/google/common/collect/Interner.java  
 \* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
 jar/com/google/common/collect/Synchronized.java  
 \* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
 jar/com/google/common/collect/ComparatorOrdering.java  
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 jar/com/google/common/collect/ForwardingSet.java  
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 /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
 jar/com/google/common/collect/AbstractMapBasedMultimap.java  
 \* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
 jar/com/google/common/collect/ForwardingIterator.java  
 \* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-

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jar/com/google/common/collect/ForwardingSortedMap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/package-info.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/ForwardingMap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/MutableClassToInstanceMap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/AbstractMapBasedMultiset.java
*
/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/UsingToStringOrdering.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/Iterables.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/TreeMultiset.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/NaturalOrdering.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/Lists.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/ExplicitOrdering.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/RegularImmutableSet.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/LinkedHashMultiset.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/ArrayListMultimap.java
*
/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/ForwardingList.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/ByFunctionOrdering.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/ForwardingMultimap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/ListMultimap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/ReverseOrdering.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
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* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/AbstractMapEntry.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/LexicographicalOrdering.java
*
/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/LinkedHashMultimap.java

```

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/HashMultiset.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ForwardingCollection.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ClassToInstanceMap.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/Maps.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ForwardingSortedSet.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ForwardingObject.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/MapDifference.java  
\*

/opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/EnumBiMap.java

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Found in path(s):

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/primitives/ImmutableDoubleArray.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/primitives/ImmutableIntArray.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/ForwardingLock.java

\*

/opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/hash/AbstractHashFunction.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/primitives/ImmutableLongArray.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/ForwardingCondition.java

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\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/primitives/Platform.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/util/concurrent/Internal.java

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jar/com/google/common/collect/Streams.java

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\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/io/Java8Compatibility.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/util/concurrent/OverflowAvoidingLockSupport.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/math/ToDoubleRounder.java  
\*  
/opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/math/BigDecimalMath.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/hash/Java8Compatibility.java

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jar/com/google/common/util/concurrent/IgnoreJRERequirement.java

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jar/com/google/common/collect/JdkBackedImmutableMultiset.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/collect/JdkBackedImmutableSet.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/hash/ImmutableSupplier.java

\*  
/opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/util/concurrent/ExecutionSequencer.java

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\* and released to the public domain, as explained at  
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\*  
\* As of 2010/06/11, this method is identical to the (package private) hash method in OpenJDK 7's  
\* java.util.HashMap  
class.  
\*/

Found in path(s):

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/Striped.java

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\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ImmutableSortedMultisetFauxverideShim.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/GeneralRange.java

\*

/opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ForwardingSortedMultiset.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/SortedIterable.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/RangeSet.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/AbstractRangeSet.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/Count.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/SortedIterables.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ImmutableSortedMultiset.java

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\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/primitives/UnsignedInts.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/WrappingExecutorService.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/AbstractScheduledService.java  
\*  
/opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/UncheckedExecutionException.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/cache/Weigher.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/cache/CacheStats.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/hash/AbstractCompositeHashFunction.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/hash/Hashing.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/cache/AbstractLoadingCache.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/cache/package-info.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/cache/ForwardingLoadingCache.java  
\*  
/opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/cache/CacheBuilderSpec.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/Optional.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/DescendingImmutableSortedMultiset.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/Ticker.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/Present.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-

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jar/com/google/common/primitives/UnsignedInteger.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/hash/Murmur3_32HashFunction.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/hash/PrimitiveSink.java
*
/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/BoundType.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/hash/AbstractHasher.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/cache/RemovalListeners.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/primitives/UnsignedLong.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/reflect/Types.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/reflect/TypeParameter.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/RegularImmutableMultiset.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/util/concurrent/ForwardingExecutorService.java
*
/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/base/PairwiseEquivalence.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/util/concurrent/CycleDetectingLockFactory.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/TreeRangeSet.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/RegularContiguousSet.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/base/Absent.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/cache/RemovalNotification.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/util/concurrent/AbstractListeningExecutorService.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/hash/Hasher.java
*
/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/util/concurrent/ForwardingListeningExecutorService.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/hash/HashCode.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/net/MediaType.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/hash/AbstractStreamingHasher.java

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\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/hash/Crc32cHashFunction.java  
 \* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/Uninterruptibles.java  
 \* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/net/HostAndPort.java  
 \* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/hash/Murmur3\_128HashFunction.java  
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 \* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/hash/MessageDigestHashFunction.java  
 \* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/primitives/UnsignedLongs.java  
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 \* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/hash/BloomFilterStrategies.java  
 \* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/math/BigIntegerMath.java  
 \* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/cache/AbstractCache.java  
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 \* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/hash/HashingOutputStream.java  
 \* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-

jar/com/google/common/collect/EmptyContiguousSet.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
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\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/cache/ForwardingCache.java  
\*  
/opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/collect/Queues.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/math/LongMath.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/math/DoubleUtils.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/collect/AbstractSortedMultiset.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/cache/LoadingCache.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/primitives/ParseRequest.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/util/concurrent/FutureCallback.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/hash/BloomFilter.java  
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```

* limitations under the License.
*/
/**
 * Returns an array containing all of the elements in the specified collection. This method
 * returns the elements in the order they are returned by the collection's iterator. The returned
 * array is "safe" in that no references to it are maintained by the collection. The caller is
 * thus free to modify the returned
array.
 *
 * <p>This method assumes that the collection size doesn't change while the method is running.
 *
 * <p>TODO(kevinb): support concurrently modified collections?
 *
 * @param c the collection for which to return an array of elements
 */

```

Found in path(s):

```

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/ObjectArrays.java

```

# 1.106 annotations 3.0.0

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## 1.109 iconv 2.17

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## 1. Source Code.

The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

A "Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The

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## 1.110 zlib 1.2.8

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- \* /opt/cola/permits/1125727006\_1615664194.51/0/reflectasm-1-11-9-sources-jar/com/esotericsoftware/reflectasm/AccessClassLoader.java
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* /opt/cola/permits/1125758851_1613553092.69/0/tangdixi-dcpathbutton-2-1-3-0-ge4b13fb-tar-gz/Tangdixi-DCPathButton-39be410/DCPathButton/Classes/DCPathItemButton.m
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* /opt/cola/permits/1125758851_1613553092.69/0/tangdixi-dcpathbutton-2-1-3-0-ge4b13fb-tar-gz/Tangdixi-DCPathButton-39be410/Example/Example/AppDelegate.m
* /opt/cola/permits/1125758851_1613553092.69/0/tangdixi-dcpathbutton-2-1-3-0-ge4b13fb-tar-gz/Tangdixi-DCPathButton-39be410/Example/Example/main.m
*
/opt/cola/permits/1125758851_1613553092.69/0/tangdixi-dcpathbutton-2-1-3-0-ge4b13fb-tar-gz/Tangdixi-DCPathButton-39be410/Example/Example/AppDelegate.h
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*
/opt/cola/permits/1125758851_1613553092.69/0/tangdixi-dcpathbutton-2-1-3-0-ge4b13fb-tar-gz/Tangdixi-DCPathButton-39be410/Example/ExampleTests/ExampleTests.m
* /opt/cola/permits/1125758851_1613553092.69/0/tangdixi-dcpathbutton-2-1-3-0-ge4b13fb-tar-gz/Tangdixi-DCPathButton-39be410/DCPathButton/Classes/DCPathButton.h
* /opt/cola/permits/1125758851_1613553092.69/0/tangdixi-dcpathbutton-2-1-3-0-ge4b13fb-tar-gz/Tangdixi-DCPathButton-39be410/Example/Example/ViewController.m
* /opt/cola/permits/1125758851_1613553092.69/0/tangdixi-dcpathbutton-2-1-3-0-ge4b13fb-tar-gz/Tangdixi-DCPathButton-39be410/Example/Pods/DCPathButton/DCPathButton/Classes/DCPathButton.h
* /opt/cola/permits/1125758851_1613553092.69/0/tangdixi-dcpathbutton-2-1-3-0-ge4b13fb-tar-gz/Tangdixi-DCPathButton-39be410/Example/Example/ViewController.h
* /opt/cola/permits/1125758851_1613553092.69/0/tangdixi-dcpathbutton-2-1-3-0-ge4b13fb-tar-gz/Tangdixi-DCPathButton-39be410/Example/Pods/DCPathButton/DCPathButton/Classes/DCPathButton.m
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```

Found in path(s):

```
* /opt/cola/permits/1125758851_1613553092.69/0/tangdixi-dcpathbutton-2-1-3-0-ge4b13fb-tar-gz/Tangdixi-DCPathButton-39be410/Example-Swift/Example-Swift/ViewController.swift
* /opt/cola/permits/1125758851_1613553092.69/0/tangdixi-dcpathbutton-2-1-3-0-ge4b13fb-tar-gz/Tangdixi-DCPathButton-39be410/Example-Swift/Example-Swift-Bridging-Header.h
* /opt/cola/permits/1125758851_1613553092.69/0/tangdixi-dcpathbutton-2-1-3-0-ge4b13fb-tar-gz/Tangdixi-DCPathButton-39be410/Example-Swift/Example-SwiftTests/Example_SwiftTests.swift
* /opt/cola/permits/1125758851_1613553092.69/0/tangdixi-dcpathbutton-2-1-3-0-ge4b13fb-tar-gz/Tangdixi-DCPathButton-39be410/Example-Swift/Example-Swift/AppDelegate.swift
```

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Pod::Spec.new do |s|

```
s.name      = "DCPathButton"
s.version   = "2.1.1"
s.summary   = " A beautiful button copy from Path® "
```

```
s.description = <<-DESC
DCPathButton is a menu button, design by an famous App Path®.
Since Path® 4.0, it return to use a tab bar instead of a side bar,
and also change the menu button. So I try to implement it and then
the DCPathButton born :)
```

```
DESC
```

```
s.homepage = "https://github.com/Tangdixi/DCPathButton"
```

```
s.license = {
:type => 'MIT',
:text => 'The DCPathButton use the MIT license'
}
```

```
s.author = { "Tangdixi" => "Tangdixi@gmail.com" }
```

```
s.platform = :ios, '7.0'
```

```
s.source = {
:git => "https://github.com/Tangdixi/DCPathButton.git",
:tag => "2.1.1"
}
```

```
s.source_files = 'DCPathButton/Classes/*.{h,m}'
```

```
s.resources = ["DCPathButton/Sounds/*"]
```

```
s.frameworks = 'QuartzCore','AudioToolbox'
```

s.requires\_arc = true

end

Found in path(s):

\* /opt/cola/permits/1125758851\_1613553092.69/0/tangdixi-dcpathbutton-2-1-3-0-ge4b13fb-tar-gz/Tangdixi-DCPathButton-39be410/DCPathButton.podspec

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Found in path(s):

\* /opt/cola/permits/1125758851\_1613553092.69/0/tangdixi-dcpathbutton-2-1-3-0-ge4b13fb-tar-gz/Tangdixi-DCPathButton-39be410/LISENCE

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```
<label opaque="NO" clipsSubviews="YES" userInteractionEnabled="NO" contentMode="left" horizontalHuggingPriority="251" verticalHuggingPriority="251" text=" Copyright (c) 2015 DC. All rights reserved.".textAlignment="center" lineBreakMode="tailTruncation" baselineAdjustment="alignBaselines" minimumFontSize="9" translatesAutoresizingMaskIntoConstraints="NO" id="8ie-xW-0ye">
```

Found in path(s):

\* /opt/cola/permits/1125758851\_1613553092.69/0/tangdixi-dcpathbutton-2-1-3-0-ge4b13fb-tar-gz/Tangdixi-DCPathButton-39be410/Example-Swift/Example-Swift/Base.lproj/LaunchScreen.xib

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# Acknowledgements

This application makes use of the following third party libraries:

## DCPATHBUTTON

The DCPATHBUTTON use the MIT license  
Generated by CocoaPods - <http://cocoapods.org>

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\* /opt/cola/permits/1125758851\_1613553092.69/0/tangdixi-dcpathbutton-2-1-3-0-ge4b13fb-tar-gz/Tangdixi-DCPATHBUTTON-39be410/Example/Example/BarButtonItemViewController.m  
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\* /opt/cola/permits/1125758851\_1613553092.69/0/tangdixi-dcpathbutton-2-1-3-0-ge4b13fb-tar-gz/Tangdixi-DCPATHBUTTON-39be410/README.md

# 1.113 centos-release 7-9.2009.1.el7.centos

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```
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it
under certain conditions; type `show c' for details.
```

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```
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`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
```

```
Ty Coon, President of Vice
```

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### ## Special Recognition ##

One of the key reasons we got delayed on the CentOS-6 release was lack of suitable build resources, especially when we had to repeatedly build large chunks of code. Norwood S came forward and worked with me to setup a large build machine, then tune the build process and help improve the overall build, test and validate process we were using. This build machine he donated to the project was about 5 times more capable than the entire buildsystem we had. And he did this out of his own pocket, from his

own time, and has since upgraded the machine as well. It's now a 128GB, 48 core machine, with 4 SSD's and 4 sata disks : but the key metric is that it can build from source, the entire CentOS-7 distro in under 22 hrs.

Having this capability was key in our ability to build, test and deliver CentOS-7 as rapidly as we have been able to.

We'd like to dedicate the CentOS-7 Release to Mr Norwood S, of Phoenix, AZ, USA for his continued support for the project.

### Contributors:

The Red Hat developers, without whom CentOS would look very different

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Fabian Arrotin  
Jakub Filak  
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Jeff Sheltren  
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Kay Williams  
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# 1.116 httpcomponents-core 4.4.13

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# 1.118 commons-lang3 2.6

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\* /opt/cola/permits/1135840457\_1613613080.13/0/commons-logging-1-1-sources-9-  
jar/org/apache/commons/logging/LogFactory.java  
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jar/org/apache/commons/logging/impl/WeakHashtable.java

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jar/org/apache/commons/logging/LogConfigurationException.java

\* /opt/cola/permits/1135840457\_1613613080.13/0/commons-logging-1-1-sources-9-

jar/org/apache/commons/logging/impl/Log4JLogger.java

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jar/org/apache/commons/logging/impl/LogFactoryImpl.java

```
*
/opt/cola/permits/1135840457_1613613080.13/0/commons-logging-1-1-sources-9-
jar/org/apache/commons/logging/impl/Jdk13LumberjackLogger.java
* /opt/cola/permits/1135840457_1613613080.13/0/commons-logging-1-1-sources-9-
jar/org/apache/commons/logging/impl/SimpleLog.java
* /opt/cola/permits/1135840457_1613613080.13/0/commons-logging-1-1-sources-9-
jar/org/apache/commons/logging/impl/Jdk14Logger.java
* /opt/cola/permits/1135840457_1613613080.13/0/commons-logging-1-1-sources-9-
jar/org/apache/commons/logging/LogSource.java
* /opt/cola/permits/1135840457_1613613080.13/0/commons-logging-1-1-sources-9-
jar/org/apache/commons/logging/impl/NoOpLog.java
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```
* /opt/cola/permits/1135840457_1613613080.13/0/commons-logging-1-1-sources-9-
jar/org/apache/commons/logging/impl/ServletContextCleaner.java
```

## 1.121 httpcomponents-core 4.4.14

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src/test/org/apache/commons/codec/language/DoubleMetaphoneTest.java

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## 1.123 javassist 3.27.0-GA

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Found in path(s):

\* /opt/cola/permits/1135872664\_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/tools/rmi/Proxy.java

\* /opt/cola/permits/1135872664\_1613621010.52/0/javassist-3-27-0-ga-sources-1-

jar/javassist/compiler/ast/Visitor.java

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/opt/cola/permits/1135872664\_1613621010.52/0/javassist-3-27-0-ga-sources-1-

jar/javassist/compiler/ast/Member.java

\* /opt/cola/permits/1135872664\_1613621010.52/0/javassist-3-27-0-ga-sources-1-

jar/javassist/tools/reflect/CannotInvokeException.java

\* /opt/cola/permits/1135872664\_1613621010.52/0/javassist-3-27-0-ga-sources-1-

jar/javassist/CtNewWrappedConstructor.java

\* /opt/cola/permits/1135872664\_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/LoaderClassPath.java

\* /opt/cola/permits/1135872664\_1613621010.52/0/javassist-3-27-0-ga-sources-1-

jar/javassist/tools/rmi/AppletServer.java

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jar/javassist/bytecode/LocalVariableAttribute.java  
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 /opt/cola/permits/1135872664\_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/Modifier.java  
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 jar/javassist/bytecode/annotation/AnnotationsWriter.java  
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 jar/javassist/CannotCompileException.java  
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jar/javassist/bytecode/annotation/AnnotationImpl.java

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/opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/bytecode/BadBytecode.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/ClassPool.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/util/proxy/Proxy.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/CtNewWrappedMethod.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/bytecode/analysis/Type.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/bytecode/SyntheticAttribute.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/tools/rmi/ObjectImporter.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/expr/ExprEditor.java
*
/opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/compiler/ProceedHandler.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/bytecode/ExceptionsAttribute.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/convert/TransformAccessArrayField.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/bytecode/AnnotationDefaultAttribute.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-

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jar/javassist/scopedpool/SoftValueHashMap.java  
 \* /opt/cola/permits/1135872664\_1613621010.52/0/javassist-3-27-0-ga-sources-1-  
 jar/javassist/tools/reflect/Loader.java  
 \* /opt/cola/permits/1135872664\_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/CtField.java  
 \* /opt/cola/permits/1135872664\_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/tools/Dump.java  
 \* /opt/cola/permits/1135872664\_1613621010.52/0/javassist-3-27-0-ga-sources-1-  
 jar/javassist/compiler/ast/MethodDecl.java  
 \*  
 /opt/cola/permits/1135872664\_1613621010.52/0/javassist-3-27-0-ga-sources-1-  
 jar/javassist/compiler/CompileError.java  
 \* /opt/cola/permits/1135872664\_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/expr/Handler.java  
 \* /opt/cola/permits/1135872664\_1613621010.52/0/javassist-3-27-0-ga-sources-1-  
 jar/javassist/bytecode/ByteStream.java  
 \* /opt/cola/permits/1135872664\_1613621010.52/0/javassist-3-27-0-ga-sources-1-  
 jar/javassist/bytecode/stackmap/Tracer.java  
 \* /opt/cola/permits/1135872664\_1613621010.52/0/javassist-3-27-0-ga-sources-1-  
 jar/javassist/util/HotSwapAgent.java  
 \* /opt/cola/permits/1135872664\_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/expr/FieldAccess.java  
 \* /opt/cola/permits/1135872664\_1613621010.52/0/javassist-3-27-0-ga-sources-1-  
 jar/javassist/bytecode/InnerClassesAttribute.java  
 \* /opt/cola/permits/1135872664\_1613621010.52/0/javassist-3-27-0-ga-sources-1-  
 jar/javassist/tools/web/Viewer.java  
 \*  
 /opt/cola/permits/1135872664\_1613621010.52/0/javassist-3-27-0-ga-sources-1-  
 jar/javassist/util/proxy/ProxyObject.java  
 \* /opt/cola/permits/1135872664\_1613621010.52/0/javassist-3-27-0-ga-sources-1-  
 jar/javassist/convert/TransformCall.java  
 \* /opt/cola/permits/1135872664\_1613621010.52/0/javassist-3-27-0-ga-sources-1-  
 jar/javassist/compiler/ast/Symbol.java  
 \* /opt/cola/permits/1135872664\_1613621010.52/0/javassist-3-27-0-ga-sources-1-  
 jar/javassist/ByteArrayClassPath.java  
 \* /opt/cola/permits/1135872664\_1613621010.52/0/javassist-3-27-0-ga-sources-1-  
 jar/javassist/compiler/AccessorMaker.java  
 \* /opt/cola/permits/1135872664\_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/compiler/Lex.java  
 \* /opt/cola/permits/1135872664\_1613621010.52/0/javassist-3-27-0-ga-sources-1-  
 jar/javassist/compiler/ast/ASTList.java  
 \* /opt/cola/permits/1135872664\_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/expr/MethodCall.java  
 \* /opt/cola/permits/1135872664\_1613621010.52/0/javassist-3-27-0-ga-sources-1-  
 jar/javassist/SerialVersionUID.java  
 \*  
 /opt/cola/permits/1135872664\_1613621010.52/0/javassist-3-27-0-ga-sources-1-  
 jar/javassist/convert/TransformBefore.java  
 \* /opt/cola/permits/1135872664\_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/runtime/Cflow.java  
 \* /opt/cola/permits/1135872664\_1613621010.52/0/javassist-3-27-0-ga-sources-1-  
 jar/javassist/convert/Transformer.java  
 \* /opt/cola/permits/1135872664\_1613621010.52/0/javassist-3-27-0-ga-sources-1-  
 jar/javassist/bytecode/AnnotationsAttribute.java  
 \* /opt/cola/permits/1135872664\_1613621010.52/0/javassist-3-27-0-ga-sources-1-

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jar/javassist/bytecode/LocalVariableTypeAttribute.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/bytecode/DuplicateMemberException.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/util/proxy/MethodFilter.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/bytecode/analysis/MultiArrayType.java
*
/opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/tools/reflect/Metaobject.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/bytecode/stackmap/MapMaker.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/compiler/JvstTypeChecker.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/convert/TransformReadField.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/Loader.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/bytecode/StackMapTable.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/ClassPoolTail.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/ClassPath.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/util/HotSwapper.java
*
/opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/compiler/Javac.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/bytecode/analysis/ControlFlow.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/bytecode/Opcodes.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/bytecode/analysis/Executor.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/tools/web/Webserver.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/bytecode/LongVector.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/util/proxy/ProxyObjectOutputStream.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/compiler/ast/CastExpr.java
*
/opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/bytecode/DeprecatedAttribute.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/CtClass.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/Translator.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/tools/rmi/Sample.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/bytecode/CodeAttribute.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/expr/NewArray.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/ClassClassPath.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-

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jar/javassist/compiler/ast/IntConst.java  
\* /opt/cola/permits/1135872664\_1613621010.52/0/javassist-3-27-0-ga-sources-1-  
jar/javassist/util/proxy/MethodHandler.java  
\*  
/opt/cola/permits/1135872664\_1613621010.52/0/javassist-3-27-0-ga-sources-1-  
jar/javassist/convert/TransformNew.java  
\* /opt/cola/permits/1135872664\_1613621010.52/0/javassist-3-27-0-ga-sources-1-  
jar/javassist/scopedpool/ScopedClassPoolRepository.java  
\* /opt/cola/permits/1135872664\_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/expr/Cast.java  
\* /opt/cola/permits/1135872664\_1613621010.52/0/javassist-3-27-0-ga-sources-1-  
jar/javassist/compiler/NoFieldException.java  
\* /opt/cola/permits/1135872664\_1613621010.52/0/javassist-3-27-0-ga-sources-1-  
jar/javassist/compiler/SyntaxError.java  
\* /opt/cola/permits/1135872664\_1613621010.52/0/javassist-3-27-0-ga-sources-1-  
jar/javassist/compiler/TokenId.java  
\* /opt/cola/permits/1135872664\_1613621010.52/0/javassist-3-27-0-ga-sources-1-  
jar/javassist/util/proxy/RuntimeSupport.java  
\* /opt/cola/permits/1135872664\_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/compiler/ast/Pair.java  
\*  
/opt/cola/permits/1135872664\_1613621010.52/0/javassist-3-27-0-ga-sources-1-  
jar/javassist/convert/TransformWriteField.java  
\* /opt/cola/permits/1135872664\_1613621010.52/0/javassist-3-27-0-ga-sources-1-  
jar/javassist/CtNewConstructor.java  
\* /opt/cola/permits/1135872664\_1613621010.52/0/javassist-3-27-0-ga-sources-1-  
jar/javassist/bytecode/ConstPool.java  
\* /opt/cola/permits/1135872664\_1613621010.52/0/javassist-3-27-0-ga-sources-1-  
jar/javassist/bytecode/analysis/MultiType.java  
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\* /opt/cola/permits/1135872664\_1613621010.52/0/javassist-3-27-0-ga-sources-1-  
jar/javassist/bytecode/annotation/MemberValue.java



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* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/bytecode/annotation/EnumMemberValue.java
*
/opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/bytecode/annotation/ByteMemberValue.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/bytecode/annotation/ClassMemberValue.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/bytecode/annotation/MemberValueVisitor.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/bytecode/annotation/FloatMemberValue.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/bytecode/annotation/IntegerMemberValue.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/bytecode/annotation/StringMemberValue.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/bytecode/annotation/ArrayMemberValue.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/bytecode/annotation/BooleanMemberValue.java
*
/opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/bytecode/annotation/LongMemberValue.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/bytecode/annotation/CharMemberValue.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/bytecode/annotation/Annotation.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/bytecode/annotation/ShortMemberValue.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/bytecode/annotation/AnnotationMemberValue.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/bytecode/annotation/DoubleMemberValue.java

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## 1.124 classmate 1.5.1

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# 1.126 jakarta-validation-api 2.0.2

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```
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* Jakarta Bean Validation API  
*  
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*/
```

Found in path(s):

```
* /opt/cola/permits/1135880235_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/Validator.java
```

\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/metadata/CascadableDescriptor.java

\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/ConstraintTarget.java

\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/constraints/FutureOrPresent.java

\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/constraints/Null.java

\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/ConstraintValidatorContext.java

\*

/opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/metadata/ExecutableDescriptor.java

\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/groups/Default.java

\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/MessageInterpolator.java

\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/metadata/package-info.java

\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/valueextraction/Unwrapping.java

\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/valueextraction/ValueExtractor.java

\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/constraintvalidation/ValidationTarget.java

\*

/opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/metadata/MethodDescriptor.java

\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/package-info.java

\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/UnexpectedTypeException.java

\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/metadata/BeanDescriptor.java

\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/constraints/Digits.java

\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/bootstrap/ProviderSpecificBootstrap.java

\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/valueextraction/UnwrapByDefault.java

\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/constraints/NegativeOrZero.java

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/opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/ConstraintViolation.java

\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/ConstraintDefinitionException.java

\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-

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jar/javax/validation/ElementKind.java  
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jar/javax/validation/metadata/MethodType.java  
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jar/javax/validation/valueextraction/ValueExtractorDeclarationException.java  
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jar/javax/validation/metadata/ContainerElementTypeDescriptor.java  
\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-  
jar/javax/validation/GroupDefinitionException.java  
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jar/javax/validation/constraints/Min.java



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jar/javax/validation/TraversableResolver.java  
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\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-  
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\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-  
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jar/javax/validation/GroupSequence.java  
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jar/javax/validation/constraints/Negative.java  
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jar/javax/validation/ConstraintValidatorFactory.java  
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/opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-  
jar/javax/validation/ValidationException.java  
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jar/javax/validation/OverridesAttribute.java  
\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-  
jar/javax/validation/spi/BootstrapState.java  
\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-  
jar/javax/validation/constraints/Email.java  
\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-  
jar/javax/validation/ConstraintDeclarationException.java  
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jar/javax/validation/metadata/PropertyDescriptor.java  
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jar/javax/validation/ConstraintValidator.java  
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\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-  
jar/javax/validation/constraints/AssertFalse.java  
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jar/javax/validation/constraints/Future.java  
\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-  
jar/javax/validation/constraints/DecimalMax.java

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* /opt/cola/permits/1135880235_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-
jar/javax/validation/constraints/Positive.java
* /opt/cola/permits/1135880235_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-
jar/javax/validation/constraints/NotEmpty.java
* /opt/cola/permits/1135880235_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-
jar/javax/validation/spi/ConfigurationState.java
* /opt/cola/permits/1135880235_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-
jar/javax/validation/Payload.java
*
/opt/cola/permits/1135880235_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-
jar/javax/validation/constraints/DecimalMin.java
* /opt/cola/permits/1135880235_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-
jar/javax/validation/constraints/Past.java
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```

~ Jakarta Bean Validation API

~

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<![CDATA[

Comments to: <a href="mailto:bean-validation-dev@eclipse.org">bean-validation-dev@eclipse.org</a>.<br>

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Found in path(s):

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* /opt/cola/permits/1135880235_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/META-
INF/maven/jakarta.validation/jakarta.validation-api/pom.xml
```

## 1.127 asm 7.3.1

### 1.127.1 Available under license :

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\* /opt/cola/permits/1135907460\_1613628459.33/0/asm-7-3-1-sources-2-jar/org/objectweb/asm/signature/SignatureWriter.java  
 \* /opt/cola/permits/1135907460\_1613628459.33/0/asm-7-3-1-sources-2-jar/org/objectweb/asm/FieldVisitor.java  
 \* /opt/cola/permits/1135907460\_1613628459.33/0/asm-7-3-1-sources-2-jar/org/objectweb/asm/Edge.java  
 \*  
 /opt/cola/permits/1135907460\_1613628459.33/0/asm-7-3-1-sources-2-jar/org/objectweb/asm/Handler.java  
 \* /opt/cola/permits/1135907460\_1613628459.33/0/asm-7-3-1-sources-2-jar/org/objectweb/asm/Constants.java  
 \* /opt/cola/permits/1135907460\_1613628459.33/0/asm-7-3-1-sources-2-jar/org/objectweb/asm/RecordComponentWriter.java  
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 \* /opt/cola/permits/1135907460\_1613628459.33/0/asm-7-3-1-sources-2-jar/org/objectweb/asm/TypePath.java  
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 \* /opt/cola/permits/1135907460\_1613628459.33/0/asm-7-3-1-sources-2-jar/org/objectweb/asm/signature/SignatureVisitor.java  
 \* /opt/cola/permits/1135907460\_1613628459.33/0/asm-7-3-1-sources-2-jar/org/objectweb/asm/Attribute.java  
 \* /opt/cola/permits/1135907460\_1613628459.33/0/asm-7-3-1-sources-2-jar/org/objectweb/asm/MethodWriter.java  
 \* /opt/cola/permits/1135907460\_1613628459.33/0/asm-7-3-1-sources-2-jar/org/objectweb/asm/Handle.java  
 \*  
 /opt/cola/permits/1135907460\_1613628459.33/0/asm-7-3-1-sources-2-jar/org/objectweb/asm/MethodTooLargeException.java  
 \* /opt/cola/permits/1135907460\_1613628459.33/0/asm-7-3-1-sources-2-jar/org/objectweb/asm/signature/SignatureReader.java  
 \* /opt/cola/permits/1135907460\_1613628459.33/0/asm-7-3-1-sources-2-jar/org/objectweb/asm/Context.java

\* /opt/cola/permits/1135907460\_1613628459.33/0/asm-7-3-1-sources-2-jar/org/objectweb/asm/Frame.java

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```

```
*/
```

```
/**
```

```
* Creates a new {@link AnalyzerAdapter}. Subclasses must not use this
```

```
* constructor. Instead, they must use the
```

```
* {@link #AnalyzerAdapter(int, String, int, String, String, MethodVisitor)}
```

```
* version.
```

```
*
```

```

* @param owner
*
  the owner's class name.
* @param access
*   the method's access flags (see { @link Opcodes }).
* @param name
*   the method's name.
* @param desc
*   the method's descriptor (see { @link Type Type }).
* @param mv
*   the method visitor to which this adapter delegates calls. May
*   be <tt>null</tt>.
* @throws IllegalStateException
*   If a subclass calls this constructor.
*/

```

Found in path(s):

```

* /opt/cola/permits/1135996864_1613649419.76/0/asm-5-1-sources-2-
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/\*\*

\* Creates a new JSRInliner. *<i>Subclasses must not use this  
\* constructor</i>*. Instead, they must use the  
\* `{ @link #JSRInlinerAdapter(int, MethodVisitor, int, String, String, String, String[])}`  
\* version.  
\*  
\* @param mv  
\*  
the `MethodVisitor` to send the resulting inlined  
\* method code to (use `null` for none).  
\* @param access  
\* the method's access flags (see `{ @link Opcodes}`). This  
\* parameter also indicates if the method is synthetic and/or  
\* deprecated.  
\* @param name  
\* the method's name.  
\* @param desc  
\* the method's descriptor (see `{ @link Type}`).  
\* @param signature  
\* the method's signature. May be `null`.  
\* @param exceptions  
\* the internal names of the method's exception classes (see  
\* `{ @link Type#getInternalName() getInternalName}`). May be  
\* `null`.  
\* @throws IllegalStateException  
\* If a subclass calls this constructor.  
\*/

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*/
/**
 * Constructs a new {@link Textifier}. Subclasses must not use this
 * constructor. Instead, they must use the {@link #Textifier(int)}
 * version.
 *
 * @throws IllegalStateException
 *         If a subclass calls this constructor.
 */

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\* /opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-jar/org/objectweb/asm/xml/Processor.java  
\* /opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-  
jar/org/objectweb/asm/xml/SAXCodeAdapter.java  
\* /opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-  
jar/org/objectweb/asm/xml/SAXFieldAdapter.java  
\*  
/opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-jar/org/objectweb/asm/xml/SAXAdapter.java  
\* /opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-  
jar/org/objectweb/asm/xml/SAXAnnotationAdapter.java  
\* /opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-  
jar/org/objectweb/asm/xml/SAXClassAdapter.java  
\* /opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-  
jar/org/objectweb/asm/xml/ASMContentHandler.java

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- \* /opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-jar/org/objectweb/asm/tree/package.html

\* /opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-jar/org/objectweb/asm/signature/package.html  
\* /opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-jar/org/objectweb/asm/commons/package.html  
\*  
/opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-jar/org/objectweb/asm/util/package.html  
\* /opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-jar/org/objectweb/asm/tree/analysis/package.html  
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 \*/  
 /\*\*  
 \* Creates a new { @link GeneratorAdapter}. *Subclasses must not use this*  
 \* constructor</i>. Instead, they must use the  
 \* { @link #GeneratorAdapter(int, MethodVisitor, int, String, String)}  
 \* version.  
 \*  
 \* @param mv  
 \*       the  
 method visitor to which this adapter delegates calls.  
 \* @param access  
 \*       the method's access flags (see { @link Opcodes}).  
 \* @param name  
 \*       the method's name.  
 \* @param desc  
 \*       the method's descriptor (see { @link Type Type}).  
 \* @throws IllegalStateException  
 \*       If a subclass calls this constructor.  
 \*/

Found in path(s):

\* /opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-  
 jar/org/objectweb/asm/commons/GeneratorAdapter.java

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 */

```

\* Constructs a new {@link LocalVariableAnnotationNode}. *<i>*Subclasses must
 \* not use this constructor*</i>*. Instead, they must use the
 \* {@link #LocalVariableAnnotationNode(int, TypePath, LabelNode[], LabelNode[], int[], String)}
 \* version.
 \*
 \* @param typeRef
 \* a reference to the annotated type. See {@link TypeReference}.
 \* @param typePath
 \* the path to the annotated type argument, wildcard bound, array
 \* element type, or static inner type within 'typeRef'. May be
 \* `<tt>null</tt>` if the annotation targets 'typeRef' as a whole.
 \* @param start
 \* the first instructions corresponding to the continuous ranges
 \* that make the scope of this local variable (inclusive).
 \* @param end
 \* the last instructions corresponding to the continuous ranges

```
*      that make the scope of this local variable (exclusive). This
*      array must have the same size as the 'start' array.
* @param index
*      the local variable's index in each range. This array must have
*      the same size as the 'start' array.
* @param desc
*      the class descriptor of
the annotation class.
*/
```

Found in path(s):

```
* /opt/cola/permits/1135996864_1613649419.76/0/asm-5-1-sources-2-
jar/org/objectweb/asm/tree/LocalVariableAnnotationNode.java
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```

```
/**
```

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```

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```
* /opt/cola/permits/1135996864_1613649419.76/0/asm-5-1-sources-2-jar/org/objectweb/asm/tree/InsnNode.java
```



\* /opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-jar/org/objectweb/asm/MethodWriter.java  
 \* /opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-jar/org/objectweb/asm/optimizer/ClassConstantsCollector.java  
 \*  
 /opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-jar/org/objectweb/asm/MethodVisitor.java  
 \* /opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-jar/org/objectweb/asm/commons/CodeSizeEvaluator.java  
 \* /opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-jar/org/objectweb/asm/commons/RemappingAnnotationAdapter.java  
 \* /opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-jar/org/objectweb/asm/optimizer/MethodOptimizer.java  
 \* /opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-jar/org/objectweb/asm/Opcodes.java  
 \* /opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-jar/org/objectweb/asm/tree/InvokeDynamicInsnNode.java  
 \* /opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-jar/org/objectweb/asm/tree/analysis/Analyzer.java  
 \* /opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-jar/org/objectweb/asm/commons/TryCatchBlockSorter.java  
 \*  
 /opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-jar/org/objectweb/asm/ClassReader.java  
 \* /opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-jar/org/objectweb/asm/optimizer/JarOptimizer.java  
 \* /opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-jar/org/objectweb/asm/tree/TableSwitchInsnNode.java  
 \* /opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-jar/org/objectweb/asm/Item.java  
 \* /opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-jar/org/objectweb/asm/tree/MethodInsnNode.java  
 \* /opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-jar/org/objectweb/asm/tree/analysis/AnalyzerException.java  
 \* /opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-jar/org/objectweb/asm/tree/InsnNode.java  
 \* /opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-jar/org/objectweb/asm/optimizer/ConstantPool.java  
 \* /opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-jar/org/objectweb/asm/util/ASMifier.java  
 \*  
 /opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-jar/org/objectweb/asm/tree/LocalVariableNode.java  
 \* /opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-jar/org/objectweb/asm/util/TraceFieldVisitor.java  
 \* /opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-jar/org/objectweb/asm/tree/AnnotationNode.java  
 \* /opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-jar/org/objectweb/asm/util/CheckAnnotationAdapter.java  
 \* /opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-jar/org/objectweb/asm/signature/SignatureWriter.java  
 \* /opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-jar/org/objectweb/asm/Frame.java  
 \* /opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-jar/org/objectweb/asm/Label.java  
 \* /opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-jar/org/objectweb/asm/util/TraceMethodVisitor.java

\* /opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-jar/org/objectweb/asm/tree/LookupSwitchInsnNode.java  
\*  
/opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-jar/org/objectweb/asm/tree/IntInsnNode.java  
\* /opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-jar/org/objectweb/asm/optimizer/FieldConstantsCollector.java  
\* /opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-jar/org/objectweb/asm/optimizer/NameMapping.java  
\* /opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-jar/org/objectweb/asm/tree/analysis/BasicVerifier.java  
\* /opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-jar/org/objectweb/asm/ClassVisitor.java  
\* /opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-jar/org/objectweb/asm/util/Printer.java  
\* /opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-jar/org/objectweb/asm/commons/Remapper.java  
\* /opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-jar/org/objectweb/asm/tree/MethodNode.java  
\* /opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-jar/org/objectweb/asm/Type.java  
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/opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-jar/org/objectweb/asm/ClassWriter.java  
\* /opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-jar/org/objectweb/asm/optimizer/Shrinker.java  
\* /opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-jar/org/objectweb/asm/commons/MethodRemapper.java  
\* /opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-jar/org/objectweb/asm/Context.java  
\* /opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-jar/org/objectweb/asm/tree/LabelNode.java  
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\* /opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-jar/org/objectweb/asm/tree/LineNumberNode.java  
\* /opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-jar/org/objectweb/asm/tree/InnerClassNode.java  
\* /opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-jar/org/objectweb/asm/tree/FrameNode.java  
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/opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-jar/org/objectweb/asm/optimizer/AnnotationConstantsCollector.java  
\* /opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-jar/org/objectweb/asm/commons/RemappingClassAdapter.java  
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\* /opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-jar/org/objectweb/asm/commons/StaticInitMerger.java  
\* /opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-jar/org/objectweb/asm/util/CheckMethodAdapter.java  
\* /opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-jar/org/objectweb/asm/util/CheckClassAdapter.java  
\* /opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-jar/org/objectweb/asm/signature/SignatureVisitor.java  
\* /opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-jar/org/objectweb/asm/tree/analysis/Subroutine.java  
\* /opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-

jar/org/objectweb/asm/commons/FieldRemapper.java  
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jar/org/objectweb/asm/optimizer/ClassOptimizer.java  
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jar/org/objectweb/asm/commons/ClassRemapper.java  
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jar/org/objectweb/asm/tree/AbstractInsnNode.java  
\* /opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-  
jar/org/objectweb/asm/tree/TypeInsnNode.java  
\* /opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-  
jar/org/objectweb/asm/optimizer/Constant.java  
\* /opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-  
jar/org/objectweb/asm/tree/MultiANewArrayInsnNode.java  
\* /opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-  
jar/org/objectweb/asm/commons/SignatureRemapper.java  
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/opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-  
jar/org/objectweb/asm/tree/analysis/SmallSet.java  
\* /opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-  
jar/org/objectweb/asm/commons/RemappingMethodAdapter.java  
\* /opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-jar/org/objectweb/asm/Handler.java  
\* /opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-  
jar/org/objectweb/asm/util/CheckFieldAdapter.java  
\* /opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-jar/org/objectweb/asm/FieldVisitor.java  
\* /opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-  
jar/org/objectweb/asm/tree/analysis/BasicInterpreter.java  
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jar/org/objectweb/asm/tree/analysis/Interpreter.java  
\* /opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-  
jar/org/objectweb/asm/commons/SerialVersionUIDAdder.java  
\*  
/opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-  
jar/org/objectweb/asm/optimizer/MethodConstantsCollector.java  
\* /opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-jar/org/objectweb/asm/Attribute.java  
\* /opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-jar/org/objectweb/asm/FieldWriter.java  
\* /opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-jar/org/objectweb/asm/tree/FieldNode.java  
\* /opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-  
jar/org/objectweb/asm/commons/LocalVariablesSorter.java  
\* /opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-  
jar/org/objectweb/asm/util/TraceClassVisitor.java  
\* /opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-  
jar/org/objectweb/asm/tree/analysis/Frame.java  
\* /opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-

jar/org/objectweb/asm/tree/analysis/BasicValue.java  
\* /opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-  
jar/org/objectweb/asm/tree/JumpInsnNode.java  
\*  
/opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-jar/org/objectweb/asm/ByteVector.java  
\* /opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-  
jar/org/objectweb/asm/commons/AdviceAdapter.java  
\* /opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-  
jar/org/objectweb/asm/tree/TypeAnnotationNode.java  
\* /opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-  
jar/org/objectweb/asm/tree/analysis/SourceInterpreter.java  
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jar/org/objectweb/asm/tree/analysis/SourceValue.java  
\* /opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-  
jar/org/objectweb/asm/tree/analysis/Value.java  
\* /opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-jar/org/objectweb/asm/Edge.java  
\* /opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-  
jar/org/objectweb/asm/commons/RemappingSignatureAdapter.java  
\* /opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-  
jar/org/objectweb/asm/commons/Method.java  
\*  
/opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-  
jar/org/objectweb/asm/util/TraceSignatureVisitor.java  
\* /opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-  
jar/org/objectweb/asm/util/TraceAnnotationVisitor.java  
\* /opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-  
jar/org/objectweb/asm/signature/SignatureReader.java  
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jar/org/objectweb/asm/tree/FieldInsnNode.java  
\* /opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-  
jar/org/objectweb/asm/AnnotationVisitor.java  
\* /opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-  
jar/org/objectweb/asm/commons/RemappingFieldAdapter.java  
\* /opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-  
jar/org/objectweb/asm/commons/TableSwitchGenerator.java  
\* /opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-  
jar/org/objectweb/asm/commons/InstructionAdapter.java  
\* /opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-jar/org/objectweb/asm/tree/VarInsnNode.java  
\*  
/opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-  
jar/org/objectweb/asm/tree/analysis/SimpleVerifier.java  
\* /opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-jar/org/objectweb/asm/AnnotationWriter.java  
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jar/org/objectweb/asm/commons/SimpleRemapper.java  
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jar/org/objectweb/asm/tree/ParameterNode.java  
\* /opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-jar/org/objectweb/asm/Handle.java  
\* /opt/cola/permits/1135996864\_1613649419.76/0/asm-5-1-sources-2-jar/org/objectweb/asm/tree/LdcInsnNode.java

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\*/

/\*\*

\* Constructs a new { @link ClassNode}. <i>Subclasses must not use this  
\* constructor</i>. Instead, they must use the { @link #ClassNode(int)}  
\* version.  
\*  
\* @throws IllegalStateException  
\* If a subclass calls this constructor.  
\*/

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writer.properties

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Kuromoji Japanese Morphological Analyzer - Apache Lucene Integration

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analysis/common/src/resources/org/apache/lucene/analysis/hi/stopwords.txt,  
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## 1.144 libtasn 4.10-1.el7

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```
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```
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```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
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@ignore

@c Set file name and title for man page.



@setfilename gpl  
@settitle GNU General Public License  
@c man begin SEEALSO  
gfdl(7), fsf-funding(7).  
@c man end  
@c man begin COPYRIGHT  
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To

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@smallexample

@var{one line to give the program's name and a brief idea of what it does.}

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```
@smallexample
@var{program} Copyright (C) @var{year} @var{name of author}
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This is free software, and you are welcome to redistribute it
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```

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@c man end

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Version 2.1, February 1999



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This is an attempt to acknowledge early contributions to the garbage collector. Later contributions should instead be mentioned in README.changes.

## HISTORY -

Early versions of this collector were developed as a part of research projects supported in part by the National Science Foundation and the Defense Advance Research Projects Agency.

The garbage collector originated as part of the run-time system for the Russell programming language implementation. The first version of the garbage collector was written primarily by Al Demers. It was then refined and mostly rewritten, primarily by Hans-J. Boehm, at Cornell U., the University of Washington, Rice University (where it was first used for C and assembly code), Xerox PARC, SGI, and HP Labs. However, significant contributions have also been made by many others.

Some other contributors:

More recent contributors are mentioned in the modification history in README.changes. My apologies for any omissions.

The SPARC specific code was originally contributed by Mark Weiser.

The Encore Multimax modifications were supplied by Kevin Kenny (kenny@m.cs.uiuc.edu). The adaptation to the IBM PC/RT is largely due to Vernon Lee, on machines made available to Rice by IBM.

Much of the HP specific code and a number of good suggestions for improving the generic code are due to Walter Underwood.

Robert Brazile (brazile@diamond.bbn.com) originally supplied the ULTRIX code. Al Dosser (dosser@src.dec.com) and Regis Cridlig (Regis.Cridlig@cl.cam.ac.uk) subsequently provided updates and information on variation between ULTRIX systems. Parag Patel (parag@netcom.com) supplied the A/UX code.

Jesper Peterson(jep@mtiame.mtia.oz.au), Michel Schinz, and Martin Tauchmann (martintauchmann@bigfoot.com) supplied the Amiga port.

Thomas Funke (thf@zelator.in-berlin.de(?)) and

Brian D.Carlstrom (bdc@clark.lcs.mit.edu) supplied the NeXT ports.

Douglas Steel (doug@wg.icl.co.uk) provided ICL DRS6000 code.

Bill Janssen (janssen@parc.xerox.com) supplied the SunOS dynamic loader

specific code. Manuel Serrano (serrano@cornas.inria.fr) supplied linux and Sony News specific code. Al Dosser provided Alpha/OSF/1 code. He and Dave Detlefs(detlefs@src.dec.com) also provided several generic bug fixes.

Alistair G. Crooks(agg@uts.amdahl.com) supplied the NetBSD and 386BSD ports.

Jeffrey Hsu (hsu@soda.berkeley.edu) provided the FreeBSD port.

Brent Benson (brent@jade.ssd.csd.harris.com) ported the collector to a Motorola 88K processor running CX/UX (Harris NightHawk).

Ari Huttunen (Ari.Huttunen@hut.fi) generalized the OS/2 port to nonIBM development environments (a nontrivial task).  
Patrick Beard (beard@cs.ucdavis.edu) provided the initial MacOS port.  
David Chase, then at Olivetti Research, suggested several improvements.  
Scott Schwartz (schwartz@groucho.cse.psu.edu) supplied some of the code to save and print call stacks for leak detection on a SPARC.  
Jesse Hull and John Ellis supplied the C++ interface code.  
Zhong Shao performed much of the experimentation that led to the current typed allocation facility. (His dynamic type inference code hasn't made it into the released version of the collector, yet.)  
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For more information see the README file in the examples directory.

Directory native/fdlibm

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We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

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Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

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(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

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When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute

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Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

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4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

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- a) Accompany the work with the complete corresponding machine-readable



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b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

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```
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```

```
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Because of this blurred distinction, using the ordinary General Public License for libraries did not effectively promote software sharing, because most developers did not use the libraries. We concluded that weaker conditions might promote sharing better.

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## 1.151 basesystem 10.0-7.el7.centos

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Summary: The skeleton package which defines a simple CentOS Linux system

Name: basesystem

Version: 10.0

Release: 7%{?dist}

License: Public Domain

Group: System Environment/Base

Requires(pre): setup filesystem

BuildRoot: %(mktemp -ud % {\_tmppath} )/% {name}-% {version}-% {release}-XXXXXX)

BuildArch: noarch

%description

Basesystem defines the components of a basic CentOS Linux system (for example, the package installation order to use during bootstrapping). Basesystem should be in every installation of a system, and it should never be removed.

%prep

%build

%install

%clean

%files

%defattr(-,root,root,-)

%changelog

\* Fri Jun 27 2014 Johnny Hughes <johnny@centos.org> - 10.0-7.el7.centos  
- Roll in CentOS Branding

\* Fri Dec 27 2013 Daniel Mach <dmach@redhat.com> - 10.0-7  
- Mass rebuild 2013-12-27

\* Tue Mar 06 2012 Ondrej Vasik <ovasik@redhat.com> 10.0-6  
- remove again reference to Fedora after RHEL-7 import(#800464)

\* Thu  
Jun 23 2011 Ondrej Vasik <ovasik@redhat.com> 10.0-5  
- fix FTBFS typo (#715640), add disttag

\* Fri May 21 2010 Ondrej Vasik <ovasik@redhat.com> - 10.0-4  
- remove reference to Fedora, add dist tag  
Related: rhbz#566527

\* Mon Apr 26 2010 Dennis Gregorovic <dgregor@redhat.com> - 10.0-3.2  
- Rebuilt for RHEL 6  
Related: rhbz#566527

\* Mon Apr 26 2010 Dennis Gregorovic <dgregor@redhat.com> - 10.0-3.1  
- Rebuilt for RHEL 6  
Related: rhbz#566527

\* Fri Jul 24 2009 Fedora Release Engineering <rel-eng@lists.fedoraproject.org> - 10.0-3  
- Rebuilt for [https://fedoraproject.org/wiki/Fedora\\_12\\_Mass\\_Rebuild](https://fedoraproject.org/wiki/Fedora_12_Mass_Rebuild)

\* Mon Feb 23 2009 Fedora Release Engineering <rel-eng@lists.fedoraproject.org> - 10.0-2

- Rebuilt for [https://fedoraproject.org/wiki/Fedora\\_11\\_Mass\\_Rebuild](https://fedoraproject.org/wiki/Fedora_11_Mass_Rebuild)

\* Mon Oct 20 2008 Phil Knirsch <pknirsch@redhat.com> 10.0-1

- Bump version and rebuild for Fedora 10 (#451289)

\* Fri Mar 02 2007 Phil Knirsch <pknirsch@redhat.com> - 8.1-1

- Cleanup per package review (#225608)

\* Wed Jul 12 2006 Jesse Keating

<jkeating@redhat.com> - 8.0-5.1.1

- rebuild

\* Fri Dec 09 2005 Jesse Keating <jkeating@redhat.com>

- rebuilt

\* Wed Sep 22 2004 Bill Nottingham <notting@redhat.com>

- rebuilt

\* Fri Feb 13 2004 Elliot Lee <sopwith@redhat.com>

- rebuilt

\* Wed Jan 22 2003 Tim Powers <timp@redhat.com>

- rebuilt

\* Wed Aug 21 2002 Bill Nottingham <notting@redhat.com>

- bump rev

\* Fri Jun 21 2002 Tim Powers <timp@redhat.com>

- automated rebuild

\* Thu May 23 2002 Tim Powers <timp@redhat.com>

- automated rebuild

\* Wed Jan 09 2002 Tim Powers <timp@redhat.com>

- automated rebuild

\* Wed Jul 12 2000 Prospector <bugzilla@redhat.com>

- automatic rebuild

\* Tue Jun 6 2000 Bill Nottingham <notting@redhat.com>

- rebuild. Wheee.

\* Sun Mar 21 1999 Cristian Gafton <gafton@redhat.com>

- auto rebuild in the new build environment (release 4)

\* Tue Mar 16 1999 Cristian Gafton <gafton@redhat.com>

- don't require rpm (breaks dependency chain)



\* Tue Mar 16 1999 Erik Troan <ewt@redhat.com>

- require rpm

\* Wed Dec 30

1998 Cristian Gafton <gafton@redhat.com>

- build for 6.0

\* Tue Aug 11 1998 Jeff Johnson <jbj@redhat.com>

- build root

\* Mon Apr 27 1998 Prospector System <bugs@redhat.com>

- translations modified for de, fr, tr

\* Tue Sep 23 1997 Erik Troan <ewt@redhat.com>

- made a noarch package

Found in path(s):

\*/opt/cola/permits/1151233448\_1617817524.04/0/basesystem-10.0-7.el7.centos.src.rpm-cosi-expand-archive-tqrtl4Z0/basesystem.spec

# 1.152 gpg-pubkey f4a80eb5-53a7ff4b

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```
# COPYING.other          -*- org -*-  
##+TITLE: List of code with permissive licenses as used by GnuPG.  
##+STARTUP: showall
```

\* DNS resolver (dirmngr/dns.c)

dns.c - Recursive, Reentrant DNS Resolver.

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\* Regular  
expression support

regex/jimregex.[ch]:

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Subsequently modified by:

1986 John Gilmore hoptoad!gnu  
1987 James A. Woods ames!jaw  
1993 Christopher Seiwald seiwald@vix.com  
2000, 2002 Christopher Seiwald <seiwald@perforce.com>  
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regex/utf8.[ch] (see regex/LICENSE):

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## 1.153 jackson 2.12.3

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ASM: a very small and fast Java bytecode manipulation framework

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```

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```
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```

```
<signature of Ty Coon>, 1 April 1989
```

```
Ty Coon, President of Vice
```

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## 1.156 util-linux 2.23.2-65.el7\_9.1

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```

```
<signature of Ty Coon>, 1 April 1989
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```

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```
size: 8388608, sector size: 512, PT: dos, offset: 446, id=0x8f8378c0
```

```
---
```

```
#1:  32  7648 0x83
#2: 7680  8704 0xa5
#5: 7936  4864 0x7 (freebsd)
#6: 12544 3584 0x7 (freebsd)
```

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Initialize empty image

f1c9645dbc14efddc7d8a322685f26eb bsd.img

Create new DOS partition table

57e721e38d1266c2df055067c18f2cf9 bsd.img

---layout-----

\_\_ts\_dev\_\_: 10 MB, 10485760 bytes, 20480 sectors

Units = sectors of 1 \* 512 = 512 bytes

Sector size (logical/physical): 512 bytes / 512 bytes

I/O size (minimum/optimal): 512 bytes / 512 bytes

Disk label type: dos

Disk identifier: 0x00000001

| Device | Boot | Start | End | Blocks | Id | System |
|--------|------|-------|-----|--------|----|--------|
|--------|------|-------|-----|--------|----|--------|

-----

Create 1st primary partition

ada64ace122978d00d1d1c0e5ee45d26 bsd.img

---layout-----

\_\_ts\_dev\_\_: 10 MB, 10485760 bytes, 20480 sectors  
Units = sectors of 1 \* 512 = 512 bytes  
Sector size (logical/physical): 512 bytes / 512 bytes  
I/O size (minimum/optimal): 512 bytes / 512 bytes  
Disk label type: dos  
Disk identifier: 0x00000001

| Device      | Boot | Start | End  | Blocks | Id | System |
|-------------|------|-------|------|--------|----|--------|
| __ts_dev__1 |      | 2048  | 4095 | 1024   | 83 | Linux  |

-----

Create 2st primary partition  
1bebf87248e05d6e4e62b749da65d023  
bsd.img  
Set 2nd partition type  
2d8e8dff51a88a045db233418dd73fbe bsd.img

---layout-----  
\_\_ts\_dev\_\_: 10 MB, 10485760 bytes, 20480 sectors  
Units = sectors of 1 \* 512 = 512 bytes  
Sector size (logical/physical): 512 bytes / 512 bytes  
I/O size (minimum/optimal): 512 bytes / 512 bytes  
Disk label type: dos  
Disk identifier: 0x00000001

| Device      | Boot | Start | End   | Blocks | Id | System  |
|-------------|------|-------|-------|--------|----|---------|
| __ts_dev__1 |      | 2048  | 4095  | 1024   | 83 | Linux   |
| __ts_dev__2 |      | 4096  | 20479 | 8192   | a5 | FreeBSD |

-----

Create default BSD  
2e1cee529cb59c9341afef0443f196a1 bsd.img

---layout-----

Changes will remain in memory only, until you decide to write them.  
Be careful before using the write command.

Command (m for help):

BSD disklabel command (m for help):

4 partitions:

| #  | start | end   | size   | fstype | [fsize | bsize | cpg] |
|----|-------|-------|--------|--------|--------|-------|------|
| c: | 4096  | 20479 | 16384  | unused | 0      | 0     |      |
| d: | 0     |       |        |        |        |       |      |
|    | 16064 | 16065 | unused |        | 0      | 0     |      |

BSD disklable command (m for help):

Command (m for help):

-----

b5c121c2091b2ff26b880551feac7112 bsd.img

---layout-----

Changes will remain in memory only, until you decide to write them.

Be careful before using the write command.

Command (m for help):

BSD disklable command (m for help):

4 partitions:

| #  | start | end   | size  | fstype | [fsize | bsize | cpg] |
|----|-------|-------|-------|--------|--------|-------|------|
| a: | 4096  | 6144  | 2049  | 4.2BSD | 0      | 0     | 0    |
| c: | 4096  | 20479 | 16384 | unused | 0      | 0     |      |
| d: | 0     | 16064 | 16065 | unused | 0      | 0     |      |

BSD disklable command (m for help):

Command (m for help):

-----

Changes will remain in memory only, until you decide to write them.

Be careful before using the write command.

Command (m for help):

BSD disklable command (m for help):

|   |           |                |        |         |          |      |       |
|---|-----------|----------------|--------|---------|----------|------|-------|
| 0 | unused    | 5              | 4.1BSD | 9       | 4.4LFS   | d    | boot  |
| 1 | swap      |                |        |         |          |      |       |
|   | 6         | Eighth Edition | a      | unknown | e        | ADOS |       |
| 2 | Version 6 | 7              | 4.2BSD | b       | HPFS     | f    | HFS   |
| 3 | Version 7 | 8              | MS-DOS | c       | ISO-9660 | 10   | AdvFS |
| 4 | System V  |                |        |         |          |      |       |

BSD disklable command (m for help):

/\*

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```
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under certain conditions; type `show c' for details.
```

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```
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'Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989  
Ty Coon, President of Vice
```

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<signature of Ty Coon>, 1 April 1990  
Ty Coon, President of Vice

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## 1.159 antlr 4.6

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\* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/parse/ANTLRLexer.java

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\*/

/\*

This file contains the actual layout of the messages emitted by ANTLR.

The text itself is coming out of the languages/\*stg files, according to the chosen locale.

This file contains the default format ANTLR uses.

\*/

location(file, line, column) ::= "<file>(<line>,<column>)"

message(id, text) ::= "error <id> : <text>"

report(location, message, type) ::= "<location> : <type> <message.id> : <message.text>"

wantsSingleLineMessage() ::= "true"

Found in path(s):

\* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/tool/templates/messages/formats/vs2005.stg

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\* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/Tool.java

\* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/tool/ErrorMessage.java

\* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/gui/PostScriptDocument.java

\* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/semantics/SemanticPipeline.java

\* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/tool/GrammarParserInterpreter.java

\* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/gui/SystemFontMetrics.java

\* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/codegen/model/ListenerDispatchMethod.java

\*

/opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/codegen/model/chunk/TokenPropertyRef\_int.java

\* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/automata/LexerATNFactory.java

\* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/codegen/model/chunk/TokenPropertyRef\_text.java

\* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/codegen/model/LL1Loop.java

\* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/codegen/model/chunk/QRetValueRef.java

\* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/codegen/model/chunk/ActionTemplate.java

\* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/codegen/model/RuleActionFunction.java

\* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/codegen/model/Choice.java

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/opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/tool/Alternative.java

\* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/codegen/model/OptionalBlock.java

\* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/codegen/target/Python2Target.java

\* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-

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jar/org/antlr/v4/tool/ast/GrammarASTWithOptions.java
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* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-
jar/org/antlr/v4/codegen/model/BaseVisitorFile.java
* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-
jar/org/antlr/v4/codegen/model/RuleElement.java
* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-
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* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-
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* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-
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* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-
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* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-
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* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/codegen/model/Sync.java
* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-
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* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-
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* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-
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* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-
jar/org/antlr/v4/codegen/model/chunk/LocalRef.java
* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/tool/ast/PredAST.java

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 \* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/tool/LexerGrammar.java  
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 \* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-  
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 \* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-  
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* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/codegen/Target.java
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* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-
jar/org/antlr/v4/parse/ToolANTLRParser.java
* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/tool/ast/GrammarAST.java
* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-
jar/org/antlr/v4/codegen/model/ModelElement.java
* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-
jar/org/antlr/v4/codegen/DefaultOutputModelFactory.java

```

\* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/codegen/model/DispatchMethod.java  
 \* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/tool/AttributeResolver.java  
 \* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/codegen/target/GoTarget.java  
 \*  
 /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/codegen/model/decl/RuleContextListDecl.java  
 \* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/codegen/model/ThrowNoViableAlt.java  
 \* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/tool/GrammarSyntaxMessage.java  
 \* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/automata/ATNOptimizer.java  
 \* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/tool/Rule.java  
 \* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/codegen/model/decl/ContextRuleGetterDecl.java  
 \* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/codegen/model/Loop.java  
 \* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/tool/ast/TerminalAST.java  
 \*  
 /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/tool/ast/SetAST.java  
 \* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/semantics/SymbolChecks.java  
 \* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/codegen/model/VisitorDispatchMethod.java  
 \* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/codegen/model/chunk/ThisRulePropertyRef\_ctx.java  
 \* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/codegen/model/MatchToken.java  
 \* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/tool/ast/ActionAST.java  
 \* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/codegen/target/SwiftTarget.java  
 \* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/tool/ErrorSeverity.java  
 \* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/misc/Graph.java  
 \*  
 /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/codegen/model/decl/ElementListDecl.java  
 \* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/codegen/model/chunk/RulePropertyRef\_ctx.java  
 \* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/codegen/model/decl/RuleContextDecl.java  
 \* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/codegen/model/chunk/SetAttr.java  
 \* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/semantics/UseDefAnalyzer.java  
 \* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/parse/ToolANTLR Lexer.java  
 \* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-

```

jar/org/antlr/v4/tool/GrammarSemanticsMessage.java
* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/codegen/Wildcard.java
* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/tool/ast/NotAST.java
*
/opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-
jar/org/antlr/v4/codegen/model/LL1StarBlockSingleAlt.java
* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-
jar/org/antlr/v4/codegen/model/chunk/RulePropertyRef.java
* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/tool/LeftRecursiveRule.java
* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/tool/DOTGenerator.java
* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-
jar/org/antlr/v4/codegen/model/ExceptionClause.java
* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-
jar/org/antlr/v4/tool/DefaultToolListener.java
* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-
jar/org/antlr/v4/codegen/model/decl/ContextRuleListIndexedGetterDecl.java
* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/codegen/model/SrcOp.java
*
/opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-
jar/org/antlr/v4/codegen/model/ThrowEarlyExitException.java
* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-
jar/org/antlr/v4/codegen/target/JavaTarget.java
* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-
jar/org/antlr/v4/codegen/CodeGenPipeline.java
* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-
jar/org/antlr/v4/codegen/model/SerializedATN.java
* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-
jar/org/antlr/v4/codegen/model/RuleFunction.java
* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-
jar/org/antlr/v4/codegen/model/CaptureNextTokenType.java
* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-
jar/org/antlr/v4/codegen/model/decl/Decl.java
* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-
jar/org/antlr/v4/codegen/model/chunk/RulePropertyRef_parser.java
*
/opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-
jar/org/antlr/v4/codegen/model/AddToLabelList.java
* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-
jar/org/antlr/v4/codegen/model/InvokeRule.java
* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/parse/ScopeParser.java
* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-
jar/org/antlr/v4/semantics/BlankActionSplitterListener.java
* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-
jar/org/antlr/v4/codegen/model/decl/TokenTypeDecl.java
* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/tool/ast/RangeAST.java
* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-
jar/org/antlr/v4/codegen/model/ListenerFile.java
* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-

```

```

jar/org/antlr/v4/codegen/OutputModelWalker.java
* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-
jar/org/antlr/v4/tool/BuildDependencyGenerator.java
*
/opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-
jar/org/antlr/v4/semantics/AttributeChecks.java
* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-
jar/org/antlr/v4/semantics/ActionSniffer.java
* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-
jar/org/antlr/v4/codegen/model/ThrowRecognitionException.java
* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/misc/CharSupport.java
* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-
jar/org/antlr/v4/codegen/model/chunk/TokenPropertyRef_channel.java
* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-
jar/org/antlr/v4/codegen/model/chunk/TokenRef.java
* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/tool/ast/PlusBlockAST.java
* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-
jar/org/antlr/v4/codegen/model/chunk/ActionChunk.java
*
/opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-
jar/org/antlr/v4/parse/ActionSplitterListener.java
* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-
jar/org/antlr/v4/gui/JFileChooserConfirmOverwrite.java
* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/codegen/model/Parser.java
* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/misc/OrderedHashMap.java
* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/tool/ErrorHandler.java
* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/automata/ATNPrinter.java
* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-
jar/org/antlr/v4/codegen/OutputModelFactory.java
* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-
jar/org/antlr/v4/analysis/LeftRecursionDetector.java
* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-
jar/org/antlr/v4/codegen/model/chunk/TokenPropertyRef_pos.java
*
/opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/misc/Utils.java
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```

```
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```

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- \*/

// args must be <object-model-object>, <fields-resulting-in-STs>

```

ParserFile(file, parser, namedActions, contextSuperClass) ::= <<
<fileHeader(file.grammarFileName, file.ANTLRVersion)>
<if(file.genPackage)>
namespace <file.genPackage> {
<endif>
<namedActions.header>
using System;
using System.Text;
using System.Diagnostics;
using System.Collections.Generic;
using Antlr4.Runtime;
using
    Antlr4.Runtime.Atn;
using Antlr4.Runtime.Misc;
using Antlr4.Runtime.Tree;
using DFA = Antlr4.Runtime.Dfa.DFA;

<parser>
<if(file.genPackage)>
} // namespace <file.genPackage>
<endif>
>>

```

```

ListenerFile(file, header, namedActions) ::= <<
<fileHeader(file.grammarFileName, file.ANTLRVersion)>
<if(file.genPackage)>

```

```

namespace <file.genPackage> {
<endif>
<header>
using Antlr4.Runtime.Misc;
using IParseTreeListener = Antlr4.Runtime.Tree.IParseTreeListener;
using IToken = Antlr4.Runtime.IToken;

/// \<summary>
/// This interface defines a complete listener for a parse tree produced by
/// \<see cref="<csIdentifier.(file.parserName)>"/>.
/// \</summary>
[System.CodeDom.Compiler.GeneratedCode("ANTLR", "<file.ANTLRVersion>")]
[System.CLSCompliant(false)]
public interface I<file.grammarName>Listener : IParseTreeListener {
    <file.listenerNames: {Iname |
/// \<summary>
<if(file.listenerLabelRuleNames.(Iname))>
/// Enter a parse tree produced by the \<c><Iname>\</c>
/// labeled alternative in
    \<see cref="<file.parserName>.<file.listenerLabelRuleNames.(Iname)>"/>.
<else>
/// Enter a parse tree produced by \<see cref="<file.parserName>.<Iname>"/>.
<endif>
/// \</summary>
/// \<param name="context">The parse tree.\</param>
void Enter<Iname; format="cap">([NotNull] <csIdentifier.(file.parserName)>.<Iname; format="cap">Context
context);
/// \<summary>
<if(file.listenerLabelRuleNames.(Iname))>
/// Exit a parse tree produced by the \<c><Iname>\</c>
/// labeled alternative in \<see cref="<file.parserName>.<file.listenerLabelRuleNames.(Iname)>"/>.
<else>
/// Exit a parse tree produced by \<see cref="<file.parserName>.<Iname>"/>.
<endif>
/// \</summary>
/// \<param name="context">The parse tree.\</param>
void Exit<Iname; format="cap">([NotNull] <csIdentifier.(file.parserName)>.<Iname; format="cap">Context
context);}; separator="\n">
    }
<if(file.genPackage)>
} // namespace <file.genPackage>
<endif>
>>

BaseListenerFile(file, header, namedActions) ::= <<
<fileHeader(file.grammarFileName,
file.ANTLRVersion)>
<if(file.genPackage)>

```

```

namespace <file.genPackage> {
<endif>
<header>

using Antlr4.Runtime.Misc;
using IErrorNode = Antlr4.Runtime.Tree.IErrorNode;
using ITerminalNode = Antlr4.Runtime.Tree.ITerminalNode;
using IToken = Antlr4.Runtime.IToken;
using ParserRuleContext = Antlr4.Runtime.ParserRuleContext;

/// \<summary>
/// This class provides an empty implementation of \<see cref="I<file.grammarName>Listener"/>,
/// which can be extended to create a listener which only needs to handle a subset
/// of the available methods.
/// \</summary>
[System.CodeDom.Compiler.GeneratedCode("ANTLR", "<file.ANTLRVersion>")]
[System.CLSCompliant(false)]
public partial class <file.grammarName>BaseListener : I<file.grammarName>Listener {
    <file.listenerNames>: { Iname |
/// \<summary>
<if(file.listenerLabelRuleNames.(Iname))>
/// Enter a parse tree produced by the \<c><Iname>\</c>
/// labeled alternative in \<see cref="<file.parserName>.<file.listenerLabelRuleNames.(Iname)>"/>.
<else>
///
/// Enter a parse tree produced by \<see cref="<file.parserName>.<Iname>"/>.
<endif>
/// \<para>The default implementation does nothing.\</para>
/// \</summary>
/// \<param name="context">The parse tree.\</param>
public virtual void Enter<Iname; format="cap">([NotNull] <csIdentifier.(file.parserName)>.<Iname;
format="cap">Context context) { \}
/// \<summary>
<if(file.listenerLabelRuleNames.(Iname))>
/// Exit a parse tree produced by the \<c><Iname>\</c>
/// labeled alternative in \<see cref="<file.parserName>.<file.listenerLabelRuleNames.(Iname)>"/>.
<else>
/// Exit a parse tree produced by \<see cref="<file.parserName>.<Iname>"/>.
<endif>
/// \<para>The default implementation does nothing.\</para>
/// \</summary>
/// \<param name="context">The parse tree.\</param>
public virtual void Exit<Iname; format="cap">([NotNull] <csIdentifier.(file.parserName)>.<Iname;
format="cap">Context context) { \} }; separator="\n"

/// \<inheritdoc>
/// \<remarks>The default implementation does nothing.\</remarks>
public

```



```

virtual void EnterEveryRule([NotNull] ParserRuleContext context) { }
/// \<inheritdoc/>
/// \<remarks>The default implementation does nothing.\</remarks>
public virtual void ExitEveryRule([NotNull] ParserRuleContext context) { }
/// \<inheritdoc/>
/// \<remarks>The default implementation does nothing.\</remarks>
public virtual void VisitTerminal([NotNull] ITerminalNode node) { }
/// \<inheritdoc/>
/// \<remarks>The default implementation does nothing.\</remarks>
public virtual void VisitErrorNode([NotNull] IErrorNode node) { }
}
<if(file.genPackage)>
} // namespace <file.genPackage>
<endif>
>>

VisitorFile(file, header, namedActions) ::= <<
<fileHeader(file.grammarFileName, file.ANTLRVersion)>
<if(file.genPackage)>
namespace <file.genPackage> {
<endif>
<header>
using Antlr4.Runtime.Misc;
using Antlr4.Runtime.Tree;
using IToken = Antlr4.Runtime.IToken;

/// \<summary>
/// This interface defines a complete generic visitor for a parse tree produced
/// by \<see
cref="<csIdentifier.(file.parserName)>"/>.
/// \</summary>
/// \<typeparam name="Result">The return type of the visit operation.\</typeparam>
[System.CodeDom.Compiler.GeneratedCode("ANTLR", "<file.ANTLRVersion>")]
[System.CLSCompliant(false)]
public interface I<file.grammarName>Visitor<Result> : IParseTreeVisitor<Result> {
<file.visitorNames:{ Iname |
/// \<summary>
<if(file.visitorLabelRuleNames.(Iname))>
/// Visit a parse tree produced by the \<c><Iname>\</c>
/// labeled alternative in \<see cref="<file.parserName>.<file.visitorLabelRuleNames.(Iname)>"/>.
<else>
/// Visit a parse tree produced by \<see cref="<file.parserName>.<Iname>"/>.
<endif>
/// \</summary>
/// \<param name="context">The parse tree.\</param>
/// \<return>The visitor result.\</return>
Result Visit<Iname; format="cap">([NotNull] <csIdentifier.(file.parserName)>.<Iname; format="cap">Context
context);}; separator="\n">

```

```

}
<if(file.genPackage)>
} // namespace <file.genPackage>
<endif>
>>

BaseVisitorFile(file, header,
    namedActions) ::= <<
<fileHeader(file.grammarFileName, file.ANTLRVersion)>
<if(file.genPackage)>
namespace <file.genPackage> {
<endif>
<header>
using Antlr4.Runtime.Misc;
using Antlr4.Runtime.Tree;
using IToken = Antlr4.Runtime.IToken;
using ParserRuleContext = Antlr4.Runtime.ParserRuleContext;

/// \<summary>
/// This class provides an empty implementation of \<see cref="I<file.grammarName>Visitor{Result}" />,
/// which can be extended to create a visitor which only needs to handle a subset
/// of the available methods.
/// \</summary>
/// \<typeparam name="Result">The return type of the visit operation.\</typeparam>
[System.CodeDom.Compiler.GeneratedCode("ANTLR", "<file.ANTLRVersion>")]
[System.CLSCompliant(false)]
public partial class <file.grammarName>BaseVisitor<Result> : AbstractParseTreeVisitor<Result>,
I<file.grammarName>Visitor<Result> {
    <file.visitorNames>: { Iname |
/// \<summary>
<if(file.visitorLabelRuleNames.(Iname))>
/// Visit a parse tree produced by the \<c><Iname>\</c>
///
labeled alternative in \<see cref="<file.parserName>.<file.visitorLabelRuleNames.(Iname)" />.
<else>
/// Visit a parse tree produced by \<see cref="<file.parserName>.<Iname" />.
<endif>
/// \<para>
/// The default implementation returns the result of calling \<see
cref="AbstractParseTreeVisitor{Result}.VisitChildren(IRuleNode)" />
/// on \<paramref name="context" />.
/// \</para>
/// \</summary>
/// \<param name="context">The parse tree.\</param>
/// \<return>The visitor result.\</return>
public virtual Result Visit<Iname; format="cap">([NotNull] <csIdentifier.(file.parserName)>.<Iname;
format="cap">Context context) { return VisitChildren(context); \} }; separator="\n"
}

```

```

<if(file.genPackage)>
} // namespace <file.genPackage>
<endif>
>>

fileHeader(grammarFileName, ANTLRVersion) ::= <<
//-----
//\<auto-generated>
// This code was generated by a tool.
// ANTLR Version: <ANTLRVersion>
//
// Changes
to this file may cause incorrect behavior and will be lost if
// the code is regenerated.
//\</auto-generated>
//-----

// Generated from <grammarFileName> by ANTLR <ANTLRVersion>

// Unreachable code detected
#pragma warning disable 0162
// The variable '...' is assigned but its value is never used
#pragma warning disable 0219
// Missing XML comment for publicly visible type or member '...'
#pragma warning disable 1591
// Ambiguous reference in cref attribute
#pragma warning disable 419

>>

Parser(parser, funcs, atn, sempredFuncs, superClass) ::= <<
<Parser_(ctor="parser_ctor", ...)>
>>

Parser_(parser, funcs, atn, sempredFuncs, ctor, superClass) ::= <<
[System.CodeDom.Compiler.GeneratedCode("ANTLR", "<file.ANTLRVersion>")]
[System.CLSCompliant(false)]
public partial class <csIdentifier.(parser.name)> : <superClass; null="Parser"> {
protected static DFA[] decisionToDFA;
protected static PredictionContextCache
sharedContextCache = new PredictionContextCache();
<if(parser.tokens)>
public const int
<parser.tokens:{k | <k>=<parser.tokens.(k)>}; separator=", ", wrap, anchor>;
<endif>
public const int
<parser.rules:{r | RULE_<r.name> = <r.index>}; separator=", ", wrap, anchor>;
public static readonly string[] ruleNames = {

```

```

<parser.ruleNames:{r | "<r>"}; separator=", ", wrap, anchor>
};

<vocabulary(parser.literalNames, parser.symbolicNames)>

public override string GrammarFileName { get { return "<parser.grammarFileName>"; } }

public override string[] RuleNames { get { return ruleNames; } }

public override string SerializedAtn { get { return _serializedATN; } }

static <csIdentifier.(parser.name)>() {
    decisionToDFA = new DFA[_ATN.NumberOfDecisions];
    for (int i = 0; i < _ATN.NumberOfDecisions; i++) {
        decisionToDFA[i] = new DFA(_ATN.GetDecisionState(i), i);
    }
}

<namedActions.members>
<parser:(ctor)()>
<funcs; separator="\n">

<if(sempredFuncs)>
    public override
    bool Sempred(RuleContext _localctx, int ruleIndex, int predIndex) {
        switch (ruleIndex) {
            <parser.sempredFuncs.values:{f}
            case <f.ruleIndex>: return <f.name>_sempred((<f.ctxType>)_localctx, predIndex);}; separator="\n">
        }
        return true;
    }
    <sempredFuncs.values; separator="\n">
<endif>

<atn>
}
>>

vocabulary(literalNames, symbolicNames) ::= <<
private static readonly string[] _LiteralNames = {
    <literalNames:{t | <t>}; null="null", separator=", ", wrap, anchor>
};
private static readonly string[] _SymbolicNames = {
    <symbolicNames:{t | <t>}; null="null", separator=", ", wrap, anchor>
};
public static readonly IVocabulary DefaultVocabulary = new Vocabulary(_LiteralNames, _SymbolicNames);

[NotNull]

```

```

public override IVocabulary Vocabulary
{
    get
    {
        return DefaultVocabulary;
    }
}
>>

dumpActions(recog, argFuncs, actionFuncs, sempredFuncs) ::= <<
<if(actionFuncs)>
public override void Action(RuleContext _localctx, int ruleIndex, int actionIndex) {
    switch (ruleIndex) {
        <recog.actionFuncs.values: {f}
    case
        <f.ruleIndex> : <f.name>_action(<if(!recog.modes)><f.ctxType><endif>_localctx, actionIndex); break;};
    separator="\n">
    }
}
<actionFuncs.values; separator="\n">
<endif>
<if(sempredFuncs)>
public override bool Sempred(RuleContext _localctx, int ruleIndex, int predIndex) {
    switch (ruleIndex) {
        <recog.sempredFuncs.values: {f}
    case <f.ruleIndex> : return <f.name>_sempred(<if(!recog.modes)><f.ctxType><endif>_localctx, predIndex);};
    separator="\n">
    }
    return true;
}
<sempredFuncs.values; separator="\n">
<endif>
>>

parser_ctor(parser) ::= <<
public <csIdentifier.(parser.name)>(ITokenStream input)
: base(input)
{
    Interpreter = new ParserATNSimulator(this, _ATN, decisionToDFA, sharedContextCache);
}
>>

/* This generates a private method since the actionIndex is generated, making an
 * overriding implementation impossible to maintain.
 */
RuleActionFunction(r, actions) ::= <<
private void <r.name>_action(<r.ctxType> _localctx, int actionIndex) {
    switch (actionIndex)

```

```

{
<actions:{index|
case <index>: <actions.(index)> break;}; separator="\n">
}
}
>>

/* This generates a private method since the predIndex is generated, making an
* overriding implementation impossible to maintain.
*/
RuleSempredFunction(r, actions) ::= <<
private bool <r.name>_sempred(<r.ctxType> _localctx, int predIndex) {
switch (predIndex) {
<actions:{index|
case <index>: return <actions.(index)>;}; separator="\n">
}
return true;
}
>>

RuleFunction(currentRule,args,code,locals,ruleCtx,altLabelCtxs,namedActions,finallyAction,postamble,exceptions)
::= <<

<if(ruleCtx)>
<ruleCtx>
<endif>
<altLabelCtxs:{l | <altLabelCtxs.(l)>}; separator="\n">

[RuleVersion(<namedActions.version; null="0">)]
<if(currentRule.modifiers)><currentRule.modifiers:{f | <f> }><else>public <endif><currentRule.ctxType>
<csIdentifier.(currentRule.name)>(<args; separator=", "> {
<currentRule.ctxType> _localctx = new <currentRule.ctxType>(Context, State<currentRule.args:{a | ,
<csIdentifier.(a.name)>}>);
EnterRule(_localctx,
<currentRule.startState>, RULE_<currentRule.name>);
<namedActions.init>
<locals; separator="\n">
try {
<if(currentRule.hasLookaheadBlock)>
int _alt;
<endif>
<code>
<postamble; separator="\n">
<namedActions.after>
}
<if(exceptions)>
<exceptions; separator="\n">
<else>

```

```

catch (RecognitionException re) {
    _localctx.exception = re;
    ErrorHandler.ReportError(this, re);
    ErrorHandler.Recover(this, re);
}
<endif>
finally {
    <finallyAction>
    ExitRule();
}
return _localctx;
}
>>

```

```

LeftFactoredRuleFunction(currentRule,args,code,locals,namedActions,finallyAction,postamble) ::=
<<

```

```

<if(currentRule.modifiers)><currentRule.modifiers:{f | <f> }><else>private <endif><currentRule.ctxType>
<csIdentifier(currentRule.name)><(args; separator=", "> {
    <currentRule.ctxType> _localctx = new <currentRule.ctxType>(Context, State<currentRule.args:{a | ,
<csIdentifier(a.name)>}>);
    EnterLeftFactoredRule(_localctx, <currentRule.startState>, RULE_<currentRule.variantOf>);
    <namedActions.init>
    <locals;
    separator="\n">
    try {
    <if(currentRule.hasLookaheadBlock)>
        int _alt;
    <endif>
    <code>
    <postamble; separator="\n">
    <namedActions.after>
    }
    catch (RecognitionException re) {
        _localctx.exception = re;
        ErrorHandler.ReportError(this, re);
        ErrorHandler.Recover(this, re);
    }
    finally {
        <finallyAction>
        ExitRule();
    }
    return _localctx;
}
>>

```

```

// This behaves similar to RuleFunction (enterRule is called, and no adjustments
// are made to the parse tree), but since it's still a variant no context class

```

```

// needs to be generated.
LeftUnfactoredRuleFunction(currentRule,args,code,locals,namedActions,finallyAction,postamble) ::=
<<

<if(currentRule.modifiers)><currentRule.modifiers:{f | <f> }><else>private <endif><currentRule.ctxType>
<csIdentifier.(currentRule.name)><(args; separator=", "> {
  <currentRule.ctxType> _localctx = new <currentRule.ctxType>(Context, State<currentRule.args:{a | ,
<csIdentifier.(a.name)>>>);
  EnterRule(_localctx,
    <currentRule.startState>, RULE_<currentRule.variantOf>);
  <namedActions.init>
  <locals; separator="\n">
  try {
    <if(currentRule.hasLookaheadBlock)>
      int _alt;
    <endif>
    <code>
    <postamble; separator="\n">
    <namedActions.after>
  }
  catch (RecognitionException re) {
    _localctx.exception = re;
    ErrorHandler.ReportError(this, re);
    ErrorHandler.Recover(this, re);
  }
  finally {
    <finallyAction>
    ExitRule();
  }
  return _localctx;
}
>>

```

```

LeftRecursiveRuleFunction(currentRule,args,code,locals,ruleCtx,altLabelCtxs,
  namedActions,finallyAction,postamble) ::=
<<

```

```

<ruleCtx>
<altLabelCtxs:{l | <altLabelCtxs.(l)>}; separator="\n">

[RuleVersion(<namedActions.version; null="0">)]
<if(currentRule.modifiers)><currentRule.modifiers:{f | <f> }><else>public <endif><currentRule.ctxType>
<csIdentifier.(currentRule.name)><(args; separator=", "> {
  return <csIdentifier.(currentRule.name)><(0<currentRule.args:{a | , <csIdentifier.(a.name)>>>);
}

private <currentRule.ctxType> <csIdentifier.(currentRule.name)><(int

```



```

_p<args:{ a | , <a>}> {
ParserRuleContext _parentctx = Context;
int _parentState = State;
<currentRule.ctxType> _localctx = new <currentRule.ctxType>(Context, _parentState<currentRule.args:{ a | ,
<csIdentifier.(a.name)>}>);
<currentRule.ctxType> _prevctx = _localctx;
int _startState = <currentRule.startState>;
EnterRecursionRule(_localctx, <currentRule.startState>, RULE_<currentRule.name>, _p);
<namedActions.init>
<locals; separator="\n">
try {
<if(currentRule.hasLookaheadBlock)>
int _alt;
<endif>
<code>
<postamble; separator="\n">
<namedActions.after>
}
catch (RecognitionException re) {
_localctx.exception = re;
ErrorHandler.ReportError(this, re);
ErrorHandler.Recover(this, re);
}
finally {
<finallyAction>
UnrollRecursionContexts(_parentctx);
}
return _localctx;
}
>>

```

```

CodeBlockForOuterMostAlt(currentOuterMostAltCodeBlock, locals, preamble, ops) ::= <<
<if(currentOuterMostAltCodeBlock.altLabel)>_localctx = new <currentOuterMostAltCodeBlock.altLabel;
format="cap">Context(_localctx);<endif>
EnterOuterAlt(_localctx, <currentOuterMostAltCodeBlock.alt.altNum>);
<CodeBlockForAlt(currentAltCodeBlock=currentOuterMostAltCodeBlock, ...)>
>>

```

```

CodeBlockForAlt(currentAltCodeBlock, locals, preamble, ops) ::= <<
{
<locals; separator="\n">
<preamble; separator="\n">
<ops; separator="\n">
}
>>

```

```

LL1AltBlock(choice, preamble, alts, error) ::= <<
State = <choice.stateNumber>;

```

```

ErrorHandler.Sync(this);
<if(choice.label)><labelref(choice.label)> = TokenStream.LT(1);<endif>
<preamble; separator="\n">
switch (TokenStream.LA(1)) {
<choice.altLook,alts:{look,alt| <cases(ttypes=look)>
<alt>
break;}; separator="\n">
default:
<error>
}
>>

```

```

LL1OptionalBlock(choice, alts, error) ::= <<
State = <choice.stateNumber>;
ErrorHandler.Sync(this);
switch (TokenStream.LA(1)) {
<choice.altLook,alts:{look,alt| <cases(ttypes=look)>
<alt>
break;}; separator="\n">
default:
<error>
}
>>

```

```

LL1OptionalBlockSingleAlt(choice, expr, alts, preamble, error, followExpr)
::= <<
State = <choice.stateNumber>;
ErrorHandler.Sync(this);
<preamble; separator="\n">
if (<expr>) {
<alts; separator="\n">
}
<!else if ( !(<followExpr>) ) <error!>
>>

```

```

LL1StarBlockSingleAlt(choice, loopExpr, alts, preamble, iteration) ::= <<
State = <choice.stateNumber>;
ErrorHandler.Sync(this);
<preamble; separator="\n">
while (<loopExpr>) {
<alts; separator="\n">
State = <choice.loopBackStateNumber>;
ErrorHandler.Sync(this);
<iteration>
}
>>

```

```

LL1PlusBlockSingleAlt(choice, loopExpr, alts, preamble, iteration) ::= <<

```

```

State = <choice.blockStartStateNumber>;<! alt block decision !>
ErrorHandler.Sync(this);
<preamble; separator="\n">
do {
  <alts; separator="\n">
  State = <choice.stateNumber>;<! loopback/exit decision !>
  ErrorHandler.Sync(this);
  <iteration>
} while ( <loopExpr> );
>>

// LL(*) stuff

AltBlock(choice, preamble, alts, error) ::= <<
State = <choice.stateNumber>;
ErrorHandler.Sync(this);
<if(choice.label)><labelref(choice.label)> = TokenStream.LT(1);<endif>
<preamble;
separator="\n">
switch ( Interpreter.AdaptivePredict(TokenStream,<choice.decision>,Context) ) {
<alts:{alt |
case <i>:
  <alt>
  break;}; separator="\n">
}
>>

OptionalBlock(choice, alts, error) ::= <<
State = <choice.stateNumber>;
ErrorHandler.Sync(this);
switch ( Interpreter.AdaptivePredict(TokenStream,<choice.decision>,Context) ) {
<alts:{alt |
case <i><if(!choice.ast.greedy)>+1<endif>:
  <alt>
  break;}; separator="\n">
}
>>

StarBlock(choice, alts, sync, iteration) ::= <<
State = <choice.stateNumber>;
ErrorHandler.Sync(this);
_alt = Interpreter.AdaptivePredict(TokenStream,<choice.decision>,Context);
while ( _alt!=<choice.exitAlt> && _alt!=global::Antlr4.Runtime.Atn.ATN.INVALID_ALT_NUMBER ) {
if ( _alt==1<if(!choice.ast.greedy)>+1<endif> ) {
  <iteration>
  <alts> <! should only be one !>
}
State = <choice.loopBackStateNumber>;

```

```

ErrorHandler.Sync(this);
_alt = Interpreter.AdaptivePredict(TokenStream,<choice.decision>,Context);
}
>>

```

```

PlusBlock(choice, alts, error) ::= <<
State
= <choice.blockStartStateNumber>;<! alt block decision !>
ErrorHandler.Sync(this);
_alt = 1<if(!choice.ast.greedy)>+1<endif>;
do {
switch (_alt) {
<alts:{alt|
case <i><if(!choice.ast.greedy)>+1<endif>:
<alt>
break;}; separator="\n">
default:
<error>
}
State = <choice.loopBackStateNumber>;<! loopback/exit decision !>
ErrorHandler.Sync(this);
_alt = Interpreter.AdaptivePredict(TokenStream,<choice.decision>,Context);
} while ( _alt!=<choice.exitAlt> && _alt!=global::Antlr4.Runtime.Atn.ATN.INVALID_ALT_NUMBER );
>>

```

```

Sync(s) ::= "Sync(<s.expecting.name>);"

```

```

ThrowNoViableAlt(t) ::= "throw new NoViableAltException(this);"

```

```

TestSetInline(s) ::= <<
<s.bitsets:{bits | <if(rest(rest(bits.ttypes)))><bitsetBitfieldComparison(s, bits)><else><bitsetInlineComparison(s,
bits)><endif>; separator=" || ">
>>

```

```

// Java language spec 15.19 - shift operators mask operands rather than overflow to 0... need range test
testShiftInRange(shiftAmount) ::= <<
((<shiftAmount>) & ~0x3f) == 0
>>

```

```

// produces
smaller bytecode only when bits.ttypes contains more than two items
bitsetBitfieldComparison(s, bits) ::= <%
(<testShiftInRange({<offsetShift(s.varName, bits.shift)>})> && ((1L \<< <offsetShift(s.varName, bits.shift)>) &
(<bits.ttypes:{ttype | (1L \<< <offsetShift(tokenType.(ttype), bits.shift)>)}; separator=" | ">)) != 0)
%>

```

```

isZero ::= [
"0":true,

```

```

default:false
]

offsetShift(shiftAmount, offset) ::= <%
<if(!isZero(offset))><shiftAmount> - <offset><else><shiftAmount><endif>
%>

// produces more efficient bytecode when bits.ttypes contains at most two items
bitsetInlineComparison(s, bits) ::= <%
<bits.ttypes:{ ttype | <s.varName>==<tokenType.(ttype)>}; separator=" || ">
%>

cases(ttypes) ::= <<
<ttypes:{ t | case <tokenType.(t)>:}; separator="\n">
>>

InvokeRule(r, argExprsChunks) ::= <<
State = <r.stateNumber>; <if(r.labels)><r.labels:{1 | <labelref(l)> =
}><endif><csIdentifier.(r.name)><(<if(r.ast.options.p)><r.ast.options.p><if(argExprsChunks)><endif><endif><arg
ExprsChunks>);
>>

MatchToken(m)
::= <<
State = <m.stateNumber>; <if(m.labels)><m.labels:{1 | <labelref(l)> = }><endif>Match(<tokenType.(m.name)>);
>>

MatchSet(m, expr, capture) ::= "<CommonSetStuff(m, expr, capture, false)>"

MatchNotSet(m, expr, capture) ::= "<CommonSetStuff(m, expr, capture, true)>"

CommonSetStuff(m, expr, capture, invert) ::= <<
State = <m.stateNumber>;
<if(m.labels)><m.labels:{1 | <labelref(l)> = }>TokenStream.LT(1);<endif>
<capture>
if ( <if(invert)><m.varName> \<= 0 || <else>!<endif><(<expr>) ) {
  <if(m.labels)><m.labels:{1 | <labelref(l)> = }><endif>ErrorHandler.RecoverInline(this);
}
else {
  ErrorHandler.ReportMatch(this);
  Consume();
}
>>

Wildcard(w) ::= <<
State = <w.stateNumber>;
<if(w.labels)><w.labels:{1 | <labelref(l)> = }><endif>MatchWildcard();
>>

```

```

// ACTION STUFF

Action(a, foo, chunks) ::= "<chunks>"

ArgAction(a, chunks) ::= "<chunks>"

SemPred(p, chunks, failChunks) ::= <<
State = <p.stateNumber>;
if (!(<chunks>)) throw new FailedPredicateException(this, <p.predicate><if(failChunks)>,
<failChunks><elseif(p.msg)>, <p.msg><endif>);
>>

ExceptionClause(e, catchArg, catchAction) ::= <<
catch (<catchArg>) {
<catchAction>
}
>>

// lexer actions are not associated with model objects

LexerSkipCommand() ::= "Skip();"
LexerMoreCommand() ::= "More();"
LexerPopModeCommand() ::= "PopMode();"

LexerTypeCommand(arg, grammar) ::= "_type = <tokenType.(arg)>);"
LexerChannelCommand(arg, grammar) ::= "_channel = <channelName.(arg)>);"
LexerModeCommand(arg, grammar) ::= "_mode = <modeName.(arg)>);"
LexerPushModeCommand(arg, grammar) ::= "PushMode(<modeName.(arg)>);"

ActionText(t) ::= "<t.text>"
ActionTemplate(t) ::= "<t.st>"
ArgRef(a) ::= "_localctx.<csIdentifier.(a.name)>"
LocalRef(a) ::= "_localctx.<csIdentifier.(a.name)>"
RetValRef(a) ::= "_localctx.<csIdentifier.(a.name)>"
QRetValRef(a) ::= "<ctx(a)>.<a.dict>.<csIdentifier.(a.name)>"
/** How to translate $tokenLabel */
TokenRef(t) ::= "<ctx(t)>.<csIdentifier.(tokenType.(t.name))>"
LabelRef(t)
::= "<ctx(t)>.<csIdentifier.(t.name)>"
ListLabelRef(t) ::= "<ctx(t)>.<ListLabelName(csIdentifier.(t.name))>"
SetAttr(s,rhsChunks) ::= "<ctx(s)>.<csIdentifier.(s.name)> = <rhsChunks>);"

TokenLabelType() ::= "<file.TokenLabelType; null={IToken}>"
InputSymbolType() ::= "<file.InputSymbolType; null={IToken}>"

TokenPropertyRef_text(t) ::= "<ctx(t)>.<tokenType.(t.label)>!=null?<ctx(t)>.<tokenType.(t.label)>.Text:null)"
TokenPropertyRef_type(t) ::= "<ctx(t)>.<tokenType.(t.label)>!=null?<ctx(t)>.<tokenType.(t.label)>.Type:0)"

```

```

TokenPropertyRef_line(t) ::= "<ctx(t)>.<tokenType.(t.label)>!=null?<ctx(t)>.<tokenType.(t.label)>.Line:0)"
TokenPropertyRef_pos(t) ::=
"<ctx(t)>.<tokenType.(t.label)>!=null?<ctx(t)>.<tokenType.(t.label)>.CharPositionInLine:0)"
TokenPropertyRef_channel(t) ::=
"<ctx(t)>.<tokenType.(t.label)>!=null?<ctx(t)>.<tokenType.(t.label)>.Channel:0)"
TokenPropertyRef_index(t) ::=
"<ctx(t)>.<tokenType.(t.label)>!=null?<ctx(t)>.<tokenType.(t.label)>.TokenIndex:0)"
TokenPropertyRef_int(t)
::= "<ctx(t)>.<tokenType.(t.label)>!=null?int.Parse(<ctx(t)>.<tokenType.(t.label)>.Text):0)"

RulePropertyRef_start(r) ::= "<ctx(r)>.<r.label>!=null?(<ctx(r)>.<r.label>.Start):null)"
RulePropertyRef_stop(r) ::= "<ctx(r)>.<r.label>!=null?(<ctx(r)>.<r.label>.Stop):null)"
RulePropertyRef_text(r) ::=
"<ctx(r)>.<r.label>!=null?TokenStream.GetText(<ctx(r)>.<r.label>.Start,<ctx(r)>.<r.label>.Stop):null)"
RulePropertyRef_ctx(r) ::= "<ctx(r)>.<r.label>"
RulePropertyRef_parser(r) ::= "this"

ThisRulePropertyRef_start(r) ::= "_localctx.Start"
ThisRulePropertyRef_stop(r) ::= "_localctx.Stop"
ThisRulePropertyRef_text(r) ::= "TokenStream.GetText(_localctx.Start, TokenStream.LT(-1))"
ThisRulePropertyRef_ctx(r) ::= "_localctx"
ThisRulePropertyRef_parser(r) ::= "this"

NonLocalAttrRef(s) ::= <%((<s.ruleName;
format="cap">Context)GetInvokingContext(<s.ruleIndex>)).<csIdentifier.(s.name)>%>
SetNonLocalAttr(s, rhsChunks) ::=
<%((<s.ruleName; format="cap">Context)GetInvokingContext(<s.ruleIndex>)).<csIdentifier.(s.name)>
= <rhsChunks>:%>

AddToLabelList(a) ::= "<ctx(a.label)>.<a.listName>.Add(<labelref(a.label)>);"

TokenDecl(t) ::= "<TokenLabelType() <csIdentifier.(tokenType.(t.name))>"
TokenTypeDecl(t) ::= "int <csIdentifier.(tokenType.(t.name))>);"
TokenListDecl(t) ::= "IList<IToken> <csIdentifier.(tokenType.(t.name))> = new List<IToken>()"
RuleContextDecl(r) ::= "<r.ctxName> <csIdentifier.(r.name)>"
RuleContextListDecl(rdecl) ::= "IList<<rdecl.ctxName>> <csIdentifier.(rdecl.name)> = new
List<<rdecl.ctxName>>()"

contextGetterCollection(elementType) ::= <%
<elementType>[]
%>

ContextTokenGetterDecl(t) ::=
"public ITerminalNode <csIdentifier.(tokenType.(t.name))>() { return
GetToken(<csIdentifier.(parser.name)>.<csIdentifier.(tokenType.(t.name))>, 0); }"
ContextTokenListGetterDecl(t) ::= <<
public <contextGetterCollection("ITerminalNode")> <csIdentifier.(tokenType.(t.name))>() { return
GetTokens(<csIdentifier.(parser.name)>.<csIdentifier.(tokenType.(t.name))>);

```

```

}
>>
ContextTokenListIndexedGetterDecl(t) ::= <<
public ITerminalNode <csIdentifier.(tokenType.(t.name))>(int i) {
    return GetToken(<csIdentifier.(parser.name)>.<csIdentifier.(tokenType.(t.name))>, i);
}
>>
ContextRuleGetterDecl(r) ::= <<
public <r.ctxName> <csIdentifier.(r.name)>() {
    return GetRuleContext\<<r.ctxName>\>(0);
}
>>
ContextRuleListGetterDecl(r) ::= <<
public <contextGetterCollection({<r.ctxName>})> <csIdentifier.(r.name)>() {
    return GetRuleContexts\<<r.ctxName>\>();
}
>>
ContextRuleListIndexedGetterDecl(r) ::= <<
public <r.ctxName> <csIdentifier.(r.name)>(int i) {
    return GetRuleContext\<<r.ctxName>\>(i);
}
>>

LexerRuleContext() ::= "RuleContext"

/** The rule context name is the rule followed by a suffix; e.g.,
 * r becomes rContext.
 */
RuleContextNameSuffix() ::= "Context"

ImplicitTokenLabel(tokenName) ::= "_<tokenType.(tokenName)>"
ImplicitRuleLabel(ruleName) ::= "_<ruleName>"
ImplicitSetLabel(id) ::= "_tset<id>"
ListLabelName(label)
    ::= "_<label>"

CaptureNextToken(d) ::= "<d.varName> = TokenStream.LT(1);"
CaptureNextTokenType(d) ::= "<d.varName> = TokenStream.LA(1);"

StructDecl(struct,ctorAttrs,attrs,getters,dispatchMethods,interfaces,extensionMembers,
    superClass={ParserRuleContext}) ::= <<
public partial class <struct.name> :
<if(contextSuperClass)><contextSuperClass><else>ParserRuleContext<endif><if(interfaces)>, <interfaces>
separator=", "><endif> {
    <attrs:{a | public <a>;}; separator="\n">
    <getters:{g | <g>;}; separator="\n">
    <if(ctorAttrs)>public <struct.name>(ParserRuleContext parent, int invokingState) : base(parent, invokingState) {
    }<endif>
}

```



```

public <struct.name>(ParserRuleContext parent, int invokingState<ctorAttrs:{ a | , <a>}>)
: base(parent, invokingState)
{
<struct.ctorAttrs:{ a | this.<csIdentifier.(a.name)> = <csIdentifier.(a.name)>;}; separator="\n">
}
public override int RuleIndex { get { return RULE_<struct.derivedFromName>; } }
<if(struct.provideCopyFrom)><! don't
need copy unless we have subclasses !>
public <struct.name>() { }
public virtual void CopyFrom(<struct.name> context) {
base.CopyFrom(context);
<struct.attrs:{ a | this.<csIdentifier.(a.name)> = context.<csIdentifier.(a.name)>;}; separator="\n">
}
<endif>
<dispatchMethods; separator="\n">
<extensionMembers; separator="\n">
}
>>

```

```

AltLabelStructDecl(struct,attrs, getters,dispatchMethods) ::= <<
public partial class <struct.name> : <currentRule.name; format="cap">Context {
<attrs:{ a | public <a>;}; separator="\n">
<getters:{ g | <g>;}; separator="\n">
public <struct.name>(<currentRule.name; format="cap">Context context) { CopyFrom(context); }
<dispatchMethods; separator="\n">
}
>>

```

```

ListenerDispatchMethod(method) ::= <<
public override void <if(method.isEnter)>Enter<else>Exit<endif>Rule(IParseTreeListener listener) {
I<parser.grammarName>Listener typedListener = listener as I<parser.grammarName>Listener;
if (typedListener != null) typedListener.<if(method.isEnter)>Enter<else>Exit<endif><struct.derivedFromName>;
format="cap">(this);
}
>>

```

```

VisitorDispatchMethod(method) ::= <<
public override TResult Accept<\<TResult>(IParseTreeVisitor<TResult> visitor) {
I<parser.grammarName>Visitor<\<TResult> typedVisitor = visitor as I<parser.grammarName>Visitor<\<TResult>;
if (typedVisitor != null) return typedVisitor.Visit<struct.derivedFromName; format="cap">(this);
else return visitor.VisitChildren(this);
}
>>

```

```

AttributeDecl(d) ::= "<d.type> <csIdentifier.(d.name)><if(d.initValue)> = <d.initValue><endif>"

```

```

/** If we don't know location of label def x, use this template */

```

```

labelref(x) ::= "<if(!x.isLocal)><typedContext(x.ctx)>.<endif><csIdentifier.(x.name)>"

```

```

/** For any action chunk, what is correctly-typed context struct ptr? */
ctx(actionChunk) ::= "<typedContext(actionChunk.ctx)>"

// only casts _localctx to the type when the cast isn't redundant (i.e. to a sub-context for a labeled alt)
typedContext(ctx) ::= "<if(ctx.provideCopyFrom)>((<ctx.name>)_localctx)<else>_localctx<endif>"

//
// used for left-recursive rules
recRuleAltPredicate(ruleName,opPrec) ::= "Precpred(Context, <opPrec>)"
recRuleSetReturnAction(src,name) ::= "$<name>=$<src>.<name>;"
recRuleSetStopToken() ::= "Context.Stop = TokenStream.LT(-1);"

recRuleAltStartAction(ruleName, ctxName, label, isListLabel) ::= <<
_localctx = new <ctxName>Context(_parentctx, _parentState);
<if(label)>
<if(isListLabel)>
_localctx.<label>.Add(_prevctx);
<else>
_localctx.<label> = _prevctx;
<endif>
<endif>
PushNewRecursionContext(_localctx, _startState, RULE_<ruleName>);
>>

recRuleLabeledAltStartAction(ruleName, currentAltLabel, label, isListLabel) ::= <<
_localctx = new <currentAltLabel; format="cap">Context(new <ruleName; format="cap">Context(_parentctx,
_parentState));
<if(label)>
<if(isListLabel)>
((<currentAltLabel; format="cap">Context)_localctx).<label>.Add(_prevctx);
<else>
((<currentAltLabel; format="cap">Context)_localctx).<label> = _prevctx;
<endif>
<endif>
PushNewRecursionContext(_localctx,
_startState, RULE_<ruleName>);
>>

recRuleReplaceContext(ctxName) ::= <<
_localctx = new <ctxName>Context(_localctx);
Context = _localctx;
_prevctx = _localctx;
>>

recRuleSetPrevCtx() ::= <<
if ( ParseListeners!=null )
TriggerExitRuleEvent();

```

```
_prevctx = _localctx;
```

```
>>
```

```
LexerFile(file, lexer, namedActions) ::= <<  
<fileHeader(file.grammarFileName, file.ANTLRVersion)>
```

```
<if(file.genPackage)>
```

```
namespace <file.genPackage> {
```

```
<endif>
```

```
<namedActions.header>
```

```
using System;
```

```
using System.Text;
```

```
using Antlr4.Runtime;
```

```
using Antlr4.Runtime.Atn;
```

```
using Antlr4.Runtime.Misc;
```

```
using DFA = Antlr4.Runtime.Dfa.DFA;
```

```
<lexer>
```

```
<if(file.genPackage)>
```

```
 } // namespace <file.genPackage>
```

```
<endif>
```

```
>>
```

```
Lexer(lexer, atn, actionFuncs, sempredFuncs, superClass) ::= <<
```

```
[System.CodeDom.Compiler.GeneratedCode("ANTLR", "<file.ANTLRVersion>")]
```

```
[System.CLSCompliant(false)]
```

```
public partial class <csIdentifier.(lexer.name)> : <superClass; null="Lexer"> {
```

```
    protected static DFA[] decisionToDFA;
```

```
    protected static PredictionContextCache
```

```
    sharedContextCache = new PredictionContextCache();
```

```
    public const int
```

```
    <lexer.tokens:{k | <tokenType.(k)>=<lexer.tokens.(k)>}; separator=", ", wrap, anchor>;
```

```
<if(lexer.channels)>
```

```
    public const int
```

```
    <lexer.channels:{k | <csIdentifier.(k)>=<lexer.channels.(k)>}; separator=", ", wrap, anchor>;
```

```
<endif>
```

```
<rest(lexer.modes):{m | public const int <modeName.(m)> = <i>;}; separator="\n">
```

```
    public static string[] modeNames = {
```

```
    <lexer.modes:{m | "<m>"}; separator=", ", wrap, anchor>
```

```
};
```

```
    public static readonly string[] ruleNames = {
```

```
    <lexer.ruleNames:{r | "<r>"}; separator=", ", wrap, anchor>
```

```
};
```

```
<namedActions.members>
```

```
    public <csIdentifier.(lexer.name)>(ICharStream input)
```

```

: base(input)
{
  Interpreter = new LexerATNSimulator(this, _ATN, decisionToDFA, sharedContextCache);
}

<vocabulary(lexer.literalNames, lexer.symbolicNames)>

public override string GrammarFileName { get { return "<lexer.grammarFileName>"; } }

public override string[] RuleNames { get { return ruleNames;
} }

public override string[] ModeNames { get { return modeNames; } }

public override string SerializedAtn { get { return _serializedATN; } }

static <csIdentifier.(lexer.name)>() {
  decisionToDFA = new DFA[_ATN.NumberOfDecisions];
  for (int i = 0; i < _ATN.NumberOfDecisions; i++) {
    decisionToDFA[i] = new DFA(_ATN.GetDecisionState(i), i);
  }
}
<dumpActions(lexer, "", actionFuncs, sempredFuncs)>
<atn>
}
>>

SerializedATN(model) ::= <<
private static string _serializedATN = _serializeATN();
private static string _serializeATN()
{
  StringBuilder sb = new StringBuilder();
  sb.Append("<model.serialized; wrap={}><\n><\t>sb.Append(">");
  return sb.ToString();
}

public static readonly ATN _ATN =
  new ATNDeserializer().Deserialize(_serializedATN.ToCharArray());

>>

initValue(typeName) ::= <<
default(<typeName>)
>>

codeFileExtension() ::= ".cs"

```

```
modeName ::= [  
  "DEFAULT_MODE" : "DefaultMode",  
  default : key  
]
```

```
channelName ::= [  
  "HIDDEN" : "Hidden",  
  "DEFAULT_TOKEN_CHANNEL"  
  : "DefaultTokenChannel",  
  default : key  
]
```

```
tokenType ::= [  
  "EOF" : "Eof",  
  default : key  
]
```

```
csIdentifier ::= [  
  "abstract" : "@abstract",  
  "as" : "@as",  
  "base" : "@base",  
  "bool" : "@bool",  
  "break" : "@break",  
  "byte" : "@byte",  
  "case" : "@case",  
  "catch" : "@catch",  
  "char" : "@char",  
  "checked" : "@checked",  
  "class" : "@class",  
  "const" : "@const",  
  "continue" : "@continue",  
  "decimal" : "@decimal",  
  "default" : "@default",  
  "delegate" : "@delegate",  
  "do" : "@do",  
  "double" : "@double",  
  "else" : "@else",  
  "enum" : "@enum",  
  "event" : "@event",  
  "explicit" : "@explicit",  
  "extern" : "@extern",  
  "false" : "@false",  
  "finally" : "@finally",  
  "fixed" : "@fixed",  
  "float" : "@float",  
  "for" : "@for",  
  "foreach" : "@foreach",
```

```
"goto" : "@goto",
"if" : "@if",
"implicit" : "@implicit",
"in" : "@in",
"int" : "@int",
"interface" : "@interface",
"internal" : "@internal",
"is" : "@is",
"lock" : "@lock",
"long" : "@long",
"namespace" : "@namespace",
"new" : "@new",
>null
: "@null",
"object" : "@object",
"operator" : "@operator",
"out" : "@out",
"override" : "@override",
"params" : "@params",
"private" : "@private",
"protected" : "@protected",
"public" : "@public",
"readonly" : "@readonly",
"ref" : "@ref",
"return" : "@return",
"sbyte" : "@sbyte",
"sealed" : "@sealed",
"short" : "@short",
"sizeof" : "@sizeof",
"stackalloc" : "@stackalloc",
"static" : "@static",
"string" : "@string",
"struct" : "@struct",
"switch" : "@switch",
"this" : "@this",
"throw" : "@throw",
>true" : "@true",
"try" : "@try",
"typeof" : "@typeof",
"uint" : "@uint",
"ulong" : "@ulong",
"unchecked" : "@unchecked",
"unsafe" : "@unsafe",
"ushort" : "@ushort",
"using" : "@using",
"virtual" : "@virtual",
"void" : "@void",
"volatile" : "@volatile",
```

```
"while" : "@while",
default : key
]
```

Found in path(s):

```
* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-
jar/org/antlr/v4/tool/templates/codegen/CSharp/CSharp.stg
No license file was found, but licenses were detected in source scan.
```

```
/*
```

```
[The "BSD licence"]
```

```
Copyright (c) 2005-20012 Terence Parr
```

```
All rights reserved.
```

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```
*/
```

Found in path(s):

```
* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/parse/ANTLRParser.java
No license file was found, but licenses were detected in source scan.
```

```
/*
```

```
* [The "BSD license"]
```

```
* Copyright (c) 2012-2016 Terence Parr
```

```
* Copyright (c) 2012-2016 Sam Harwell
```

```
* All rights reserved.
```

```
*
```

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 \*/

```
// File   : A3Lexer.g
// Author  : Jim Idle (jimi@temporal-wave.com)
// Copyright : Free BSD - See @header clause below
// Version  : First implemented as part of ANTLR 3.2 this is the self
//           hosting ANTLR 3 Lexer.
//
// Description
// -----
// This is the definitive lexer grammar for parsing ANTLR V3.x.x grammars. All other
// grammars are
// derived from this grammar via source code control integration (perforce)
// or by the gdiff tool.
//
// This grammar and its associated grmmars A3Parser.g and A3Walker.g exhibit the following
// traits, which are recommended for all production quality grammars:
//
// 1) They are separate grammars, not composite grammars;
// 2) They implement all supporting methods in a superclass (at least this is recommended
//    for language targets that support inheritance;
// 3) All errors are pushed as far down the parsing chain as possible, which means
//    that the lexer tries to defer error reporting to the parser, and the parser
//    tries to defer error reporting to a semantic phase consisting of a single
//    walk of the AST. The reason for this is that the error messages produced
```



```

// from later phases of the parse will generally have better context and so
// be more useful to the end user. Consider the message: "Syntax error at 'options'"
// vs: "You cannot specify two options{ }
// sections in a single grammar file".
// 4) The lexer is 'programmed' to catch common mistakes such as unterminated literals
// and report them specifically and not just issue confusing lexer mismatch errors.
//

/** Read in an ANTLR grammar and build an AST. Try not to do
 * any actions, just build the tree.
 *
 * The phases are:
 *
 * A3Lexer.g (this file)
 *     A3Parser.g
 *     A3Verify.g (derived from A3Walker.g)
 * assign.types.g
 * define.g
 * buildnfa.g
 * antlr.print.g (optional)
 * codegen.g
 *
 * Terence Parr
 * University of San Francisco
 * 2005
 * Jim Idle (this v3 grammar)
 * Temporal Wave LLC
 * 2009
 */
lexer grammar ANTLRLexer;

// =====
// Note that while this grammar does not care about order of constructs
// that don't really matter, such as options before @header etc, it must first
// be parsed by the original v2 parser, before it replaces it. That parser
// does
// care about order of structures. Hence we are constrained by the v2 parser
// for at least the first bootstrap release that causes this parser to replace
// the v2 version.
// =====

// -----
// Options
//
// V3 option directives to tell the tool what we are asking of it for this
// grammar.
//
options {

```

```

// Target language is Java, which is the default but being specific
// here as this grammar is also meant as a good example grammar for
// for users.
//
language    = Java;

// The super class that this lexer should expect to inherit from, and
// which contains any and all support routines for the lexer. This is
// commented out in this baseline (definitive or normative grammar)
// - see the ANTLR tool implementation for hints on how to use the super
// class
//
//superclass = AbstractA3Lexer;
}

tokens { SEMPRED; TOKEN_REF; RULE_REF; LEXER_CHAR_SET; ARG_ACTION; }

```

```

// Include the copyright
// in this source and also the generated source
//
@lexer::header {
/*
[The "BSD licence"]
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All rights reserved.

```

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```
*/
package org.antlr.v4.parse;
import org.antlr.v4.tool.*;
}

@members {
public static final int COMMENTS_CHANNEL = 2;

public CommonTokenStream tokens; // track stream we push to; need for context info
public boolean isLexerRule = false;

public void grammarError(ErrorType etype, org.antlr.runtime.Token token, Object... args) { }

/** scan backwards from current point in this.tokens list
 * looking for the start of the rule or subrule.
 * Return token or null if for
some reason we can't find the start.
 */
public Token getRuleOrSubruleStartToken() {
    if ( tokens==null ) return null;
    int i = tokens.index();
    int n = tokens.size();
    if ( i>=n ) i = n-1; // seems index == n as we lex
    while ( i>=0 && i<n) {
        int ttype = tokens.get(i).getType();
        if ( ttype == LPAREN || ttype == TOKEN_REF || ttype == RULE_REF ) {
            return tokens.get(i);
        }
        i--;
    }
    return null;
}

// -----
// Comments
//
// ANTLR comments can be multi or single line and we don't care
// which particularly. However we also accept Javadoc style comments
// of the form: /** ... */ and we do take care to distinguish those
// from ordinary multi-line comments
// Note how we guide the lexical PATH because we want to issue a decriptive
// error message in case of a standalone '/' character, which makes no
// sense in ANTLR source code. We also trap unterminated multi-line comments
//
fragment DOC_COMMENT : ;
```

## COMMENT

```
@init {

    // Record the start line
    and offsets as if we need to report an
    // unterminated comment, then we want to show the start of the comment
    // we think is broken, not the end, where people will have to try and work
    // it out themselves.
    //
    int startLine = $line;
    int offset = getCharPositionInLine();
}

: // Eat the first character only, then see if we have a comment
  // or something silly.
  //
  '/' // Comment introducer

(
  // Single line comment, possibly with embedded src/line directives
  // in a similar style to the C pre-processor, allowing generated
  // code to refer the programmer back to the original source code
  // in case of error.
  //
  '/'
  (
    (' $ANTLR')=> ' $ANTLR' SRC
    | ~(NLCHARS)*
  )

  | // Multi-line comment, which may be a documentation comment
    // if it starts /** (note that we protect against accidentally
    // recognizing a comment /**/
as a documentation comment
  //
  /** (
    { input.LA(2) != '/' }?=> '*' { $type = DOC_COMMENT; }
    | { true }?=> // Required to cover all alts with predicates
  )

  // Should we support embedded multiline comments here?
  //
  (
    // Pick out end of multiline comment and exit the loop
    // if we find it.
    //
    { !(input.LA(1) == '*' && input.LA(2) == '/') }?

    // Anything else other than the non-greedy match of
```

```

        // the comment close sequence
        //
        .
    )*
    (
        // Look for the comment terminator, but if it is accidentally
        // unterminated, then we will hit EOF, which will trigger the
        // epsilon alt and hence we can issue an error message relative
        // to the
start of the unterminated multi-line comment
        //
        /*'

        | // Unterminated comment!
        //
        {
            // ErrorManager.msg(Msg.UNTERMINATED_DOC_COMMENT, startLine, offset, $pos, startLine,
offset, $pos, (Object)null);
        }
    )

    | // There was nothing that made sense following the opening '/' and so
    // we issue an error regarding the malformed comment
    //
    {
        // TODO: Insert error message relative to comment start
        //
    }
)
{
    // We do not wish to pass the comments in to the parser. If you are
    // writing a formatter then you will want to preserve the comments off
    // channel, but could just skip and save token space if not.
    //
    $channel=COMMENTS_CHANNEL;
}
;

```

ARG\_OR\_CHARSET

options {k=1;}

: {isLexerRule}?=> LEXER\_CHAR\_SET {\$type=LEXER\_CHAR\_SET;}

| {!isLexerRule}?=> ARG\_ACTION

{

\$type=ARG\_ACTION;

// Set the token text to our gathered string minus outer [ ]

String t = \$text;

t = t.substring(1,t.length()-1);

setText(t);

```

    }
;

fragment
LEXER_CHAR_SET
: '['
  ( '\\' ~('\r'\n')
    | ~('\r'\n'\\'']')
  )*
  ']'
;

// -----
// Argument specs
//
// Certain argument lists, such as those specifying call parameters
// to a rule invocation, or input parameters to a rule specification
// are contained within square brackets. In the lexer we consume them
// all at once and sort them out later in the grammar analysis.
//
fragment
ARG_ACTION
: '['
  (
    ARG_ACTION

    | ('')=>ACTION_STRING_LITERAL

    | ('\')=>ACTION_CHAR_LITERAL

    | ~('[']')
  )*
  ']'
;

// -----
// Actions
//
// Other than making sure to distinguish between { and } embedded
// within what we have assumed to be literals
// in the action code, the
// job of the lexer is merely to gather the code within the action
// (delimited by {}) and pass it to the parser as a single token.
// We know that this token will be asked for its text somewhere
// in the upcoming parse, so setting the text here to exclude
// the delimiting {} is no additional overhead.
//

```

```

ACTION
: NESTED_ACTION
( '?' { $type = SEMPRED; }
( ( WSNLCHARS* '=>' => WSNLCHARS* '=>' // v3 gated sempred
{
Token t = new CommonToken(input, state.type, state.channel, state.tokenStartCharIndex, getCharIndex()-1);
t.setLine(state.tokenStartLine);
t.setText(state.text);
t.setCharPositionInLine(state.tokenStartCharPositionInLine);
grammarError(ErrorType.V3_GATED_SEMPRED, t);
}
)?
)?
;

// -----
// Action structure
//
// Many language targets use { } as block delimiters and so we
// must recursively match { } delimited blocks to balance the
// braces. Additionally, we must make some assumptions about
// literal
string representation in the target language. We assume
// that they are delimited by ' or " and so consume these
// in their own alts so as not to inadvertently match { }.
// This rule calls itself on matching a {
//
fragment
NESTED_ACTION
@init {

// Record the start line and offsets as if we need to report an
// unterminated block, then we want to show the start of the comment
// we think is broken, not the end, where people will have to try and work
// it out themselves.
//
int startLine = getLine();
int offset = getCharPositionInLine();
}

: // Action and other blocks start with opening {
//
'{'
(
// And now we can match one of a number of embedded
// elements within the action until we find a
// } that balances the opening {. If we do not find
// the balanced } then we will hit EOF and can issue

```

```

// an error message about the brace that we believe to
// be mismatched. This won't be foolproof but we will
// be able to at
least report an error against the
// opening brace that we feel is in error and this will
// guide the user to the correction as best we can.
//

// An embedded {} block
//
NESTED_ACTION

|// What appears to be a literal
//
ACTION_CHAR_LITERAL

|// We have assumed that the target language has C/Java
// type comments.
//
COMMENT

|// What appears to be a literal
//
ACTION_STRING_LITERAL

|// What appears to be an escape sequence
//
ACTION_ESC

|// Some other single character that is not
// handled above
//
~(\\|'"|\"|/|'{|'})

)*

(
// Correctly balanced closing brace
//
}'

|// Looks like have an imbalanced {} block, report
// with respect to the opening brace.
//
{
// TODO: Report imbalanced {}
System.out.println("Block starting at line

```



```

" + startLine + " offset " + (offset+1) + " contains imbalanced {} or is missing a }");
    }
)
;

// Keywords
// -----
// keywords used to specify ANTLR v3 grammars. Keywords may not be used as
// labels for rules or in any other context where they would be ambiguous
// with the keyword vs some other identifier
// OPTIONS, TOKENS, and CHANNELS must also consume the opening brace that captures
// their option block, as this is the easiest way to parse it separate
// to an ACTION block, despite it using the same {} delimiters.
//
OPTIONS    : 'options' WSNLCHARS* '{' ;
TOKENS_SPEC : 'tokens' WSNLCHARS* '{' ;
CHANNELS   : 'channels' WSNLCHARS* '{' ;

IMPORT     : 'import'      ;
FRAGMENT   : 'fragment'   ;
LEXER      : 'lexer'      ;
PARSER     : 'parser'     ;
GRAMMAR    : 'grammar'    ;
TREE_GRAMMAR : 'tree' WSNLCHARS* 'grammar' ;
PROTECTED  : 'protected'  ;
PUBLIC     : 'public'     ;
;
PRIVATE    : 'private'    ;
RETURNS    : 'returns'    ;
LOCALS     : 'locals'     ;
THROWS     : 'throws'     ;
CATCH      : 'catch'      ;
FINALLY    : 'finally'    ;
MODE       : 'mode'       ;

// -----
// Punctuation
//
// Character sequences used as separators, delimiters, operators, etc
//
COLON      : ':'
    {
        // scan backwards, looking for a RULE_REF or TOKEN_REF.
        // which would indicate the start of a rule definition.
        // If we see a LPAREN, then it's the start of the subrule.
        // this.tokens is the token string we are pushing into, so
        // just loop backwards looking for a rule definition. Then

```

```

// we set isLexerRule.
Token t = getRuleOrSubruleStartToken();
if ( t!=null ) {
    if ( t.getType()==RULE_REF ) isLexerRule = false;

    else if ( t.getType()==TOKEN_REF ) isLexerRule = true;
        // else must be subrule; don't alter context
    }
}
;

COLONCOLON  : '::'      ;
COMMA       : ','      ;
SEMI        : ';'      ;
LPAREN      : '('      ;
RPAREN      : ')'      ;
RARROW      : '->'     ;
LT          : '<'      ;
GT          : '>'      ;
ASSIGN      : '='      ;
QUESTION    : '?'      ;
SYNPRED     : '=>'    ;
{
    Token t = new CommonToken(input, state.type, state.channel,
        state.tokenStartCharIndex, getCharIndex()-1);
    t.setLine(state.tokenStartLine);
    t.setText(state.text);
    t.setCharPositionInLine(state.tokenStartCharPositionInLine);
    grammarError(ErrorType.V3_SYNPRED, t);
    $channel=HIDDEN;
}
;

STAR        : '*'      ;
;
PLUS        : '+'      ;
PLUS_ASSIGN : '+='     ;
OR          : '|'      ;
DOLLAR      : '$'      ;
DOT         : '.'      ; // can be WILDCARD or DOT in qid or imported rule ref
RANGE       : '..'     ;
AT          : '@'      ;
POUND       : '#'      ;
NOT         : '~'      ;
RBRACE      : '}'      ;

/** Allow unicode rule/token names */
ID : a=NameStartChar NameChar*
{
    if ( Grammar.isTokenName($a.text) ) $type = TOKEN_REF;
}

```

```
else $type = RULE_REF;
}
;
```

fragment

```
NameChar : NameStartChar
| '0'..'9'
| '_'
| '\u00B7'
| '\u0300'..\u036F'
| '\u203F'..\u2040'
;
```

fragment

```
NameStartChar
: 'A'..'Z' | 'a'..'z'
| '\u00C0'..\u00D6'
| '\u00D8'..\u00F6'
| '\u00F8'..\u02FF'
| '\u0370'..\u037D'
| '\u037F'..\u1FFF'
| '\u200C'..\u200D'
| '\u2070'..\u218F'
| '\u2C00'..\u2FEF'
| '\u3001'..\uD7FF'
| '\uF900'..\uFDCF'
| '\uFDF0'..\uFEFE'
| '\uFF00'..\uFFFD'
; // ignores | [\u10000-\uEFFFF] ;
```

```
// -----
```

```
// Literals embedded in actions
```

```
//
```

```
// Note that we have made the assumption that the language used within
```

```
// actions uses the fairly standard " and ' delimiters for literals and
```

```
// that within these literals, characters are escaped using the \ character.
```

```
// There are some languages which do not conform to this in all cases, such
```

```
// as by using /string/ and so on. We will have to deal with such cases if
```

```
// if they come up in targets.
```

```
//
```

```
// Within actions, or other structures that are not part of the ANTLR
```

```
// syntax, we may encounter literal characters. Within these, we do
```

```
// not want to inadvertently
```

```
match things like '}' and so we eat them
```

```
// specifically. While this rule is called CHAR it allows for the fact that
```

```
// some languages may use/allow ' as the string delimiter.
```

```
//
```

```

fragment
ACTION_CHAR_LITERAL
: "\"" ((\\)=>ACTION_ESC | ~\" )* "\""
;

// Within actions, or other structures that are not part of the ANTLR
// syntax, we may encounter literal strings. Within these, we do
// not want to inadvertently match things like '}' and so we eat them
// specifically.
//
fragment
ACTION_STRING_LITERAL
: "\"" ((\\)=>ACTION_ESC | ~\" )* "\""
;

// Within literal strings and characters that are not part of the ANTLR
// syntax, we must allow for escaped character sequences so that we do not
// inadvertently recognize the end of a string or character when the terminating
// delimiter has been escaped.
//
fragment
ACTION_ESC
: '\\ .
;

// -----
// Integer
//
// Obviously (I hope) match an arbitrary long sequence of digits.
//
INT : ('0'..'9')+
;

// -----
// Source
spec
//
// A fragment rule for picking up information about an originating
// file from which the grammar we are parsing has been generated. This allows
// ANTLR to report errors against the originating file and not the generated
// file.
//
fragment
SRC : 'src' WSCHARS+ file=ACTION_STRING_LITERAL WSCHARS+ line=INT
{
    // TODO: Add target specific code to change the source file name and current line number
    //
}

```

```

;

// -----
// Literal string
//
// ANTLR makes no distinction between a single character literal and a
// multi-character string. All literals are single quote delimited and
// may contain unicode escape sequences of the form \uxxxx, where x
// is a valid hexadecimal number (as per Java basically).
STRING_LITERAL
: "\"" ( ( ESC_SEQ | ~("\|\"|\r|\n') ) ) *
  ( "\""
  | // Unterminated string literal
    {
      Token t = new CommonToken(input, state.type, state.channel, state.tokenStartCharIndex,
getCharIndex()-1);
      t.setLine(state.tokenStartLine);
      t.setText(state.text);
      t.setCharPositionInLine(state.tokenStartCharPositionInLine);
      grammarError(ErrorType.UNTERMINATED_STRING_LITERAL, t);
    }
  )
;

// A valid hex digit specification
//
fragment
HEX_DIGIT : ('0'..'9'|'a'..'f'|'A'..'F') ;

// Any kind of escaped character that we can embed within ANTLR
// literal strings.
//
fragment
ESC_SEQ
: "\\"
  (
    // The standard escaped character set such as tab, newline,
    // etc.
    //
    'b'|'t'|'n'|'f'|'r'|'\"'|'\\'|'\'|'\'

    // A Java style Unicode escape sequence
    //
    UNICODE_ESC

    // An illegal escape sequence
    //
    {

```

```

    Token t = new CommonToken(input, state.type, state.channel, getCharIndex()-1, getCharIndex());
    t.setText(t.getText());
    t.setLine(input.getLine());

    t.setCharPositionInLine(input.getCharPositionInLine()-1);
    grammarError(ErrorType.INVALID_ESCAPE_SEQUENCE, t);
  }
)
;

```

```

fragment
UNICODE_ESC

```

```

@init {

// Flag to tell us whether we have a valid number of
// hex digits in the escape sequence
//
int hCount = 0;
}

: 'u' // Leadin for unicode escape sequence

// We now require 4 hex digits. Note though
// that we accept any number of characters
// and issue an error if we do not get 4. We cannot
// use an infinite count such as + because this
// might consume too many, so we lay out the lexical
// options and issue an error at the invalid paths.
//
(
  (
    HEX_DIGIT { hCount++; }
    (
      HEX_DIGIT { hCount++; }
      (
        HEX_DIGIT { hCount++; }
        (
          // Four valid hex digits, we are good
          //
          HEX_DIGIT { hCount++; }

          | // Three valid digits
        )
      )
      | // Two valid digits
    )
  )
  | // One valid digit

```

```

    )
    )
    | // No valid hex digits at all
)

// Now check the digit count and issue an error if we need to
//
{
  if (hCount != 4) {
    Token t = new CommonToken(input, state.type, state.channel, getCharIndex()-3-hCount, getCharIndex()-
1);
    t.setText(t.getText());
    t.setLine(input.getLine());
    t.setCharPositionInLine(input.getCharPositionInLine()-hCount-2);
    grammarError(ErrorType.INVALID_ESCAPE_SEQUENCE, t);
  }
}
;

// -----
// Whitespace
//
// Characters and character constructs that are of no import
// to the parser and are used to make the grammar easier to read
// for humans.
//
WS
: (
  ''
  | '\t'
  | '\r'
  | '\n'
  | '\f'
)+
{$channel=HIDDEN;}
;

// A fragment rule for use in recognizing end of line in
// rules like COMMENT.
//
fragment
NLCHARS
: '\n' | '\r'
;

// A fragment rule for recognizing traditional whitespace
// characters within lexer rules.
//

```

```

fragment
WSCHARS
    : ' | \t | \f
    ;

// A fragment rule for recognizing both traditional whitespace and
// end of line markers, when we don't care to distinguish but don't
// want any action code going on.
//
fragment
WSNLCHARS
    : ' | \t | \f | \n | \r
    ;

// This rule allows ANTLR 4 to parse grammars using the UTF-8 encoding with a
// byte order mark. Since this Unicode character doesn't appear as a token
// anywhere else in the grammar, we can simply skip all instances of it without
// problem. This rule will not break usage of \uFEFF inside a LEXER_CHAR_SET or
// STRING_LITERAL.
UnicodeBOM
    : '\uFEFF' {skip();}
    ;

// -----
// Illegal Character
//
// This
// is an illegal character trap which is always the last rule in the
// lexer specification. It matches a single character of any value and being
// the last rule in the file will match when no other rule knows what to do
// about the character. It is reported as an error but is not passed on to the
// parser. This means that the parser to deal with the gramamr file anyway
// but we will not try to analyse or code generate from a file with lexical
// errors.
//
ERRCHAR
    : .
    {
        Token t = new CommonToken(input, state.type, state.channel, state.tokenStartCharIndex, getCharIndex()-1);
        t.setLine(state.tokenStartLine);
        t.setText(state.text);
        t.setCharPositionInLine(state.tokenStartCharPositionInLine);
        String msg = getTokenErrorDisplay(t) + " came as a complete surprise to me";
        grammarError(ErrorType.SYNTAX_ERROR, t, msg);
        state.syntaxErrors++;
        skip();
    }
    ;

```



Found in path(s):

\* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/parse/ANTLRLexer.g

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 \*/

```
tree grammar BlockSetTransformer;
options {
language    = Java;
tokenVocab = ANTLRParser;
ASTLabelType = GrammarAST;
output     = AST;
filter     = true;
}

@header {
package org.antlr.v4.parse;
import org.antlr.v4.misc.Utils;
import org.antlr.v4.misc.*;
import org.antlr.v4.tool.*;
import org.antlr.v4.tool.ast.*;
import java.util.List;
import java.util.Set;
import
java.util.HashSet;
import java.util.ArrayList;
import org.antlr.v4.runtime.misc.IntervalSet;
}

@members {
public String currentRuleName;
public GrammarAST currentAlt;
```

```

public Grammar g;
public BlockSetTransformer(TreeNodeStream input, Grammar g) {
    this(input, new RecognizerSharedState());
    this.g = g;
}
}

topdown
: ^(RULE (id=TOKEN_REF|id=RULE_REF) {currentRuleName=$id.text;} .+)
| setAlt
| ebnfBlockSet
| blockSet
;

setAlt
: {inContext("RULE BLOCK")}?
ALT {currentAlt = $start;}
;

// (BLOCK (ALT (+ (BLOCK (ALT INT) (ALT ID))))))
ebnfBlockSet
@after {
GrammarTransformPipeline.setGrammarPtr(g, $tree);
}
: ^(ebnfSuffix blockSet) -> ^(ebnfSuffix ^(BLOCK<BlockAST> ^(ALT<AltAST> blockSet)))
;

ebnfSuffix
@after { $tree = (GrammarAST)adaptor.dupNode($start); }
: OPTIONAL
| CLOSURE
| POSITIVE_CLOSURE
;

blockSet
@init {
boolean inLexer = Grammar.isTokenName(currentRuleName);
}
@after {
GrammarTransformPipeline.setGrammarPtr(g, $tree);
}
: {inContext("RULE")}?
// top-level: rule block and > 1 alt
^(BLOCK ^(alt=ALT elementOptions? {((AltAST)$alt).altLabel==null}? setElement[inLexer]) (^(ALT
elementOptions? setElement[inLexer]) )+)
-> ^(BLOCK<BlockAST>[$BLOCK.token] ^(ALT<AltAST>[$BLOCK.token,"ALT"] ^(SET[$BLOCK.token,
"SET"] setElement+)))
| {!inContext("RULE")}? // if not rule block and > 1 alt

```

```

^(BLOCK ^(ALT elementOptions? setElement[inLexer]) ( ^(ALT elementOptions? setElement[inLexer]) )+
-> ^(SET[$BLOCK.token, "SET"] setElement+)
;

setElement[boolean inLexer]
@after {
GrammarTransformPipeline.setGrammarPtr(g, $tree);
}
: ( ^(a=STRING_LITERAL elementOptions) {!inLexer ||
CharSupport.getCharValueFromGrammarCharLiteral($a.getText())!=-1 }?
| a=STRING_LITERAL {!inLexer || CharSupport.getCharValueFromGrammarCharLiteral($a.getText())!=-1 }?
| {!inLexer}?=> ^(TOKEN_REF elementOptions)
| {!inLexer}?=> TOKEN_REF
| {inLexer}?=> ^(RANGE a=STRING_LITERAL b=STRING_LITERAL)
{CharSupport.getCharValueFromGrammarCharLiteral($a.getText())!=-1
&&
CharSupport.getCharValueFromGrammarCharLiteral($b.getText())!=-1 }?
)
;

```

```

elementOptions
: ^(ELEMENT_OPTIONS elementOption*)
;

```

```

elementOption
: ID
| ^(ASSIGN id=ID v=ID)
| ^(ASSIGN ID v=STRING_LITERAL)
| ^(ASSIGN ID v=ACTION)
| ^(ASSIGN ID v=INT)
;

```

Found in path(s):

\* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/parse/BlockSetTransformer.g

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- \*/

```
atn(startState, states, edges, rankdir, decisionRanks, useBox) ::= <<
digraph ATN {
rankdir=LR;
<decisionRanks; separator="\n">
<states; separator="\n">
<edges; separator="\n">
}
>>
```

```
dfa(name, startState, states, edges, rankdir, decisionRanks, useBox) ::= <<
digraph <name> {
<if(rankdir)>rankdir=<rankdir>;<endif>
<decisionRanks; separator="\n">
<states; separator="\n">
<edges;
separator="\n">
}
>>
```

```
decision-rank(states) ::= <<
{rank=same; rankdir=TB; <states:{s | s<s>}; separator=" "; >}
>>
```

```
edge(src,target,label,arrowhead,transitionIndex) ::= <<
<src><if(transitionIndex)>p<transitionIndex><endif> -> <target> [fontsize=11, fontname="Courier", arrowsize=.7,
label = "<label>"<if(arrowhead)>, arrowhead = <arrowhead><endif>];
>>
```

```

action-edge(src,target,label,arrowhead,transitionIndex) ::= <<
<src><if(transitionIndex)>p<transitionIndex><endif> -> <target> [fontsize=11, fontname="Courier", arrowsize=.7,
label = "<label>"<if(arrowhead)>, arrowhead = <arrowhead><endif>];
>>

```

```

epsilon-edge(src,label,target,arrowhead,transitionIndex,loopback=false) ::= <<
<src><if(transitionIndex)>p<transitionIndex><endif> -> <target> [fontname="Times-Italic",
label="&epsilon;"<if(loopback)>, style="dashed"<endif>];
>>

```

```

state(state, label, name, transitions) ::= <%
<name>[fontsize=11,
label="
<! rest(transition) tests for decision states: these nodes have a non-empty
set of transitions after the first one. !>
<if(rest(transitions))>
{
<! Label on the left side of the record node. !>
<label>
|
<! Named ports in order on right side of record node, no display text. !>
{<transitions:{t|\<p<i0>>}; separator="|">}}
<else>
<label>
<endif>
"
<if(rest(transitions))>
, shape=record, fixedsize=false
<else>
, shape=circle, fixedsize=true, width=.55
<endif>
, peripheries=1];
%>

```

```

stopstate(name,label,actionIndex,useBox) ::= <<
<name>[fontsize=11, label="<label><if(actionIndex)>,\naction:<actionIndex><endif>",
<if(useBox)>shape=polygon,sides=4,peripheries=2,fixedsize=false<else>shape=doublecircle, fixedsize=true,
width=.6<endif>];
>>

```

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```

* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-
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/\*\* Find left-recursive rules \*/

tree grammar LeftRecursiveRuleWalker;

```
options {
  tokenVocab=ANTLRParser;
  ASTLabelType=GrammarAST;
}
```

```
@header {
package org.antlr.v4.parse;
```

```
import org.antlr.v4.misc.*;
import org.antlr.v4.tool.*;
import org.antlr.v4.tool.ast.*;
}
```

```
@members {
private String ruleName;
private int currentOuterAltNumber; // which outer alt of rule?
public
```

```

int numAlts; // how many alts for this rule total?

public void setAltAssoc(AltAST altTree, int alt) {}
public void binaryAlt(AltAST altTree, int alt) {}
public void prefixAlt(AltAST altTree, int alt) {}
public void suffixAlt(AltAST altTree, int alt) {}
public void otherAlt(AltAST altTree, int alt) {}
public void setReturnValues(GrammarAST t) {}
}

@rulecatch { }

// TODO: can get parser errors for not matching pattern; make them go away
public
rec_rule returns [boolean isLeftRec]
@init
{
    currentOuterAltNumber = 1;
}
: ^( r=RULE id=RULE_REF {ruleName=$id.getText();}
    ruleModifier?
// (ARG_ACTION)? shouldn't allow args, right?
    ^(RETURNS a=ARG_ACTION {setReturnValues($a;)}))?)
// (^(THROWS .+)? don't allow
    (^(LOCALS ARG_ACTION) )? // TODO: copy these to gen'd code
    (^(OPTIONS .*)
    | ^(AT ID ACTION) // TODO: copy
    )*)
ruleBlock { $isLeftRec = $ruleBlock.isLeftRec;}
exceptionGroup
)
;

exceptionGroup
: exceptionHandler* finallyClause?
;

exceptionHandler
: ^(CATCH ARG_ACTION ACTION)
;

finallyClause
: ^(FINALLY ACTION)
;

ruleModifier
: PUBLIC
| PRIVATE

```



```

| PROTECTED
;

ruleBlock returns [boolean isLeftRec]
@init{boolean lr=false; this.numAlts = $start.getChildCount();}
: ^( BLOCK
(
o=outerAlternative
{if ($o.isLeftRec) $isLeftRec = true;}
{currentOuterAltNumber++;}
)+
)
;

/** An alt is either prefix, suffix, binary, or ternary operation or "other" */
outerAlternative returns [boolean isLeftRec]
: (binary)=>    binary
                {binaryAlt((AltAST)$start, currentOuterAltNumber); $isLeftRec=true;}
| (prefix)=>    prefix
                {prefixAlt((AltAST)$start, currentOuterAltNumber);}
| (suffix)=>   suffix
                {suffixAlt((AltAST)$start, currentOuterAltNumber); $isLeftRec=true;}
| nonLeftRecur {otherAlt((AltAST)$start, currentOuterAltNumber);}
;

binary
: ^(
ALT elementOptions? recurse element* recurse epsilonElement* )
  {setAltAssoc((AltAST)$ALT,currentOuterAltNumber);}
;

prefix
: ^( ALT elementOptions?
element+
recurse epsilonElement*
)
  {setAltAssoc((AltAST)$ALT,currentOuterAltNumber);}
;

suffix
: ^( ALT elementOptions? recurse element+ )
  {setAltAssoc((AltAST)$ALT,currentOuterAltNumber);}
;

nonLeftRecur
: ^(ALT elementOptions? element+)
;

```

recurse

```
: ^(ASSIGN ID recurseNoLabel)
| ^(PLUS_ASSIGN ID recurseNoLabel)
| recurseNoLabel
;
```

recurseNoLabel : {((CommonTree)input.LT(1)).getText().equals(ruleName)}? RULE\_REF;

token returns [GrammarAST t=null]

```
: ^(ASSIGN ID s=token {$t = $s.t;})
| ^(PLUS_ASSIGN ID s=token {$t = $s.t;})
| b=STRING_LITERAL    {$t = $b;}
| ^(b=STRING_LITERAL elementOptions) {$t = $b;}
| ^(c=TOKEN_REF elementOptions) {$t = $c;}
| c=TOKEN_REF         {$t = $c;}
;
```

elementOptions

```
: ^(ELEMENT_OPTIONS elementOption*)
```

;

elementOption

```
: ID
| ^(ASSIGN ID ID)
| ^(ASSIGN ID STRING_LITERAL)
| ^(ASSIGN ID ACTION)
| ^(ASSIGN ID INT)
;
```

element

```
: atom
| ^(NOT element)
| ^(RANGE atom atom)
| ^(ASSIGN ID element)
| ^(PLUS_ASSIGN ID element)
| ^(SET setElement+)
| RULE_REF
| ebnf
| epsilonElement
;
```

epsilonElement

```
: ACTION
| SEMPRED
| EPSILON
| ^(ACTION elementOptions)
| ^(SEMPRED elementOptions)
```

;

setElement

```
: ^(STRING_LITERAL elementOptions)
| ^(TOKEN_REF elementOptions)
| STRING_LITERAL
| TOKEN_REF
;
```

ebnf: block

```
| ^( OPTIONAL block )
| ^( CLOSURE block )
| ^( POSITIVE_CLOSURE block )
;
```

block

```
: ^(BLOCK ACTION? alternative+)
;
```

alternative

```
: ^(ALT elementOptions? element+)
;
```

atom

```
: ^(RULE_REF ARG_ACTION? elementOptions?)
| ^(STRING_LITERAL elementOptions)
| STRING_LITERAL
| ^(TOKEN_REF elementOptions)
| TOKEN_REF
| ^(WILDCARD elementOptions)
| WILDCARD
| ^(DOT ID element)
;
```

Found in path(s):

\*

/opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/parse/LeftRecursiveRuleWalker.g

No license file was found, but licenses were detected in source scan.

/\*

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*/

```

```

/** ANTLR tool checks output templates are compatible with tool code generation.
* For now, a simple string match used on x.y of x.y.z scheme.
* Must match Tool.VERSION during load to templates.
*
* REQUIRED.
*/

```

```

pythonTypeInitMap ::= [
  "bool":"False",
  "int":"0",
  "float":"0.0",
  "str": "",
  default:"None" // anything other
  than a primitive type is an object
]

```

```

// args must be <object-model-object>, <fields-resulting-in-STs>

```

```

ParserFile(file, parser, namedActions, contextSuperClass) ::= <<
<fileHeader(file.grammarFileName, file.ANTLRVersion)>
# encoding: utf-8
from antlr4 import *
from io import StringIO

```

```
<namedActions.header>
```

```
<parser>
```

```
>>
```

```
ListenerFile(file, header, namedActions) ::= <<
```

```
<fileHeader(file.grammarFileName, file.ANTLRVersion)>
```

```
from antlr4 import *
```

```
if __name__ is not None and "." in __name__:
```

```
    from <file.parserName> import <file.parserName>
```

```
else:
```

```
    from <file.parserName> import <file.parserName>
```

```
<header>
```

```
# This class defines a complete listener for a parse tree produced by <file.parserName>.
```

```
class <file.grammarName>Listener(ParseTreeListener):
```

```
    <file.listenerNames: {lname |
```

```
# Enter a parse tree produced by <file.parserName>#<lname>.
```

```
def enter<lname; format="cap">(self, ctx:<file.parserName>.<lname; format="cap">Context):
```

```
    pass
```

```
# Exit a parse tree produced by <file.parserName>#<lname>.
```

```
def
```

```
exit<lname; format="cap">(self, ctx:<file.parserName>.<lname; format="cap">Context):
```

```
    pass
```

```
}; separator="\n">
```

```
>>
```

```
VisitorFile(file, header, namedActions) ::= <<
```

```
<fileHeader(file.grammarFileName, file.ANTLRVersion)>
```

```
from antlr4 import *
```

```
if __name__ is not None and "." in __name__:
```

```
    from <file.parserName> import <file.parserName>
```

```
else:
```

```
    from <file.parserName> import <file.parserName>
```

```
<header>
```

```
# This class defines a complete generic visitor for a parse tree produced by <file.parserName>.
```

```
class <file.grammarName>Visitor(ParseTreeVisitor):
```

```
    <file.visitorNames: {lname |
```

```
# Visit a parse tree produced by <file.parserName>#<lname>.
```

```
def visit<lname; format="cap">(self, ctx:<file.parserName>.<lname; format="cap">Context):
```

```

return self.visitChildren(ctx)

}; separator="\n">

del <file.parserName>
>>

fileHeader(grammarFileName, ANTLRVersion) ::= <<
# Generated from <grammarFileName> by ANTLR <ANTLRVersion>
>>

Parser(parser, funcs, atn, sempredFuncs, superClass)
::= <<
<Parser_(ctor="parser_ctor", ...)>
>>

Parser_(parser, funcs, atn, sempredFuncs, ctor, superClass) ::= <<
<if(superClass)>
from .<superClass> import <superClass>

<endif>
<atn>

class <parser.name> ( <if(superClass)><superClass><else>Parser<endif> ):

    grammarFileName = "<parser.grammarFileName>"

    atn = ATNDeserializer().deserialize(serializedATN())

    decisionsToDFA = [ DFA(ds, i) for i, ds in enumerate(atn.decisionToState) ]

    sharedContextCache = PredictionContextCache()

    literalNames = [ <parser.literalNames:{t | <t>}; null="\\"<INVALID>\\"", separator=", ", wrap, anchor ]

    symbolicNames = [ <parser.symbolicNames:{t | <t>}; null="\\"<INVALID>\\"", separator=", ", wrap, anchor ]

    <parser.rules:{r | RULE_<r.name> = <r.index>}; separator="\n", wrap, anchor>

    ruleNames = [ <parser.ruleNames:{r | "<r>"}; separator=", ", wrap, anchor ]

    EOF = <TokenLabelType().EOF
    <if(parser.tokens)>
    <parser.tokens:{k | <k>=<parser.tokens.(k)>}; separator="\n",
wrap, anchor>
    <endif>

```

```

<parser:(ctor)()>

<namedActions.members>

<funcs; separator="\n">

<if(sempredFuncs)>
  def sempred(self, localctx:RuleContext, ruleIndex:int, predIndex:int):
    if self._predicates == None:
      self._predicates = dict()
<parser.sempredFuncs.values: { f |
  self._predicates[<f.ruleIndex>] = self.<f.name>_sempred }; separator="\n  ">
  pred = self._predicates.get(ruleIndex, None)
  if pred is None:
    raise Exception("No predicate with index:" + str(ruleIndex))
  else:
    return pred(localctx, predIndex)

  <sempredFuncs.values; separator="\n">
<endif>

>>

dumpActions(recog, argFuncs, actionFuncs, sempredFuncs) ::= <<
<if(actionFuncs)>
def action(self, localctx:RuleContext, ruleIndex:int, actionIndex:int):
  if self._actions is None:
    actions = dict()
<recog.actionFuncs.values: { f |
  actions[<f.ruleIndex>] = self.<f.name>_action }; separator="\n">
  self._actions = actions
  action
  = self._actions.get(ruleIndex, None)
  if action is not None:
    action(localctx, actionIndex)
  else:
    raise Exception("No registered action for:" + str(ruleIndex))

  <actionFuncs.values; separator="\n">

<endif>
<if(sempredFuncs)>
def sempred(self, localctx:RuleContext, ruleIndex:int, predIndex:int):
  if self._predicates is None:
    preds = dict()

```

```

<recog.sempredFuncs.values:{f|
  preds[<f.ruleIndex>] = self.<f.name>_sempred}; separator="\n">
  self._predicates = preds
  pred = self._predicates.get(ruleIndex, None)
  if pred is not None:
    return pred(localctx, predIndex)
  else:
    raise Exception("No registered predicate for:" + str(ruleIndex))

<sempredFuncs.values; separator="\n">
<endif>
>>

parser_ctor(p) ::= <<
def __init__(self, input:TokenStream):
  super().__init__(input)
  self.checkVersion("<file.ANTLRVersion>")
  self._interp = ParserATNSimulator(self, self.atn, self.decisionsToDFA, self.sharedContextCache)
  self._predicates
= None

>>

/* This generates a private method since the actionIndex is generated, making an
* overriding implementation impossible to maintain.
*/
RuleActionFunction(r, actions) ::= <<

def <r.name>_action(self, localctx:<r.ctxType> , actionIndex:int):
  <actions:{index|
  <if(first(actions))>
    if actionIndex == <index>:
      <actions.(index)>
  <elseif(rest(actions))>
    elif actionIndex == <index>:
      <actions.(index)>
  <endif> }; separator="\n">
  >>

/* This generates a private method since the predIndex is generated, making an
* overriding implementation impossible to maintain.
*/
RuleSempredFunction(r, actions) ::= <<
def <r.name>_sempred(self, localctx:<r.ctxType>, predIndex:int):
  <actions:{index|
  <if(first(actions))>
    if predIndex == <index>:
      return <actions.(index)>

```



```

<elseif(rest(actions))>
  elif predIndex == <index>:
    return <actions.(index)>
<endif> }; separator="\n">

>>

RuleFunction(currentRule,args,code,locals,ruleCtx,altLabelCtxs,namedActions,finallyAction,postamble,exceptions)
::= <<

<ruleCtx>

<altLabelCtxs:{l | <altLabelCtxs.(l)>}; separator="\n">

def <currentRule.name>(self<currentRule.args:{a | , <a.name><if(a.type)>:<a.type><endif>}>):

  localctx = <parser.name>.<currentRule.ctxType>(self, self._ctx, self.state<currentRule.args:{a | , <a.name>}>)>
  self.enterRule(localctx, <currentRule.startState>, self.RULE_<currentRule.name>)
  <namedActions.init>
  <locals; separator="\n">
  try:
    <code>
    <postamble; separator="\n">
    <namedActions.after>
  <if(exceptions)>
    <exceptions; separator="\n">
  <else>
  except RecognitionException as re:
    localctx.exception = re
    self._errHandler.reportError(self, re)
    self._errHandler.recover(self, re)
  <endif>
  finally:
    <finallyAction>
    self.exitRule()
  return localctx

>>

LeftRecursiveRuleFunction(currentRule,args,code,locals,ruleCtx,altLabelCtxs,
namedActions,finallyAction,postamble) ::=
<<

<ruleCtx>
<altLabelCtxs:{l
| <altLabelCtxs.(l)>}; separator="\n">

def <currentRule.name>(self, _p:int=0<if(currentRule.args)>, <args:{a | , <a>}><endif>):

```

```

_parentctx = self._ctx
_parentState = self.state
localctx = <parser.name>.<currentRule.ctxType>(self, self._ctx, _parentState<args:{a | , <a.name>}>)
_prevctx = localctx
_startState = <currentRule.startState>
self.enterRecursionRule(localctx, <currentRule.startState>, self.RULE_<currentRule.name>, _p)
<namedActions.init>
<locals; separator="\n">
try:
    <code>
    <postamble; separator="\n">
    <namedActions.after>
except RecognitionException as re:
    localctx.exception = re
    self._errHandler.reportError(self, re)
    self._errHandler.recover(self, re)
finally:
    <finallyAction>
    self.unrollRecursionContexts(_parentctx)
return localctx

>>

```

```

CodeBlockForOuterMostAlt(currentOuterMostAltCodeBlock, locals, preamble, ops) ::= <<
<if(currentOuterMostAltCodeBlock.altLabel)>localctx
= <parser.name>.<currentOuterMostAltCodeBlock.altLabel; format="cap">Context(self, localctx)<endif>
self.enterOuterAlt(localctx, <currentOuterMostAltCodeBlock.alt.altNum>)
<CodeBlockForAlt(currentAltCodeBlock=currentOuterMostAltCodeBlock, ...)>
>>

```

```

CodeBlockForAlt(currentAltCodeBlock, locals, preamble, ops) ::= <<
<locals; separator="\n">
<preamble; separator="\n">
<ops; separator="\n">
>>

```

```

LL1AltBlock(choice, preamble, alts, error) ::= <<
self.state = <choice.stateNumber>
self._errHandler.sync(self)
<if(choice.label)><labelref(choice.label)> = _input.LT(1)<endif>
<preamble; separator="\n">
token = self._input.LA(1)
<choice.altLook,alts:{look,alt| <cases(ttypes=look)>
    <alt>
    pass}; separator="\n1">
else:
    <error>

```

>>

```
LL1OptionalBlock(choice, alts, error) ::= <<
self.state = <choice.stateNumber>
self._errHandler.sync(self)
token = self._input.LA(1)
<choice.altLook,alts:{look,alt| <cases(ttypes=look)>
  <alt>
  pass }; separator="\n">
else:
  <error>
>>
```

```
LL1OptionalBlockSingleAlt(choice, expr, alts, preamble, error, followExpr) ::= <<
self.state = <choice.stateNumber>
self._errHandler.sync(self)
<preamble; separator="\n">
if <expr>:
  <alts; separator="\n">

<!else if ( !(<followExpr> ) <error>!>
>>
```

```
LL1StarBlockSingleAlt(choice, loopExpr, alts, preamble, iteration) ::= <<
self.state = <choice.stateNumber>
self._errHandler.sync(self)
<preamble; separator="\n">
while <loopExpr>:
  <alts; separator="\n">
  self.state = <choice.loopBackStateNumber>
  self._errHandler.sync(self)
  <iteration>

>>
```

```
LL1PlusBlockSingleAlt(choice, loopExpr, alts, preamble, iteration) ::= <<
self.state = <choice.blockStartStateNumber> <! alt block decision !>
self._errHandler.sync(self)
<preamble; separator="\n">
while True:
  <alts; separator="\n">
  self.state = <choice.stateNumber> <! loopback/exit decision !>
  self._errHandler.sync(self)
  <iteration>
if not (<loopExpr>):
  break
```

>>

// LL(\*) stuff

```
AltBlock(choice,
  preamble, alts, error) ::= <<
self.state = <choice.stateNumber>
self._errHandler.sync(self)
<if(choice.label)><labelref(choice.label)> = _input.LT(1)<endif>
<preamble; separator="\n">
la_ = self._interp.adaptivePredict(self._input,<choice.decision>,self._ctx)
<alts:{ alt |
if la_ == <i>:
  <alt>
  pass
}; separator="\nel">
```

>>

```
OptionalBlock(choice, alts, error) ::= <<
self.state = <choice.stateNumber>
self._errHandler.sync(self)
la_ = self._interp.adaptivePredict(self._input,<choice.decision>,self._ctx)
<alts:{ alt |
if la_ == <i><if(!choice.ast.greedy)>+1<endif>:
  <alt>
}; separator="\nel">
```

>>

```
StarBlock(choice, alts, sync, iteration) ::= <<
self.state = <choice.stateNumber>
self._errHandler.sync(self)
_alt = self._interp.adaptivePredict(self._input,<choice.decision>,self._ctx)
while _alt!=<choice.exitAlt> and _alt!=ATN.INVALID_ALT_NUMBER:
  if _alt==1<if(!choice.ast.greedy)>+1<endif>:
    <iteration>
    <alts> <! should only be one !>
  self.state =
  <choice.loopBackStateNumber>
  self._errHandler.sync(self)
  _alt = self._interp.adaptivePredict(self._input,<choice.decision>,self._ctx)
```

>>

```
PlusBlock(choice, alts, error) ::= <<
self.state = <choice.blockStartStateNumber> <! alt block decision !>
self._errHandler.sync(self)
```

```

_alt = 1<if(!choice.ast.greedy)>+1<endif>
while _alt!=<choice.exitAlt> and _alt!=ATN.INVALID_ALT_NUMBER:
  <alts:{alt|
if _alt == <i><if(!choice.ast.greedy)>+1<endif>:
  <alt>
}; separator="\nел">
  else:
    <error>
  self.state = <choice.loopBackStateNumber> <! loopback/exit decision !>
  self._errHandler.sync(self)
  _alt = self._interp.adaptivePredict(self._input,<choice.decision>,self._ctx)

>>

Sync(s) ::= "sync(<s.expecting.name>)"

ThrowNoViableAlt(t) ::= "raise NoViableAltException(self)"

TestSetInline(s) ::= <<
<s.bitsets:{bits | <if(rest(rest(bits.ttypes)))><bitsetBitfieldComparison(s, bits)><else><bitsetInlineComparison(s,
bits)><endif>}; separator=" or ">
>>

// Java language spec
15.19 - shift operators mask operands rather than overflow to 0... need range test
testShiftInRange(shiftAmount) ::= <<
((<shiftAmount>) & ~0x3f) == 0
>>

// produces smaller bytecode only when bits.ttypes contains more than two items
bitsetBitfieldComparison(s, bits) ::= <%
(<testShiftInRange({<offsetShiftVar(s.varName, bits.shift)>})> and ((1 \<< <offsetShiftVar(s.varName,
bits.shift)>) & (<bits.ttypes:{ttype | (1 \<< <offsetShiftType(ttype, bits.shift)>)}); separator=" | ">)) != 0
%>

isZero ::= [
"0":true,
default:false
]

offsetShiftVar(shiftAmount, offset) ::= <%
<if(!isZero.(offset))><shiftAmount> - <offset><else><shiftAmount><endif>
%>

offsetShiftType(shiftAmount, offset) ::= <%
<if(!isZero.(offset))><parser.name>.<shiftAmount> - <offset><else><parser.name>.<shiftAmount><endif>
%>

```

```

// produces more efficient bytecode when bits.ttypes contains at most two items
bitsetInlineComparison(s, bits) ::= <%
<bits.ttypes:{ ttype | <s.varName>==<parser.name>.<ttype> }; separator="
or ">
%>

cases(ttypes) ::= <<
if token in [<ttypes:{ t | <parser.name>.<t> }; separator=", ">]:
>>

InvokeRule(r, argExprsChunks) ::= <<
self.state = <r.stateNumber>
<if(r.labels)><r.labels:{1 | <labelref(l)> =
}><endif>self.<r.name>(<if(r.ast.options.p)><r.ast.options.p><if(argExprsChunks)>,<endif><endif><argExprsChu
nks>)
>>

MatchToken(m) ::= <<
self.state = <m.stateNumber>
<if(m.labels)><m.labels:{1 | <labelref(l)> = }><endif>self.match(<parser.name>.<m.name>)
>>

MatchSet(m, expr, capture) ::= "<CommonSetStuff(m, expr, capture, false)>"

MatchNotSet(m, expr, capture) ::= "<CommonSetStuff(m, expr, capture, true)>"

CommonSetStuff(m, expr, capture, invert) ::= <<
self.state = <m.stateNumber>
<if(m.labels)><m.labels:{1 | <labelref(l)> = }>self._input.LT(1)<endif>
<capture>
<if(invert)>if <m.varName> \<= 0 or <expr><else>if not(<expr>)<endif>:
<if(m.labels)><m.labels:{1 | <labelref(l)> = }><else> <endif>self._errHandler.recoverInline(self)
else:
    self._errHandler.reportMatch(self)
    self.consume()
>>

Wildcard(w) ::= <<
self.state = <w.stateNumber>
<if(w.labels)><w.labels:{1 | <labelref(l)> = }><endif>self.matchWildcard()
>>

// ACTION STUFF

Action(a, foo, chunks) ::= "<chunks>"

ArgAction(a, chunks) ::= "<chunks>"

```

```

SemPred(p, chunks, failChunks) ::= <<
self.state = <p.stateNumber>
if not <chunks>:
    from antlr4.error.Errors import FailedPredicateException
    raise FailedPredicateException(self, <p.predicate><if(failChunks)>, <failChunks><elseif(p.msg)>,
<p.msg><endif>)
>>

```

```

ExceptionClause(e, catchArg, catchAction) ::= <<
catch (<catchArg>) {
    <catchAction>
}
>>

```

```
// lexer actions are not associated with model objects
```

```

LexerSkipCommand() ::= "skip()"
LexerMoreCommand() ::= "more()"
LexerPopModeCommand() ::= "popMode()"

```

```

LexerTypeCommand(arg, grammar)    ::= "_type = <arg>"
LexerChannelCommand(arg, grammar) ::= "_channel = <arg>"
LexerModeCommand(arg, grammar)    ::= "_mode = <arg>"
LexerPushModeCommand(arg, grammar) ::= "pushMode(<arg>)"

```

```

ActionText(t)
    ::= "<t.text>"
ActionTemplate(t) ::= "<t.st>"
ArgRef(a) ::= "localctx.<a.name>"
LocalRef(a) ::= "localctx.<a.name>"
RetValRef(a) ::= "localctx.<a.name>"
QRetValRef(a) ::= "<ctx(a)>.<a.dict>.<a.name>"
/** How to translate $tokenLabel */
TokenRef(t) ::= "<ctx(t)>.<t.name>"
LabelRef(t) ::= "<ctx(t)>.<t.name>"
ListLabelRef(t) ::= "<ctx(t)>.<ListLabelName(t.name)>"
SetAttr(s,rhsChunks) ::= "<ctx(s)>.<s.name> = <rhsChunks>"

```

```

TokenLabelType() ::= "<file.TokenLabelType; null={Token}>"
InputSymbolType() ::= "<file.InputSymbolType; null={Token}>"

```

```

TokenPropertyRef_text(t) ::= "(None if <ctx(t)>.<t.label> is None else <ctx(t)>.<t.label>.text)"
TokenPropertyRef_type(t) ::= "(0 if <ctx(t)>.<t.label> is None else <ctx(t)>.<t.label>.type)"
TokenPropertyRef_line(t) ::= "(0 if <ctx(t)>.<t.label> is None else <ctx(t)>.<t.label>.line)"
TokenPropertyRef_pos(t) ::= "(0 if <ctx(t)>.<t.label> is None else <ctx(t)>.<t.label>.column)"
TokenPropertyRef_channel(t) ::= "(0 if (<ctx(t)>.<t.label> is
None else <ctx(t)>.<t.label>.channel)"
TokenPropertyRef_index(t) ::= "(0 if <ctx(t)>.<t.label> is None else <ctx(t)>.<t.label>.tokenIndex)"

```

```
TokenPropertyRef_int(t) ::= "(0 if <ctx(t)>.<t.label> is None else int(<ctx(t)>.<t.label>.text))"
```

```
RulePropertyRef_start(r) ::= "(None if <ctx(r)>.<r.label> is None else <ctx(r)>.<r.label>.start)"
```

```
RulePropertyRef_stop(r) ::= "(None if <ctx(r)>.<r.label> is None else <ctx(r)>.<r.label>.stop)"
```

```
RulePropertyRef_text(r) ::= "(None if <ctx(r)>.<r.label> is None else  
self._input.getText((<ctx(r)>.<r.label>.start,<ctx(r)>.<r.label>.stop)))"
```

```
RulePropertyRef_ctx(r) ::= "<ctx(r)>.<r.label>"
```

```
RulePropertyRef_parser(r) ::= "self"
```

```
ThisRulePropertyRef_start(r) ::= "localctx.start"
```

```
ThisRulePropertyRef_stop(r) ::= "localctx.stop"
```

```
ThisRulePropertyRef_text(r) ::= "self._input.getText((localctx.start, self._input.LT(-1)))"
```

```
ThisRulePropertyRef_ctx(r) ::= "localctx"
```

```
ThisRulePropertyRef_parser(r) ::= "self"
```

```
NonLocalAttrRef(s) ::= "getInvokingContext(<s.ruleIndex>).<s.name>"
```

```
SetNonLocalAttr(s,
```

```
rhsChunks) ::= "getInvokingContext(<s.ruleIndex>).<s.name> = <rhsChunks>"
```

```
AddToLabelList(a) ::= "<ctx(a.label)>.<a.listName>.append(<labelref(a.label)>)"
```

```
TokenDecl(t) ::= "self.<t.name> = None # <TokenLabelType()>"
```

```
TokenTypeDecl(t) ::= "self.<t.name> = 0 # <TokenLabelType()> type"
```

```
TokenListDecl(t) ::= "self.<t.name> = list() # of <TokenLabelType()>s"
```

```
RuleContextDecl(r) ::= "self.<r.name> = None # <r.ctxName>"
```

```
RuleContextListDecl(rdecl) ::= "self.<rdecl.name> = list() # of <rdecl.ctxName>s"
```

```
ContextTokenGetterDecl(t) ::= <<
```

```
def <t.name>(self):
```

```
    return self.getToken(<parser.name>.<t.name>, 0)
```

```
>>
```

```
// should never be called
```

```
ContextTokenListGetterDecl(t) ::= <<
```

```
def <t.name>_list(self):
```

```
    return self.getTokens(<parser.name>.<t.name>)
```

```
>>
```

```
ContextTokenListIndexedGetterDecl(t) ::= <<
```

```
def <t.name>(self, i:int=None):
```

```
    if i is None:
```

```
        return self.getTokens(<parser.name>.<t.name>)
```

```
    else:
```

```
        return self.getToken(<parser.name>.<t.name>,
```

```
        i)
```

```
>>
```

```
ContextRuleGetterDecl(r) ::= <<
```



```

def <r.name>(self):
    return self.getTypedRuleContext(<parser.name>.<r.ctxName>,0)

>>

// should never be called
ContextRuleListGetterDecl(r) ::= <<
def <r.name>_list(self):
    return self.getTypedRuleContexts(<parser.name>.<r.ctxName>)

>>

ContextRuleListIndexedGetterDecl(r) ::= <<
def <r.name>(self, i:int=None):
    if i is None:
        return self.getTypedRuleContexts(<parser.name>.<r.ctxName>)
    else:
        return self.getTypedRuleContext(<parser.name>.<r.ctxName>,i)

>>

LexerRuleContext() ::= "RuleContext"

/** The rule context name is the rule followed by a suffix; e.g.,
 * r becomes rContext.
 */
RuleContextNameSuffix() ::= "Context"

ImplicitTokenLabel(tokenName) ::= "_<tokenName>"
ImplicitRuleLabel(ruleName) ::= "_<ruleName>"
ImplicitSetLabel(id) ::= "_tset<id>"
ListLabelName(label) ::= "<label>"

CaptureNextToken(d) ::= "<d.varName> = self._input.LT(1)"
CaptureNextTokenType(d) ::= "<d.varName> = self._input.LA(1)"

StructDecl(struct,ctorAttrs,attrs,getters,dispatchMethods,interfaces,extensionMembers)
::= <<
class <struct.name>(<if(contextSuperClass)><contextSuperClass><else>ParserRuleContext<endif>):

    def __init__(self, parser, parent:ParserRuleContext=None, invokingState:int=-1<struct.ctorAttrs:{ a | ,
<a.name><if(a.type)>:<a.type><endif>=None }>):
        super().__init__(parent, invokingState)
        self.parser = parser
        <attrs:{ a | <a> }; separator="\n">
        <struct.ctorAttrs:{ a | self.<a.name> = <a.name> }; separator="\n">

        <getters:{ g | <g> }; separator="\n\n">

```

```

def getRuleIndex(self):
    return <parser.name>.RULE_<struct.derivedFromName>

<if(struct.provideCopyFrom)> <! don't need copy unless we have subclasses !>
def copyFrom(self, ctx:ParserRuleContext):
    super().copyFrom(ctx)
    <struct.attrs:{ a | self.<a.name> = ctx.<a.name> }; separator="\n">

<endif>
<dispatchMethods; separator="\n">
<extensionMembers; separator="\n">

>>

AltLabelStructDecl(struct,attrs, getters,dispatchMethods)
::= <<
class <struct.name>(<currentRule.name; format="cap">Context):

    def __init__(self, parser, ctx:ParserRuleContext): # actually a <parser.name>.<currentRule.name;
format="cap">Context
        super().__init__(parser)
        <attrs:{ a | <a> }; separator="\n">
        self.copyFrom(ctx)

    <getters:{ g | <g> }; separator="\n">

    <dispatchMethods; separator="\n">

>>

ListenerDispatchMethod(method) ::= <<
def <if(method.isEnter)>enter<else>exit<endif>Rule(self, listener:ParseTreeListener):
    if hasattr( listener, "<if(method.isEnter)>enter<else>exit<endif><struct.derivedFromName; format="cap">" ):
        listener.<if(method.isEnter)>enter<else>exit<endif><struct.derivedFromName; format="cap">(self)

>>

VisitorDispatchMethod(method) ::= <<
def accept(self, visitor:ParseTreeVisitor):
    if hasattr( visitor, "visit<struct.derivedFromName; format="cap">" ):
        return visitor.visit<struct.derivedFromName; format="cap">(self)
    else:
        return visitor.visitChildren(self)

>>

AttributeDecl(d) ::= "self.<d.name> = <if(d.initValue)><d.initValue><else>None<endif>"

```

```

/** If we don't know location of label def x, use this template */
labelref(x) ::= "<if(!x.isLocal)>localctx.<endif><x.name>"

/** For any action chunk, what is correctly-typed context struct ptr? */
ctx(actionChunk) ::= "localctx"

// used for left-recursive rules
recRuleAltPredicate(ruleName,opPrec) ::= "self.precpred(self._ctx, <opPrec>)"
recRuleSetReturnAction(src,name) ::= "$<name>=<src>.<name>"
recRuleSetStopToken() ::= "self._ctx.stop = self._input.LT(-1)"

recRuleAltStartAction(ruleName, ctxName, label) ::= <<
localctx = <parser.name>.<ctxName>Context(self, _parentctx, _parentState)
<if(label)>localctx.<label> = _prevctx<endif>
self.pushNewRecursionContext(localctx, _startState, self.RULE_<ruleName>)
>>

recRuleLabeledAltStartAction(ruleName, currentAltLabel, label, isListLabel) ::= <<
localctx = <parser.name>.<currentAltLabel>;
format="cap">Context(self, <parser.name>.<ruleName>; format="cap">Context(self, _parentctx, _parentState))
<if(label)>
<if(isListLabel)>
localctx.<label>.append(_prevctx)
<else>
localctx.<label> = _prevctx
<endif>
<endif>
self.pushNewRecursionContext(localctx, _startState, self.RULE_<ruleName>)
>>

recRuleReplaceContext(ctxName) ::= <<
localctx = <parser.name>.<ctxName>Context(self, localctx)
self._ctx = localctx
_prevctx = localctx
>>

recRuleSetPrevCtx() ::= <<
if self._parseListeners is not None:
self.triggerExitRuleEvent()
_prevctx = localctx
>>

LexerFile(lexerFile, lexer, namedActions) ::= <<
<fileHeader(lexerFile.grammarFileName, lexerFile.ANTLRVersion)>
from antlr4 import *
from io import StringIO

```

```

<namedActions.header>

<lexer>
>>

Lexer(lexer, atn, actionFuncs, sempredFuncs, superClass) ::= <<

<atn>

class <lexer.name>(<if(superClass)><superClass><else>Lexer<endif>):

    atn = ATNDeserializer().deserialize(serializedATN())

    decisionsToDFA = [
DFA(ds, i) for i, ds in enumerate(atn.decisionToState) ]

    <rest(lexer.modes):{m| <m> = <i>}; separator="\n">

    <lexer.tokens:{k | <k> = <lexer.tokens.(k)>}; separator="\n", wrap, anchor>

    modeNames = [ <lexer.modes:{m| "<m>"}; separator=", ", wrap, anchor> ]

    literalNames = [ "\<INVALID>",
        <lexer.literalNames:{t | <t>}; separator=", ", wrap, anchor> ]

    symbolicNames = [ "\<INVALID>",
        <lexer.symbolicNames:{t | <t>}; separator=", ", wrap, anchor> ]

    ruleNames = [ <lexer.ruleNames:{r | "<r>"}; separator=", ", wrap, anchor> ]

    grammarFileName = "<lexer.grammarFileName>"

    def __init__(self, input=None):
        super().__init__(input)
        self.checkVersion("<lexerFile.ANTLRVersion>")
        self._interp = LexerATNSimulator(self, self.atn, self.decisionsToDFA, PredictionContextCache())
        self._actions = None
        self._predicates = None

<namedActions.members>

<dumpActions(lexer, "", actionFuncs, sempredFuncs)>

>>

SerializedATN(model)

```

```

::= <<
<! only one segment, can be inlined !>

def serializedATN():
    with StringIO() as buf:
        buf.write("<model.serialized; wrap={ }<\n>    buf.write({ }>")
        return buf.getvalue()

```

```
>>
```

```

/** Using a type to init value map, try to init a type; if not in table
* must be an object, default value is "null".
*/

```

```

initValue(typeName) ::= <<
<javaTypeInitMap.(typeName)>

```

```
>>
```

```
codeFileExtension() ::= ".py"
```

Found in path(s):

```

* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-
jar/org/antlr/v4/tool/templates/codegen/Python3/Python3.stg

```

No license file was found, but licenses were detected in source scan.

```
/*
```

```
* [The "BSD license"]
```

```
* Copyright (c) 2012-2016 Terence Parr
```

```
* Copyright (c) 2012-2016 Sam Harwell
```

```
* All rights reserved.
```

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*
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- \* THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
- \* (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF
- \* THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

\*/

```
javaTypeInitMap ::= [
  "int": "0",
  "long": "0",
  "float": "0.0f",
  "double": "0.0",
  "boolean": "false",
  "byte": "0",
  "short": "0",
  "char": "0",
  default: "null" // anything other than a primitive type is an object
]
```

// args must be <object-model-object>, <fields-resulting-in-STs>

```
ParserFile(file, parser, namedActions, contextSuperClass) ::= <<
  <fileHeader(file.grammarFileName,
    file.ANTLRVersion)>
  <if(file.genPackage)>
    package <file.genPackage>;
  <endif>
  <namedActions.header>
  import org.antlr.v4.runtime.atn.*;
  import org.antlr.v4.runtime.dfa.DFA;
  import org.antlr.v4.runtime.*;
  import org.antlr.v4.runtime.misc.*;
  import org.antlr.v4.runtime.tree.*;
  import java.util.List;
  import java.util.Iterator;
  import java.util.ArrayList;

  <parser>
  >>
```

```
ListenerFile(file, header, namedActions) ::= <<
  <fileHeader(file.grammarFileName, file.ANTLRVersion)>
  <if(file.genPackage)>
    package <file.genPackage>;
  <endif>
  <header>
  import org.antlr.v4.runtime.tree.ParseTreeListener;
```

```

/**
 * This interface defines a complete listener for a parse tree produced by
 * { @link <file.parserName> }.
 */
public interface <file.grammarName>Listener extends ParseTreeListener {
    <file.listenerNames: {lname |
/**
<if(file.listenerLabelRuleNames.(lname))>
 * Enter a parse tree produced by the { @code <lname>}
 * labeled alternative in { @link <file.parserName>#<file.listenerLabelRuleNames.(lname)> }.
<else>
 * Enter a parse tree produced by { @link <file.parserName>#<lname> }.
<endif>
 * @param ctx the parse tree
 */
void enter<lname; format="cap">(<file.parserName>.<lname; format="cap">Context ctx);
/**
<if(file.listenerLabelRuleNames.(lname))>
 * Exit a parse tree produced by the { @code <lname>}
 * labeled alternative in { @link <file.parserName>#<file.listenerLabelRuleNames.(lname)> }.
<else>
 * Exit a parse tree produced by { @link <file.parserName>#<lname> }.
<endif>
 * @param ctx the parse tree
 */
void exit<lname; format="cap">(<file.parserName>.<lname; format="cap">Context ctx); ; separator="\n">
}
>>

```

```

BaseListenerFile(file, header, namedActions) ::= <<
<fileHeader(file.grammarFileName, file.ANTLRVersion)>
<if(file.genPackage)>
package <file.genPackage>;
<endif>
<header>

```

```

import org.antlr.v4.runtime.ParserRuleContext;
import org.antlr.v4.runtime.tree.ErrorNode;
import org.antlr.v4.runtime.tree.TerminalNode;

```

```

/**
 * This class provides an empty implementation of { @link <file.grammarName>Listener },
 * which can be extended to create a listener which only needs to handle a subset
 * of the available methods.
 */
public class <file.grammarName>BaseListener implements <file.grammarName>Listener {
    <file.listenerNames: {lname |
/**

```

```

* { @inheritDoc\}
*
* \<p>The default implementation does nothing.\</p>
*/
@Override public void enter<lname; format="cap">(<file.parserName>.<lname; format="cap">Context ctx) { \}
/**
* { @inheritDoc\}
*
* \<p>The default implementation does nothing.\</p>
*/
@Override public void exit<lname; format="cap">(<file.parserName>.<lname; format="cap">Context ctx) { \} };
separator="\n">

/**
* { @inheritDoc\}
*
* \<p>The default implementation does nothing.\</p>
*/
@Override public void enterEveryRule(ParserRuleContext ctx) { }
/**
* { @inheritDoc\}
*
* \<p>The default implementation does nothing.\</p>
*/
@Override public void exitEveryRule(ParserRuleContext ctx) { }
/**
* { @inheritDoc\}
*
* \<p>The default
implementation does nothing.\</p>
*/
@Override public void visitTerminal(TerminalNode node) { }
/**
* { @inheritDoc\}
*
* \<p>The default implementation does nothing.\</p>
*/
@Override public void visitErrorNode(ErrorNode node) { }
}
>>

```

```

VisitorFile(file, header, namedActions) ::= <<
<fileHeader(file.grammarFileName, file.ANTLRVersion)>
<if(file.genPackage)>
package <file.genPackage>;
<endif>
<header>
import org.antlr.v4.runtime.tree.ParseTreeVisitor;

```



```

/**
 * This interface defines a complete generic visitor for a parse tree produced
 * by { @link <file.parserName> }.
 *
 * @param \<T> The return type of the visit operation. Use { @link Void } for
 * operations with no return type.
 */
public interface <file.grammarName>Visitor\<T> extends ParseTreeVisitor\<T> {
    <file.visitorNames:{ lname |
/**
<if(file.visitorLabelRuleNames.(lname))>
 * Visit a parse tree produced by the { @code <lname>\}
 * labeled alternative in { @link <file.parserName>#<file.visitorLabelRuleNames.(lname)>\}.
<else>
 * Visit a parse tree produced by { @link <file.parserName>#<lname>\}.
<endif>
 * @param ctx the parse tree
 * @return the visitor result
 */
T visit<lname; format="cap">(<file.parserName>.<lname; format="cap">Context ctx);}; separator="\n"
}
>>

```

```

BaseVisitorFile(file, header, namedActions) ::= <<
<fileHeader(file.grammarFileName, file.ANTLRVersion)>
<if(file.genPackage)>
package <file.genPackage>;
<endif>
<header>
import org.antlr.v4.runtime.tree.AbstractParseTreeVisitor;

```

```

/**
 * This class provides an empty implementation of { @link <file.grammarName>Visitor },
 * which can be extended to create a visitor which only needs to handle a subset
 * of the available methods.
 *
 * @param \<T> The return type of the visit operation. Use { @link Void } for
 * operations with no return type.
 */
public class <file.grammarName>BaseVisitor\<T> extends AbstractParseTreeVisitor\<T> implements
<file.grammarName>Visitor\<T> {
    <file.visitorNames:{ lname |
/**
 * { @inheritDoc }
 *
 * \<p>The default

```

```

implementation returns the result of calling
* { @link #visitChildren\} on { @code ctx\}.\</p>
*/
@Override public T visit<lname; format="cap">(<file.parserName>.<lname; format="cap">Context ctx) { return
visitChildren(ctx); \} }; separator="\n">
}
>>

```

```

fileHeader(grammarFileName, ANTLRVersion) ::= <<
// Generated from <grammarFileName; format="java-escape"> by ANTLR <ANTLRVersion>
>>

```

```

Parser(parser, funcs, atn, sempredFuncs, superClass) ::= <<
<Parser_(ctor="parser_ctor", ...)>
>>

```

```

Parser_(parser, funcs, atn, sempredFuncs, ctor, superClass) ::= <<
@SuppressWarnings({"all", "warnings", "unchecked", "unused", "cast"})
public class <parser.name> extends <superClass; null="Parser"> {
static { RuntimeMetaData.checkVersion("<file.ANTLRVersion>", RuntimeMetaData.VERSION); }

```

```

protected static final DFA[] _decisionToDFA;
protected static final PredictionContextCache _sharedContextCache =
new PredictionContextCache();
<if(parser.tokens)>
public static final int
<parser.tokens:{k | <k>=<parser.tokens.(k)>}>;
separator=", ", wrap, anchor>;
<endif>
public static final int
<parser.rules:{r | RULE_<r.name> = <r.index>}>; separator=", ", wrap, anchor>;
public static final String[] ruleNames = {
<parser.ruleNames:{r | "<r">}>; separator=", ", wrap, anchor>
};

```

```

<vocabulary(parser.literalNames, parser.symbolicNames)>

```

```

@Override
public String getGrammarFileName() { return "<parser.grammarFileName; format="java-escape">"; }

```

```

@Override
public String[] getRuleNames() { return ruleNames; }

```

```

@Override
public String getSerializedATN() { return _serializedATN; }

```

```

@Override
public ATN getATN() { return _ATN; }

```

```

<namedActions.members>
<parser:(ctor)()>
<funcs; separator="\n">

<if(sempredFuncs)>
public boolean sempred(RuleContext _localctx, int ruleIndex, int predIndex) {
    switch (ruleIndex) {
        <parser.sempredFuncs.values:{f}
    case <f.ruleIndex>:
        return <f.name>_sempred((<f.ctxType>)_localctx, predIndex);}; separator="\n">
    }
    return true;
    }
    <sempredFuncs.values;
    separator="\n">
<endif>

<atn>
}
>>

vocabulary(literalNames, symbolicNames) ::= <<
private static final String[] _LITERAL_NAMES = {
    <literalNames:{t | <t>}; null="null", separator=" ", wrap, anchor>
};
private static final String[] _SYMBOLIC_NAMES = {
    <symbolicNames:{t | <t>}; null="null", separator=" ", wrap, anchor>
};
public static final Vocabulary VOCABULARY = new VocabularyImpl(_LITERAL_NAMES,
    _SYMBOLIC_NAMES);

/**
 * @deprecated Use { @link #VOCABULARY } instead.
 */
@Deprecated
public static final String[] tokenNames;
static {
    tokenNames = new String[_SYMBOLIC_NAMES.length];
    for (int i = 0; i < tokenNames.length; i++) {
        tokenNames[i] = VOCABULARY.getLiteralName(i);
        if (tokenNames[i] == null) {
            tokenNames[i] = VOCABULARY.getSymbolicName(i);
        }

        if (tokenNames[i] == null) {
            tokenNames[i] = "\<INVALID>";
        }
    }
}

```

```

}
}

@Override
@Deprecated
public String[] getTokenNames() {
    return tokenNames;
}

@Override

public Vocabulary getVocabulary() {
    return VOCABULARY;
}
>>

dumpActions(recog,
    argFuncs, actionFuncs, sempredFuncs) ::= <<
<if(actionFuncs)>
@Override
public void action(RuleContext _localctx, int ruleIndex, int actionIndex) {
    switch (ruleIndex) {
        <recog.actionFuncs.values:{f}
    case <f.ruleIndex>:
        <f.name>_action((<f.ctxType>)_localctx, actionIndex);
        break;}; separator="\n">
    }
}
<actionFuncs.values; separator="\n">
<endif>
<if(sempredFuncs)>
@Override
public boolean sempred(RuleContext _localctx, int ruleIndex, int predIndex) {
    switch (ruleIndex) {
        <recog.sempredFuncs.values:{f}
    case <f.ruleIndex>:
        return <f.name>_sempred((<f.ctxType>)_localctx, predIndex);}; separator="\n">
    }
    return true;
}
<sempredFuncs.values; separator="\n">
<endif>
>>

parser_ctor(p) ::= <<
public <p.name>(TokenStream input) {
    super(input);
    _interp = new ParserATNSimulator(this, _ATN, _decisionToDFA, _sharedContextCache);
}
}

```

```

}
>>

/* This generates a private method since the actionIndex is generated, making an
 * overriding implementation impossible to maintain.
 */
RuleActionFunction(r, actions) ::= <<
private void <r.name>_action(<r.ctxType> _localctx, int actionIndex) {
  switch (actionIndex) {
    <actions:{index|
case <index>:
  <actions.(index)>
  break;}; separator="\n">
  }
}
>>

/* This generates a private method since the predIndex is generated, making an
 * overriding implementation impossible to maintain.
 */
RuleSempredFunction(r, actions) ::= <<
private boolean <r.name>_sempred(<r.ctxType> _localctx, int predIndex) {
  switch (predIndex) {
    <actions:{index|
case <index>:
  return <actions.(index)>;}; separator="\n">
  }
  return true;
}
>>

RuleFunction(currentRule,args,code,locals,ruleCtx,altLabelCtxs,namedActions,finallyAction,postamble,exceptions)
::= <<

<ruleCtx>
<altLabelCtxs:{l | <altLabelCtxs.(l)>}; separator="\n">

<if(currentRule.modifiers)><currentRule.modifiers:{f | <f> }><else>public final <endif><currentRule.ctxType>
<currentRule.name><(<args; separator=",">) throws RecognitionException {
  <currentRule.ctxType> _localctx = new
  <currentRule.ctxType>(_ctx, getState(<currentRule.args:{a | , <a.name>}>));
  enterRule(_localctx, <currentRule.startState>, RULE_<currentRule.name>);
  <namedActions.init>
  <locals; separator="\n">
  try {
  <if(currentRule.hasLookaheadBlock)>
  int _alt;
  <endif>

```

```

<code>
<postamble; separator="\n">
<namedActions.after>
}
<if(exceptions)>
<exceptions; separator="\n">
<else>
catch (RecognitionException re) {
    _localctx.exception = re;
    _errHandler.reportError(this, re);
    _errHandler.recover(this, re);
}
<endif>
finally {
    <finallyAction>
    exitRule();
}
return _localctx;
}
>>

```

```

LeftRecursiveRuleFunction(currentRule,args,code,locals,ruleCtx,altLabelCtxs,
namedActions,finallyAction,postamble) ::=
<<

```

```

<ruleCtx>
<altLabelCtxs:{l | <altLabelCtxs.(l)>}; separator="\n">

<if(currentRule.modifiers)><currentRule.modifiers:{f | <f> }><else>public final <endif><currentRule.ctxType>
<currentRule.name><(args; separator=", "> throws RecognitionException {
return <currentRule.name>(0<currentRule.args:{a
| , <a.name>}>);
}

```

```

private <currentRule.ctxType> <currentRule.name>(int _p<args:{a | , <a>}>) throws RecognitionException {
    ParserRuleContext _parentctx = _ctx;
    int _parentState = getState();
    <currentRule.ctxType> _localctx = new <currentRule.ctxType>(_ctx, _parentState<currentRule.args:{a | ,
<a.name>}>);
    <currentRule.ctxType> _prevctx = _localctx;
    int _startState = <currentRule.startState>;
    enterRecursionRule(_localctx, <currentRule.startState>, RULE_<currentRule.name>, _p);
    <namedActions.init>
    <locals; separator="\n">
    try {
    <if(currentRule.hasLookaheadBlock)>
        int _alt;
    <endif>

```

```

<code>
<postamble; separator="\n">
<namedActions.after>
}
catch (RecognitionException re) {
  _localctx.exception = re;
  _errHandler.reportError(this, re);
  _errHandler.recover(this, re);
}
finally {
  <finallyAction>
  unrollRecursionContexts(_parentctx);
}
return _localctx;
}
>>

```

```

CodeBlockForOuterMostAlt(currentOuterMostAltCodeBlock, locals, preamble, ops) ::=
<<
<if(currentOuterMostAltCodeBlock.altLabel)>_localctx = new <currentOuterMostAltCodeBlock.altLabel;
format="cap">Context(_localctx);<endif>
enterOuterAlt(_localctx, <currentOuterMostAltCodeBlock.alt.altNum>);
<CodeBlockForAlt(currentAltCodeBlock=currentOuterMostAltCodeBlock, ...)>
>>

```

```

CodeBlockForAlt(currentAltCodeBlock, locals, preamble, ops) ::= <<
{
<locals; separator="\n">
<preamble; separator="\n">
<ops; separator="\n">
}
>>

```

```

LL1AltBlock(choice, preamble, alts, error) ::= <<
setState(<choice.stateNumber>);
_errHandler.sync(this);
<if(choice.label)><labelref(choice.label)> = _input.LT(1);<endif>
<preamble; separator="\n">
switch (_input.LA(1)) {
<choice.altLook,alts:{look,alt| <cases(ttypes=look)>
<alt>
break;}; separator="\n">
default:
<error>
}
>>

```

```

LL1OptionalBlock(choice, alts, error) ::= <<

```

```

setState(<choice.stateNumber>);
_errHandler.sync(this);
switch (_input.LA(1)) {
<choice.altLook,alts:{look,alt| <cases(ttypes=look)>
<alt>
break;}; separator="\n">
default:
<error>
}
>>

```

```

LL1OptionalBlockSingleAlt(choice,
expr, alts, preamble, error, followExpr) ::= <<
setState(<choice.stateNumber>);
_errHandler.sync(this);
<preamble; separator="\n">
if (<expr>) {
<alts; separator="\n">
}
<!else if ( !(<followExpr> ) <error!>
>>

```

```

LL1StarBlockSingleAlt(choice, loopExpr, alts, preamble, iteration) ::= <<
setState(<choice.stateNumber>);
_errHandler.sync(this);
<preamble; separator="\n">
while (<loopExpr>) {
<alts; separator="\n">
setState(<choice.loopBackStateNumber>);
_errHandler.sync(this);
<iteration>
}
>>

```

```

LL1PlusBlockSingleAlt(choice, loopExpr, alts, preamble, iteration) ::= <<
setState(<choice.blockStartStateNumber>); <! alt block decision !>
_errHandler.sync(this);
<preamble; separator="\n">
do {
<alts; separator="\n">
setState(<choice.stateNumber>); <! loopback/exit decision !>
_errHandler.sync(this);
<iteration>
} while ( <loopExpr> );
>>

```

```

// LL(*) stuff

```



```

AltBlock(choice, preamble, alts, error) ::= <<
setState(<choice.stateNumber>);
_errHandler.sync(this);
<if(choice.label)><labelref(choice.label)>
= _input.LT(1);<endif>
<preamble; separator="\n">
switch ( getInterpreter().adaptivePredict(_input,<choice.decision>,_ctx) ) {
<alts:{alt |
case <i>:
<alt>
break;}; separator="\n">
}
>>

```

```

OptionalBlock(choice, alts, error) ::= <<
setState(<choice.stateNumber>);
_errHandler.sync(this);
switch ( getInterpreter().adaptivePredict(_input,<choice.decision>,_ctx) ) {
<alts:{alt |
case <i><if(!choice.ast.greedy)>+1<endif>:
<alt>
break;}; separator="\n">
}
>>

```

```

StarBlock(choice, alts, sync, iteration) ::= <<
setState(<choice.stateNumber>);
_errHandler.sync(this);
_alt = getInterpreter().adaptivePredict(_input,<choice.decision>,_ctx);
while ( _alt!=<choice.exitAlt> && _alt!=org.antlr.v4.runtime.atn.ATN.INVALID_ALT_NUMBER ) {
if ( _alt==1<if(!choice.ast.greedy)>+1<endif> ) {
<iteration>
<alts> <! should only be one !>
}
setState(<choice.loopBackStateNumber>);
_errHandler.sync(this);
_alt = getInterpreter().adaptivePredict(_input,<choice.decision>,_ctx);
}
>>

```

```

PlusBlock(choice,
alts, error) ::= <<
setState(<choice.blockStartStateNumber>); <! alt block decision !>
_errHandler.sync(this);
_alt = 1<if(!choice.ast.greedy)>+1<endif>;
do {
switch (_alt) {
<alts:{alt|

```

```

case <i><if(!choice.ast.greedy)>+1<endif>:
  <alt>
  break;}; separator="\n">
  default:
  <error>
  }
  setState(<choice.loopBackStateNumber>); <! loopback/exit decision !>
  _errHandler.sync(this);
  _alt = getInterpreter().adaptivePredict(_input,<choice.decision>,_ctx);
  } while ( _alt!=<choice.exitAlt> && _alt!=org.antlr.v4.runtime.atn.ATN.INVALID_ALT_NUMBER );
>>

Sync(s) ::= "sync(<s.expecting.name>);"

ThrowNoViableAlt(t) ::= "throw new NoViableAltException(this);"

TestSetInline(s) ::= <<
<s.bitsets:{bits | <if(rest(rest(bits.ttypes)))><bitsetBitfieldComparison(s, bits)><else><bitsetInlineComparison(s,
bits)><endif>}; separator=" || ">
>>

// Java language spec 15.19 - shift operators mask operands rather than overflow to 0... need range test
testShiftInRange(shiftAmount)
::= <<
((<shiftAmount>) & ~0x3f) == 0
>>

// produces smaller bytecode only when bits.ttypes contains more than two items
bitsetBitfieldComparison(s, bits) ::= <%
(<testShiftInRange({<offsetShift(s.varName, bits.shift)>})> && ((1L \<< <offsetShift(s.varName, bits.shift)>) &
(<bits.ttypes:{ ttype | (1L \<< <offsetShift(ttype, bits.shift)>)}; separator=" | ">)) != 0)
%>

isZero ::= [
"0":true,
default:false
]

offsetShift(shiftAmount, offset) ::= <%
<if(!isZero.(offset))><shiftAmount> - <offset><else><shiftAmount><endif>
%>

// produces more efficient bytecode when bits.ttypes contains at most two items
bitsetInlineComparison(s, bits) ::= <%
<bits.ttypes:{ ttype | <s.varName>==<ttype>}; separator=" || ">
%>

cases(ttypes) ::= <<

```

```
<ttypes:{t | case <t>:}; separator="\n">
```

```
>>
```

```
InvokeRule(r, argExprsChunks) ::= <<
```

```
setState(<r.stateNumber>);
```

```
<if(r.labels)><r.labels:{1 | <labelref(l)> =
```

```
>><endif><r.name>(<if(r.ast.options.p)><r.ast.options.p><if(argExprsChunks)>,<endif><endif><argExprsChunks>
```

```
);
```

```
>>
```

```
MatchToken(m)
```

```
::= <<
```

```
setState(<m.stateNumber>);
```

```
<if(m.labels)><m.labels:{1 | <labelref(l)> = }><endif>match(<m.name>);
```

```
>>
```

```
MatchSet(m, expr, capture) ::= "<CommonSetStuff(m, expr, capture, false)>"
```

```
MatchNotSet(m, expr, capture) ::= "<CommonSetStuff(m, expr, capture, true)>"
```

```
CommonSetStuff(m, expr, capture, invert) ::= <<
```

```
setState(<m.stateNumber>);
```

```
<if(m.labels)><m.labels:{1 | <labelref(l)> = }>_input.LT(1);<endif>
```

```
<capture>
```

```
if ( <if(invert)><m.varName> \<= 0 || <else>!<endif>(<expr> ) ) {
```

```
<if(m.labels)><m.labels:{1 | <labelref(l)> = (Token)}><endif>_errHandler.recoverInline(this);
```

```
}
```

```
else {
```

```
if ( _input.LA(1)==Token.EOF ) matchedEOF = true;
```

```
_errHandler.reportMatch(this);
```

```
consume();
```

```
}
```

```
>>
```

```
Wildcard(w) ::= <<
```

```
setState(<w.stateNumber>);
```

```
<if(w.labels)><w.labels:{1 | <labelref(l)> = }><endif>matchWildcard();
```

```
>>
```

```
// ACTION STUFF
```

```
Action(a, foo, chunks) ::= "<chunks>"
```

```
ArgAction(a, chunks) ::= "<chunks>"
```

```
SemPred(p, chunks, failChunks) ::= <<
```

```
setState(<p.stateNumber>);
```

```
if
```

```

(!(<chunks>)) throw new FailedPredicateException(this, <p.predicate><if(failChunks)>,
<failChunks><elseif(p.msg)>, <p.msg><endif>);
>>

ExceptionClause(e, catchArg, catchAction) ::= <<
catch (<catchArg>) {
  <catchAction>
}
>>

// lexer actions are not associated with model objects

LexerSkipCommand() ::= "skip();"
LexerMoreCommand() ::= "more();"
LexerPopModeCommand() ::= "popMode();"

LexerTypeCommand(arg, grammar) ::= "_type = <arg>";
LexerChannelCommand(arg, grammar) ::= "_channel = <arg>";
LexerModeCommand(arg, grammar) ::= "_mode = <arg>";
LexerPushModeCommand(arg, grammar) ::= "pushMode(<arg>);"

ActionText(t) ::= "<t.text>"
ActionTemplate(t) ::= "<t.st>"
ArgRef(a) ::= "_localctx.<a.name>"
LocalRef(a) ::= "_localctx.<a.name>"
RetValRef(a) ::= "_localctx.<a.name>"
QRetValRef(a) ::= "<ctx(a)>.<a.dict>.<a.name>"
/** How to translate $tokenLabel */
TokenRef(t) ::= "<ctx(t)>.<t.name>"
LabelRef(t) ::= "<ctx(t)>.<t.name>"
ListLabelRef(t) ::= "<ctx(t)>.<ListLabelName(t.name)>"
SetAttr(s,rhsChunks)
::= "<ctx(s)>.<s.name> = <rhsChunks>";

TokenLabelType() ::= "<file.TokenLabelType; null={Token}>"
InputSymbolType() ::= "<file.InputSymbolType; null={Token}>"

TokenPropertyRef_text(t) ::= "<ctx(t)>.<t.label>!=null?<ctx(t)>.<t.label>.getText():null)"
TokenPropertyRef_type(t) ::= "<ctx(t)>.<t.label>!=null?<ctx(t)>.<t.label>.getType():0)"
TokenPropertyRef_line(t) ::= "<ctx(t)>.<t.label>!=null?<ctx(t)>.<t.label>.getLine():0)"
TokenPropertyRef_pos(t) ::= "<ctx(t)>.<t.label>!=null?<ctx(t)>.<t.label>.getCharPositionInLine():0)"
TokenPropertyRef_channel(t) ::= "<ctx(t)>.<t.label>!=null?<ctx(t)>.<t.label>.getChannel():0)"
TokenPropertyRef_index(t) ::= "<ctx(t)>.<t.label>!=null?<ctx(t)>.<t.label>.getTokenIndex():0)"
TokenPropertyRef_int(t) ::= "<ctx(t)>.<t.label>!=null?Integer.valueOf(<ctx(t)>.<t.label>.getText()):0)"

RulePropertyRef_start(r) ::= "<ctx(r)>.<r.label>!=null?<ctx(r)>.<r.label>.start():null)"
RulePropertyRef_stop(r) ::= "<ctx(r)>.<r.label>!=null?<ctx(r)>.<r.label>.stop():null)"
RulePropertyRef_text(r)

```

```

::= "<ctx(r)>.<r.label>!=null?_input.getText(<ctx(r)>.<r.label>.start,<ctx(r)>.<r.label>.stop):null)"
RulePropertyRef_ctx(r) ::= "<ctx(r)>.<r.label>"
RulePropertyRef_parser(r) ::= "this"

ThisRulePropertyRef_start(r) ::= "_localctx.start"
ThisRulePropertyRef_stop(r) ::= "_localctx.stop"
ThisRulePropertyRef_text(r) ::= "_input.getText(_localctx.start, _input.LT(-1))"
ThisRulePropertyRef_ctx(r) ::= "_localctx"
ThisRulePropertyRef_parser(r) ::= "this"

NonLocalAttrRef(s) ::= "(<s.ruleName; format=\"cap\">Context)getInvokingContext(<s.ruleIndex>).<s.name>"
SetNonLocalAttr(s, rhsChunks) ::=
"(<s.ruleName; format=\"cap\">Context)getInvokingContext(<s.ruleIndex>).<s.name> = <rhsChunks>;"

AddToLabelList(a) ::= "<ctx(a.label)>.<a.listName>.add(<labelref(a.label)>);"

TokenDecl(t) ::= "<TokenLabelType() <t.name>"
TokenTypeDecl(t) ::= "int <t.name>);"
TokenListDecl(t) ::= "List<Token> <t.name> = new ArrayList<Token>()"
RuleContextDecl(r)
::= "<r.ctxName> <r.name>"
RuleContextListDecl(rdecl) ::= "List<<rdecl.ctxName>> <rdecl.name> = new ArrayList<<rdecl.ctxName>>()"

ContextTokenGetterDecl(t) ::=
"public TerminalNode <t.name>() { return getToken(<parser.name>.<t.name>, 0); }"
ContextTokenListGetterDecl(t) ::=
"public List<TerminalNode> <t.name>() { return getTokens(<parser.name>.<t.name>); }"
ContextTokenListIndexedGetterDecl(t) ::= <<
public TerminalNode <t.name>(int i) {
return getToken(<parser.name>.<t.name>, i);
}
>>
ContextRuleGetterDecl(r) ::= <<
public <r.ctxName> <r.name>() {
return getRuleContext(<r.ctxName>.class,0);
}
>>
ContextRuleListGetterDecl(r) ::= <<
public List<<r.ctxName>> <r.name>() {
return getRuleContexts(<r.ctxName>.class);
}
>>
ContextRuleListIndexedGetterDecl(r) ::= <<
public <r.ctxName> <r.name>(int i) {
return getRuleContext(<r.ctxName>.class,i);
}
>>

```

```

LexerRuleContext() ::= "RuleContext"

/** The rule context name is the rule followed
by a suffix; e.g.,
* r becomes rContext.
*/
RuleContextNameSuffix() ::= "Context"

ImplicitTokenLabel(tokenName) ::= "<tokenName>"
ImplicitRuleLabel(ruleName) ::= "<ruleName>"
ImplicitSetLabel(id) ::= "_tset<id>"
ListLabelName(label) ::= "<label>"

CaptureNextToken(d) ::= "<d.varName> = _input.LT(1);"
CaptureNextTokenType(d) ::= "<d.varName> = _input.LA(1);"

StructDecl(struct,ctorAttrs,attrs, getters,dispatchMethods,interfaces,extensionMembers)
 ::= <<
public static class <struct.name> extends
<if(contextSuperClass)><contextSuperClass><else>ParserRuleContext<endif><if(interfaces)> implements
<interfaces; separator=", "><endif> {
<attrs:{a | public <a>;}; separator="\n">
<getters:{g | <g>;}; separator="\n">
<if(ctorAttrs)>public <struct.name>(ParserRuleContext parent, int invokingState) { super(parent, invokingState);
}<endif>
public <struct.name>(ParserRuleContext parent, int invokingState<ctorAttrs:{a | , <a>>}) {
super(parent, invokingState);
<struct.ctorAttrs:{a
| this.<a.name> = <a.name>;}; separator="\n">
}
@Override public int getRuleIndex() { return RULE_<struct.derivedFromName>; }
<if(struct.provideCopyFrom)> <! don't need copy unless we have subclasses !>
public <struct.name>() { }
public void copyFrom(<struct.name> ctx) {
super.copyFrom(ctx);
<struct.attrs:{a | this.<a.name> = ctx.<a.name>;}; separator="\n">
}
<endif>
<dispatchMethods; separator="\n">
<extensionMembers; separator="\n">
}
>>

AltLabelStructDecl(struct,attrs, getters,dispatchMethods) ::= <<
public static class <struct.name> extends <currentRule.name; format="cap">Context {
<attrs:{a | public <a>;}; separator="\n">
<getters:{g | <g>;}; separator="\n">
public <struct.name>(<currentRule.name; format="cap">Context ctx) { copyFrom(ctx); }

```

```

<dispatchMethods; separator="\n">
}
>>

ListenerDispatchMethod(method) ::= <<
@Override
public void <if(method.isEnter)>enter<else>exit<endif>Rule(ParseTreeListener listener) {
if ( listener instanceof <parser.grammarName>Listener
)
((<parser.grammarName>Listener)listener).<if(method.isEnter)>enter<else>exit<endif><struct.derivedFromName;
format="cap">(this);
}
>>

VisitorDispatchMethod(method) ::= <<
@Override
public <T> T accept(ParseTreeVisitor<? extends T> visitor) {
if ( visitor instanceof <parser.grammarName>Visitor ) return ((<parser.grammarName>Visitor<? extends
T>)visitor).visit<struct.derivedFromName; format="cap">(this);
else return visitor.visitChildren(this);
}
>>

AttributeDecl(d) ::= "<d.type> <d.name><if(d.initValue)> = <d.initValue><endif>"

/** If we don't know location of label def x, use this template */
labelref(x) ::= "<if(!x.isLocal)>(<x.ctx.name>)_localctx.<endif><x.name>"

/** For any action chunk, what is correctly-typed context struct ptr? */
ctx(actionChunk) ::= "(<actionChunk.ctx.name>)_localctx"

// used for left-recursive rules
recRuleAltPredicate(ruleName,opPrec) ::= "precpred(_ctx, <opPrec>)"
recRuleSetReturnAction(src,name) ::= "$<name>=<src>.<name>;"
recRuleSetStopToken()
::= "_ctx.stop = _input.LT(-1);"

recRuleAltStartAction(ruleName, ctxName, label, isListLabel) ::= <<
_localctx = new <ctxName>Context(_parentctx, _parentState);
<if(label)>
<if(isListLabel)>
_localctx.<label>.add(_prevctx);
<else>
_localctx.<label> = _prevctx;
<endif>
<endif>
<if(label)>_localctx.<label> = _prevctx;<endif>
pushNewRecursionContext(_localctx, _startState, RULE_<ruleName>);

```

>>

```
recRuleLabeledAltStartAction(ruleName, currentAltLabel, label, isListLabel) ::= <<
  _localctx = new <currentAltLabel; format="cap">Context(new <ruleName; format="cap">Context(_parentctx,
  _parentState));
  <if(label)>
  <if(isListLabel)>
  ((<currentAltLabel; format="cap">Context)_localctx).<label>.add(_prevctx);
  <else>
  ((<currentAltLabel; format="cap">Context)_localctx).<label> = _prevctx;
  <endif>
  <endif>
  pushNewRecursionContext(_localctx, _startState, RULE_<ruleName>);
  >>
```

```
recRuleReplaceContext(ctxName) ::= <<
  _localctx = new <ctxName>Context(_localctx);
  _ctx = _localctx;
  _prevctx
  = _localctx;
  >>
```

```
recRuleSetPrevCtx() ::= <<
  if ( _parseListeners!=null ) triggerExitRuleEvent();
  _prevctx = _localctx;
  >>
```

```
LexerFile(lexerFile, lexer, namedActions) ::= <<
  <fileHeader(lexerFile.grammarFileName, lexerFile.ANTLRVersion)>
  <if(lexerFile.genPackage)>
  package <lexerFile.genPackage>;
  <endif>
  <namedActions.header>
  import org.antlr.v4.runtime.Lexer;
  import org.antlr.v4.runtime.CharStream;
  import org.antlr.v4.runtime.Token;
  import org.antlr.v4.runtime.TokenStream;
  import org.antlr.v4.runtime.*;
  import org.antlr.v4.runtime.atn.*;
  import org.antlr.v4.runtime.dfa.DFA;
  import org.antlr.v4.runtime.misc.*;

  <lexer>
  >>
```

```
Lexer(lexer, atn, actionFuncs, sempredFuncs, superClass) ::= <<
  @SuppressWarnings({"all", "warnings", "unchecked", "unused", "cast"})
```



```

public class <lexer.name> extends <superClass; null="Lexer"> {
    static { RuntimeMetaData.checkVersion("<lexerFile.ANTLRVersion>", RuntimeMetaData.VERSION); }

    protected static final DFA[] _decisionToDFA;
    protected static final PredictionContextCache
    _sharedContextCache =
        new PredictionContextCache();
    public static final int
    <lexer.tokens:{k | <k>=<lexer.tokens.(k)>}; separator=", ", wrap, anchor>;
    <if(lexer.channels)>
    public static final int
    <lexer.channels:{k | <k>=<lexer.channels.(k)>}; separator=", ", wrap, anchor>;
    <endif>
    <rest(lexer.modes):{m | public static final int <m> = <i>;}; separator="\n">
    public static String[] modeNames = {
    <lexer.modes:{m | "<m>"}; separator=", ", wrap, anchor>
    };

    public static final String[] ruleNames = {
    <lexer.ruleNames:{r | "<r>"}; separator=", ", wrap, anchor>
    };

    <vocabulary(lexer.literalNames, lexer.symbolicNames)>

    <namedActions.members>

    public <lexer.name>(CharStream input) {
        super(input);
        _interp = new LexerATNSimulator(this, _ATN, _decisionToDFA, _sharedContextCache);
    }

    @Override
    public String getGrammarFileName() { return "<lexer.grammarFileName>"; }

    @Override
    public String[] getRuleNames() { return ruleNames; }

    @Override
    public String
    getSerializedATN() { return _serializedATN; }

    @Override
    public String[] getModeNames() { return modeNames; }

    @Override
    public ATN getATN() { return _ATN; }

    <dumpActions(lexer, "", actionFuncs, sempredFuncs)>

```

```

<atn>
}
>>

SerializedATN(model) ::= <<
<if(rest(model.segments))>
<! requires segmented representation !>
private static final int _serializedATNSegments = <length(model.segments)>;
<model.segments:{segment|private static final String _serializedATNSegment<i0> =
"<segment; wrap={ "+<\n><\t>" }>";}; separator="\n">
public static final String _serializedATN = Utils.join(
new String[] {
<model.segments:{segment | _serializedATNSegment<i0>}; separator=",\n">
},
""
);
<else>
<! only one segment, can be inlined !>
public static final String _serializedATN =
"<model.serialized; wrap={ "+<\n><\t>" }>";
<endif>
public static final ATN _ATN =
new ATNDeserializer().deserialize(_serializedATN.toCharArray());
static {
_decisionToDFA = new DFA[_ATN.getNumberOfDecisions()];
for
(int i = 0; i < _ATN.getNumberOfDecisions(); i++) {
_decisionToDFA[i] = new DFA(_ATN.getDecisionState(i), i);
}
<! org.antlr.v4.tool.DOTGenerator dot = new org.antlr.v4.tool.DOTGenerator(null);!>
<! System.out.println(dot.getDOT(_ATN.decisionToState.get(0), ruleNames, false));!>
<! System.out.println(dot.getDOT(_ATN.ruleToStartState[2], ruleNames, false));!>
}
>>

/** Using a type to init value map, try to init a type; if not in table
* must be an object, default value is "null".
*/
initValue(typeName) ::= <<
<javaTypeInitMap.(typeName)>
>>

codeFileExtension() ::= ".java"

```

Found in path(s):

```

* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-
jar/org/antlr/v4/tool/templates/codegen/Java/Java.stg

```

No license file was found, but licenses were detected in source scan.

```
/*
 * [The "BSD license"]
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 * THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
 * (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF
 * THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
 */
```

```
/** How to generate rules derived from left-recursive rules.
 * These rely on recRuleAltPredicate(),
 * recRuleArg(), recRuleSetResultAction(), recRuleSetReturnAction()
 * templates in main language.stg
 */
```

```
group LeftRecursiveRules;
```

```
recRule(ruleName, argName, primaryAlts, opAlts, setResultAction,
        userRetvals, leftRecursiveRuleRefLabels) ::=
```

```
<<
```

```
<ruleName><if(userRetvals)>
```

```
returns [<userRetvals>]<endif>
```

```
: ( { } <primaryAlts: { alt | <alt.altText> }; separator="\n    | ">
```

```
)
```

```
(
```

```
    <opAlts; separator="\n    | ">
  )*
;
>>
```

```
recRuleAlt(alt, precOption, opPrec, pred) ::= <<
{<pred>}?{\<precOption>=<opPrec>}\> <alt.altText>
>>
```

Found in path(s):

\* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/tool/templates/LeftRecursiveRules.stg

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 \*/

```
tree grammar SourceGenTriggers;
```

```
options {
  language = Java;
  tokenVocab = ANTLRParser;
  ASTLabelType = GrammarAST;
}
```

```
@header {
package org.antlr.v4.codegen;
import org.antlr.v4.misc.Utils;
import org.antlr.v4.codegen.model.*;
import org.antlr.v4.codegen.model.decl.*;
import org.antlr.v4.tool.*;
import org.antlr.v4.tool.ast.*;
import java.util.Collections;
import
  java.util.Map;
import java.util.HashMap;
}
```

```
@members {
```

```

public OutputModelController controller;
public boolean hasLookaheadBlock;
public SourceGenTriggers(TreeNodeStream input, OutputModelController controller) {
    this(input);
    this.controller = controller;
}
}

```

```
dummy : block[null, null] ;
```

```

block[GrammarAST label, GrammarAST ebnfRoot] returns [List<? extends SrcOp> omos]
: ^( blk=BLOCK ^(OPTIONS .+)?
{List<CodeBlockForAlt> alts = new ArrayList<CodeBlockForAlt>();}
( alternative {alts.add($alternative.altCodeBlock);} )+
)
{
if ( alts.size()==1 && ebnfRoot==null) return alts;
if ( ebnfRoot==null ) {
    Somos = DefaultOutputModelFactory.list(controller.getChoiceBlock((BlockAST)$blk, alts, $label));
}
else {
    Choice choice = controller.getEBNFBlock($ebnfRoot, alts);
    hasLookaheadBlock |= choice instanceof PlusBlock || choice instanceof StarBlock;
    Somos = DefaultOutputModelFactory.list(choice);
}
}
;

```

```

alternative returns [CodeBlockForAlt altCodeBlock, List<SrcOp> ops]
@init {
    boolean outerMost = inContext("RULE BLOCK");
}
@after {
    controller.finishAlternative($altCodeBlock, $ops, outerMost);
}
: a=alt[outerMost] { $altCodeBlock=$a.altCodeBlock; $ops=$a.ops;}
;

```

```

alt[boolean outerMost] returns [CodeBlockForAlt altCodeBlock, List<SrcOp> ops]
@init {
// set alt if outer ALT only (the only ones with alt field set to Alternative object)
AltAST altAST = (AltAST)retval.start;
if ( outerMost ) controller.setCurrentOuterMostAlt(altAST.alt);
}
: {
List<SrcOp> elems = new ArrayList<SrcOp>();
// TODO: shouldn't we pass $start to controller.alternative()?
$altCodeBlock = controller.alternative(controller.getCurrentOuterMostAlt(), outerMost);
}

```

```

$altCodeBlock.ops = $ops = elems;
controller.setCurrentBlock($altCodeBlock);
}
^( ALT elementOptions? ( element {if ($element.omos!=null) elems.addAll($element.omos);} )+ )

```

```

| ^(ALT elementOptions?
EPSILON)
    {$altCodeBlock = controller.epsilon(controller.getCurrentOuterMostAlt(), outerMost);}
;

```

```

element returns [List<? extends SrcOp> omos]
: labeledElement    {$omos = $labeledElement.omos;}
| atom[null,false]  {$omos = $atom.omos;}
| subrule           {$omos = $subrule.omos;}
| ACTION           {$omos = controller.action((ActionAST)$ACTION);}
| SEMPRED          {$omos = controller.sempred((ActionAST)$SEMPRED);}
| ^(ACTION elementOptions) {$omos = controller.action((ActionAST)$ACTION);}
| ^(SEMPRED elementOptions) {$omos = controller.sempred((ActionAST)$SEMPRED);}
;

```

```

labeledElement returns [List<? extends SrcOp> omos]
: ^(ASSIGN ID atom[$ID,false] ) {$omos = $atom.omos;}
| ^(PLUS_ASSIGN ID atom[$ID,false]) {$omos = $atom.omos;}
| ^(ASSIGN ID block[$ID,null] ) {$omos = $block.omos;}
| ^(PLUS_ASSIGN ID block[$ID,null]) {$omos = $block.omos;}
;

```

```

subrule returns [List<? extends SrcOp> omos]
: ^(OPTIONAL b=block[null,$OPTIONAL])
{
    $omos = $block.omos;
}
| ( ^(op=CLOSURE
b=block[null,null])
| ^(op=POSITIVE_CLOSURE b=block[null,null])
)
{
    List<CodeBlockForAlt> alts = new ArrayList<CodeBlockForAlt>();
    SrcOp blk = $b.omos.get(0);
    CodeBlockForAlt alt = new CodeBlockForAlt(controller.delegate);
    alt.addOp(blk);
    alts.add(alt);
    SrcOp loop = controller.getEBNFBlock($op, alts); // "star it"
    hasLookaheadBlock |= loop instanceof PlusBlock || loop instanceof StarBlock;
    $omos = DefaultOutputModelFactory.list(loop);
}
| block[null, null]    {$omos = $block.omos;}
;

```

```

blockSet[GrammarAST label, boolean invert] returns [List<SrcOp> omos]
  : ^(SET atom[label,invert]+) {$omos = controller.set($SET, $label, invert);}
  ;

/*
setElement
: STRING_LITERAL
| TOKEN_REF
| ^(RANGE STRING_LITERAL STRING_LITERAL)
;
*/

// TODO: combine ROOT/BANG into one then just make new op ref'ing return value of atom/terminal...
// TODO: same for NOT
atom[GrammarAST label, boolean invert] returns [List<SrcOp> omos]
: ^(NOT
a=atom[$label, true]) {$omos = $a.omos;}
| range[label]    {$omos = $range.omos;}
| ^(DOT ID terminal[$label])
| ^(DOT ID ruleref[$label])
| ^(WILDCARD .)  {$omos = controller.wildcard($WILDCARD, $label);}
| WILDCARD      {$omos = controller.wildcard($WILDCARD, $label);}
| terminal[label] {$omos = $terminal.omos;}
| ruleref[label] {$omos = $ruleref.omos;}
| blockSet[$label, invert] {$omos = $blockSet.omos;}
;

ruleref[GrammarAST label] returns [List<SrcOp> omos]
  : ^(RULE_REF ARG_ACTION? elementOptions?) {$omos = controller.ruleRef($RULE_REF, $label,
$ARG_ACTION);}
  ;

range[GrammarAST label] returns [List<SrcOp> omos]
  : ^(RANGE a=STRING_LITERAL b=STRING_LITERAL)
  ;

terminal[GrammarAST label] returns [List<SrcOp> omos]
  : ^(STRING_LITERAL .) {$omos = controller.stringRef($STRING_LITERAL, $label);}
  | STRING_LITERAL    {$omos = controller.stringRef($STRING_LITERAL, $label);}
  | ^(TOKEN_REF ARG_ACTION .) {$omos =
controller.tokenRef($TOKEN_REF, $label, $ARG_ACTION);}
  | ^(TOKEN_REF .)   {$omos = controller.tokenRef($TOKEN_REF, $label, null);}
  | TOKEN_REF        {$omos = controller.tokenRef($TOKEN_REF, $label, null);}
  ;

elementOptions
  : ^(ELEMENT_OPTIONS elementOption+)

```



;

elementOption

: ID

| ^(ASSIGN ID ID)

| ^(ASSIGN ID STRING\_LITERAL)

| ^(ASSIGN ID ACTION)

| ^(ASSIGN ID INT)

;

Found in path(s):

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\*/

lexer grammar ActionSplitter;

```

options { filter=true; }

@header {
package org.antlr.v4.parse;
import org.antlr.v4.tool.*;
import org.antlr.v4.tool.ast.*;
}

@members {
ActionSplitterListener delegate;

public ActionSplitter(CharStream input, ActionSplitterListener delegate) {
    this(input, new RecognizerSharedState());
    this.delegate = delegate;
}

/** force filtering
    (and return tokens). triggers all above actions. */
public List<Token> getActionTokens() {
    List<Token> chunks = new ArrayList<Token>();
    Token t = nextToken();
    while ( t.getType()!=Token.EOF ) {
        chunks.add(t);
        t = nextToken();
    }
    return chunks;
}

private boolean isIDStartChar(int c) {
    return c == '_' || Character.isLetter(c);
}

}

// ignore comments right away

COMMENT
: /*' ( options { greedy=false; } : . )* */' { delegate.text($text); }
;

LINE_COMMENT
: //' ~(\n"\'r)* \'r'? \n' { delegate.text($text); }
;

SET_NONLOCAL_ATTR
: '$' x=ID ':' y=ID WS? '=' expr=ATTR_VALUE_EXPR ';'
{
    delegate.setNonLocalAttr($text, $x, $y, $expr);
}

```

```

;

NONLOCAL_ATTR
: '$ x=ID ':' y=ID {delegate.nonLocalAttr($text, $x, $y);}
;

QUALIFIED_ATTR
: '$ x=ID ' y=ID {input.LA(1)!='('}? {delegate.qualifiedAttr($text, $x, $y);}
;

SET_ATTR
: '$ x=ID WS? '=' expr=ATTR_VALUE_EXPR ';'
{
delegate.setAttr($text, $x, $expr);
}
;

ATTR
: '$
x=ID {delegate.attr($text, $x);}
;

// Anything else is just random text
TEXT
@init {StringBuilder buf = new StringBuilder();}
@after {delegate.text(buf.toString());}
: ( c=~('\| '$) {buf.append((char)$c);}
| '\\$' {buf.append('$);}
| '\\ c=~('$) {buf.append('\\').append((char)$c);}
| {!isIDStartChar(input.LA(2))}? => '$' {buf.append('$);}
)+
;

fragment
ID : ('a'..'z'|'A'..'Z'|'_') ('a'..'z'|'A'..'Z'|'0'..'9'|'_')*
;

/** Don't allow an = as first char to prevent $x == 3; kind of stuff. */
fragment
ATTR_VALUE_EXPR
: ~'=' (~';)*
;

fragment
WS : (' '\t' '\n' '\r')+
;

```

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\*/

/\*\* ANTLR tool checks output templates are compatible with tool code generation.

\* For now, a simple string match used on x.y of x.y.z scheme.

\* Must match Tool.VERSION during load to templates.

\*

\* REQUIRED.

\*/

pythonTypeInitMap ::= [

"bool": "False",

"int": "0",

"float": "0.0",

"str": "",

default: "None" // anything other

than a primitive type is an object

]

```
// args must be <object-model-object>, <fields-resulting-in-STs>
```

```
ParserFile(file, parser, namedActions, contextSuperClass) ::= <<  
<fileHeader(file.grammarFileName, file.ANTLRVersion)>  
var antlr4 = require('antlr4/index');  
<if(file.genListener)>  
var <file.grammarName>Listener = require('./<file.grammarName>Listener').<file.grammarName>Listener;  
<endif>  
<if(file.genVisitor)>  
var <file.grammarName>Visitor = require('./<file.grammarName>Visitor').<file.grammarName>Visitor;  
<endif>  
  
<namedActions.header>  
<parser>  
>>
```

```
ListenerFile(file, header, namedActions) ::= <<  
<fileHeader(file.grammarFileName, file.ANTLRVersion)>  
var antlr4 = require('antlr4/index');
```

```
// This class defines a complete listener for a parse tree produced by <file.parserName>.
```

```
function <file.grammarName>Listener() {  
  antlr4.tree.ParseTreeListener.call(this);  
  return this;  
}
```

```
<file.grammarName>Listener.prototype = Object.create(antlr4.tree.ParseTreeListener.prototype);  
<file.grammarName>Listener.prototype.constructor  
= <file.grammarName>Listener;
```

```
<file.listenerNames>:{Iname |
```

```
// Enter a parse tree produced by <file.parserName>#<Iname>.
```

```
<file.grammarName>Listener.prototype.enter<Iname; format="cap"> = function(ctx) {  
  \};
```

```
// Exit a parse tree produced by <file.parserName>#<Iname>.
```

```
<file.grammarName>Listener.prototype.exit<Iname; format="cap"> = function(ctx) {  
  \};
```

```
}; separator="\n">
```

```
exports.<file.grammarName>Listener = <file.grammarName>Listener;
```

```
>>
```

```

VisitorFile(file, header, namedActions) ::= <<
<fileHeader(file.grammarFileName, file.ANTLRVersion)>
var antlr4 = require('antlr4/index');

// This class defines a complete generic visitor for a parse tree produced by <file.parserName>.

function <file.grammarName>Visitor() {
  antlr4.tree.ParseTreeVisitor.call(this);
  return this;
}

<file.grammarName>Visitor.prototype = Object.create(antlr4.tree.ParseTreeVisitor.prototype);
<file.grammarName>Visitor.prototype.constructor = <file.grammarName>Visitor;

<file.visitorNames: {Iname
|
// Visit a parse tree produced by <file.parserName>#<Iname>.
<file.grammarName>Visitor.prototype.visit<Iname; format="cap"> = function(ctx) {
  return this.visitChildren(ctx);
\};

}; separator="\n">

exports.<file.grammarName>Visitor = <file.grammarName>Visitor;
>>

fileHeader(grammarFileName, ANTLRVersion) ::= <<
// Generated from <grammarFileName; format="java-escape"> by ANTLR <ANTLRVersion>
// jshint ignore: start
>>

Parser(parser, funcs, atn, sempredFuncs, superClass) ::= <<
<if(superClass)>
var <superClass> = require('./<superClass>').<superClass>;
<endif>

var grammarFileName = "<parser.grammarFileName; format="java-escape">";

<atn>

var atn = new antlr4.atn.ATNDeserializer().deserialize(serializedATN);

var decisionsToDFA = atn.decisionToState.map( function(ds, index) { return new antlr4.dfa.DFA(ds, index); });

var sharedContextCache = new antlr4.PredictionContextCache();

var literalNames = [ <parser.literalNames: {t | <t>}; null="null", separator=", ", wrap,

```

```

anchor> ];

var symbolicNames = [ <parser.symbolicNames:{t | <t>}; null="null", separator=", ", wrap, anchor > ];

var ruleNames = [ <parser.ruleNames:{r | "<r>"}; separator=", ", wrap, anchor > ];

function <parser.name> (input) {
  <superClass; null="antlr4.Parser">.call(this, input);
  this._interp = new antlr4.atn.ParserATNSimulator(this, atn, decisionsToDFA, sharedContextCache);
  this.ruleNames = ruleNames;
  this.literalNames = literalNames;
  this.symbolicNames = symbolicNames;
  <namedActions.members>
  return this;
}

<parser.name>.prototype = Object.create(<superClass; null="antlr4.Parser">.prototype);
<parser.name>.prototype.constructor = <parser.name>;

Object.defineProperty(<parser.name>.prototype, "atn", {
  get : function() {
    return atn;
  }
});

<parser.name>.EOF = antlr4.Token.EOF;
<if(parser.tokens)>
<parser.tokens:{k | <parser.name>.<k> = <parser.tokens.(k)>;}; separator="\n", wrap, anchor >
<endif>

<parser.rules:{r | <parser.name>.RULE_<r.name> = <r.index>;};
separator="\n", wrap, anchor >

<funcs; separator="\n">

<if(sempredFuncs)>
<parser.name>.prototype.sempred = function(localctx, ruleIndex, predIndex) {
  switch(ruleIndex) {
  <parser.sempredFuncs.values:{f | case <f.ruleIndex>:
  return this.<f.name>_sempred(localctx, predIndex);}; separator="\n">
  default:
    throw "No predicate with index:" + ruleIndex;
  }
};

<sempredFuncs.values; separator="\n">
<endif>

```

```
exports.<parser.name> = <parser.name>;
```

```
>>
```

```
dumpActions(recog, argFuncs, actionFuncs, sempredFuncs) ::= <<  
<if(actionFuncs)>  
<lexer.name>.prototype.action = function(localctx, ruleIndex, actionIndex) {  
  switch (ruleIndex) {  
    <recog.actionFuncs.values:{f}|  
  case <f.ruleIndex>:  
    this.<f.name>_action(localctx, actionIndex);  
    break;}; separator="\n">  
  default:  
    throw "No registered action for:" + ruleIndex;  
  }  
};
```

```
<actionFuncs.values; separator="\n">  
<endif>  
<if(sempredFuncs)>  
<lexer.name>.prototype.sempred = function(localctx, ruleIndex, predIndex) {  
  switch (ruleIndex) {  
    <recog.sempredFuncs.values:{f}|  
  case <f.ruleIndex>:  
    return this.<f.name>_sempred(localctx, predIndex);}; separator="\n">  
  default:  
    throw "No registered predicate for:" + ruleIndex;  
  }  
};
```

```
<sempredFuncs.values; separator="\n">  
<endif>  
>>
```

```
/* This generates a private method since the actionIndex is generated, making an  
* overriding implementation impossible to maintain.
```

```
*/
```

```
RuleActionFunction(r, actions) ::= <<
```

```
<lexer.name>.prototype.<r.name>_action = function(localctx , actionIndex) {  
  switch (actionIndex) {  
    <actions:{index}|  
  case <index>:  
    <actions.(index)>  
    break;}; separator="\n">  
  default:  
    throw "No registered action for:" + actionIndex;
```



```
}  
};  
>>
```

```
/* This generates a private method since the predIndex is generated, making an  
* overriding implementation impossible to maintain.
```

```
*/
```

```
RuleSempredFunction(r, actions) ::= <<
```

```
<if (r.factory.g.lexer)><lexer.name><else><parser.name><endif>.prototype.<r.name>_sempred = function(localctx,  
predIndex) {
```

```
  switch(predIndex) {
```

```
    <actions:{index|
```

```
  case <index>:
```

```
    return <actions.(index)>;}; separator="\n">
```

```
  default:
```

```
    throw "No predicate with index:" + predIndex;
```

```
  }
```

```
};
```

```
>>
```

```
RuleFunction(currentRule,args,code,locals,ruleCtx,altLabelCtxs,namedActions,finallyAction,postamble,exceptions)
```

```
::= <<
```

```
<ruleCtx>
```

```
<altLabelCtxs:{l | <altLabelCtxs.(l)>}; separator="\n">
```

```
<! Define fields of this parser to export the context classes !>
```

```
<parser.name>.<currentRule.ctxType> = <currentRule.ctxType>;
```

```
<parser.name>.prototype.<currentRule.name> = function(<currentRule.args:{a | <a.name>}; separator=", ">) {
```

```
  var localctx = new <currentRule.ctxType>(this, this._ctx, this.state<currentRule.args:{a | , <a.name>}>);
```

```
  this.enterRule(localctx, <currentRule.startState>, <parser.name>.RULE_<currentRule.name>);
```

```
  <namedActions.init>
```

```
  <locals; separator="\n">
```

```
  try {
```

```
    <code>
```

```
    <postamble; separator="\n">
```

```
    <namedActions.after>
```

```
  <if(exceptions)>
```

```
  <exceptions; separator="\n">
```

```
  <else>
```

```
  } catch (re)
```

```
{
```

```
  if(re instanceof antlr4.error.RecognitionException) {
```

```
    localctx.exception = re;
```

```

        this._errHandler.reportError(this, re);
        this._errHandler.recover(this, re);
    } else {
        throw re;
    }
} <endif> finally {
    <finallyAction>
    this.exitRule();
}
return localctx;
};

>>

```

```

LeftRecursiveRuleFunction(currentRule,args,code,locals,ruleCtx,altLabelCtxs,
namedActions,finallyAction,postamble) ::=
<<

```

```

<ruleCtx>
<altLabelCtxs:{l | <altLabelCtxs.(l)>}; separator="\n">

<parser.name>.prototype.<currentRule.name> = function(_p<if(currentRule.args)>, <args:{a | , <a>}><endif>) {
    if(_p===undefined) {
        _p = 0;
    }
    var _parentctx = this._ctx;
    var _parentState = this.state;
    var localctx = new <currentRule.ctxType>(this, this._ctx, _parentState<args:{a | , <a.name>}>);
    var _prevctx = localctx;
    var _startState = <currentRule.startState>;
    this.enterRecursionRule(localctx, <currentRule.startState>, <parser.name>.RULE_<currentRule.name>,
    _p);
    <namedActions.init>
    <locals; separator="\n">
    try {
        <code>
        <postamble; separator="\n">
        <namedActions.after>
    } catch( error) {
        if(error instanceof antlr4.error.RecognitionException) {
            localctx.exception = error;
            this._errHandler.reportError(this, error);
            this._errHandler.recover(this, error);
        } else {
            throw error;
        }
    } finally {
        <finallyAction>
    }
}

```

```

    this.unrollRecursionContexts(_parentctx)
  }
  return localctx;
};

>>

```

```

CodeBlockForOuterMostAlt(currentOuterMostAltCodeBlock, locals, preamble, ops) ::= <<
<if(currentOuterMostAltCodeBlock.altLabel)>localctx = new <currentOuterMostAltCodeBlock.altLabel;
format="cap">Context(this, localctx);<endif>
this.enterOuterAlt(localctx, <currentOuterMostAltCodeBlock.alt.altNum>);
<CodeBlockForAlt(currentAltCodeBlock=currentOuterMostAltCodeBlock, ...)>
>>

```

```

CodeBlockForAlt(currentAltCodeBlock, locals, preamble, ops) ::= <<
<locals;
separator="\n">
<preamble; separator="\n">
<ops; separator="\n">
>>

```

```

LL1AltBlock(choice, preamble, alts, error) ::= <<
this.state = <choice.stateNumber>;
this._errHandler.sync(this);
<if(choice.label)><labelref(choice.label)> = this._input.LT(1);<endif>
<preamble; separator="\n">
switch(this._input.LA(1)) {
<choice.altLook,alts:{look,alt| <cases(ttypes=look)>
  <alt>
  break; }; separator="\n">
default:
  <error>
}
>>

```

```

LL1OptionalBlock(choice, alts, error) ::= <<
this.state = <choice.stateNumber>;
this._errHandler.sync(this);
switch (this._input.LA(1)) {
<choice.altLook,alts:{look,alt| <cases(ttypes=look)>
  <alt>
  break; }; separator="\n">
default:
  <error>
}
>>

```

```

LL1OptionalBlockSingleAlt(choice, expr, alts, preamble, error, followExpr) ::= <<

```

```

this.state = <choice.stateNumber>;
this._errHandler.sync(this);
<preamble; separator="\n">
if(<expr>) {
  <alts; separator="\n">
}
<!else if ( !(<followExpr>) ) <error!>
>>

```

```

LL1StarBlockSingleAlt(choice, loopExpr, alts, preamble,
iteration) ::= <<
this.state = <choice.stateNumber>;
this._errHandler.sync(this);
<preamble; separator="\n">
while(<loopExpr>) {
  <alts; separator="\n">
  this.state = <choice.loopBackStateNumber>;
  this._errHandler.sync(this);
  <iteration>
}
>>

```

```

LL1PlusBlockSingleAlt(choice, loopExpr, alts, preamble, iteration) ::= <<
this.state = <choice.blockStartStateNumber>; <! alt block decision !>
this._errHandler.sync(this);
<preamble; separator="\n">
do {
  <alts; separator="\n">
  this.state = <choice.stateNumber>; <! loopback/exit decision !>
  this._errHandler.sync(this);
  <iteration>
} while(<loopExpr>);
>>

```

// LL(\*) stuff

```

AltBlock(choice, preamble, alts, error) ::= <<
this.state = <choice.stateNumber>;
this._errHandler.sync(this);
<if(choice.label)><labelref(choice.label)> = _input.LT(1)<endif>
<preamble; separator="\n">
var la_ = this._interp.adaptivePredict(this._input,<choice.decision>,this._ctx);
switch(la_) {
<alts:{alt |
case <i>:
  <alt>
  break;
}; separator="\n">

```

```
}  
>>
```

```
OptionalBlock(choice,  
  alts, error) ::= <<  
  this.state = <choice.stateNumber>;  
  this._errHandler.sync(this);  
  var la_ = this._interp.adaptivePredict(this._input,<choice.decision>,this._ctx);  
  <alts:{alt |  
  if(la_===<i><if(!choice.ast.greedy)>+1<endif>) {  
    <alt>  
  }; separator="\n} else ">  
  }  
>>
```

```
StarBlock(choice, alts, sync, iteration) ::= <<  
  this.state = <choice.stateNumber>;  
  this._errHandler.sync(this);  
  var _alt = this._interp.adaptivePredict(this._input,<choice.decision>,this._ctx)  
  while(_alt!=<choice.exitAlt> && _alt!=antlr4.atn.ATN.INVALID_ALT_NUMBER) {  
    if(_alt===1<if(!choice.ast.greedy)>+1<endif>) {  
      <iteration>  
      <alts> <! should only be one !>  
    }  
    this.state = <choice.loopBackStateNumber>;  
    this._errHandler.sync(this);  
    _alt = this._interp.adaptivePredict(this._input,<choice.decision>,this._ctx);  
  }  
>>
```

```
PlusBlock(choice, alts, error) ::= <<  
  this.state = <choice.blockStartStateNumber>; <! alt block decision !>  
  this._errHandler.sync(this);  
  var  
  _alt = 1<if(!choice.ast.greedy)>+1<endif>;  
  do {  
    switch (_alt) {  
      <alts:{alt|  
      case <i><if(!choice.ast.greedy)>+1<endif>:  
        <alt>  
        break;}; separator="\n">  
      default:  
        <error>  
      }  
    this.state = <choice.loopBackStateNumber>; <! loopback/exit decision !>  
    this._errHandler.sync(this);  
    _alt = this._interp.adaptivePredict(this._input,<choice.decision>, this._ctx);
```

```

} while ( _alt!=<choice.exitAlt> && _alt!=antlr4.atn.ATN.INVALID_ALT_NUMBER );
>>

Sync(s) ::= "sync(<s.expecting.name>)"

ThrowNoViableAlt(t) ::= "throw new antlr4.error.NoViableAltException(this);"

TestSetInline(s) ::= <<
<s.bitsets:{bits | <if(rest(rest(bits.ttypes)))><bitsetBitfieldComparison(s, bits)><else><bitsetInlineComparison(s,
bits)><endif>}; separator=" || ">
>>

// Javascript language spec - shift operators are 32 bits long max
testShiftInRange(shiftAmount) ::= <<
((<shiftAmount>) & ~0x1f) == 0
>>

// produces smaller bytecode only when bits.ttypes contains more than two items
bitsetBitfieldComparison(s, bits) ::= <%
(<testShiftInRange({<offsetShiftVar(s.varName,
bits.shift)>})> && ((1 \<< <offsetShiftVar(s.varName, bits.shift)>) & (<bits.ttypes:{ttype | (1 \<<
<offsetShiftType(ttype, bits.shift)>}); separator=" | ">)) !== 0)
%>

isZero ::= [
"0":true,
default:false
]

offsetShiftVar(shiftAmount, offset) ::= <%
<if(!isZero.(offset))><shiftAmount> - <offset><else><shiftAmount><endif>
%>

offsetShiftType(shiftAmount, offset) ::= <%
<if(!isZero.(offset))><parser.name>.<shiftAmount> - <offset><else><parser.name>.<shiftAmount><endif>
%>

// produces more efficient bytecode when bits.ttypes contains at most two items
bitsetInlineComparison(s, bits) ::= <%
<bits.ttypes:{ttype | <s.varName>===<parser.name>.<ttype>}; separator=" || ">
%>

cases(ttypes) ::= <<
<ttypes:{t | case <parser.name>.<t>:}; separator="\n">
>>

InvokeRule(r, argExprsChunks) ::= <<
this.state = <r.stateNumber>;

```

```

<if(r.labels)><r.labels:{1 | <labelref(1)> =
}><endif>this.<r.name>(<if(r.ast.options.p)><r.ast.options.p><if(argExprsChunks)><endif><endif><argExprsChu
nks>);
>>

```

```
MatchToken(m)
```

```

::= <<
this.state = <m.stateNumber>;
<if(m.labels)><m.labels:{1 | <labelref(1)> = }><endif>this.match(<parser.name>.<m.name>);
>>

```

```
MatchSet(m, expr, capture) ::= "<CommonSetStuff(m, expr, capture, false)>"
```

```
MatchNotSet(m, expr, capture) ::= "<CommonSetStuff(m, expr, capture, true)>"
```

```
CommonSetStuff(m, expr, capture, invert) ::= <<
```

```

this.state = <m.stateNumber>;
<if(m.labels)><m.labels:{1 | <labelref(1)> = }>this._input.LT(1);<endif>
<capture>
<if(invert)>if(<m.varName>\<=0 || <expr>)<else>if(!(<expr>))<endif> {
  <if(m.labels)><m.labels:{1 | <labelref(1)> = }><endif>this._errHandler.recoverInline(this);
}
else {
  this._errHandler.reportMatch(this);
  this.consume();
}
>>

```

```
Wildcard(w) ::= <<
```

```

this.state = <w.stateNumber>;
<if(w.labels)><w.labels:{1 | <labelref(1)> = }><endif>matchWildcard();
>>

```

```
// ACTION STUFF
```

```
Action(a, foo, chunks) ::= "<chunks>"
```

```
ArgAction(a, chunks) ::= "<chunks>"
```

```
SemPred(p, chunks, failChunks) ::= <<
```

```

this.state
= <p.stateNumber>;
if (!( <chunks>)) {
  throw new antlr4.error.PredicateException(this, <p.predicate><if(failChunks)>,
<failChunks><elseif(p.msg)>, <p.msg><endif>);
}
>>

```

```

ExceptionClause(e, catchArg, catchAction) ::= <<
catch (<catchArg>) {
  <catchAction>
}
>>

// lexer actions are not associated with model objects

LexerSkipCommand() ::= "this.skip()"
LexerMoreCommand() ::= "this.more()"
LexerPopModeCommand() ::= "this.popMode()"
LexerTypeCommand(arg, grammar) ::= "this._type = <arg>"
LexerChannelCommand(arg, grammar) ::= "this._channel = <arg>"
LexerModeCommand(arg, grammar) ::= "this._mode = <arg>"
LexerPushModeCommand(arg, grammar) ::= "this.pushMode(<arg>)"

ActionText(t) ::= "<t.text>"
ActionTemplate(t) ::= "<t.st>"
ArgRef(a) ::= "localctx.<a.name>"
LocalRef(a) ::= "localctx.<a.name>"
RetValRef(a) ::= "localctx.<a.name>"
QRetValRef(a) ::= "<ctx(a)>.<a.dict>.<a.name>"
/** How to translate $tokenLabel */
TokenRef(t) ::= "<ctx(t)>.<t.name>"
LabelRef(t)
  ::= "<ctx(t)>.<t.name>"
ListLabelRef(t) ::= "<ctx(t)>.<ListLabelName(t.name)>"
SetAttr(s,rhsChunks) ::= "<ctx(s)>.<s.name> = <rhsChunks>"

TokenLabelType() ::= "<file.TokenLabelType; null={Token}>"
InputSymbolType() ::= "<file.InputSymbolType; null={Token}>"

TokenPropertyRef_text(t) ::= "<ctx(t)>.<t.label>===null ? null : <ctx(t)>.<t.label>.text)"
TokenPropertyRef_type(t) ::= "<ctx(t)>.<t.label> === null ? 0 : <ctx(t)>.<t.label>.type)"
TokenPropertyRef_line(t) ::= "<ctx(t)>.<t.label> === null ? 0 : <ctx(t)>.<t.label>.line)"
TokenPropertyRef_pos(t) ::= "<ctx(t)>.<t.label> === null ? 0 : <ctx(t)>.<t.label>.column)"
TokenPropertyRef_channel(t) ::= "<ctx(t)>.<t.label> === null ? 0 : <ctx(t)>.<t.label>.channel)"
TokenPropertyRef_index(t) ::= "<ctx(t)>.<t.label> === null ? 0 : <ctx(t)>.<t.label>.tokenIndex)"
TokenPropertyRef_int(t) ::= "<ctx(t)>.<t.label> === null ? 0 : parseInt(<ctx(t)>.<t.label>.text))"

RulePropertyRef_start(r) ::= "<ctx(r)>.<r.label>===null ? null : <ctx(r)>.<r.label>.start)"
RulePropertyRef_stop(r)
  ::= "<ctx(r)>.<r.label>===null ? null : <ctx(r)>.<r.label>.stop)"
RulePropertyRef_text(r) ::= "<ctx(r)>.<r.label>===null ? null : this._input.getText(new
antlr4.Interval(<ctx(r)>.<r.label>.start,<ctx(r)>.<r.label>.stop)))"
RulePropertyRef_ctx(r) ::= "<ctx(r)>.<r.label>"
RulePropertyRef_parser(r) ::= "this"

```



```

ThisRulePropertyRef_start(r) ::= "localctx.start"
ThisRulePropertyRef_stop(r) ::= "localctx.stop"
ThisRulePropertyRef_text(r) ::= "this._input.getText(new antlr4.Interval(localctx.start, this._input.LT(-1)))"
ThisRulePropertyRef_ctx(r) ::= "localctx"
ThisRulePropertyRef_parser(r) ::= "this"

```

```

NonLocalAttrRef(s) ::= "getInvokingContext(<s.ruleIndex>).<s.name>"
SetNonLocalAttr(s, rhsChunks) ::= "getInvokingContext(<s.ruleIndex>).<s.name> = <rhsChunks>"

```

```

AddToLabelList(a) ::= "<ctx(a.label)>.<a.listName>.push(<labelref(a.label)>);"

```

```

TokenDecl(t) ::= "this.<t.name> = null; // <TokenLabelType(>"
TokenTypeDecl(t) ::= "var <t.name>
= 0; // <TokenLabelType(> type"
TokenListDecl(t) ::= "this.<t.name> = []; // of <TokenLabelType(>s"
RuleContextDecl(r) ::= "this.<r.name> = null; // <r.ctxName>"
RuleContextListDecl(rdecl) ::= "this.<rdecl.name> = []; // of <rdecl.ctxName>s"

```

```

ContextTokenGetterDecl(t) ::= <<
<t.name> = function() {
    return this.getToken(<parser.name>.<t.name>, 0);
};
>>

```

```

// should never be called
ContextTokenListGetterDecl(t) ::= <<
def <t.name>_list(self):
    return self.getTokens(<parser.name>.<t.name>)
>>

```

```

ContextTokenListIndexedGetterDecl(t) ::= <<
<t.name> = function(i) {
    if(i===undefined) {
        i = null;
    }
    if(i===null) {
        return this.getTokens(<parser.name>.<t.name>);
    } else {
        return this.getToken(<parser.name>.<t.name>, i);
    }
};
>>

```

```

ContextRuleGetterDecl(r) ::= <<
<r.name> = function() {
    return this.getTypedRuleContext(<r.ctxName>,0);
};

```

```

>>

// should never be called
ContextRuleListGetterDecl(r) ::= <<
def <r.name>_list(self):
    return self.getTypedRuleContexts(<parser.name>.<r.ctxName>)

>>

ContextRuleListIndexedGetterDecl(r)
    ::= <<
<r.name> = function(i) {
    if(i===undefined) {
        i = null;
    }
    if(i===null) {
        return this.getTypedRuleContexts(<r.ctxName>);
    } else {
        return this.getTypedRuleContext(<r.ctxName>,i);
    }
};
>>

LexerRuleContext() ::= "RuleContext"

/** The rule context name is the rule followed by a suffix; e.g.,
 * r becomes rContext.
 */
RuleContextNameSuffix() ::= "Context"

ImplicitTokenLabel(tokenName) ::= "_<tokenName>"
ImplicitRuleLabel(ruleName) ::= "_<ruleName>"
ImplicitSetLabel(id) ::= "_tset<id>"
ListLabelName(label) ::= "<label>"

CaptureNextToken(d) ::= "<d.varName> = self._input.LT(1)"
CaptureNextTokenType(d) ::= "<d.varName> = this._input.LA(1);"

StructDecl(struct,ctorAttrs,attrs, getters,dispatchMethods,interfaces,extensionMembers) ::= <<
function <struct.name>(parser, parent, invokingState<struct.ctorAttrs:{a | , <a.name>}> ) {
    if(parent===undefined)
    {
        parent = null;
    }
    if(invokingState===undefined || invokingState===null) {
        invokingState = -1;
    }
    <if(contextSuperClass><contextSuperClass><else>antlr4.ParserRuleContext<endif>.call(this, parent,

```

```

invokingState);
    this.parser = parser;
    this.ruleIndex = <parser.name>.RULE_<struct.derivedFromName>;
    <attrs:{a | <a>}; separator="\n">
    <struct.ctorAttrs:{a | this.<a.name> = <a.name> || null;}; separator="\n">
    return this;
}

<struct.name>.prototype =
Object.create(<if(contextSuperClass)><contextSuperClass><else>antlr4.ParserRuleContext<endif>.prototype);
<struct.name>.prototype.constructor = <struct.name>;

<getters:{g | <struct.name>.prototype.<g>}; separator="\n\n">

<if(struct.provideCopyFrom)> <! don't need copy unless we have subclasses !>
<struct.name>.prototype.copyFrom = function(ctx) {
<if(contextSuperClass)><contextSuperClass><else>antlr4.ParserRuleContext<endif>.prototype.copyFrom.call(this,
ctx);
    <struct.attrs:{a | this.<a.name> = ctx.<a.name>};};
    separator="\n">
};
<endif>
<dispatchMethods; separator="\n">
<extensionMembers; separator="\n">

>>

AltLabelStructDecl(struct,attrs,getters,dispatchMethods) ::= <<
function <struct.name>(parser, ctx) {
    <currentRule.name; format="cap">Context.call(this, parser);
    <attrs:{a | <a>};}; separator="\n">
    <currentRule.name; format="cap">Context.prototype.copyFrom.call(this, ctx);
    return this;
}

<struct.name>.prototype = Object.create(<currentRule.name; format="cap">Context.prototype);
<struct.name>.prototype.constructor = <struct.name>;

<! Define fields of this parser to export this struct/context class !>
<parser.name>.<struct.name> = <struct.name>;

<getters:{g | <struct.name>.prototype.<g>}; separator="\n\n">
<dispatchMethods; separator="\n">

>>

ListenerDispatchMethod(method) ::= <<
<struct.name>.prototype.<if(method.isEnter)>enter<else>exit<endif>Rule = function(listener) {

```

```

    if(listener instanceof <parser.grammarName>Listener ) {
        listener.<if(method.isEnter)>enter<else>exit<endif><struct.derivedFromName;
format="cap">(this);
    }
};

>>

VisitorDispatchMethod(method) ::= <<
<struct.name>.prototype.accept = function(visitor) {
    if ( visitor instanceof <parser.grammarName>Visitor ) {
        return visitor.visit<struct.derivedFromName; format="cap">(this);
    } else {
        return visitor.visitChildren(this);
    }
};

>>

AttributeDecl(d) ::= "this.<d.name> = <if(d.initValue)><d.initValue><else>null<endif>"

/** If we don't know location of label def x, use this template */
labelref(x) ::= "<if(!x.isLocal)>localctx.<endif><x.name>"

/** For any action chunk, what is correctly-typed context struct ptr? */
ctx(actionChunk) ::= "localctx"

// used for left-recursive rules
recRuleAltPredicate(ruleName,opPrec) ::= "this.precpred(this._ctx, <opPrec>)"
recRuleSetReturnAction(src,name) ::= "$<name>=<src>.<name>"
recRuleSetStopToken() ::= "this._ctx.stop = this._input.LT(-1);"

recRuleAltStartAction(ruleName, ctxName,
    label) ::= <<
localctx = new <ctxName>Context(this, _parentctx, _parentState);
<if(label)>localctx.<label> = _prevctx;<endif>
this.pushNewRecursionContext(localctx, _startState, <parser.name>.RULE_<ruleName>);
>>

recRuleLabeledAltStartAction(ruleName, currentAltLabel, label, isListLabel) ::= <<
localctx = new <currentAltLabel; format="cap">Context(this, new <ruleName; format="cap">Context(this,
    _parentctx, _parentState));
<if(label)>
<if(isListLabel)>
localctx.<label>.push(_prevctx);
<else>
localctx.<label> = _prevctx;
<endif>

```

```

<endif>
this.pushNewRecursionContext(localctx, _startState, <parser.name>.RULE_<ruleName>);
>>

recRuleReplaceContext(ctxName) ::= <<
localctx = new <ctxName>Context(this, localctx);
this._ctx = localctx;
_prevctx = localctx;
>>

recRuleSetPrevCtx() ::= <<
if(this._parseListeners!==null) {
    this.triggerExitRuleEvent();
}
_prevctx = localctx;
>>

LexerFile(lexerFile, lexer, namedActions) ::= <<
<fileHeader(lexerFile.grammarFileName, lexerFile.ANTLRVersion)>
var
    antlr4 = require('antlr4/index');

<namedActions.header>

<lexer>

>>

Lexer(lexer, atn, actionFuncs, sempredFuncs, superClass) ::= <<

<atn>

var atn = new antlr4.atn.ATNDeserializer().deserialize(serializedATN);

var decisionsToDFA = atn.decisionToState.map( function(ds, index) { return new antlr4.dfa.DFA(ds, index); });

function <lexer.name>(input) {
    <if(superClass)><superClass><else>antlr4.Lexer<endif>.call(this, input);
    this._interp = new antlr4.atn.LexerATNSimulator(this, atn, decisionsToDFA, new
antlr4.PredictionContextCache());
    return this;
}

<lexer.name>.prototype = Object.create(<if(superClass)><superClass><else>antlr4.Lexer<endif>.prototype);
<lexer.name>.prototype.constructor = <lexer.name>;

<lexer.name>.EOF = antlr4.Token.EOF;

```

```

<lexer.tokens:{k | <lexer.name>.<k> = <lexer.tokens.(k)>; separator="\n", wrap, anchor>

<rest(lexer.modes):{m| <lexer.name>.<m> = <i>; separator="\n">

<lexer.name>.prototype.modeNames = [ <lexer.modes:{m| "<m>"}; separator=", ",
wrap, anchor > ];

<lexer.name>.prototype.literalNames = [ <lexer.literalNames:{t | <t>}; null="null", separator=", ", wrap, anchor > ];

<lexer.name>.prototype.symbolicNames = [ <lexer.symbolicNames:{t | <t>}; null="null", separator=", ", wrap,
anchor > ];

<lexer.name>.prototype.ruleNames = [ <lexer.ruleNames:{r | "<r>"}; separator=", ", wrap, anchor > ];

<lexer.name>.prototype.grammarFileName = "<lexer.grammarFileName>";

<namedActions.members>

<dumpActions(lexer, "", actionFuncs, sempredFuncs)>

exports.<lexer.name> = <lexer.name>;

>>

SerializedATN(model) ::= <<
<! only one segment, can be inlined !>

var serializedATN = ["<model.serialized; wrap={", <\n> " }>"].join("");

>>

/** Using a type to init value map, try to init a type; if not in table
* must be an object, default value is "null".
*/
initValue(typeName) ::= <<
<javaTypeInitMap.(typeName)>
>>

codeFileExtension() ::= ".js"

Found in path(s):
* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-
jar/org/antlr/v4/tool/templates/codegen/JavaScript/JavaScript.stg
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\* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-  
jar/org/antlr/v4/tool/templates/codegen/Cpp/Files.stg

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\*/

/\*

This file contains the actual layout of the messages emitted by ANTLR.

This file contains the default format ANTLR uses.

\*/

location(file, line, column) ::= "<file>:<line>:<column>:"

message(id, text) ::= "<id> <text>"

report(location, message, type) ::= "<type>(<message.id>): <location> <message.text>"

wantsSingleLineMessage() ::= "false"

Found in path(s):

\* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/tool/templates/messages/formats/antlr.stg

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Found in path(s):

\* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/parse/ATNBuilder.java

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\*/

/\*

This file contains the actual layout of the messages emitted by ANTLR.

The text itself is coming out of the languages/\*stg files, according to the chosen locale.

This file contains the format that mimicks GCC output.

\*/

location(file, line, column) ::= "<file>:<line>:"

message(id, text) ::= "<text> (<id>)"

report(location, message, type) ::= "<location> <type>: <message>"

wantsSingleLineMessage() ::= "true"

Found in path(s):

\* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/tool/templates/messages/formats/gnu.stg

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\*/

Found in path(s):

\* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/gui/GraphicsSupport.java

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*/

```

```

/** templates used to generate make-compatible dependencies */

```

```

/** Generate "f : x, y, z" dependencies for input
* dependencies and generated files. in and out
* are File objects. For example, you can say
* <f.canonicalPath>
*/
dependencies(grammarFileName,in,out) ::= <<
<if(in)><grammarFileName>: <in; separator=", "><endif>
<out:{f | <f> : <grammarFileName>}>;
separator="\n">
>>

```

Found in path(s):

```

* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/tool/templates/depend.stg
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```

```

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 */

/** ANTLR tool checks output templates are compatible with tool code generation.
 * For now, a simple string match used on x.y of x.y.z scheme.
 * Must match Tool.VERSION during load to templates.
 *
 * REQUIRED.
 */

pythonTypeInitMap ::= [
  "bool":"False",
  "int":"0",
  "float":"0.0",
  "str": "",
  default:"None" // anything other
  than a primitive type is an object
]

```

```

// args must be <object-model-object>, <fields-resulting-in-STs>

ParserFile(file, parser, namedActions, contextSuperClass) ::= <<
<fileHeader(file.grammarFileName, file.ANTLRVersion)>
# encoding: utf-8
from __future__ import print_function
from antlr4 import *
from io import StringIO

<namedActions.header>
<parser>

>>

ListenerFile(file, header, namedActions) ::= <<
<fileHeader(file.grammarFileName, file.ANTLRVersion)>
from antlr4 import *
<header>

# This class defines a complete listener for a parse tree produced by <file.parserName>.
class <file.grammarName>Listener(ParseTreeListener):

    <file.listenerNames:{lname |
# Enter a parse tree produced by <file.parserName>#<lname>.
def enter<lname; format="cap">(self, ctx):
    pass

# Exit a parse tree produced by <file.parserName>#<lname>.
def exit<lname; format="cap">(self, ctx):
    pass

}; separator="\n">

>>

VisitorFile(file, header, namedActions) ::= <<
<fileHeader(file.grammarFileName,
file.ANTLRVersion)>
from antlr4 import *
<header>

# This class defines a complete generic visitor for a parse tree produced by <file.parserName>.

class <file.grammarName>Visitor(ParseTreeVisitor):

    <file.visitorNames:{lname |
# Visit a parse tree produced by <file.parserName>#<lname>.

```

```
def visit<lname; format="cap">(self, ctx):
    return self.visitChildren(ctx)
```

```
}; separator="\n">
```

```
>>
```

```
fileHeader(grammarFileName, ANTLRVersion) ::= <<
# Generated from <grammarFileName> by ANTLR <ANTLRVersion>
>>
```

```
Parser(parser, funcs, atn, sempredFuncs, superClass) ::= <<
<Parser_(ctor="parser_ctor", ...)>
>>
```

```
Parser_(parser, funcs, atn, sempredFuncs, ctor, superClass) ::= <<
<if(superClass)>
from .<superClass> import <superClass>
```

```
<endif>
```

```
<atn>
```

```
class <parser.name> ( <if(superClass)><superClass><else>Parser<endif> ):
```

```
    grammarFileName = "<parser.grammarFileName>"
```

```
    atn = ATNDeserializer().deserialize(serializedATN())
```

```
    decisionsToDFA = [ DFA(ds, i) for i, ds in enumerate(atn.decisionToState)
] 
```

```
    sharedContextCache = PredictionContextCache()
```

```
    literalNames = [ <parser.literalNames:{t | u<t>}; null="u\"<INVALID>\"", separator=", ", wrap, anchor ]
```

```
    symbolicNames = [ <parser.symbolicNames:{t | u<t>}; null="u\"<INVALID>\"", separator=", ", wrap, anchor ]
```

```
    <parser.rules:{r | RULE_<r.name> = <r.index>}; separator="\n", wrap, anchor>
```

```
    ruleNames = [ <parser.ruleNames:{r | u"<r>"}; separator=", ", wrap, anchor ]
```

```
    EOF = <TokenLabelType().EOF
```

```
    <if(parser.tokens)>
```

```
    <parser.tokens:{k | <k>=<parser.tokens.(k)>}; separator="\n", wrap, anchor>
```

```
    <endif>
```

```
    <parser:(ctor)()>
```

```

<namedActions.members>

<funcs; separator="\n">

<if(sempredFuncs)>
  def sempred(self, localctx, ruleIndex, predIndex):
    if self._predicates == None:
      self._predicates = dict()
<parser.sempredFuncs.values: { f |
  self._predicates[<f.ruleIndex>] = self.<f.name>_sempred }; separator="\n
  pred = self._predicates.get(ruleIndex,
None)
  if pred is None:
    raise Exception("No predicate with index:" + str(ruleIndex))
  else:
    return pred(localctx, predIndex)

  <sempredFuncs.values; separator="\n">
<endif>

>>

dumpActions(recog, argFuncs, actionFuncs, sempredFuncs) ::= <<
<if(actionFuncs)>
def action(self, localctx, ruleIndex, actionIndex):
  if self._actions is None:
    actions = dict()
<recog.actionFuncs.values: { f |
  actions[<f.ruleIndex>] = self.<f.name>_action }; separator="\n">
  self._actions = actions
  action = self._actions.get(ruleIndex, None)
  if action is not None:
    action(localctx, actionIndex)
  else:
    raise Exception("No registered action for:" + str(ruleIndex))

<actionFuncs.values; separator="\n">

<endif>
<if(sempredFuncs)>
def sempred(self, localctx, ruleIndex, predIndex):
  if self._predicates is None:
    preds = dict()
<recog.sempredFuncs.values: { f |

```

```

    preds[<f.ruleIndex>] = self.<f.name>_sempred}; separator="\n">
    self._predicates =
preds
    pred = self._predicates.get(ruleIndex, None)
    if pred is not None:
        return pred(localctx, predIndex)
    else:
        raise Exception("No registered predicate for:" + str(ruleIndex))

<sempredFuncs.values; separator="\n">
<endif>
>>

parser_ctor(p) ::= <<
def __init__(self, input):
    super(<parser.name>, self).__init__(input)
    self.checkVersion("<file.ANTLRVersion>")
    self._interp = ParserATNSimulator(self, self.atn, self.decisionsToDFA, self.sharedContextCache)
    self._predicates = None

>>

/* This generates a private method since the actionIndex is generated, making an
* overriding implementation impossible to maintain.
*/
RuleActionFunction(r, actions) ::= <<

def <r.name>_action(self, localctx , actionIndex):
<actions:{index|
<if(first(actions))>
    if actionIndex == <index>:
        <actions.(index)>
<elseif(rest(actions))>
    elif actionIndex == <index>:
        <actions.(index)>
<endif> }; separator="\n">
>>

/* This generates a private method
since the predIndex is generated, making an
* overriding implementation impossible to maintain.
*/
RuleSempredFunction(r, actions) ::= <<
def <r.name>_sempred(self, localctx, predIndex):
    <actions:{index|
<if(first(actions))>
    if predIndex == <index>:
        return <actions.(index)>

```



```

<elseif(rest(actions))>
  elif predIndex == <index>:
    return <actions.(index)>
<endif> }; separator="\n">

>>

RuleFunction(currentRule,args,code,locals,ruleCtx,altLabelCtxs,namedActions,finallyAction,postamble,exceptions)
::= <<

<ruleCtx>

<altLabelCtxs:{l | <altLabelCtxs.(l)>}; separator="\n">

def <currentRule.name>(self<currentRule.args:{a | , <a.name>}>):

  localctx = <parser.name>.<currentRule.ctxType>(self, self._ctx, self.state<currentRule.args:{a | , <a.name>}>)
  self.enterRule(localctx, <currentRule.startState>, self.RULE_<currentRule.name>)
  <namedActions.init>
  <locals; separator="\n">
  try:
    <code>
    <postamble; separator="\n">
    <namedActions.after>
  <if(exceptions)>
  <exceptions; separator="\n">
  <else>
  except RecognitionException as re:
    localctx.exception = re
    self._errHandler.reportError(self, re)
    self._errHandler.recover(self, re)
  <endif>
  finally:
    <finallyAction>
    self.exitRule()
  return localctx

>>

LeftRecursiveRuleFunction(currentRule,args,code,locals,ruleCtx,altLabelCtxs,
namedActions,finallyAction,postamble) ::=
<<

<ruleCtx>
<altLabelCtxs:{l | <altLabelCtxs.(l)>}; separator="\n">

def <currentRule.name>(self, _p=0<if(currentRule.args)>, <args:{a | , <a>}><endif>):
  _parentctx = self._ctx

```

```

_parentState = self.state
localctx = <parser.name>.<currentRule.ctxType>(self, self._ctx, _parentState<args:{a | , <a.name>}>>)
_prevctx = localctx
_startState = <currentRule.startState>
self.enterRecursionRule(localctx, <currentRule.startState>, self.RULE_<currentRule.name>, _p)
<namedActions.init>
<locals; separator="\n">
try:
    <code>
    <postamble; separator="\n">
    <namedActions.after>
except RecognitionException as re:
    localctx.exception = re
    self._errHandler.reportError(self, re)
    self._errHandler.recover(self, re)
finally:
    <finallyAction>
    self.unrollRecursionContexts(_parentctx)
return localctx

>>

```

```

CodeBlockForOuterMostAlt(currentOuterMostAltCodeBlock, locals, preamble, ops) ::= <<
<if(currentOuterMostAltCodeBlock.altLabel)>localctx = <parser.name>.<currentOuterMostAltCodeBlock.altLabel;
format="cap">Context(self, localctx)<endif>
self.enterOuterAlt(localctx, <currentOuterMostAltCodeBlock.alt.altNum>)
<CodeBlockForAlt(currentAltCodeBlock=currentOuterMostAltCodeBlock, ...)>
>>

```

```

CodeBlockForAlt(currentAltCodeBlock, locals, preamble, ops) ::= <<
<locals; separator="\n">
<preamble; separator="\n">
<ops; separator="\n">
>>

```

```

LL1AltBlock(choice, preamble, alts, error) ::= <<
self.state = <choice.stateNumber>
self._errHandler.sync(self)
<if(choice.label)><labelref(choice.label)>
= _input.LT(1)<endif>
<preamble; separator="\n">
token = self._input.LA(1)
<choice.altLook,alts:{look,alt| <cases(ttypes=look)>
    <alt>
    pass}; separator="\n">
else:
    <error>

```

>>

```
LL1OptionalBlock(choice, alts, error) ::= <<
self.state = <choice.stateNumber>
self._errHandler.sync(self)
token = self._input.LA(1)
<choice.altLook,alts:{look,alt| <cases(ttypes=look)>
  <alt>
  pass }; separator="\n">
else:
  <error>
>>
```

```
LL1OptionalBlockSingleAlt(choice, expr, alts, preamble, error, followExpr) ::= <<
self.state = <choice.stateNumber>
self._errHandler.sync(self)
<preamble; separator="\n">
if <expr>:
  <alts; separator="\n">

<!else if ( !(<followExpr> ) <error>!>
>>
```

```
LL1StarBlockSingleAlt(choice, loopExpr, alts, preamble, iteration) ::= <<
self.state = <choice.stateNumber>
self._errHandler.sync(self)
<preamble; separator="\n">
while <loopExpr>:
  <alts; separator="\n">
  self.state = <choice.loopBackStateNumber>
  self._errHandler.sync(self)
  <iteration>

>>
```

```
LL1PlusBlockSingleAlt(choice, loopExpr, alts, preamble, iteration) ::= <<
self.state = <choice.blockStartStateNumber> <! alt block decision !>
self._errHandler.sync(self)
<preamble; separator="\n">
while True:
  <alts; separator="\n">
  self.state = <choice.stateNumber> <! loopback/exit decision !>
  self._errHandler.sync(self)
  <iteration>
if not (<loopExpr>):
  break
```

>>

// LL(\*) stuff

```
AltBlock(choice, preamble, alts, error) ::= <<
self.state = <choice.stateNumber>
self._errHandler.sync(self)
<if(choice.label)><labelref(choice.label)> = _input.LT(1)<endif>
<preamble; separator="\n">
la_ = self._interp.adaptivePredict(self._input,<choice.decision>,self._ctx)
<alts:{ alt |
if la_ == <i>:
    <alt>
    pass
}; separator="\nel">
```

>>

```
OptionalBlock(choice, alts, error) ::= <<
self.state = <choice.stateNumber>
self._errHandler.sync(self)
la_ = self._interp.adaptivePredict(self._input,<choice.decision>,self._ctx)
<alts:{ alt |
if la_ ==
    <i><if(!choice.ast.greedy)>+1<endif>:
    <alt>
}; separator="\nel">
```

>>

```
StarBlock(choice, alts, sync, iteration) ::= <<
self.state = <choice.stateNumber>
self._errHandler.sync(self)
_alt = self._interp.adaptivePredict(self._input,<choice.decision>,self._ctx)
while _alt!=<choice.exitAlt> and _alt!=ATN.INVALID_ALT_NUMBER:
    if _alt==1<if(!choice.ast.greedy)>+1<endif>:
        <iteration>
        <alts> <! should only be one !>
        self.state = <choice.loopBackStateNumber>
        self._errHandler.sync(self)
        _alt = self._interp.adaptivePredict(self._input,<choice.decision>,self._ctx)
```

>>

```
PlusBlock(choice, alts, error) ::= <<
self.state = <choice.blockStartStateNumber> <! alt block decision !>
self._errHandler.sync(self)
_alt = 1<if(!choice.ast.greedy)>+1<endif>
```

```

while _alt!=<choice.exitAlt> and _alt!=ATN.INVALID_ALT_NUMBER:
  <alts:{alt|
if _alt == <i><if(!choice.ast.greedy)>+1<endif>:
  <alt>
}; separator="\nел">
  else:
    <error>
    self.state = <choice.loopBackStateNumber>
    <! loopback/exit decision !>
    self._errHandler.sync(self)
    _alt = self._interp.adaptivePredict(self._input,<choice.decision>,self._ctx)

>>

Sync(s) ::= "sync(<s.expecting.name>)"

ThrowNoViableAlt(t) ::= "raise NoViableAltException(self)"

TestSetInline(s) ::= <<
<s.bitsets:{bits | <if(rest(rest(bits.ttypes)))><bitsetBitfieldComparison(s, bits)><else><bitsetInlineComparison(s,
bits)><endif>}; separator=" or ">
>>

// Java language spec 15.19 - shift operators mask operands rather than overflow to 0... need range test
testShiftInRange(shiftAmount) ::= <<
((<shiftAmount>) & ~0x3f) == 0
>>

// produces smaller bytecode only when bits.ttypes contains more than two items
bitsetBitfieldComparison(s, bits) ::= <%
(<testShiftInRange({<offsetShiftVar(s.varName, bits.shift)>})> and ((1 \<< <offsetShiftVar(s.varName,
bits.shift)>) & (<bits.ttypes:{ttype | (1 \<< <offsetShiftType(ttype, bits.shift)>)); separator=" | ">)) != 0)
%>

isZero ::= [
"0":true,
default:false
]

offsetShiftVar(shiftAmount,
offset) ::= <%
<if(!isZero.(offset))>(<shiftAmount> - <offset>)<else><shiftAmount><endif>
%>

offsetShiftType(shiftAmount, offset) ::= <%
<if(!isZero.(offset))>(<parser.name>.<shiftAmount> - <offset>)<else><parser.name>.<shiftAmount><endif>
%>

```

```

// produces more efficient bytecode when bits.ttypes contains at most two items
bitsetInlineComparison(s, bits) ::= <%
<bits.ttypes:{ttype | <s.varName>===<parser.name>.<ttype>}; separator=" or ">
%>

cases(ttypes) ::= <<
if token in [<ttypes:{t | <parser.name>.<t>}; separator=", ">]:
>>

InvokeRule(r, argExprsChunks) ::= <<
self.state = <r.stateNumber>
<if(r.labels)><r.labels:{l | <labelref(l)> =
}><endif>self.<r.name>(<if(r.ast.options.p)><r.ast.options.p><if(argExprsChunks)>,<endif><endif><argExprsChu
nks>)
>>

MatchToken(m) ::= <<
self.state = <m.stateNumber>
<if(m.labels)><m.labels:{l | <labelref(l)> = }><endif>self.match(<parser.name>.<m.name>)
>>

MatchSet(m, expr, capture) ::= "<CommonSetStuff(m, expr, capture, false)>"

MatchNotSet(m,
expr, capture) ::= "<CommonSetStuff(m, expr, capture, true)>"

CommonSetStuff(m, expr, capture, invert) ::= <<
self.state = <m.stateNumber>
<if(m.labels)><m.labels:{l | <labelref(l)> = }>self._input.LT(1)<endif>
<capture>
<if(invert)>if <m.varName> \<= 0 or <expr><else>if not(<expr>)<endif>:
<if(m.labels)><m.labels:{l | <labelref(l)> = }><else> <endif>self._errHandler.recoverInline(self)
else:
self._errHandler.reportMatch(self)
self.consume()
>>

Wildcard(w) ::= <<
self.state = <w.stateNumber>
<if(w.labels)><w.labels:{l | <labelref(l)> = }><endif>self.matchWildcard()
>>

// ACTION STUFF

Action(a, foo, chunks) ::= "<chunks>"

ArgAction(a, chunks) ::= "<chunks>"

```

```

SemPred(p, chunks, failChunks) ::= <<
self.state = <p.stateNumber>
if not <chunks>:
    from antlr4.error.Errors import FailedPredicateException
    raise FailedPredicateException(self, <p.predicate><if(failChunks)>, <failChunks><elseif(p.msg)>,
<p.msg><endif>)
>>

```

```

ExceptionClause(e, catchArg, catchAction)
::= <<
catch (<catchArg>) {
    <catchAction>
}
>>

```

```
// lexer actions are not associated with model objects
```

```

LexerSkipCommand() ::= "skip()"
LexerMoreCommand() ::= "more()"
LexerPopModeCommand() ::= "popMode()"

```

```

LexerTypeCommand(arg, grammar)    ::= "_type = <arg>"
LexerChannelCommand(arg, grammar) ::= "_channel = <arg>"
LexerModeCommand(arg, grammar)    ::= "_mode = <arg>"
LexerPushModeCommand(arg, grammar) ::= "pushMode(<arg>)"

```

```

ActionText(t) ::= "<t.text>"
ActionTemplate(t) ::= "<t.st>"
ArgRef(a) ::= "localctx.<a.name>"
LocalRef(a) ::= "localctx.<a.name>"
RetValRef(a) ::= "localctx.<a.name>"
QRetValRef(a) ::= "<ctx(a)>.<a.dict>.<a.name>"
/** How to translate $tokenLabel */
TokenRef(t) ::= "<ctx(t)>.<t.name>"
LabelRef(t) ::= "<ctx(t)>.<t.name>"
ListLabelRef(t) ::= "<ctx(t)>.<ListLabelName(t.name)>"
SetAttr(s,rhsChunks) ::= "<ctx(s)>.<s.name> = <rhsChunks>"

```

```

TokenLabelType() ::= "<file.TokenLabelType; null={Token}>"
InputSymbolType() ::= "<file.InputSymbolType; null={Token}>"

```

```

TokenPropertyRef_text(t)
::= "(None if <ctx(t)>.<t.label> is None else <ctx(t)>.<t.label>.text)"
TokenPropertyRef_type(t) ::= "(0 if <ctx(t)>.<t.label> is None else <ctx(t)>.<t.label>.type()"
TokenPropertyRef_line(t) ::= "(0 if <ctx(t)>.<t.label> is None else <ctx(t)>.<t.label>.line)"
TokenPropertyRef_pos(t) ::= "(0 if <ctx(t)>.<t.label> is None else <ctx(t)>.<t.label>.column)"
TokenPropertyRef_channel(t) ::= "(0 if (<ctx(t)>.<t.label> is None else <ctx(t)>.<t.label>.channel)"
TokenPropertyRef_index(t) ::= "(0 if <ctx(t)>.<t.label> is None else <ctx(t)>.<t.label>.tokenIndex)"

```

```

TokenPropertyRef_int(t) ::= "(0 if <ctx(t)>.<t.label> is None else int(<ctx(t)>.<t.label>.text))"

RulePropertyRef_start(r) ::= "(None if <ctx(r)>.<r.label> is None else <ctx(r)>.<r.label>.start)"
RulePropertyRef_stop(r) ::= "(None if <ctx(r)>.<r.label> is None else <ctx(r)>.<r.label>.stop)"
RulePropertyRef_text(r) ::= "(None if <ctx(r)>.<r.label> is None else
self._input.getText((<ctx(r)>.<r.label>.start,<ctx(r)>.<r.label>.stop)))"
RulePropertyRef_ctx(r)
::= "<ctx(r)>.<r.label>"
RulePropertyRef_parser(r) ::= "self"

ThisRulePropertyRef_start(r) ::= "localctx.start"
ThisRulePropertyRef_stop(r) ::= "localctx.stop"
ThisRulePropertyRef_text(r) ::= "self._input.getText((localctx.start, self._input.LT(-1)))"
ThisRulePropertyRef_ctx(r) ::= "localctx"
ThisRulePropertyRef_parser(r) ::= "self"

NonLocalAttrRef(s) ::= "getInvokingContext(<s.ruleIndex>).<s.name>"
SetNonLocalAttr(s, rhsChunks) ::= "getInvokingContext(<s.ruleIndex>).<s.name> = <rhsChunks>"

AddToLabelList(a) ::= "<ctx(a.label)>.<a.listName>.append(<labelref(a.label)>)"

TokenDecl(t) ::= "self.<t.name> = None # <TokenLabelType()>"
TokenTypeDecl(t) ::= "self.<t.name> = 0 # <TokenLabelType()> type"
TokenListDecl(t) ::= "self.<t.name> = list() # of <TokenLabelType()>s"
RuleContextDecl(r) ::= "self.<r.name> = None # <r.ctxName>"
RuleContextListDecl(rdecl) ::= "self.<rdecl.name> = list() # of <rdecl.ctxName>s"

ContextTokenGetterDecl(t)
::= <<
def <t.name>(self):
    return self.getToken(<parser.name>.<t.name>, 0)
>>

// should never be called
ContextTokenListGetterDecl(t) ::= <<
def <t.name>_list(self):
    return self.getTokens(<parser.name>.<t.name>)
>>

ContextTokenListIndexedGetterDecl(t) ::= <<
def <t.name>(self, i=None):
    if i is None:
        return self.getTokens(<parser.name>.<t.name>)
    else:
        return self.getToken(<parser.name>.<t.name>, i)
>>

ContextRuleGetterDecl(r) ::= <<

```



```

def <r.name>(self):
    return self.getTypedRuleContext(<parser.name>.<r.ctxName>,0)

>>

// should never be called
ContextRuleListGetterDecl(r) ::= <<
def <r.name>_list(self):
    return self.getTypedRuleContexts(<parser.name>.<r.ctxName>)

>>

ContextRuleListIndexedGetterDecl(r) ::= <<
def <r.name>(self, i=None):
    if i is None:
        return self.getTypedRuleContexts(<parser.name>.<r.ctxName>)
    else:
        return self.getTypedRuleContext(<parser.name>.<r.ctxName>,i)

>>

LexerRuleContext()
::= "RuleContext"

/** The rule context name is the rule followed by a suffix; e.g.,
 * r becomes rContext.
 */
RuleContextNameSuffix() ::= "Context"

ImplicitTokenLabel(tokenName) ::= "_<tokenName>"
ImplicitRuleLabel(ruleName) ::= "_<ruleName>"
ImplicitSetLabel(id) ::= "_tset<id>"
ListLabelName(label) ::= "<label>"

CaptureNextToken(d) ::= "<d.varName> = self._input.LT(1)"
CaptureNextTokenType(d) ::= "<d.varName> = self._input.LA(1)"

StructDecl(struct,ctorAttrs,attrs,getters,dispatchMethods,interfaces,extensionMembers) ::= <<
class <struct.name>(<if(contextSuperClass)><contextSuperClass><else>ParserRuleContext<endif>):

    def __init__(self, parser, parent=None, invokingState=-1<struct.ctorAttrs:{a | , <a.name>=None }>):
        super(<parser.name>.<struct.name>, self).__init__(parent, invokingState)
        self.parser = parser
        <attrs:{a | <a>}; separator="\n">
        <struct.ctorAttrs:{a | self.<a.name> = <a.name>}; separator="\n">

    <getters:{g | <g>};

```

```

separator="\n\n">

def getRuleIndex(self):
    return <parser.name>.RULE_<struct.derivedFromName>

<if(struct.provideCopyFrom)> <! don't need copy unless we have subclasses !>
def copyFrom(self, ctx):
    super(<parser.name>.<struct.name>, self).copyFrom(ctx)
    <struct.attrs:{ a | self.<a.name> = ctx.<a.name> }; separator="\n">

<endif>
<dispatchMethods; separator="\n">
<extensionMembers; separator="\n">

>>

AltLabelStructDecl(struct,attrs, getters,dispatchMethods) ::= <<
class <struct.name>(<currentRule.name; format="cap">Context):

    def __init__(self, parser, ctx): # actually a <parser.name>.<currentRule.name; format="cap">Context)
        super(<parser.name>.<struct.name>, self).__init__(parser)
        <attrs:{ a | <a> }; separator="\n">
        self.copyFrom(ctx)

    <getters:{ g | <g> }; separator="\n">

    <dispatchMethods; separator="\n">

>>

ListenerDispatchMethod(method) ::= <<
def <if(method.isEnter)>enter<else>exit<endif>Rule(self, listener):
    if hasattr(listener, "<if(method.isEnter)>enter<else>exit<endif><struct.derivedFromName; format="cap">"):
        listener.<if(method.isEnter)>enter<else>exit<endif><struct.derivedFromName; format="cap">(self)

>>

VisitorDispatchMethod(method) ::= <<
def accept(self, visitor):
    if hasattr(visitor, "visit<struct.derivedFromName; format="cap">"):
        return visitor.visit<struct.derivedFromName; format="cap">(self)
    else:
        return visitor.visitChildren(self)

>>

AttributeDecl(d) ::= "self.<d.name> = <if(d.initValue)><d.initValue><else>None<endif>"

```

```

/** If we don't know location of label def x, use this template */
labelref(x) ::= "<if(!x.isLocal)>localctx.<endif><x.name>"

/** For any action chunk, what is correctly-typed context struct ptr? */
ctx(actionChunk) ::= "localctx"

// used for left-recursive rules
recRuleAltPredicate(ruleName,opPrec) ::= "self.precpred(self._ctx, <opPrec>)"
recRuleSetReturnAction(src,name) ::= "$<name>=$<src>.<name>"
recRuleSetStopToken()
    ::= "self._ctx.stop = self._input.LT(-1)"

recRuleAltStartAction(ruleName, ctxName, label) ::= <<
localctx = <parser.name>.<ctxName>Context(self, _parentctx, _parentState)
<if(label)>localctx.<label> = _prevctx<endif>
self.pushNewRecursionContext(localctx, _startState, self.RULE_<ruleName>)
>>

recRuleLabeledAltStartAction(ruleName, currentAltLabel, label, isListLabel) ::= <<
localctx = <parser.name>.<currentAltLabel; format="cap">Context(self, <parser.name>.<ruleName>;
format="cap">Context(self, _parentctx, _parentState))
<if(label)>
<if(isListLabel)>
localctx.<label>.append(_prevctx)
<else>
localctx.<label> = _prevctx
<endif>
<endif>
self.pushNewRecursionContext(localctx, _startState, self.RULE_<ruleName>)
>>

recRuleReplaceContext(ctxName) ::= <<
localctx = <parser.name>.<ctxName>Context(self, localctx)
self._ctx = localctx
_prevctx = localctx
>>

recRuleSetPrevCtx() ::= <<
if self._parseListeners is not None:
    self.triggerExitRuleEvent()
_prevctx = localctx
>>

LexerFile(lexerFile,
lexer, namedActions) ::= <<
<fileHeader(lexerFile.grammarFileName, lexerFile.ANTLRVersion)>

```

```

# encoding: utf-8
from __future__ import print_function
from antlr4 import *
from io import StringIO

<namedActions.header>

<lexer>
>>

Lexer(lexer, atn, actionFuncs, sempredFuncs, superClass) ::= <<

<atn>

class <lexer.name>(<if(superClass)><superClass><else>Lexer<endif>):

    atn = ATNDeserializer().deserialize(serializedATN())

    decisionsToDFA = [ DFA(ds, i) for i, ds in enumerate(atn.decisionToState) ]

    <rest(lexer.modes):{m| <m> = <i>; separator="\n">

    <lexer.tokens:{k | <k> = <lexer.tokens.(k)>; separator="\n", wrap, anchor>

    modeNames = [ <lexer.modes:{m| u"<m>"}; separator=", ", wrap, anchor> ]

    literalNames = [ u"\<INVALID>",
        <lexer.literalNames:{t | u<t>}; separator=", ", wrap, anchor> ]

    symbolicNames = [ u"\<INVALID>",
        <lexer.symbolicNames:{t | u<t>}; separator=", ", wrap, anchor> ]

    ruleNames = [ <lexer.ruleNames:{r
| u"<r>"}; separator=", ", wrap, anchor> ]

    grammarFileName = u"<lexer.grammarFileName>"

    def __init__(self, input=None):
        super(<lexer.name>, self).__init__(input)
        self.checkVersion("<lexerFile.ANTLRVersion>")
        self._interp = LexerATNSimulator(self, self.atn, self.decisionsToDFA, PredictionContextCache())
        self._actions = None
        self._predicates = None

<namedActions.members>

<dumpActions(lexer, "", actionFuncs, sempredFuncs)>

```

>>

```
SerializedATN(model) ::= <<  
<! only one segment, can be inlined !>
```

```
def serializedATN():  
    with StringIO() as buf:  
        buf.write(u"<model.serialized; wrap={ }<\n>    buf.write(u"}>")  
        return buf.getvalue()
```

>>

```
/** Using a type to init value map, try to init a type; if not in table  
 * must be an object, default value is "null".  
 */
```

```
initValue(typeName) ::= <<  
<javaTypeInitMap.(typeName)>
```

>>

```
codeFileExtension() ::= ".py"
```

Found in path(s):

```
* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-  
jar/org/antlr/v4/tool/templates/codegen/Python2/Python2.stg
```

No license file was found, but licenses were detected in source scan.

```
/*
```

```
* [The "BSD license"]
```

```
* Copyright (c) 2012-2016 Terence Parr
```

```
* Copyright (c) 2012-2016 Sam Harwell
```

```
* All rights reserved.
```

```
*
```

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*
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* THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT  
* (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF  
* THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.  
*/
```

```
/** The definitive ANTLR v3 tree grammar to walk/visit ANTLR v4 grammars.
```

```
* Parses trees created by ANTLRParser.g.
```

```
*
```

```
* Rather than have multiple tree grammars, one for each visit, I'm
```

```
* creating this generic visitor that knows about context. All of the
```

```
* boilerplate pattern recognition is done here. Then, subclasses can
```

```
* override the methods they care about.
```

```
This prevents a lot of the same
```

```
* context tracking stuff like "set current alternative for current
```

```
* rule node" that is repeated in lots of tree filters.
```

```
*/
```

```
tree grammar GrammarTreeVisitor;
```

```
options {
```

```
language    = Java;
```

```
tokenVocab  = ANTLRParser;
```

```
ASTLabelType = GrammarAST;
```

```
}
```

```
// Include the copyright in this source and also the generated source
```

```
@header {
```

```
/*
```

```
[The "BSD license"]
```

```
Copyright (c) 2011 Terence Parr
```

```
All rights reserved.
```

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\*/

```
package org.antlr.v4.parse;
import org.antlr.v4.Tool;
import org.antlr.v4.tool.*;
import org.antlr.v4.tool.ast.*;
import java.lang.reflect.InvocationTargetException;
import java.lang.reflect.Method;
}
```

@members

```
{
public String grammarName;
public GrammarAST currentRuleAST;
public String currentModeName = LexerGrammar.DEFAULT_MODE_NAME;
public String currentRuleName;
public GrammarAST currentOuterAltRoot;
public int currentOuterAltNumber = 1; // 1..n
public int rewriteEBNFLevel = 0;

public GrammarTreeVisitor() { this(null); }

// Should be abstract but can't make gen'd parser abstract;
// subclasses should implement else everything goes to stderr!
public ErrorManager getErrorManager() { return null; }

public void visitGrammar(GrammarAST t) { visit(t, "grammarSpec"); }
public void visit(GrammarAST t, String ruleName) {
    CommonTreeNodeStream nodes = new CommonTreeNodeStream(new GrammarASTAdaptor(), t);
    setTreeNodeStream(nodes);
    try {
        Method m = getClass().getMethod(ruleName);
        m.invoke(this);
    }
    catch (Throwable e) {
        ErrorManager errMgr = getErrorManager();
        if ( e instanceof InvocationTargetException ) {
            e = e.getCause();
        }
        //e.printStackTrace(System.err);
    }
}
```

```

if
( errMgr==null ) {
    System.err.println("can't find rule "+ruleName+
        " or tree structure error: "+t.toStringTree()
    );
    e.printStackTrace(System.err);
}
else errMgr.toolError(ErrorType.INTERNAL_ERROR, e);
}
}

public void discoverGrammar(GrammarRootAST root, GrammarAST ID) { }
public void finishPrequels(GrammarAST firstPrequel) { }
public void finishGrammar(GrammarRootAST root, GrammarAST ID) { }

public void grammarOption(GrammarAST ID, GrammarAST valueAST) { }
public void ruleOption(GrammarAST ID, GrammarAST valueAST) { }
public void blockOption(GrammarAST ID, GrammarAST valueAST) { }
public void defineToken(GrammarAST ID) { }
public void defineChannel(GrammarAST ID) { }
public void globalNamedAction(GrammarAST scope, GrammarAST ID, ActionAST action) { }
public void importGrammar(GrammarAST label, GrammarAST ID) { }

public void modeDef(GrammarAST m, GrammarAST ID) { }

public void discoverRules(GrammarAST rules) { }
public void finishRules(GrammarAST
    rule) { }
public void discoverRule(RuleAST rule, GrammarAST ID, List<GrammarAST> modifiers,
    ActionAST arg, ActionAST returns, GrammarAST thrws,
    GrammarAST options, ActionAST locals,
    List<GrammarAST> actions,
    GrammarAST block) { }
public void finishRule(RuleAST rule, GrammarAST ID, GrammarAST block) { }
public void discoverLexerRule(RuleAST rule, GrammarAST ID, List<GrammarAST> modifiers,
    GrammarAST block) { }
public void finishLexerRule(RuleAST rule, GrammarAST ID, GrammarAST block) { }
public void ruleCatch(GrammarAST arg, ActionAST action) { }
public void finallyAction(ActionAST action) { }
public void discoverOuterAlt(AltAST alt) { }
public void finishOuterAlt(AltAST alt) { }
public void discoverAlt(AltAST alt) { }
public void finishAlt(AltAST alt) { }

public void ruleRef(GrammarAST ref, ActionAST arg) { }
public void tokenRef(TerminalAST ref) { }
public void elementOption(GrammarASTWithOptions t, GrammarAST ID, GrammarAST

```



```

valueAST) { }
public void stringRef(TerminalAST ref) { }
public void wildcardRef(GrammarAST ref) { }
public void actionInAlt(ActionAST action) { }
public void sempredInAlt(PredAST pred) { }
public void label(GrammarAST op, GrammarAST ID, GrammarAST element) { }
public void lexerCallCommand(int outerAltNumber, GrammarAST ID, GrammarAST arg) { }
public void lexerCommand(int outerAltNumber, GrammarAST ID) { }

protected void enterGrammarSpec(GrammarAST tree) { }
protected void exitGrammarSpec(GrammarAST tree) { }

protected void enterPrequelConstructs(GrammarAST tree) { }
protected void exitPrequelConstructs(GrammarAST tree) { }

protected void enterPrequelConstruct(GrammarAST tree) { }
protected void exitPrequelConstruct(GrammarAST tree) { }

protected void enterOptionsSpec(GrammarAST tree) { }
protected void exitOptionsSpec(GrammarAST tree) { }

protected void enterOption(GrammarAST tree) { }
protected void exitOption(GrammarAST tree) { }

protected void enterOptionValue(GrammarAST
tree) { }
protected void exitOptionValue(GrammarAST tree) { }

protected void enterDelegateGrammars(GrammarAST tree) { }
protected void exitDelegateGrammars(GrammarAST tree) { }

protected void enterDelegateGrammar(GrammarAST tree) { }
protected void exitDelegateGrammar(GrammarAST tree) { }

protected void enterTokensSpec(GrammarAST tree) { }
protected void exitTokensSpec(GrammarAST tree) { }

protected void enterTokenSpec(GrammarAST tree) { }
protected void exitTokenSpec(GrammarAST tree) { }

protected void enterChannelsSpec(GrammarAST tree) { }
protected void exitChannelsSpec(GrammarAST tree) { }

protected void enterChannelSpec(GrammarAST tree) { }
protected void exitChannelSpec(GrammarAST tree) { }

protected void enterAction(GrammarAST tree) { }
protected void exitAction(GrammarAST tree) { }

```

```
protected void enterRules(GrammarAST tree) { }
protected void exitRules(GrammarAST tree) { }

protected void enterMode(GrammarAST tree) { }
protected void exitMode(GrammarAST tree) { }

protected
void enterLexerRule(GrammarAST tree) { }
protected void exitLexerRule(GrammarAST tree) { }

protected void enterRule(GrammarAST tree) { }
protected void exitRule(GrammarAST tree) { }

protected void enterExceptionGroup(GrammarAST tree) { }
protected void exitExceptionGroup(GrammarAST tree) { }

protected void enterExceptionHandler(GrammarAST tree) { }
protected void exitExceptionHandler(GrammarAST tree) { }

protected void enterFinallyClause(GrammarAST tree) { }
protected void exitFinallyClause(GrammarAST tree) { }

protected void enterLocals(GrammarAST tree) { }
protected void exitLocals(GrammarAST tree) { }

protected void enterRuleReturns(GrammarAST tree) { }
protected void exitRuleReturns(GrammarAST tree) { }

protected void enterThrowsSpec(GrammarAST tree) { }
protected void exitThrowsSpec(GrammarAST tree) { }

protected void enterRuleAction(GrammarAST tree) { }
protected void exitRuleAction(GrammarAST tree) { }

protected void enterRuleModifier(GrammarAST tree) { }
protected
void exitRuleModifier(GrammarAST tree) { }

protected void enterLexerRuleBlock(GrammarAST tree) { }
protected void exitLexerRuleBlock(GrammarAST tree) { }

protected void enterRuleBlock(GrammarAST tree) { }
protected void exitRuleBlock(GrammarAST tree) { }

protected void enterLexerOuterAlternative(AltAST tree) { }
protected void exitLexerOuterAlternative(AltAST tree) { }
```

```
protected void enterOuterAlternative(AltAST tree) { }
protected void exitOuterAlternative(AltAST tree) { }

protected void enterLexerAlternative(GrammarAST tree) { }
protected void exitLexerAlternative(GrammarAST tree) { }

protected void enterLexerElements(GrammarAST tree) { }
protected void exitLexerElements(GrammarAST tree) { }

protected void enterLexerElement(GrammarAST tree) { }
protected void exitLexerElement(GrammarAST tree) { }

protected void enterLabeledLexerElement(GrammarAST tree) { }
protected void exitLabeledLexerElement(GrammarAST tree) { }

protected void enterLexerBlock(GrammarAST tree) { }
protected
void exitLexerBlock(GrammarAST tree) { }

protected void enterLexerAtom(GrammarAST tree) { }
protected void exitLexerAtom(GrammarAST tree) { }

protected void enterActionElement(GrammarAST tree) { }
protected void exitActionElement(GrammarAST tree) { }

protected void enterAlternative(AltAST tree) { }
protected void exitAlternative(AltAST tree) { }

protected void enterLexerCommand(GrammarAST tree) { }
protected void exitLexerCommand(GrammarAST tree) { }

protected void enterLexerCommandExpr(GrammarAST tree) { }
protected void exitLexerCommandExpr(GrammarAST tree) { }

protected void enterElement(GrammarAST tree) { }
protected void exitElement(GrammarAST tree) { }

protected void enterAstOperand(GrammarAST tree) { }
protected void exitAstOperand(GrammarAST tree) { }

protected void enterLabeledElement(GrammarAST tree) { }
protected void exitLabeledElement(GrammarAST tree) { }

protected void enterSubrule(GrammarAST tree) { }
protected void exitSubrule(GrammarAST tree) { }

protected
```

```

void enterLexerSubrule(GrammarAST tree) { }
protected void exitLexerSubrule(GrammarAST tree) { }

protected void enterBlockSuffix(GrammarAST tree) { }
protected void exitBlockSuffix(GrammarAST tree) { }

protected void enterEbnfSuffix(GrammarAST tree) { }
protected void exitEbnfSuffix(GrammarAST tree) { }

protected void enterAtom(GrammarAST tree) { }
protected void exitAtom(GrammarAST tree) { }

protected void enterBlockSet(GrammarAST tree) { }
protected void exitBlockSet(GrammarAST tree) { }

protected void enterSetElement(GrammarAST tree) { }
protected void exitSetElement(GrammarAST tree) { }

protected void enterBlock(GrammarAST tree) { }
protected void exitBlock(GrammarAST tree) { }

protected void enterRuleref(GrammarAST tree) { }
protected void exitRuleref(GrammarAST tree) { }

protected void enterRange(GrammarAST tree) { }
protected void exitRange(GrammarAST tree) { }

protected void enterTerminal(GrammarAST tree) { }
protected void exitTerminal(GrammarAST tree) { }

protected
void enterElementOptions(GrammarAST tree) { }
protected void exitElementOptions(GrammarAST tree) { }

protected void enterElementOption(GrammarAST tree) { }
protected void exitElementOption(GrammarAST tree) { }

@Override
public void traceIn(String ruleName, int ruleIndex) {
    System.err.println("enter "+ruleName+": "+input.LT(1));
}

@Override
public void traceOut(String ruleName, int ruleIndex) {
    System.err.println("exit "+ruleName+": "+input.LT(1));
}
}

```

```

grammarSpec
@init {
  enterGrammarSpec($start);
}
@after {
  exitGrammarSpec($start);
}
: ^( GRAMMAR ID { grammarName=$ID.text; }
  { discoverGrammar((GrammarRootAST)$GRAMMAR, $ID); }
  prequelConstructs
  { finishPrequels($prequelConstructs.firstOne); }
  rules mode*
  { finishGrammar((GrammarRootAST)$GRAMMAR, $ID); }
)
;

```

prequelConstructs returns [GrammarAST firstOne=null]

```

@init {
  enterPrequelConstructs($start);
}
@after {
  exitPrequelConstructs($start);
}
: { $firstOne=$start; } prequelConstruct+
|
;

```

prequelConstruct

```

@init
{
  enterPrequelConstructs($start);
}
@after {
  exitPrequelConstructs($start);
}
: optionsSpec
| delegateGrammars
| tokensSpec
| channelsSpec
| action
;

```

optionsSpec

```

@init {
  enterOptionsSpec($start);
}
@after {
  exitOptionsSpec($start);
}

```

```

}
: ^(OPTIONS option*)
;

option
@init {
enterOption($start);
boolean rule = inContext("RULE ...");
boolean block = inContext("BLOCK ...");
}
@after {
exitOption($start);
}
: ^(a=ASSIGN ID v=optionValue)
{
if ( block ) blockOption($ID, $v.start); // most specific first
else if ( rule ) ruleOption($ID, $v.start);
else grammarOption($ID, $v.start);
}
;

```

optionValue returns [String v]

```

@init {
enterOptionValue($start);
$v = $start.token.getText();
}
@after {
exitOptionValue($start);
}
: ID
| STRING_LITERAL
| INT
;

```

delegateGrammars

```

@init {
enterDelegateGrammars($start);
}
@after {
exitDelegateGrammars($start);
}
: ^(IMPORT
delegateGrammar+)
;

```

delegateGrammar

```

@init {
enterDelegateGrammar($start);

```

```

}
@after {
  exitDelegateGrammar($start);
}
: ^(ASSIGN label=ID id=ID) {importGrammar($label, $id);}
| id=ID {importGrammar(null, $id);}
;

```

```

tokensSpec
@init {
  enterTokensSpec($start);
}
@after {
  exitTokensSpec($start);
}
: ^(TOKENS_SPEC tokenSpec+)
;

```

```

tokenSpec
@init {
  enterTokenSpec($start);
}
@after {
  exitTokenSpec($start);
}
: ID {defineToken($ID);}
;

```

```

channelsSpec
@init {
  enterChannelsSpec($start);
}
@after {
  exitChannelsSpec($start);
}
: ^(CHANNELS channelSpec+)
;

```

```

channelSpec
@init {
  enterChannelSpec($start);
}
@after {
  exitChannelSpec($start);
}
: ID {defineChannel($ID);}
;

```

```

action
@init {
    enterAction($start);
}
@after {
    exitAction($start);
}
: ^(AT sc=ID? name=ID ACTION) {globalNamedAction($sc, $name, (ActionAST)$ACTION);}
;

```

```

rules
@init {
    enterRules($start);
}
@after {
    exitRules($start);
}
: ^(RULES {discoverRules($RULES);} (rule|lexerRule)*
{finishRules($RULES);})
;

```

```

mode
@init {
    enterMode($start);
}
@after {
    exitMode($start);
}
: ^( MODE ID {currentModeName=$ID.text; modeDef($MODE, $ID);} lexerRule* )
;

```

```

lexerRule
@init {
    enterLexerRule($start);
    List<GrammarAST> mods = new ArrayList<GrammarAST>();
    currentOuterAltNumber=0;
}
@after {
    exitLexerRule($start);
}
: ^( RULE TOKEN_REF
    {currentRuleName=$TOKEN_REF.text; currentRuleAST=$RULE;}
    (^ (RULEMODIFIERS m=FRAGMENT {mods.add($m);}))?
    {discoverLexerRule((RuleAST)$RULE, $TOKEN_REF, mods, (GrammarAST)input.LT(1));}
    lexerRuleBlock
    {
        finishLexerRule((RuleAST)$RULE, $TOKEN_REF, $lexerRuleBlock.start);
        currentRuleName=null; currentRuleAST=null;
    }

```



```

    }
  )
;

rule
@init {
enterRule($start);
List<GrammarAST> mods = new ArrayList<GrammarAST>();
List<GrammarAST> actions = new ArrayList<GrammarAST>(); // track roots
currentOuterAltNumber=0;
}
@after {
exitRule($start);
}
: ^( RULE RULE_REF {currentRuleName=$RULE_REF.text;
currentRuleAST=$RULE;}
(^ (RULEMODIFIERS (m=ruleModifier{ mods.add($m.start);})+)) ?
ARG_ACTION ?
ret=ruleReturns?
thr=throwsSpec?
loc=locals?
( opts=optionsSpec
| a=ruleAction {actions.add($a.start);}
)*
{discoverRule((RuleAST)$RULE, $RULE_REF, mods, (ActionAST)$ARG_ACTION,
$ret.start!=null?(ActionAST)$ret.start.getChild(0):null,
$thr.start, $opts.start,
$loc.start!=null?(ActionAST)$loc.start.getChild(0):null,
actions, (GrammarAST)input.LT(1));}
ruleBlock exceptionGroup
{finishRule((RuleAST)$RULE, $RULE_REF, $ruleBlock.start); currentRuleName=null; currentRuleAST=null;}
)
;

exceptionGroup
@init {
enterExceptionGroup($start);
}
@after {
exitExceptionGroup($start);
}
: exceptionHandler* finallyClause?
;

exceptionHandler
@init {
enterExceptionHandler($start);
}

```

```
@after {
  exitExceptionHandler($start);
}
: ^(CATCH ARG_ACTION ACTION) {ruleCatch($ARG_ACTION,
(ActionAST)$ACTION);}
;
```

#### finallyClause

```
@init {
  enterFinallyClause($start);
}
@after {
  exitFinallyClause($start);
}
: ^(FINALLY ACTION) {finallyAction((ActionAST)$ACTION);}
;
```

#### locals

```
@init {
  enterLocals($start);
}
@after {
  exitLocals($start);
}
: ^(LOCALS ARG_ACTION)
;
```

#### ruleReturns

```
@init {
  enterRuleReturns($start);
}
@after {
  exitRuleReturns($start);
}
: ^(RETURNS ARG_ACTION)
;
```

#### throwsSpec

```
@init {
  enterThrowsSpec($start);
}
@after {
  exitThrowsSpec($start);
}
: ^(THROWS ID+)
;
```

#### ruleAction

```

@init {
  enterRuleAction($start);
}
@after {
  exitRuleAction($start);
}
: ^(AT ID ACTION)
;

```

ruleModifier

```

@init {
  enterRuleModifier($start);
}
@after {
  exitRuleModifier($start);
}
: PUBLIC
| PRIVATE
| PROTECTED
| FRAGMENT
;

```

lexerRuleBlock

```

@init {
  enterLexerRuleBlock($start);
}
@after {
  exitLexerRuleBlock($start);
}
: ^( BLOCK
  ( {
    currentOuterAltRoot = (GrammarAST)input.LT(1);
    currentOuterAltNumber++;
  }
  lexerOuterAlternative
  )+
  )
;

```

ruleBlock

```

@init {
  enterRuleBlock($start);
}
@after {
  exitRuleBlock($start);
}
: ^( BLOCK
  ( {

```

```

    currentOuterAltRoot = (GrammarAST)input.LT(1);
    currentOuterAltNumber++;
}
    outerAlternative
)+
)
;

```

```

lexerOuterAlternative
@init {
    enterLexerOuterAlternative((AltAST)$start);
    discoverOuterAlt((AltAST)$start);
}
@after {
    finishOuterAlt((AltAST)$start);
    exitLexerOuterAlternative((AltAST)$start);
}
: lexerAlternative
;

```

```

outerAlternative
@init {
    enterOuterAlternative((AltAST)$start);
    discoverOuterAlt((AltAST)$start);
}
@after {
    finishOuterAlt((AltAST)$start);
    exitOuterAlternative((AltAST)$start);
}
: alternative
;

```

```

lexerAlternative
@init {
    enterLexerAlternative($start);
}
@after {
    exitLexerAlternative($start);
}
: ^(LEXER_ALT_ACTION lexerElements lexerCommand+)
| lexerElements
;

```

```

lexerElements
@init {
    enterLexerElements($start);
}

```

```

@after {
  exitLexerElements($start);
}
: ^(ALT lexerElement+)
;

```

lexerElement

```

@init {
  enterLexerElement($start);
}
@after {
  exitLexerElement($start);
}
: labeledLexerElement
| lexerAtom
| lexerSubrule
| ACTION {actionInAlt((ActionAST)$ACTION);}
| SEMPRED {sempredInAlt((PredAST)$SEMPRED);}
| ^(ACTION elementOptions) {actionInAlt((ActionAST)$ACTION);}
| ^(SEMPRED elementOptions) {sempredInAlt((PredAST)$SEMPRED);}
| EPSILON
;

```

labeledLexerElement

```

@init {
  enterLabeledLexerElement($start);
}
@after {
  exitLabeledLexerElement($start);
}
: ^((ASSIGN|PLUS_ASSIGN) ID (lexerAtom|block))
;

```

lexerBlock

```

@init {
  enterLexerBlock($start);
}
@after {
  exitLexerBlock($start);
}
: ^(BLOCK optionsSpec? lexerAlternative+)
;

```

lexerAtom

```

@init {
  enterLexerAtom($start);
}
@after {

```

```

exitLexerAtom($start);
}
: terminal
| ^(NOT blockSet)
| blockSet
| ^(WILDCARD elementOptions)
| WILDCARD
| LEXER_CHAR_SET
| range
| ruleref
;

actionElement
@init {
enterActionElement($start);
}
@after
{
exitActionElement($start);
}
: ACTION
| ^(ACTION elementOptions)
| SEMPRED
| ^(SEMPRED elementOptions)
;

alternative
@init {
enterAlternative((AltAST)$start);
discoverAlt((AltAST)$start);
}
@after {
finishAlt((AltAST)$start);
exitAlternative((AltAST)$start);
}
: ^(ALT elementOptions? element+)
| ^(ALT elementOptions? EPSILON)
;

lexerCommand
@init {
enterLexerCommand($start);
}
@after {
exitLexerCommand($start);
}
: ^(LEXER_ACTION_CALL ID lexerCommandExpr)
{lexerCallCommand(currentOuterAltNumber, $ID, $lexerCommandExpr.start);}

```

```

| ID
  {lexerCommand(currentOuterAltNumber, $ID);}
;

lexerCommandExpr
@init {
  enterLexerCommandExpr($start);
}
@after {
  exitLexerCommandExpr($start);
}
: ID
| INT
;

element
@init {
  enterElement($start);
}
@after {
  exitElement($start);
}
: labeledElement
| atom
| subrule
| ACTION    {actionInAlt((ActionAST)$ACTION);}
| SEMPRED   {sempredInAlt((PredAST)$SEMPRED);}
|
  ^(ACTION elementOptions) {actionInAlt((ActionAST)$ACTION);}
|  ^(SEMPRED elementOptions) {sempredInAlt((PredAST)$SEMPRED);}

| ^(NOT blockSet)
| ^(NOT block)
;

astOperand
@init {
  enterAstOperand($start);
}
@after {
  exitAstOperand($start);
}
: atom
| ^(NOT blockSet)
| ^(NOT block)
;

labeledElement

```

```
@init {
  enterLabeledElement($start);
}
@after {
  exitLabeledElement($start);
}
: ^((ASSIGN|PLUS_ASSIGN) ID element) {label($start, $ID, $element.start);}
;
```

```
subrule
@init {
  enterSubrule($start);
}
@after {
  exitSubrule($start);
}
: ^(blockSuffix block)
| block
;
```

```
lexerSubrule
@init {
  enterLexerSubrule($start);
}
@after {
  exitLexerSubrule($start);
}
: ^(blockSuffix lexerBlock)
| lexerBlock
;
```

```
blockSuffix
@init {
  enterBlockSuffix($start);
}
@after {
  exitBlockSuffix($start);
}
: ebnfSuffix
;
```

```
ebnfSuffix
@init {
  enterEbnfSuffix($start);
}
@after {
  exitEbnfSuffix($start);
}
```



```
: OPTIONAL
| CLOSURE
| POSITIVE_CLOSURE
;
```

atom

```
@init {
  enterAtom($start);
}
@after
{
  exitAtom($start);
}
: ^(DOT ID terminal)
| ^(DOT ID ruleref)
| ^(WILDCARD elementOptions) {wildcardRef($WILDCARD);}
| WILDCARD {wildcardRef($WILDCARD);}
| terminal
| blockSet
| ruleref
;
```

blockSet

```
@init {
  enterBlockSet($start);
}
@after {
  exitBlockSet($start);
}
: ^(SET setElement+)
;
```

setElement

```
@init {
  enterSetElement($start);
}
@after {
  exitSetElement($start);
}
: ^(STRING_LITERAL elementOptions) {stringRef((TerminalAST)$STRING_LITERAL);}
| ^(TOKEN_REF elementOptions) {tokenRef((TerminalAST)$TOKEN_REF);}
| STRING_LITERAL {stringRef((TerminalAST)$STRING_LITERAL);}
| TOKEN_REF {tokenRef((TerminalAST)$TOKEN_REF);}
| ^(RANGE a=STRING_LITERAL b=STRING_LITERAL)
{
  stringRef((TerminalAST)$a);
  stringRef((TerminalAST)$b);
}
```

```

    | LEXER_CHAR_SET
;

block
@init {
    enterBlock($start);
}
@after {
    exitBlock($start);
}
: ^(BLOCK optionsSpec? ruleAction* ACTION? alternative+)
;

ruleref
@init {
    enterRuleref($start);
}
@after {
    exitRuleref($start);
}
: ^(RULE_REF arg=ARG_ACTION? elementOptions?)
{
    ruleRef($RULE_REF, (ActionAST)$ARG_ACTION);
    if ( $arg!=null ) actionInAlt((ActionAST)$arg);
}
;

range
@init {
    enterRange($start);
}
@after {
    exitRange($start);
}
: ^(RANGE STRING_LITERAL STRING_LITERAL)
;

terminal
@init {
    enterTerminal($start);
}
@after {
    exitTerminal($start);
}
: ^(STRING_LITERAL elementOptions)
    {stringRef((TerminalAST)$STRING_LITERAL);}
| STRING_LITERAL {stringRef((TerminalAST)$STRING_LITERAL);}
| ^(TOKEN_REF elementOptions) {tokenRef((TerminalAST)$TOKEN_REF);}

```

```

| TOKEN_REF      {tokenRef((TerminalAST)$TOKEN_REF);}
;

elementOptions
@init {
  enterElementOptions($start);
}
@after {
  exitElementOptions($start);
}
: ^(ELEMENT_OPTIONS elementOption[(GrammarASTWithOptions)$start.getParent()]*);
;

elementOption[GrammarASTWithOptions t]
@init {
  enterElementOption($start);
}
@after
{
  exitElementOption($start);
}
: ID      {elementOption(t, $ID, null);}
| ^(ASSIGN id=ID v=ID) {elementOption(t, $id, $v);}
| ^(ASSIGN ID v=STRING_LITERAL) {elementOption(t, $ID, $v);}
| ^(ASSIGN ID v=ACTION) {elementOption(t, $ID, $v);}
| ^(ASSIGN ID v=INT) {elementOption(t, $ID, $v);}
;

```

Found in path(s):

\* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/parse/GrammarTreeVisitor.g

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 \*/

tree grammar ATNBuilder;

```
options {
  language = Java;
  tokenVocab = ANTLRParser;
  ASTLabelType = GrammarAST;
  // filter = true;
}
```

// Include the copyright in this source and also the generated source

@header {

/\*

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\*/

```
package org.antlr.v4.parse;  
import org.antlr.v4.tool.*;  
import org.antlr.v4.tool.ast.*;  
import org.antlr.v4.automata.ATNFactory;  
}
```

```
@members {  
    ATNFactory factory;  
    public ATNBuilder(TreeNodeStream input, ATNFactory factory) {  
        this(input);  
        this.factory = factory;  
    }  
}
```

```
dummy : block[null] ; // avoid error about no start rule
```

```
ruleBlock[GrammarAST ebnfRoot] returns [ATNFactory.Handle p]
```

```
@init {  
    List<ATNFactory.Handle> alts = new ArrayList<ATNFactory.Handle>();  
    int alt = 1;  
    factory.setCurrentOuterAlt(alt);  
}  
:  
: ^(BLOCK  
    (^ (OPTIONS .*)?  
    ( a=alternative  
        {alts.add($a.p); factory.setCurrentOuterAlt(++alt);}  
    )+  
    )  
    {$p = factory.block((BlockAST)$BLOCK, ebnfRoot, alts);}  
;
```

```
block[GrammarAST ebnfRoot] returns [ATNFactory.Handle p]
```

```
@init {List<ATNFactory.Handle> alts = new ArrayList<ATNFactory.Handle>();}  
:  
: ^(BLOCK (^ (OPTIONS .*)? (a=alternative {alts.add($a.p);}))+  
    {$p = factory.block((BlockAST)$BLOCK, ebnfRoot, alts);}  
;
```

```
alternative returns [ATNFactory.Handle p]
```

```
@init {List<ATNFactory.Handle> els = new ArrayList<ATNFactory.Handle>();}  
:  
: ^(LEXER_ALT_ACTION a=alternative lexerCommands  
    {$p = factory.lexerAltCommands($a.p,$lexerCommands.p);}  
| ^(ALT elementOptions? EPSILON) {$p = factory.epsilon($EPSILON);}  
| ^(ALT elementOptions? (e=element {els.add($e.p);}))+ {$p = factory.alt(els);}  
;
```

```
lexerCommands returns [ATNFactory.Handle p]
@init {List<ATNFactory.Handle> cmds = new ArrayList<ATNFactory.Handle>();}
: (c=lexerCommand {if ($c.cmd != null) cmds.add($c.cmd);}+
  {
    $p = factory.alt(cmds);
  }
);
```

```
lexerCommand returns
[ATNFactory.Handle cmd]
: ^(LEXER_ACTION_CALL ID lexerCommandExpr)
  {$cmd = factory.lexerCallCommand($ID, $lexerCommandExpr.start);}
| ID
  {$cmd = factory.lexerCommand($ID);}
;
```

```
lexerCommandExpr
: ID
| INT
;
```

```
element returns [ATNFactory.Handle p]
: labeledElement {$p = $labeledElement.p;}
| atom {$p = $atom.p;}
| subrule {$p = $subrule.p;}
| ACTION {$p = factory.action((ActionAST)$ACTION);}
| SEMPRED {$p = factory.sempred((PredAST)$SEMPRED);}
| ^(ACTION .) {$p = factory.action((ActionAST)$ACTION);}
| ^(SEMPRED .) {$p = factory.sempred((PredAST)$SEMPRED);}
| ^(NOT b=blockSet[true]) {$p = $b.p;}
| LEXER_CHAR_SET {$p = factory.charSetLiteral($start);}
;
```

```
astOperand returns [ATNFactory.Handle p]
: atom {$p = $atom.p;}
| ^(NOT blockSet[true]) {$p = $blockSet.p;}
;
```

```
labeledElement returns [ATNFactory.Handle p]
: ^(ASSIGN ID element) {$p = factory.label($element.p);}
| ^(PLUS_ASSIGN ID element)
  {$p = factory.listLabel($element.p);}
;
```

```
subrule returns [ATNFactory.Handle p]
: ^(OPTIONAL block[$start]) {$p = $block.p;}
| ^(CLOSURE block[$start]) {$p = $block.p;}
;
```

```

| ^(POSITIVE_CLOSURE block[$start]) {$p = $block.p;}
| block[null]    {$p = $block.p;}
;

blockSet[boolean invert] returns [ATNFactory.Handle p]
@init {List<GrammarAST> alts = new ArrayList<GrammarAST>();}
: ^(SET (setElement {alts.add($setElement.start);})+) {$p = factory.set($start, alts, $invert);}
;

/** Don't combine with atom otherwise it will build spurious ATN nodes */
setElement
: ^(STRING_LITERAL .)
| ^(TOKEN_REF .)
| STRING_LITERAL
| TOKEN_REF
| ^(RANGE a=STRING_LITERAL b=STRING_LITERAL)
| LEXER_CHAR_SET
;

atom returns [ATNFactory.Handle p]
: range    {$p = $range.p;}
| ^(DOT ID terminal) {$p = $terminal.p;}
| ^(DOT ID ruleref) {$p = $ruleref.p;}
| ^(WILDCARD .) {$p = factory.wildcard($start);}
| WILDCARD    {$p = factory.wildcard($start);}
| blockSet[false] {$p
= $blockSet.p;}
| terminal    {$p = $terminal.p;}
| ruleref    {$p = $ruleref.p;}
;

ruleref returns [ATNFactory.Handle p]
: ^(RULE_REF ARG_ACTION? ^(ELEMENT_OPTIONS .*)) {$p = factory.ruleRef($RULE_REF);}
| ^(RULE_REF ARG_ACTION?)    {$p = factory.ruleRef($RULE_REF);}
| RULE_REF    {$p = factory.ruleRef($RULE_REF);}
;

range returns [ATNFactory.Handle p]
: ^(RANGE a=STRING_LITERAL b=STRING_LITERAL) {$p = factory.range($a,$b);}
;

terminal returns [ATNFactory.Handle p]
: ^(STRING_LITERAL .) {$p = factory.stringLiteral((TerminalAST)$start);}
| STRING_LITERAL    {$p = factory.stringLiteral((TerminalAST)$start);}
| ^(TOKEN_REF ARG_ACTION .) {$p = factory.tokenRef((TerminalAST)$start);}
| ^(TOKEN_REF .)    {$p = factory.tokenRef((TerminalAST)$start);}
| TOKEN_REF    {$p = factory.tokenRef((TerminalAST)$start);}
;

```

```
elementOptions
: ^(ELEMENT_OPTIONS elementOption*)
;
```

```
elementOption
: ID
| ^(ASSIGN ID
ID)
| ^(ASSIGN ID STRING_LITERAL)
| ^(ASSIGN ID ACTION)
| ^(ASSIGN ID INT)
;
```

Found in path(s):

\* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/parse/ATNBuilder.g  
No license file was found, but licenses were detected in source scan.

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\*/



Found in path(s):

\* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/parse/GrammarTreeVisitor.java

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\*/

```
SwiftTypeInitMap ::= [
```

```
  "Int": "0",
```

```
  "Int64": "0",
```

```
  "Float": "0.0",
```

```
  "Double": "0.0",
```

```
  "Bool": "false",
```

```
  default: "nil" // anything other than a primitive type is an object
```

```
]
```

```
SwiftTypeMap ::= [
```

```
  "int": "Int",
```

```
  "float": "Float",
```

```

"long": "Int64",
"double": "Double",
"bool": "Bool",
"boolean": "Bool",
default : key
]
// args must be <object-model-object>,
<fields-resulting-in-STs>

ParserFile(file, parser, namedActions, contextSuperClass) ::= <<
<fileHeader(file.grammarFileName, file.ANTLRVersion)>
<if(file.genPackage)>
<!package <file.genPackage>;!>
<endif>
<namedActions.header>
import Antlr4

<parser>
>>

```

```

ListenerFile(file, header, namedActions) ::= <<
<fileHeader(file.grammarFileName, file.ANTLRVersion)>
<if(file.genPackage)>
<!package <file.genPackage>;!>
<endif>
<header>
import Antlr4

/**
 * This interface defines a complete listener for a parse tree produced by
 * { @link <file.parserName> }.
 */
public protocol <file.grammarName>Listener: ParseTreeListener {
  <file.listenerNames: {lname |
/**
  <if(file.listenerLabelRuleNames.(lname))>
  * Enter a parse tree produced by the { @code <lname>\}
  * labeled alternative in { @link <file.parserName>#<file.listenerLabelRuleNames.(lname)>\}.
  <else>
  * Enter a parse tree produced by { @link <file.parserName>#<lname>\}.
  <endif>
  - Parameters:
    - ctx: the parse tree
  */
  func enter<lname>(
    format="cap">(_ ctx: <file.parserName>.<lname>; format="cap">Context)
/**
  <if(file.listenerLabelRuleNames.(lname))>

```

```

* Exit a parse tree produced by the { @code <lname>\}
* labeled alternative in { @link <file.parserName>#<file.listenerLabelRuleNames.<lname>>\}.
<else>
* Exit a parse tree produced by { @link <file.parserName>#<lname>\}.
<endif>
- Parameters:
  - ctx: the parse tree
*/
func exit<lname; format="cap">(_ ctx: <file.parserName>.<lname; format="cap">Context); separator="\n">
}
>>

```

```

BaseListenerFile(file, header, namedActions) ::= <<
<fileHeader(file.grammarFileName, file.ANTLRVersion)>
<if(file.genPackage)>
<!package <file.genPackage>;!>
<endif>
<header>

```

```
import Antlr4
```

```

/**
* This class provides an empty implementation of { @link <file.grammarName>Listener },
* which can be extended to create a listener which only needs to handle a subset
* of the available methods.
*/
open class <file.grammarName>BaseListener: <file.grammarName>Listener {
  public init() { \}
  <file.listenerNames: {lname
  |

/**
* { @inheritDoc\}
*
* \<p>The default implementation does nothing.\</p>
*/
open func enter<lname; format="cap">(_ ctx: <file.parserName>.<lname; format="cap">Context) { \}
/**
* { @inheritDoc\}
*
* \<p>The default implementation does nothing.\</p>
*/
open func exit<lname; format="cap">(_ ctx: <file.parserName>.<lname; format="cap">Context) { \} };
separator="\n">

/**
* { @inheritDoc\}

```

```

*
* \<p>The default implementation does nothing.\</p>
*/
open func enterEveryRule(_ ctx: ParserRuleContext) { }
/**
* { @inheritDoc\}
*
* \<p>The default implementation does nothing.\</p>
*/
open func exitEveryRule(_ ctx: ParserRuleContext) { }
/**
* { @inheritDoc\}
*
* \<p>The default implementation does nothing.\</p>
*/
open func visitTerminal(_ node: TerminalNode) { }
/**
* { @inheritDoc\}
*
* \<p>The default implementation does nothing.\</p>
*/
open func visitErrorNode(_ node: ErrorNode) { }
}
>>

```

VisitorFile(file, header, namedActions)

```

::= <<
<fileHeader(file.grammarFileName, file.ANTLRVersion)>
<if(file.genPackage)>
<!package <file.genPackage>;!>
<endif>
<header>
import Antlr4

/**
* This interface defines a complete generic visitor for a parse tree produced
* by { @link <file.parserName>}.
*
* @param \<T> The return type of the visit operation. Use { @link Void} for
* operations with no return type.
*/
open class <file.grammarName>Visitor\<T>: ParseTreeVisitor\<T> {
  <file.visitorNames:{Iname |
/**
<if(file.visitorLabelRuleNames.(Iname))>
* Visit a parse tree produced by the { @code <Iname>}
* labeled alternative in { @link <file.parserName>#<file.visitorLabelRuleNames.(Iname)>}.
<else>

```

```

* Visit a parse tree produced by { @link <file.parserName>#<lname>\}.
<endif>
- Parameters:
- ctx: the parse tree
- returns: the visitor result
*/
open func visit<lname; format="cap">(_ ctx: <file.parserName>.<lname; format="cap">Context) -> T{
    fatalError(#function + " must be overridden")
}
}; separator="\n">
}
>>

BaseVisitorFile(file,
    header, namedActions) ::= <<
<fileHeader(file.grammarFileName, file.ANTLRVersion)>
<if(file.genPackage)>
<!package <file.genPackage>;!>
<endif>
<header>
import Antlr4

/**
* This class provides an empty implementation of { @link <file.grammarName>Visitor},
* which can be extended to create a visitor which only needs to handle a subset
* of the available methods.
*
* @param \<T> The return type of the visit operation. Use { @link Void} for
* operations with no return type.
*/
open class <file.grammarName>BaseVisitor\<T>: AbstractParseTreeVisitor\<T> {
    <file.visitorNames:{ lname |
/**
* { @inheritDoc\}
*
* \<p>The default implementation returns the result of calling
* { @link #visitChildren\} on { @code ctx\}.\</p>
*/
open func visit<lname; format="cap">(_ ctx: <file.parserName>.<lname; format="cap">Context) -> T? { return
visitChildren(ctx) \}}; separator="\n">
}
>>

fileHeader(grammarFileName, ANTLRVersion) ::= <<
// Generated from <grammarFileName; format="java-escape">
by ANTLR <ANTLRVersion>
>>

```

```

Parser(parser, funcs, atn, sempredFuncs, superClass) ::= <<
<Parser_(ctor="parser_ctor", ...)>
>>

Parser_(parser, funcs, atn, sempredFuncs, ctor, superClass) ::= <<
</*!/@SuppressWarnings({"all", "warnings", "unchecked", "unused", "cast"})!>
open class <parser.name>: <superClass; null="Parser"> {

internal static var _decisionToDFA: [DFA] = {
    var decisionToDFA = [DFA]()
    let length = <parser.name>._ATN.getNumberOfDecisions()
    for i in 0..<length {
        </*! decisionToDFA[i] = DFA(<parser.name>._ATN.getDecisionState(i)!, i)!>
        decisionToDFA.append(DFA(<parser.name>._ATN.getDecisionState(i)!, i))
    }
    return decisionToDFA
}()
internal static let _sharedContextCache: PredictionContextCache = PredictionContextCache()
<if(parser.tokens)>
public enum Tokens: Int {
    case EOF = -1, <parser.tokens:{k | <k> = <parser.tokens.(k)>}; separator=", ", wrap, anchor>
}
    <endif>
public
static let <parser.rules:{r | RULE_<r.name> = <r.index>}; separator=", ", wrap, anchor>
public static let ruleNames: [String] = [
    <parser.ruleNames:{r | "<r">}; separator=", ", wrap, anchor>
]

<vocabulary(parser.literalNames, parser.symbolicNames)>

override
open func getGrammarFileName() -> String { return "<parser.grammarFileName; format="java-escape">" }

override
open func getRuleNames() -> [String] { return <parser.name>.ruleNames }

override
open func getSerializedATN() -> String { return <parser.name>._serializedATN }

override
open func getATN() -> ATN { return <parser.name>._ATN }

<namedActions.members>
<parser:(ctor)()>
<funcs; separator="\n">

<if(sempredFuncs)>

```

```

    override
    open func sempred(_ _localctx: RuleContext?, _ ruleIndex: Int, _ predIndex: Int)throws -> Bool {
    switch (ruleIndex) {
    <parser.sempredFuncs.values:{f}
case <f.ruleIndex>:
return try <f.name>_sempred(_localctx?.castdown(<f.ctxType>.self), predIndex)); separator="\n">

    default: return true
    }
    <!return true;!>
    }
    <sempredFuncs.values; separator="\n">
<endif>

<atn>
    public static let _serializedATN : String = <parser.name>ATN().jsonString
    public static let _ATN: ATN = ATNDeserializer().deserializeFromJson(_serializedATN)
    }
    >>

vocabulary(literalNames, symbolicNames) ::= <<
private static let _LITERAL_NAMES: [String?] = [
    <literalNames:{t | <t>}; null="nil", separator=", ", wrap, anchor>
]
private static let _SYMBOLIC_NAMES: [String?] = [
    <symbolicNames:{t | <t>}; null="nil", separator=", ", wrap, anchor>
]
public static let VOCABULARY: Vocabulary = Vocabulary(_LITERAL_NAMES, _SYMBOLIC_NAMES)

/**
 * @deprecated Use {@link #VOCABULARY} instead.
 */
//@Deprecated
public let tokenNames: [String?]? = {
    let length = _SYMBOLIC_NAMES.count
    var tokenNames = [String?](repeating: nil, count: length)
    for i in 0..\<length {
        var name = VOCABULARY.getLiteralName(i)
        if name == nil {
            name = VOCABULARY.getSymbolicName(i)
        }
        if name == nil
        {
            name = "\<INVALID>"
        }
        tokenNames[i] = name
    }
    return tokenNames
}

```

```
}()
```

```
override
```

```
<!/!@Deprecated!>
```

```
open func getTokenNames() -> [String?]? {
```

```
    return tokenNames
```

```
}
```

```
>>
```

```
dumpActions(recog, argFuncs, actionFuncs, sempredFuncs) ::= <<
```

```
<if(actionFuncs)>
```

```
override
```

```
open func action(_ _localctx: RuleContext?, _ ruleIndex: Int, _ actionIndex: Int) throws {
```

```
    switch (ruleIndex) {
```

```
        <recog.actionFuncs.values: {f|
```

```
    case <f.ruleIndex>:
```

```
        <f.name>_action((_localctx as <f.ctxType>?), actionIndex)
```

```
        }; separator="\n">
```

```
    default: break
```

```
}
```

```
}
```

```
<actionFuncs.values; separator="\n">
```

```
<endif>
```

```
<if(sempredFuncs)>
```

```
override
```

```
open func sempred(_ _localctx: RuleContext?, _ ruleIndex: Int, _ predIndex: Int) throws -> Bool{
```

```
    switch (ruleIndex) {
```

```
        <recog.sempredFuncs.values: {f|
```

```
    case <f.ruleIndex>:
```

```
        return try <f.name>_sempred(_localctx?.castdown(<f.ctxType>.self), predIndex); separator="\n">
```

```
    default: return true
```

```
}
```

```
<!return true;!>
```

```
}
```

```
<sempredFuncs.values; separator="\n">
```

```
<endif>
```

```
>>
```

```
parser_ctor(p) ::= <<
```

```
open override
```

```
func getVocabulary() -> Vocabulary {
```

```
    return <p.name>.VOCABULARY
```

```
}
```

```
public override init(_ input:TokenStream)throws {
```

```
    RuntimeMetaData.checkVersion("4.6", RuntimeMetaData.VERSION)
```

```
    try super.init(input)
```



```

_interp = ParserATNSimulator(self,<p.name>._ATN,<p.name>._decisionToDFA,
<parser.name>._sharedContextCache)
}
>>

```

```

/* This generates a private method since the actionIndex is generated, making an
* overriding implementation impossible to maintain.
*/

```

```

RuleActionFunction(r, actions) ::= <<
private func <r.name>_action(_ localctx: <r.ctxType>?, _ actionIndex: Int) {
switch (actionIndex) {
<actions:{index|
case <index>:
<actions.(index)>
}; separator="\n">
default: break
}
}
>>

```

```

/* This generates a private method since the predIndex is generated, making an
* overriding implementation impossible to maintain.
*/

```

```

RuleSempredFunction(r, actions) ::= <<
private func <r.name>_sempred(_ localctx: <r.ctxType>!, _ predIndex: Int) throws -> Bool {
switch (predIndex) {
<actions:{index|
case <index>:return <actions.(index)>; separator="\n">
default: return true
}
<!return true;!>
}
}
>>

```

```

RuleFunction(currentRule,args,code,locals,ruleCtx,altLabelCtxs,namedActions,finallyAction,postamble,exceptions)
::= <<
<ruleCtx>
<altLabelCtxs:{l | <altLabelCtxs.(l)>}; separator="\n">
@discardableResult
<if(currentRule.modifiers)><currentRule.modifiers:{f | <f> }><else>open func
<endif><currentRule.name><(if(first(args))>_ <endif><args; separator=", _">) throws -> <currentRule.ctxType> {
var _localctx: <currentRule.ctxType> = <currentRule.ctxType>(_ctx, getState())<currentRule.args:{a | ,
<a.name>}>>)
try enterRule(_localctx, <currentRule.startState>, <parser.name>.RULE_<currentRule.name>)
<namedActions.init>
<locals; separator="\n">
defer {
<finallyAction>

```

```

    try! exitRule()
  }
do {
<if(currentRule.hasLookaheadBlock)>
  var _alt:Int
<endif>
  <code>
  <postamble; separator="\n">
  <namedActions.after>
  }
<if(exceptions)>
<exceptions; separator="\n">
<else>
catch
ANTLRException.recognition(let re) {
  _localctx.exception = re
  _errHandler.reportError(self, re)
  try _errHandler.recover(self, re)
  }
<endif>

return _localctx
}
>>

LeftRecursiveRuleFunction(currentRule,args,code,locals,ruleCtx,altLabelCtxs,
namedActions,finallyAction,postamble) ::=

<<

<ruleCtx>
<altLabelCtxs:{l | <altLabelCtxs.(l)>}; separator="\n">

<if(currentRule.modifiers)><currentRule.modifiers:{f | <f> }><else>public final <endif> func <currentRule.name>(
<if(first(args))>_ <endif><args; separator=", _">) throws -> <currentRule.ctxType> {
return try <currentRule.name>(0<currentRule.args:{a | , <a.name>}>)
}
}
@discardableResult
private func <currentRule.name>(_ _p<args:{a | , <a>}>: Int) throws -> <currentRule.ctxType> {
let _parentctx: ParserRuleContext? = _ctx
var _parentState: Int = getState()
var _localctx: <currentRule.ctxType> = <currentRule.ctxType>(_ctx, _parentState<currentRule.args:{a | ,
<a.name>}>)
var _prevctx: <currentRule.ctxType>
= _localctx
var _startState: Int = <currentRule.startState>
try enterRecursionRule(_localctx, <currentRule.startState>, <parser.name>.RULE_<currentRule.name>, _p)
<namedActions.init>
<locals; separator="\n">

```

```

defer {
  <finallyAction>
  try! unrollRecursionContexts(_parentctx)
}
do {
<if(currentRule.hasLookaheadBlock)>
  var _alt: Int
<endif>
  <code>
  <postamble; separator="\n">
  <namedActions.after>
}
catch ANTLRException.recognition(let re) {
  _localctx.exception = re
  _errHandler.reportError(self, re)
  try _errHandler.recover(self, re)
}

return _localctx;
}
>>

```

```

CodeBlockForOuterMostAlt(currentOuterMostAltCodeBlock, locals, preamble, ops) ::= <<
<if(currentOuterMostAltCodeBlock.altLabel)>_localctx = <currentOuterMostAltCodeBlock.altLabel;
format="cap">Context(_localctx);<endif>
try enterOuterAlt(_localctx, <currentOuterMostAltCodeBlock.alt.altNum>)
<CodeBlockForAlt(currentAltCodeBlock=currentOuterMostAltCodeBlock, ...)>
>>

```

```

CodeBlockForAlt(currentAltCodeBlock,
locals, preamble, ops) ::= <<
<!/{!>
<locals; separator="\n">
<preamble; separator="\n">
<ops; separator="\n">
<!/{!>
>>

```

```

LL1AltBlock(choice, preamble, alts, error) ::= <<
setState(<choice.stateNumber>)
try _errHandler.sync(self)
<if(choice.label)><labelref(choice.label)> = try _input.LT(1)<endif>
<preamble; separator="\n">
switch (<parser.name>.Tokens(rawValue: try _input.LA(1))!) {
<choice.altLook,alts:{look,alt | <cases(ttypes=look)>
  <alt>
break }; separator="\n">
default:

```

```
<error>
}
>>
```

```
LL1OptionalBlock(choice, alts, error) ::= <<
setState(<choice.stateNumber>)
try _errHandler.sync(self)
switch (<parser.name>.Tokens(rawValue: try _input.LA(1))!) {
<choice.altLook,alts:{look,alt| <cases(ttypes=look)>
<alt>
break }; separator="\n">
default:
<error>
}
>>
```

```
LL1OptionalBlockSingleAlt(choice, expr, alts, preamble, error, followExpr) ::= <<
setState(<choice.stateNumber>)
try _errHandler.sync(self)
<preamble; separator="\n">
if (<expr>) {
<alts; separator="\n">
}
<!else
if ( !(<followExpr> ) ) <error!>
>>
```

```
LL1StarBlockSingleAlt(choice, loopExpr, alts, preamble, iteration) ::= <<
setState(<choice.stateNumber>)
try _errHandler.sync(self)
<preamble; separator="\n">
while (<loopExpr>) {
<alts; separator="\n">
setState(<choice.loopBackStateNumber>)
try _errHandler.sync(self)
<iteration>
}
>>
```

```
LL1PlusBlockSingleAlt(choice, loopExpr, alts, preamble, iteration) ::= <<
setState(<choice.blockStartStateNumber>) <! alt block decision !>
try _errHandler.sync(self)
<preamble; separator="\n">
repeat {
<alts; separator="\n">
setState(<choice.stateNumber>); <! loopback/exit decision !>
try _errHandler.sync(self)
<iteration>
}
```

```

} while (<loopExpr>)
>>

// LL(*) stuff

AltBlock(choice, preamble, alts, error) ::= <<
setState(<choice.stateNumber>)
try _errHandler.sync(self)
<if(choice.label)><labelref(choice.label)> = try _input.LT(1)<endif>
<preamble; separator="\n">
switch(try getInterpreter().adaptivePredict(_input,<choice.decision>, _ctx)) {
<alts:{alt |
case
<i>:
<alt>
break}; separator="\n">
default: break
}
>>

OptionalBlock(choice, alts, error) ::= <<
setState(<choice.stateNumber>)
try _errHandler.sync(self)
switch (try getInterpreter().adaptivePredict(_input,<choice.decision>,_ctx)) {
<alts:{alt |
case <i><if(!choice.ast.greedy)>+1<endif>:
<alt>
break}; separator="\n">
default: break
}
>>

StarBlock(choice, alts, sync, iteration) ::= <<
setState(<choice.stateNumber>)
try _errHandler.sync(self)
_alt = try getInterpreter().adaptivePredict(_input,<choice.decision>,_ctx)
while (_alt != <choice.exitAlt> && _alt != ATN.INVALID_ALT_NUMBER) {
if ( _alt==1<if(!choice.ast.greedy)>+1<endif> ) {
<iteration>
<alts> <! should only be one !>
}
setState(<choice.loopBackStateNumber>)
try _errHandler.sync(self)
_alt = try getInterpreter().adaptivePredict(_input,<choice.decision>,_ctx)
}
>>

PlusBlock(choice, alts, error) ::= <<

```

```

setState(<choice.blockStartStateNumber>); <! alt block decision !>
try _errHandler.sync(self)
_alt = 1<if(!choice.ast.greedy)>+1<endif>;
repeat
{
switch (_alt) {
<alts:{alt|
case <i><if(!choice.ast.greedy)>+1<endif>:
<alt>
break}; separator="\n">
default:
<error>
}
setState(<choice.loopBackStateNumber>); <! loopback/exit decision !>
try _errHandler.sync(self)
_alt = try getInterpreter().adaptivePredict(_input,<choice.decision>,_ctx)
} while (_alt != <choice.exitAlt> && _alt != ATN.INVALID_ALT_NUMBER)
>>

Sync(s) ::= "sync(<s.expecting.name>);"

ThrowNoViableAlt(t) ::= "throw try ANTLRException.recognition(e: NoViableAltException(self))"

TestSetInline(s) ::= <<
<!<s.bitsets:{bits | <if(rest(rest(bits.ttypes)))><bitsetBitfieldComparison(s, bits)><else><bitsetInlineComparison(s,
bits)><endif>; separator=" || ">!>
//closure
{ () -> Bool in
<if(rest(s.bitsets)>var<else>let<endif> testSet: Bool = <first(s.bitsets):{bits |
<if(rest(rest(bits.ttypes)))><bitsetBitfieldComparison(s, bits)><else><bitsetInlineComparison(s, bits)><endif>}>
<rest(s.bitsets):{bits | testSet =
testSet || <if(rest(rest(bits.ttypes)))><bitsetBitfieldComparison(s, bits)><else><bitsetInlineComparison(s,
bits)><endif>; separator="\n">
return testSet
}()
>>

// Java language spec 15.19 - shift operators mask operands rather than overflow to 0... need range test
testShiftInRange(shiftAmount) ::= <<
((<shiftAmount>) & ~0x3f) == 0
>>

// produces smaller bytecode only when bits.ttypes contains more than two items
bitsetBitfieldComparison(s, bits) ::= <<
<!(<testShiftInRange({<offsetShift(s.varName, bits.shift)>})> && ((1 \<< <offsetShift(s.varName, bits.shift)>) &
<bits.ttypes:{ttype | (1 \<< <offsetShift(ttype, bits.shift)>)}; separator=" | ">)) != 0)!>
{ () -> Bool in
<! let test: Bool = (<testShiftInRange({<offsetShift(s.varName, bits.shift)>})>)!>

```

```

<!var temp: Int64 = Int64(<offsetShift(s.varName, bits.shift)>)!>
<!temp = (temp < 0) ? (64 + (temp % 64)) : (temp % 64)!>
<!let test1: Int64 = (Int64(1) < < temp)!>
<!var test2: Int64 = (<first(bits.ttypes): { ttype
| Utils.bitLeftShift(<offsetShift(parserName(ttype), bits.shift)>) }>)!>
<!<rest(bits.ttypes): { ttype | test2 = test2 | Utils.bitLeftShift(<offsetShift(parserName(ttype), bits.shift)>)};
separator="\n">!>
let testArray: [Int] = [<s.varName>, <bits.ttypes: { ttype | <parserName(ttype)> }; separator=", ">]
<!var test2: Int64 = Utils.testBitLeftShiftArray(testArray)!>
return Utils.testBitLeftShiftArray(testArray, <bits.shift>)
}()
>>

isZero ::= [
"0": true,
default: false
]
parserName(ttype) ::= <%
<parser.name>.Tokens.<ttype>.rawValue
%>
offsetShift(shiftAmount, offset) ::= <%
<if(!isZero.(offset))><shiftAmount> - <offset><else><shiftAmount><endif>
%>

// produces more efficient bytecode when bits.ttypes contains at most two items
bitsetInlineComparison(s, bits) ::= <%
<bits.ttypes: { ttype | <s.varName> == <parser.name>.Tokens.<ttype>.rawValue }; separator=" || ">
%>

cases(ttypes) ::= <<
<trunc(ttypes): { t | case .<t>:fallthrough } ; separator="\n">
<last(ttypes): { t
| case .<t>: } ; separator="\n">
>>

InvokeRule(r, argExprsChunks) ::= <<
setState(<r.stateNumber>)
<if(r.labels)>
try {
let assignmentValue = try
<r.name><(if(r.ast.options.p)><r.ast.options.p><if(argExprsChunks)>, <endif><endif><argExprsChunks>)
<r.labels: { l | <labelref(l)> = assignmentValue } ; separator="\n">
}()
<else>try
<r.name><(if(r.ast.options.p)><r.ast.options.p><if(argExprsChunks)>, <endif><endif><argExprsChunks><endif>
>>

MatchToken(m) ::= <<

```

```

setState(<m.stateNumber>)
<if(m.labels)>
try {
  let assignmentValue = try match(<parser.name>.Tokens.<m.name>.rawValue)
  <m.labels:{1 | <labelref(l)> = assignmentValue} ; separator="\n">
  }()
<else>try match(<parser.name>.Tokens.<m.name>.rawValue)<endif>
>>

MatchSet(m, expr, capture) ::= "<CommonSetStuff(m, expr, capture, false)>"

MatchNotSet(m, expr, capture) ::= "<CommonSetStuff(m, expr, capture, true)>"

CommonSetStuff(m, expr, capture, invert) ::= <<
setState(<m.stateNumber>)
<if(m.labels)><m.labels:{1 | <labelref(l)>
= }>try _input.LT(1)<endif>
<capture>
if (<if(invert)><m.varName> \<= 0 || <else>!<endif>(<expr>)) {
  <if(m.labels)><m.labels:{1 | <labelref(l)> = }><endif>try _errHandler.recoverInline(self)<if(m.labels)> as
  Token<endif>
}
else {
  _errHandler.reportMatch(self)
  try consume()
}
>>

Wildcard(w) ::= <<
setState(<w.stateNumber>)
<if(w.labels)><w.labels:{1 | <labelref(l)> = }><endif>try matchWildcard();
>>

// ACTION STUFF

Action(a, foo, chunks) ::= "<chunks>"

ArgAction(a, chunks) ::= "<chunks>"

SemPred(p, chunks, failChunks) ::= <<
setState(<p.stateNumber>)
if (!<chunks>)) {
  throw try ANTLRException.recognition(e:FailedPredicateException(self, <p.predicate><if(failChunks)>,
<failChunks><elseif(p.msg)>, <p.msg><endif>))
}
>>

ExceptionClause(e, catchArg, catchAction) ::= <<

```



```

catch (<catchArg>) {
  <catchAction>
}
>>

// lexer actions are not associated with model objects

LexerSkipCommand() ::= "skip()"
LexerMoreCommand() ::= "more()"
LexerPopModeCommand() ::= "popMode()"

LexerTypeCommand(arg)
  ::= "_type = <arg>"
LexerChannelCommand(arg) ::= "_channel = <arg>"
LexerModeCommand(arg)   ::= "_mode = <arg>"
LexerPushModeCommand(arg) ::= "pushMode(<arg>)"

ActionText(t) ::= "<t.text>"
ActionTemplate(t) ::= "<t.st>"
ArgRef(a) ::= "_localctx.<a.name>"
LocalRef(a) ::= "_localctx.<a.name>"
RetValRef(a) ::= "_localctx.<a.name>"
QRetValRef(a) ::= "<ctx(a)>.<a.dict>.<a.name>"
/** How to translate $tokenLabel */
TokenRef(t) ::= "<ctx(t)>.<t.name>"
LabelRef(t) ::= "<ctx(t)>.<t.name>"
ListLabelRef(t) ::= "<ctx(t)>.<ListLabelName(t.name)>"
SetAttr(s,rhsChunks) ::= "<ctx(s)>.<s.name> = <rhsChunks>"

TokenLabelType() ::= "<file.TokenLabelType; null={Token}>"
InputSymbolType() ::= "<file.InputSymbolType; null={Token}>"

TokenPropertyRef_text(t) ::= "<ctx(t)>.<t.label> != nil ? <ctx(t)>.<t.label>!.getText()! : \"\""
TokenPropertyRef_type(t) ::= "<ctx(t)>.<t.label> != nil ? <ctx(t)>.<t.label>!.getType() : 0)"
TokenPropertyRef_line(t) ::= "<ctx(t)>.<t.label>
  != nil ? <ctx(t)>.<t.label>!.getLine() : 0)"
TokenPropertyRef_pos(t) ::= "<ctx(t)>.<t.label> != nil ? <ctx(t)>.<t.label>!.getCharPositionInLine() : 0)"
TokenPropertyRef_channel(t) ::= "<ctx(t)>.<t.label> != nil ? <ctx(t)>.<t.label>!.getChannel() : 0)"
TokenPropertyRef_index(t) ::= "<ctx(t)>.<t.label> != nil ? <ctx(t)>.<t.label>!.getTokenIndex() : 0)"
TokenPropertyRef_int(t) ::= "<ctx(t)>.<t.label> != nil ? Int(<ctx(t)>.<t.label>!.getText()!) : 0)"

RulePropertyRef_start(r) ::= "<ctx(r)>.<r.label> != nil ? (<ctx(r)>.<r.label>!.start?.description ?? \"\") : \"\""
RulePropertyRef_stop(r) ::= "<ctx(r)>.<r.label> != nil ? (<ctx(r)>.<r.label>!.stop?.description ?? \"\") : \"\""
RulePropertyRef_text(r) ::= "<ctx(r)>.<r.label> != nil ? try
  _input.getText(<ctx(r)>.<r.label>!.start,<ctx(r)>.<r.label>!.stop) : \"\""
RulePropertyRef_ctx(r) ::= "<ctx(r)>.<r.label>"
RulePropertyRef_parser(r) ::= "self"

```

```

ThisRulePropertyRef_start(r) ::= "_localctx.start"
ThisRulePropertyRef_stop(r) ::=
    "_localctx.stop"
ThisRulePropertyRef_text(r) ::= "(try _input.getText(_localctx.start, try _input.LT(-1)))"
ThisRulePropertyRef_ctx(r) ::= "_localctx"
ThisRulePropertyRef_parser(r) ::= "self"

NonLocalAttrRef(s) ::= "(<<s.ruleName; format=\"cap\">Context)getInvokingContext(<s.ruleIndex>).<s.name>"
SetNonLocalAttr(s, rhsChunks) ::=
    "(<<s.ruleName; format=\"cap\">Context)getInvokingContext(<s.ruleIndex>).<s.name> = <rhsChunks>"

AddToLabelList(a) ::= "<ctx(a.label)>.<a.listName>.append(<labelref(a.label)>)"

TokenDecl(t) ::= "<t.name>: <SwiftTypeMap.(TokenLabelType())>!"
TokenTypeDecl(t) ::= "var <t.name>: Int = 0"
TokenListDecl(t) ::= "<t.name>: Array<Token> = Array<Token>()"
RuleContextDecl(r) ::= "<r.name>: <r.ctxName>!"
RuleContextListDecl(rdecl) ::= "<rdecl.name>: Array<<rdecl.ctxName>> = Array<<rdecl.ctxName>>()"

ContextTokenGetterDecl(t) ::=
    "open func <t.name>() -> TerminalNode? { return getToken(<parser.name>.Tokens.<t.name>.rawValue, 0) }"
ContextTokenListGetterDecl(t)
    ::=
    "open func <t.name>() -> Array<TerminalNode> { return getTokens(<parser.name>.Tokens.<t.name>.rawValue)
    }"
ContextTokenListIndexedGetterDecl(t) ::= <<
    open func <t.name>(_ i: Int) -> TerminalNode? {
        return getToken(<parser.name>.Tokens.<t.name>.rawValue, i)
    }
    >>
ContextRuleGetterDecl(r) ::= <<
    open func <r.name>() -> <r.ctxName>? {
        return getRuleContext(<r.ctxName>.self, 0)
    }
    >>
ContextRuleListGetterDecl(r) ::= <<
    open func <r.name>() -> Array<<r.ctxName>> {
        return getRuleContexts(<r.ctxName>.self)
    }
    >>
ContextRuleListIndexedGetterDecl(r) ::= <<
    open func <r.name>(_ i: Int) -> <r.ctxName>? {
        return getRuleContext(<r.ctxName>.self, i)
    }
    >>

LexerRuleContext() ::= "RuleContext"

```

```

/** The rule context name is the rule followed by a suffix; e.g.,
 * r becomes rContext.
 */
RuleContextNameSuffix() ::= "Context"

ImplicitTokenLabel(tokenName) ::= "_<tokenName>"
ImplicitRuleLabel(ruleName) ::= "_<ruleName>"
ImplicitSetLabel(id) ::= "_tset<id>"
ListLabelName(label)
 ::= "<label>"

CaptureNextToken(d) ::= "<d.varName> = try _input.LT(1)"
CaptureNextTokenType(d) ::= "<d.varName> = try _input.LA(1)"

StructDecl(struct,ctorAttrs,attrs, getters,dispatchMethods,interfaces,extensionMembers,
          superClass={ParserRuleContext}) ::= <<
open class
<struct.name>:<if(contextSuperClass)><contextSuperClass><else>ParserRuleContext<endif><if(interfaces)>,
<interfaces; separator=", "><endif> {
  <attrs:{ a | public var <a>}; separator="\n">
  <getters:{ g | <g>}; separator="\n">
  <! <if(ctorAttrs)>public init(_ parent: ParserRuleContext,_ invokingState: Int) { super.init(parent, invokingState)
}<endif> !>
  <if(ctorAttrs)>
  public convenience init(_ parent: ParserRuleContext?, _ invokingState: Int<ctorAttrs:{ a | , _ <a>}> ) {
  self.init(parent, invokingState)
  <struct.ctorAttrs:{ a | self.<a.name> = <a.name>;}; separator="\n">
  }
  <endif>
  open override func getRuleIndex() -> Int { return <parser.name>.RULE_<struct.derivedFromName> }
  <if(struct.provideCopyFrom)>
  <! don't need copy unless we have subclasses !>
  <!public init() { }!>
  public func copyFrom(_ ctx: <struct.name>) {
  super.copyFrom(ctx)
  <struct.attrs:{ a | self.<a.name> = ctx.<a.name>;}; separator="\n">
  }
  <endif>
  <dispatchMethods; separator="\n">
  <extensionMembers; separator="\n">
  }
  >>

AltLabelStructDecl(struct,attrs, getters,dispatchMethods) ::= <<
public final class <struct.name>: <currentRule.name; format="cap">Context {
  <attrs:{ a | public var <a>}; separator="\n">
  <getters:{ g | <g>}; separator="\n">
  public init(_ ctx: <currentRule.name; format="cap">Context) {

```

```

super.init()
copyFrom(ctx)
}
<dispatchMethods; separator="\n">
}
>>

```

```

ListenerDispatchMethod(method) ::= <<
override
open func <if(method.isEnter)>enter<else>exit<endif>Rule(_ listener: ParseTreeListener) {
if listener is <parser.grammarName>Listener {
(listener as!
<parser.grammarName>Listener).<if(method.isEnter)>enter<else>exit<endif><struct.derivedFromName;
format="cap">(self)
}
}
>>

```

```

VisitorDispatchMethod(method)
::= <<
override
open func accept<T>(_ visitor: ParseTreeVisitor<T>) -> T? {
if visitor is <parser.grammarName>Visitor {
return (visitor as! <parser.grammarName>Visitor<T>).visit<struct.derivedFromName; format="cap">(self)
} else if visitor is <parser.grammarName>BaseVisitor {
return (visitor as! <parser.grammarName>BaseVisitor<T>).visit<struct.derivedFromName; format="cap">(self)
}
} else {
return visitor.visitChildren(self)
}
}
>>

```

```

AttributeDecl(d) ::= "<d.name>: <SwiftTypeMap.(d.type)><if(d.initValue)> = <d.initValue><else>!<endif>"

```

```

/** If we don't know location of label def x, use this template (_localctx as! <x.ctx.name> */

```

```

labelref(x) ::= "<if(!x.isLocal)>_localctx.castdown(<x.ctx.name>.self).<endif><x.name>"

```

```

/** For any action chunk, what is correctly-typed context struct ptr? */

```

```

ctx(actionChunk) ::= "_localctx.castdown(<actionChunk.ctx.name>.self)"

```

```

// used for left-recursive rules

```

```

recRuleAltPredicate(ruleName, opPrec)

```

```

::= "precpred(_ctx, <opPrec>)"

```

```

recRuleSetReturnAction(src, name) ::= "$<name>=<src>.<name>"

```

```

recRuleSetStopToken() ::= "_ctx!.stop = try _input.LT(-1)"

```

```

recRuleAltStartAction(ruleName, ctxName, label, isListLabel) ::= <<

```

```

_localctx = <ctxName>Context(_parentctx, _parentState);
<if(label)>
<if(isListLabel)>
_localctx.<label>.append(_prevctx)
<else>
_localctx.<label> = _prevctx
<endif>
<endif>
<if(label)>_localctx.<label> = _prevctx;<endif>
try pushNewRecursionContext(_localctx, _startState, <parser.name>.RULE_<ruleName>)
>>

recRuleLabeledAltStartAction(ruleName, currentAltLabel, label, isListLabel) ::= <<
_localctx = <currentAltLabel; format="cap">Context( <ruleName; format="cap">Context(_parentctx,
_parentState))
<if(label)>
<if(isListLabel)>
(_localctx as! <currentAltLabel; format="cap">Context).<label>.append(_prevctx)
<else>
(_localctx as! <currentAltLabel; format="cap">Context).<label> = _prevctx
<endif>
<endif>
try pushNewRecursionContext(_localctx, _startState,
<parser.name>.RULE_<ruleName>)
>>

recRuleReplaceContext(ctxName) ::= <<
_localctx = <ctxName>Context(_localctx)
_ctx = _localctx
_prevctx = _localctx
>>

recRuleSetPrevCtx() ::= <<
if _parseListeners != nil {
try triggerExitRuleEvent()
}
_prevctx = _localctx
>>

LexerFile(lexerFile, lexer, namedActions) ::= <<
<fileHeader(lexerFile.grammarFileName, lexerFile.ANTLRVersion)>
<if(lexerFile.genPackage)>
<!package <lexerFile.genPackage>;!>
<endif>
<namedActions.header>
import Antlr4

```

```

<lexer>
>>
Lexer(lexer, atn, actionFuncs, sempredFuncs, superClass) ::= <<
open class <lexer.name>: <superClass; null="Lexer"> {
internal static var _decisionToDFA: [DFA] = {
    var decisionToDFA = [DFA]()
    let length = <lexer.name>._ATN.getNumberOfDecisions()
    for i in 0..<length {
        <! decisionToDFA[i] = DFA(<lexer.name>._ATN.getDecisionState(i!), i);!>
        decisionToDFA.append(DFA(<lexer.name>._ATN.getDecisionState(i!), i))
    }

return decisionToDFA
    }()

internal static let _sharedContextCache: PredictionContextCache = PredictionContextCache()
public static let <lexer.tokens>: {k | <k>=<lexer.tokens.(k)>}; separator=" ", wrap, anchor>
<if(lexer.channels)>
    public let <lexer.channels>: {k | <k>=<lexer.channels.(k)>}; separator=" ", wrap, anchor>
<endif>
<rest(lexer.modes): {m | public static let <m>: Int = <i>;}; separator="\n">
public static let modeNames: [String] = [
    <lexer.modes: {m | "<m>"}; separator=" ", wrap, anchor>
]

public static let ruleNames: [String] = [
    <lexer.ruleNames: {r | "<r>"}; separator=" ", wrap, anchor>
]

<vocabulary(lexer.literalNames, lexer.symbolicNames)>

<namedActions.members>
open override func getVocabulary() -> Vocabulary {
    return <lexer.name>.VOCABULARY
}

public override init(_ input: CharStream) {
    RuntimeMetaData.checkVersion("<lexerFile.ANTLRVersion>", RuntimeMetaData.VERSION)
    super.init(input)
    _interp = LexerATNSimulator(self, <lexer.name>._ATN,
    <lexer.name>._decisionToDFA, <lexer.name>._sharedContextCache)
}

override
open func getGrammarFileName() -> String { return "<lexer.grammarFileName>" }

override
open func getRuleNames() -> [String] { return <lexer.name>.ruleNames }

```

```
override
open func getSerializedATN() -> String { return <lexer.name>._serializedATN }
```

```
override
open func getModeNames() -> [String] { return <lexer.name>.modeNames }
```

```
override
open func getATN() -> ATN { return <lexer.name>._ATN }
```

```
<dumpActions(lexer, "", actionFuncs, sempredFuncs)>
```

```
<atn>
```

```
public static let _serializedATN: String = <lexer.name>ATN().jsonString
public static let _ATN: ATN = ATNDeserializer().deserializeFromJson(_serializedATN)
}
>>
```

```
/** Don't need to define anything. The tool generates a XParserATN.swift file (and same for lexer)
 * which is referenced from static field _serializedATN. This json string is passed to
 * deserializeFromJson(). Note this is not the "serialization as array of ints" that
 other targets
 * do. It is more or less the output of ATNPrinter which gets read back in.
 */
```

```
SerializedATN(model) ::= <<
```

```
>>
```

```
/** Using a type to init value map, try to init a type; if not in table
```

```
 * must be an object, default value is "null".
```

```
*/
```

```
initValue(typeName) ::= <<
```

```
<SwiftTypeInitMap.(typeName)>
```

```
>>
```

```
codeFileExtension() ::= ".swift"
```

```
Found in path(s):
```

```
 * /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-
 jar/org/antlr/v4/tool/templates/codegen/Swift/Swift.stg
```

## 1.160 glib 2.56.1-9.e17\_9

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## 1.161 lombok-utils 1.18.12

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Jan 21, 2002

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@ignore

@c Set file name and title for man page.

@setfilename gpl

@settitle GNU General Public License

@c man begin SEEALSO

gfdl(7), fsf-funding(7).

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```
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```

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Any

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#### END OF TERMS AND CONDITIONS

Appendix: How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to humanity, the best way to achieve this is to make it free software which everyone can redistribute and change under these



terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>  
Copyright (C) 19yy <name of author>
```

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If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) 19xx name of author  
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.  
This is free software, and you are welcome to redistribute it  
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the  
program `Gnomovision' (a program to direct compilers to make passes
```

at assemblers) written by James Hacker.

<signature of Ty Coon>, 1 April 1989  
Ty Coon, President of Vice

That's all there is to it!  
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=====

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Developed by:

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@cindex LGPL, Lesser General Public License

@center Version 2.1, February 1999

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@appendixsubsec Preamble

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When a program is linked with a library, whether statically or using

a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library.

The ordinary

General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the @dfn{Lesser} General Public License because it does @emph{Less} to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a ``work based on the library" and a ``work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

@iftex

@appendixsubsec TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

@end iftex

@ifinfo

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@item

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@heading END OF TERMS AND CONDITIONS  
@end iftex  
@ifinfo  
@center END OF TERMS AND CONDITIONS  
@end ifinfo

@page  
@appendixsubsec How to Apply These Terms to Your New Libraries

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@smallexample

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@var{signature of Ty Coon}, 1 April 1990

Ty Coon, President of Vice

@end smallexample

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@ifnohtml

@comment node-name, next, previous, up

@node GNU Free Documentation License, Concept Index, Old, Top

@end ifnohtml

@html

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@end html

@ifnohtml

@unnumbered GNU Free Documentation License

@end ifnohtml

@end ifset

@c man begin DESCRIPTION

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```
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```

```
<signature of Ty Coon>, 1 April 1989
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```

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<signature of Ty Coon>, 1 April 1989  
Ty Coon, President of Vice
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Version 3.1, 31 March 2009

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Packaging is done by the Debian GCC Maintainers <debian-gcc@lists.debian.org>, with sources obtained from:

<ftp://gcc.gnu.org/pub/gcc/releases/> (for full releases)

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<http://bitbucket.org/goshawk/gdc> (for D)

The current gcc-4.8 source package is taken from the SVN gcc-4\_8-branch.

Changes: See [changelog.Debian.gz](http://changelog.Debian.gz)

Debian splits the GNU Compiler Collection into packages for each language, library, and documentation as follows:

| Language      | Compiler package | Library package | Documentation      |
|---------------|------------------|-----------------|--------------------|
| Ada           | gnat-4.8         |                 |                    |
|               | libgnat-4.8      | gnat-4.8-doc    |                    |
| C             | gcc-4.8          |                 | gcc-4.8-doc        |
| C++           | g++-4.8          | libstdc++6      | libstdc++6-4.8-doc |
| D             | gdc-4.8          |                 |                    |
| Fortran 95    | gfortran-4.8     | libgfortran3    | gfortran-4.8-doc   |
| Go            | gccgo-4.8        | libgo0          |                    |
| Java          | gcj-4.8          | libgcj10        | libgcj-doc         |
| Objective C   | gobjc-4.8        | libobjc2        |                    |
| Objective C++ | gobjc++-4.8      |                 |                    |

For some language run-time libraries, Debian provides source files, development files, debugging symbols and libraries containing position-independent code in separate packages:

| Language | Sources | Development        | Debugging          | Position-Independent |
|----------|---------|--------------------|--------------------|----------------------|
| C++      |         | libstdc++6-4.8-dbg | libstdc++6-4.8-pic |                      |

D libphobos-4.8-dev  
Java libgcj10-src libgcj10-dev libgcj10-dbg

Additional packages include:

All languages:

libgcc1, libgcc2, libgcc4

GCC intrinsics (platform-dependent)

gcc-4.8-base Base files common to all compilers  
gcc-4.8-soft-float Software floating point (ARM only)  
gcc-4.8-source The sources with patches

Ada:

libgnatvsn-dev, libgnatvsn4.8 GNAT version library  
libgnatprj-dev, libgnatprj4.8 GNAT Project Manager library

C:

cpp-4.8, cpp-4.8-doc GNU C Preprocessor  
libmudflap0-dev, libmudflap0 Library for instrumenting pointers  
libssp0-dev, libssp0 GCC stack smashing protection library  
libquadmath0 Math routines for the \_\_float128 type  
fixincludes Fix non-ANSI header files  
protoize Create/remove ANSI prototypes from C code

Java:

gij The Java bytecode interpreter and VM  
libgcj-common Common files for the Java run-time  
libgcj10-awt The Abstract Windowing Toolkit  
libgcj10-jar Java ARchive  
for the Java run-time

C, C++ and Fortran 95:

libgomp1-dev, libgomp1 GCC OpenMP (GOMP) support library  
libitm1-dev, libitm1 GNU Transactional Memory Library

Biarch support: On some 64-bit platforms which can also run 32-bit code, Debian provides additional packages containing 32-bit versions of some libraries. These packages have names beginning with 'lib32' instead of 'lib', for example lib32stdc++6. Similarly, on some 32-bit platforms which can also run 64-bit code, Debian provides additional packages with names beginning with 'lib64' instead of 'lib'. These packages contain 64-bit versions of the libraries. (At this time, not all platforms and not all libraries support biarch.) The license terms for these lib32 or lib64 packages are identical to the ones for the lib packages.

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- libatomic
- libdecnumber
- libgomp
- libitm
- libssp
- libstdc++-v3
- libobjc
- libmudflap
- libgfortran
- The libgnat-4.8 Ada support library and libgnatvsn library.
- Various config files in gcc/config/ used in runtime libraries.

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Developed by:

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University of Illinois at Urbana-Champaign

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ldexpq.c:

- \* Conversion to long double by Ulrich Drepper,
- \* Cygnus Support, drepper@cygnus.com.

cosq\_kernel.c, expq.c, sincos\_table.c, sincosq.c, sincosq\_kernel.c, sinq\_kernel.c, truncq.c:

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Cephes Math Library Release 2.2: January, 1991

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Adapted for glibc November, 2001

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gcc/go/gofrontend, libgo:

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D:  
gdc-4.8                    GNU D Compiler  
libphobos-4.8-dev        D standard runtime library

The D source package is made up of the following components.

The D front-end for GCC:  
- d/\*

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The DMD Compiler implementation of the D programming language:  
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The Zlib data compression library:  
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The Phobos standard runtime library:  
- `d/phobos/*`

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## HISTORY -

Early versions of this collector were developed as a part of research projects supported in part by the National Science Foundation and the Defense Advance Research Projects Agency.

The garbage collector originated as part of the run-time system for the Russell programming language implementation. The first version of the garbage collector was written primarily by Al Demers. It was then refined and mostly rewritten, primarily by Hans-J. Boehm, at Cornell U., the University of Washington, Rice University (where it was first used for C and assembly code), Xerox PARC, SGI, and HP Labs. However, significant contributions have also been made by many others.

Some other contributors:

More recent contributors are mentioned in the modification history in

README.changes. My apologies for any omissions.

The SPARC specific code was

originally contributed by Mark Weiser.

The Encore Multimax modifications were supplied by

Kevin Kenny (kenny@m.cs.uiuc.edu). The adaptation to the IBM PC/RT is largely due to Vernon Lee, on machines made available to Rice by IBM.

Much of the HP specific code and a number of good suggestions for improving the generic code are due to Walter Underwood.

Robert Brazile (brazile@diamond.bbn.com) originally supplied the ULTRIX code.

Al Dosser (dosser@src.dec.com) and Regis Cridlig (Regis.Cridlig@cl.cam.ac.uk) subsequently provided updates and information on variation between ULTRIX systems. Parag Patel (parag@netcom.com) supplied the A/UX code.

Jesper Peterson(jep@mtiame.mtia.oz.au), Michel Schinz, and

Martin Tauchmann (martintauchmann@bigfoot.com) supplied the Amiga port.

Thomas Funke (thf@zelator.in-berlin.de(?)) and

Brian D.Carlstrom (bdc@clark.lcs.mit.edu) supplied the NeXT ports.

Douglas Steel (doug@wg.icl.co.uk) provided ICL DRS6000 code.

Bill Janssen (janssen@parc.xerox.com) supplied

the SunOS dynamic loader

specific code. Manuel Serrano (serrano@cornas.inria.fr) supplied linux and

Sony News specific code. Al Dosser provided Alpha/OSF/1 code. He and

Dave Detlefs(detlefs@src.dec.com) also provided several generic bug fixes.

Alistair G. Crooks(agg@uts.amdahl.com) supplied the NetBSD and 386BSD ports.

Jeffrey Hsu (hsu@soda.berkeley.edu) provided the FreeBSD port.

Brent Benson (brent@jade.ssd.csd.harris.com) ported the collector to

a Motorola 88K processor running CX/UX (Harris NightHawk).

Ari Huttunen (Ari.Huttunen@hut.fi) generalized the OS/2 port to

nonIBM development environments (a nontrivial task).

Patrick Beard (beard@cs.ucdavis.edu) provided the initial MacOS port.

David Chase, then at Olivetti Research, suggested several improvements.

Scott Schwartz (schwartz@groucho.cse.psu.edu) supplied some of the

code to save and print call stacks for leak detection on a SPARC.

Jesse Hull and John Ellis supplied the C++ interface code.

Zhong Shao performed much of the

experimentation that led to the

current typed allocation facility. (His dynamic type inference code hasn't

made it into the released version of the collector, yet.)

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David Megginson,  
sax@megginson.com  
1998-05-11

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\* m4/ax\_func\_which\_gethostbyname\_r.m4

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```
<program> Copyright (C) <year> <name of author>  
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This is free software, and you are welcome to redistribute it  
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```

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## 1.166 libcurl 7.29.0-59.el7\_9.1

### 1.166.1 Available under license :

License Mixing with apps, libcurl and Third Party Libraries

=====

libcurl can be built to use a fair amount of various third party libraries, libraries that are written and provided by other parties that are distributed using their own licenses. Even libcurl itself contains code that may cause problems to some. This document attempts to describe what licenses libcurl and the other libraries use and what possible dilemmas linking and mixing them all can lead to for end users.

I am not a lawyer and this is not legal advice!

One common dilemma is that GPL[1]-licensed code is not allowed to be linked with code licensed under the Original BSD license (with the announcement clause). You may still build your own copies that use them all, but distributing them as binaries would be to violate the GPL license - unless you accompany your license with an exception[2]. This particular problem was addressed when the Modified BSD license was created, which does not have the announcement clause that collides with GPL.

libcurl <http://curl.haxx.se/docs/copyright.html>

Uses an MIT (or Modified BSD)-style license that is as liberal as possible. Some of the source files that deal with KRB4 have Original

BSD-style announce-clause licenses. You may not distribute binaries with krb4-enabled libcurl that also link with GPL-licensed code!

OpenSSL <http://www.openssl.org/source/license.html>

(May be used for SSL/TLS support) Uses an Original BSD-style license with an announcement clause that makes it "incompatible" with GPL. You are not allowed to ship binaries that link with OpenSSL that includes GPL code (unless that specific GPL code includes an exception for OpenSSL - a habit that is growing more and more common). If OpenSSL's licensing is a problem for you, consider using GnuTLS or yassl instead.

GnuTLS <http://www.gnutls.org/>

(May be used for SSL/TLS support) Uses the LGPL[3] license. If this is a problem for you, consider using OpenSSL instead. Also note that GnuTLS itself depends on and uses other libs (libcrypt and libpgp-error) and they too are LGPL- or GPL-licensed.

yassl <http://www.yassl.com/>

(May be used for SSL/TLS support) Uses the GPL[1] license. If this is a problem for you, consider using OpenSSL or GnuTLS instead.

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axTLS <http://axtls.sourceforge.net/>

(May be used for SSL/TLS support) Uses a Modified BSD-style license.

c-ares <http://daniel.haxx.se/projects/c-ares/license.html>

(Used for asynchronous name resolves) Uses an MIT license that is very liberal and imposes no restrictions on any other library or part you may link with.

zlib [http://www.gzip.org/zlib/zlib\\_license.html](http://www.gzip.org/zlib/zlib_license.html)

(Used for compressed Transfer-Encoding support) Uses an MIT-style license that shouldn't collide with any other library.

## krb4

While nothing in particular says that a Kerberos4 library must use any particular license, the one I've tried and used successfully so far (kth-krb4) is partly Original BSD-licensed with the announcement clause. Some of the code in libcurl that is written to deal with Kerberos4 is Modified BSD-licensed.

MIT Kerberos <http://web.mit.edu/kerberos/www/dist/>

(May be used for GSS support) MIT licensed, that shouldn't collide with any other parts.

Heimdal <http://www.pdc.kth.se/heimdal/>

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GNU GSS <http://www.gnu.org/software/gss/>

(May be used for GSS support) GNU GSS is GPL licensed. Note that you may not distribute binary curl packages that uses this if you build curl to also link and use any Original BSD licensed libraries!

## fbopenssl

(Used for SPNEGO support) Unclear license. Based on its name, I assume that it uses the OpenSSL license and thus shares the same issues as described for OpenSSL above.

libidn <http://josefsson.org/libidn/>

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OpenLDAP <http://www.openldap.org/software/release/license.html>

(Used for LDAP support) Uses a Modified BSD-style license. Since libcurl uses OpenLDAP as a shared library only, I have not heard of anyone that ships OpenLDAP linked with libcurl in an app.

libssh2 <http://www.libssh2.org/>

(Used for scp and sftp support) libssh2 uses a Modified BSD-style license.

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[2] = <http://www.fsf.org/licenses/gpl-faq.html#GPLIncompatibleLibs> details on how to write such an exception to the GPL

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## 1.167 libstdc++ 4.8.5-44.el7

### 1.167.1 Available under license :

Jan 21, 2002

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This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

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A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated

interface definition files, plus the scripts used to control compilation and installation of the library.

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a) The modified work must itself be a software library.

b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.

c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.

d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the

application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves,

then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

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Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which

must be

distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License.

Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6.

Any

executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse



engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

- a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)
- b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.
- c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.
- d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.
- e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is

normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

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Version 2.1, February 1999

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effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

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When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is



linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

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2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

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- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based

on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

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This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or

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When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

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6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2)

will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

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ftp://gcc.gnu.org/pub/gcc/releases/ (for full releases)  
svn://gcc.gnu.org/svn/gcc/ (for prereleases)  
http://bitbucket.org/goshawk/gdc (for D)

The current gcc-4.8 source package is taken from the SVN gcc-4\_8-branch.

Changes: See changelog.Debian.gz

Debian splits the GNU Compiler Collection into packages for each language, library, and documentation as follows:

| Language   | Compiler package | Library package | Documentation      |
|------------|------------------|-----------------|--------------------|
| Ada        | gnat-4.8         |                 |                    |
|            | libgnat-4.8      | gnat-4.8-doc    |                    |
| C          | gcc-4.8          |                 | gcc-4.8-doc        |
| C++        | g++-4.8          | libstdc++6      | libstdc++6-4.8-doc |
| D          | gdc-4.8          |                 |                    |
| Fortran 95 | gfortran-4.8     | libgfortran3    | gfortran-4.8-doc   |
| Go         | gccgo-4.8        | libgo0          |                    |

Java gcj-4.8 libgcj10 libgcj-doc  
 Objective C gobjc-4.8 libobjc2  
 Objective C++ gobjc++-4.8

For some language run-time libraries, Debian provides source files, development files, debugging symbols and libraries containing position-independent code in separate packages:

| Language | Sources           | Development        | Debugging          | Position-Independent |
|----------|-------------------|--------------------|--------------------|----------------------|
| C++      |                   | libstdc++6-4.8-dbg | libstdc++6-4.8-pic |                      |
| D        | libphobos-4.8-dev |                    |                    |                      |
| Java     | libgcj10-src      | libgcj10-dev       | libgcj10-dbg       |                      |

Additional packages include:

All languages:

libgcc1, libgcc2, libgcc4

GCC intrinsics (platform-dependent)

|                    |                                    |
|--------------------|------------------------------------|
| gcc-4.8-base       | Base files common to all compilers |
| gcc-4.8-soft-float | Software floating point (ARM only) |
| gcc-4.8-source     | The sources with patches           |

Ada:

libgnatvsn-dev, libgnatvsn4.8 GNAT version library  
 libgnatprj-dev, libgnatprj4.8 GNAT Project Manager library

C:

|                              |                                           |
|------------------------------|-------------------------------------------|
| cpp-4.8, cpp-4.8-doc         | GNU C Preprocessor                        |
| libmudflap0-dev, libmudflap0 | Library for instrumenting pointers        |
| libssp0-dev, libssp0         | GCC stack smashing protection library     |
| libquadmath0                 | Math routines for the __float128 type     |
| fixincludes                  | Fix non-ANSI header files                 |
| protoize                     | Create/remove ANSI prototypes from C code |

Java:

|               |                                      |
|---------------|--------------------------------------|
| gij           | The Java bytecode interpreter and VM |
| libgcj-common | Common files for the Java run-time   |
| libgcj10-awt  | The Abstract Windowing Toolkit       |
| libgcj10-jar  | Java ARchive                         |
|               | for the Java run-time                |

C, C++ and Fortran 95:

libgomp1-dev, libgomp1 GCC OpenMP (GOMP) support library  
 libitm1-dev, libitm1 GNU Transactional Memory Library

Biarch support: On some 64-bit platforms which can also run 32-bit code, Debian provides additional packages containing 32-bit versions of some

libraries. These packages have names beginning with 'lib32' instead of 'lib', for example lib32stdc++6. Similarly, on some 32-bit platforms which can also run 64-bit code, Debian provides additional packages with names beginning with 'lib64' instead of 'lib'. These packages contain 64-bit versions of the libraries. (At this time, not all platforms and not all libraries support biarch.) The license terms for these lib32 or lib64 packages are identical to the ones for the lib packages.

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- libatomic
- libdecnumber
- libgomp
- libitm

- libssp
- libstdc++-v3
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- libmudflap
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Written by Tobias Burnus <burnus@net-b.de>

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ldexpq.c:

- \* Conversion to long double by Ulrich Drepper,
- \* Cygnus Support, drepper@cygnus.com.

cosq\_kernel.c, expq.c, sincos\_table.c, sincosq.c, sincosq\_kernel.c,  
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isinfq.c:

- \* Written by J.T. Conklin <jtc@netbsd.org>.
- \* Change for long double by Jakub Jelinek <jj@ultra.linux.cz>
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log10q.c:

Cephes Math Library Release 2.2: January, 1991

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Adapted for glibc November, 2001

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gcc/go/gofrontend, libgo:

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D:

gdc-4.8                    GNU D Compiler  
libphobos-4.8-dev        D standard runtime library

The D source package is made up of the following components.

The D front-end for GCC:

- d/\*

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The DMD Compiler implementation of the D programming language:

- d/dmd/\*

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The Zlib data compression library:

- d/phobos/etc/c/zlib/\*

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The Phobos standard runtime library:

- d/phobos/\*

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This is an attempt to acknowledge early contributions to the garbage collector. Later contributions should instead be mentioned in README.changes.

HISTORY -

Early versions of this collector were developed as a part of research projects supported in part by the National Science Foundation and the Defense Advance Research Projects Agency.

The garbage collector originated as part of the run-time system for the Russell programming language implementation. The first version of the garbage collector was written primarily by Al Demers. It was then refined and mostly rewritten, primarily by Hans-J. Boehm, at Cornell U., the University of Washington, Rice University (where it was first used for C and assembly code), Xerox PARC, SGI, and HP Labs. However, significant contributions have also been made by many others.

Some other contributors:

More recent contributors are mentioned in the modification history in README.changes. My apologies for any omissions.

The SPARC specific code was originally contributed by Mark Weiser.

The Encore Multimax modifications were supplied by Kevin Kenny (kenny@m.cs.uiuc.edu). The adaptation to the IBM PC/RT is largely due to Vernon Lee, on machines made available to Rice by IBM.

Much of the HP specific code and a number of good suggestions for improving the generic code are due to Walter Underwood.

Robert Brazile (brazile@diamond.bbn.com) originally supplied the ULTRIX code. Al Dosser (dosser@src.dec.com) and Regis Cridlig (Regis.Cridlig@cl.cam.ac.uk) subsequently provided updates and information on variation between ULTRIX systems. Parag Patel (parag@netcom.com) supplied the A/UX code.

Jesper Peterson(jep@mtiame.mtia.oz.au), Michel Schinz, and Martin Tauchmann (martintauchmann@bigfoot.com) supplied the Amiga port. Thomas Funke (thf@zelator.in-berlin.de(?)) and

Brian D.Carlstrom (bdc@clark.lcs.mit.edu) supplied the NeXT ports.

Douglas Steel (doug@wg.icl.co.uk) provided ICL DRS6000 code.

Bill Janssen (janssen@parc.xerox.com) supplied the SunOS dynamic loader

specific code. Manuel Serrano (serrano@cornas.inria.fr) supplied linux and Sony News specific code. Al Dosser provided Alpha/OSF/1 code. He and Dave Detlefs(detlefs@src.dec.com) also provided several generic bug fixes.

Alistair G. Crooks(agg@uts.amdahl.com) supplied the NetBSD and 386BSD ports.

Jeffrey Hsu (hsu@soda.berkeley.edu) provided the FreeBSD port.

Brent Benson (brent@jade.ssd.csd.harris.com) ported the collector to a Motorola 88K processor running CX/UX (Harris NightHawk).

Ari Huttunen (Ari.Huttunen@hut.fi) generalized the OS/2 port to nonIBM development environments (a nontrivial task).

Patrick Beard (beard@cs.ucdavis.edu) provided the initial MacOS port.

David Chase, then at Olivetti Research, suggested several improvements.

Scott Schwartz (schwartz@groucho.cse.psu.edu) supplied some of the code to save and print call stacks for leak detection on a SPARC.

Jesse Hull and John Ellis supplied the C++ interface code.

Zhong Shao performed much of the experimentation that led to the current typed allocation facility. (His dynamic type inference code hasn't

made it into the released version of the collector, yet.)

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Directory native/fdlibm

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David Megginson,  
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## 1.168 libuuid 2.23.2-65.el7\_9.1

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```
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it
under certain conditions; type `show c' for details.
```

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```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
```

```
Ty Coon, President of Vice
```

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size: 8388608, sector size: 512, PT: dos, offset: 446, id=0x8f8378c0

---

#1: 32 7648 0x83

#2: 7680 8704 0xa5

#5: 7936 4864 0x7 (freebsd)

#6: 12544 3584 0x7 (freebsd)

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Initialize empty image

f1c9645dbc14efddc7d8a322685f26eb bsd.img

Create new DOS partition table

57e721e38d1266c2df055067c18f2cf9 bsd.img

---layout-----

\_\_ts\_dev\_\_: 10 MB, 10485760 bytes, 20480 sectors

Units = sectors of 1 \* 512 = 512 bytes

Sector size (logical/physical): 512 bytes / 512 bytes

I/O size (minimum/optimal): 512 bytes / 512 bytes

Disk label type: dos

Disk identifier: 0x00000001

| Device | Boot | Start | End | Blocks | Id | System |
|--------|------|-------|-----|--------|----|--------|
|--------|------|-------|-----|--------|----|--------|

Create 1st primary partition

ada64ace122978d00d1d1c0e5ee45d26 bsd.img

---layout-----

\_\_ts\_dev\_\_: 10 MB, 10485760 bytes, 20480 sectors

Units = sectors of 1 \* 512 = 512 bytes

Sector size (logical/physical): 512 bytes / 512 bytes

I/O size (minimum/optimal): 512 bytes / 512 bytes

Disk label type: dos

Disk identifier: 0x00000001

| Device      | Boot | Start | End  | Blocks | Id | System |
|-------------|------|-------|------|--------|----|--------|
| __ts_dev__1 |      | 2048  | 4095 | 1024   | 83 | Linux  |

Create 2st primary partition

1bebf87248e05d6e4e62b749da65d023

bsd.img

Set 2nd partition type

2d8e8dff51a88a045db233418dd73fbe bsd.img

---layout-----

\_\_ts\_dev\_\_: 10 MB, 10485760 bytes, 20480 sectors

Units = sectors of 1 \* 512 = 512 bytes

Sector size (logical/physical): 512 bytes / 512 bytes

I/O size (minimum/optimal): 512 bytes / 512 bytes

Disk label type: dos

Disk identifier: 0x00000001

| Device      | Boot | Start | End  | Blocks | Id | System |
|-------------|------|-------|------|--------|----|--------|
| __ts_dev__1 |      | 2048  | 4095 | 1024   | 83 | Linux  |

\_\_ts\_dev\_\_2 4096 20479 8192 a5 FreeBSD

-----

Create default BSD

2e1cee529cb59c9341afef0443f196a1 bsd.img

---layout-----

Changes will remain in memory only, until you decide to write them.  
Be careful before using the write command.

Command (m for help):

BSD disklabel command (m for help):

4 partitions:

| #  | start | end   | size   | fstype | [fsize | bsize | cpg] |
|----|-------|-------|--------|--------|--------|-------|------|
| c: | 4096  | 20479 | 16384  | unused | 0      | 0     |      |
| d: | 0     |       |        |        |        |       |      |
|    | 16064 | 16065 | unused | 0      | 0      |       |      |

BSD disklabel command (m for help):

Command (m for help):

-----

b5c121c2091b2ff26b880551feac7112 bsd.img

---layout-----

Changes will remain in memory only, until you decide to write them.  
Be careful before using the write command.

Command (m for help):

BSD disklabel command (m for help):

4 partitions:

| #  | start | end   | size  | fstype | [fsize | bsize | cpg] |
|----|-------|-------|-------|--------|--------|-------|------|
| a: | 4096  | 6144  | 2049  | 4.2BSD | 0      | 0     | 0    |
| c: | 4096  | 20479 | 16384 | unused | 0      | 0     |      |
| d: | 0     | 16064 | 16065 | unused | 0      | 0     |      |

BSD disklabel command (m for help):

Command (m for help):

-----



Changes will remain in memory only, until you decide to write them.  
Be careful before using the write command.

Command (m for help):

BSD disklabel command (m for help):

```
0 unused      5 4.1BSD      9 4.4LFS      d boot
1 swap
   6 Eighth Edition  a unknown    e ADOS
2 Version 6      7 4.2BSD      b HPFS       f HFS
3 Version 7      8 MS-DOS     c ISO-9660   10 AdvFS
4 System V
```

BSD disklabel command (m for help):

/\*

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\*/

# 1.169 libcom-err 1.42.9-19.el7

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system utilities (e2fsck, mke2fs, etc.). The EXT2 utilities were  
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## 1.170 libmount 2.23.2-65.el7\_9.1

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```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute
it
under certain conditions; type `show c' for details.
```

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```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

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size: 8388608, sector size: 512, PT: dos, offset: 446, id=0x8f8378c0

---

```
#1: 32 7648 0x83
#2: 7680 8704 0xa5
#5: 7936 4864 0x7 (freebsd)
#6: 12544 3584 0x7 (freebsd)
```

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Initialize empty image

f1c9645dbc14efddc7d8a322685f26eb bsd.img

Create new DOS partition table

57e721e38d1266c2df055067c18f2cf9 bsd.img

---layout-----

\_\_ts\_dev\_\_: 10 MB, 10485760 bytes, 20480 sectors

Units = sectors of 1 \* 512 = 512 bytes

Sector size (logical/physical): 512 bytes / 512 bytes

I/O size (minimum/optimal): 512 bytes / 512 bytes

Disk label type: dos

Disk identifier: 0x00000001

| Device | Boot | Start | End | Blocks | Id | System |
|--------|------|-------|-----|--------|----|--------|
|--------|------|-------|-----|--------|----|--------|

-----

Create 1st primary partition

ada64ace122978d00d1d1c0e5ee45d26 bsd.img

---layout-----

\_\_ts\_dev\_\_: 10 MB, 10485760 bytes, 20480 sectors

Units = sectors of 1 \* 512 = 512 bytes

Sector size (logical/physical): 512 bytes / 512 bytes

I/O size (minimum/optimal): 512 bytes / 512 bytes

Disk label type: dos

Disk identifier: 0x00000001

| Device | Boot | Start | End | Blocks | Id | System |
|--------|------|-------|-----|--------|----|--------|
|--------|------|-------|-----|--------|----|--------|

|             |  |      |      |      |    |       |
|-------------|--|------|------|------|----|-------|
| __ts_dev__1 |  | 2048 | 4095 | 1024 | 83 | Linux |
|-------------|--|------|------|------|----|-------|

-----

Create 2st primary partition

1bebf87248e05d6e4e62b749da65d023

bsd.img

Set 2nd partition type

2d8e8dff51a88a045db233418dd73fbe bsd.img

---layout-----

\_\_ts\_dev\_\_: 10 MB, 10485760 bytes, 20480 sectors

Units = sectors of 1 \* 512 = 512 bytes

Sector size (logical/physical): 512 bytes / 512 bytes

I/O size (minimum/optimal): 512 bytes / 512 bytes

Disk label type: dos

Disk identifier: 0x00000001

| Device | Boot | Start | End | Blocks | Id | System |
|--------|------|-------|-----|--------|----|--------|
|--------|------|-------|-----|--------|----|--------|

|             |  |      |      |      |    |       |
|-------------|--|------|------|------|----|-------|
| __ts_dev__1 |  | 2048 | 4095 | 1024 | 83 | Linux |
|-------------|--|------|------|------|----|-------|

|             |  |      |       |      |    |         |
|-------------|--|------|-------|------|----|---------|
| __ts_dev__2 |  | 4096 | 20479 | 8192 | a5 | FreeBSD |
|-------------|--|------|-------|------|----|---------|

-----

Create default BSD

2e1cee529cb59c9341afef0443f196a1 bsd.img

---layout-----

Changes will remain in memory only, until you decide to write them.

Be careful before using the write command.

Command (m for help):



BSD disklabel command (m for help):

4 partitions:

```
# start end size fstype [fsize bsize cpg]
c: 4096 20479 16384 unused 0 0
d: 0
   16064 16065 unused 0 0
```

BSD disklabel command (m for help):

Command (m for help):

-----

b5c121c2091b2ff26b880551feac7112 bsd.img

---layout-----

Changes will remain in memory only, until you decide to write them.

Be careful before using the write command.

Command (m for help):

BSD disklabel command (m for help):

4 partitions:

```
# start end size fstype [fsize bsize cpg]
a: 4096 6144 2049 4.2BSD 0 0 0
c: 4096 20479 16384 unused 0 0
d: 0 16064 16065 unused 0 0
```

BSD disklabel command (m for help):

Command (m for help):

-----

Changes will remain in memory only, until you decide to write them.

Be careful before using the write command.

Command (m for help):

BSD disklabel command (m for help):

```
0 unused 5 4.1BSD 9 4.4LFS d boot
1 swap
   6 Eighth Edition a unknown e ADOS
2 Version 6 7 4.2BSD b HPFS f HFS
3 Version 7 8 MS-DOS c ISO-9660 10 AdvFS
4 System V
```

BSD disklabel command (m for help):

/\*

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\*/

## 1.171 kmod-libs 20-28.el7

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Version 2.1, February 1999

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```
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```

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```
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```

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```
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```

```
<signature of Ty Coon>, 1 April 1989  
Ty Coon, President of Vice
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## 1.174 device-mapper-libs 1.02.170-6.el7\_9.5

## 1.174.1 Available under license :

This package was debianized by Andres Salomon <dilinger@mp3revolution.net> on Wed, 20 Feb 2002 03:17:25 -0500.

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Because

of this blurred distinction, using the ordinary General Public License for libraries did not effectively promote software sharing, because most developers did not use the libraries. We concluded that weaker conditions might promote sharing better.

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## 1.175 pycurl 7.19.0

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## 1.176 rxjava 1.3.8

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This package "rx.internal.operators" is for internal implementation details and can change at any time.

It is excluded from the public Javadocs (<http://netflix.github.io/RxJava/javadoc/>) and should not be relied upon by any code.

In short, changes to public signatures of these classes will not be accounted for in the versioning of RxJava.

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/opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/OnSubscribeTakeLastOne.java  
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\* /opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/OperatorTakeLast.java

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jar/rx/internal/operators/OnSubscribeAmb.java
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/opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
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* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
jar/rx/internal/operators/OnSubscribeTimeoutSelectorWithFallback.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/Notification.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/Observer.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/OperatorAll.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
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* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/functions/Action5.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/functions/Func0.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/functions/Func9.java
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/opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
jar/rx/internal/operators/OperatorTimestamp.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/Scheduler.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/observers/SerializedSubscriber.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/functions/Functions.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/observables/SyncOnSubscribe.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/functions/Func8.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/functions/Action4.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
jar/rx/internal/operators/OnSubscribeDefer.java
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*
/opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
jar/rx/internal/operators/OperatorDematerialize.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
jar/rx/internal/operators/OnSubscribeGroupJoin.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
jar/rx/internal/operators/OnSubscribeRange.java

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\* /opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/functions/Action3.java  
 \* /opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/OnSubscribeFromIterable.java  
 \* /opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/BlockingOperatorLatest.java  
 \* /opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/observers/Subscribers.java  
 \* /opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/OperatorMaterialize.java  
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 \* /opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/SingleOnSubscribeMap.java  
 \* /opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/OperatorOnBackpressureDrop.java  
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\* /opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/OperatorDelay.java  
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* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/functions/Func1.java
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jar/rx/exceptions/CompositeException.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/exceptions/OnErrorThrowable.java
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jar/rx/internal/schedulers/SleepingAction.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/functions/Action0.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/subjects/TestSubject.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/subjects/AsyncSubject.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
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* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/functions/ActionN.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
jar/rx/internal/operators/OperatorOnErrorResumeNextViaFunction.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
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/opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/subjects/SerializedSubject.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
jar/rx/internal/operators/CompletableOnSubscribeConcatArray.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/functions/FuncN.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/OperatorScan.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
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* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
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*/
```

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* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
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/opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/util/BlockingUtils.java  
\* /opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/SingleSubscriber.java

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Found in path(s):

\* /opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/CompletableEmitter.java  
\* /opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/CompletableSubscriber.java  
\* /opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/SingleEmitter.java  
\* /opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/CompletableFromEmitter.java

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\* /opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/Single.java  
\* /opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-  
jar/rx/internal/operators/OnSubscribeCombineLatest.java

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\* Modified from <http://www.javacodegeeks.com/2013/08/simple-and-lightweight-pool-implementation.html>

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\* /opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/util/OpenHashSet.java

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This package contains code that relies on sun.misc.Unsafe. Before using it you MUST assert

UnsafeAccess.isUnsafeAvailable() == true

Much of the code in this package comes from or is inspired by the JCTools project:

<https://github.com/JCTools/JCTools>

JCTools has now published artifacts (<https://github.com/JCTools/JCTools/issues/17>) so RxJava could add JCTools as a "shadow" dependency (<https://github.com/ReactiveX/RxJava/issues/1735>).

RxJava has a "zero dependency" policy for the core library, so if we do add it as a dependency, it won't be an

externally visible dependency that results in a separate jar.

The license for the JCTools code is <https://github.com/JCTools/JCTools/blob/master/LICENSE>

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core/src/main/java/org/jctools/queues/MpscLinkedQueue.java

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* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
jar/rx/internal/producers/QueuedValueProducer.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
jar/rx/internal/producers/ProducerObserverArbiter.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
jar/rx/internal/producers/QueuedProducer.java
*
/opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
jar/rx/internal/operators/BackpressureUtils.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
jar/rx/internal/producers/ProducerArbiter.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
jar/rx/internal/producers/SingleProducer.java
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jar/rx/internal/operators/OperatorBufferWithTime.java

\* /opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-

jar/rx/internal/operators/OperatorMulticast.java

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/opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-

jar/rx/internal/operators/OperatorMapPair.java

\* /opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-

jar/rx/internal/operators/OperatorEagerConcatMap.java

\* /opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-

jar/rx/internal/operators/OperatorDistinct.java

\* /opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-

jar/rx/internal/schedulers/ScheduledAction.java

\* /opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-

jar/rx/internal/operators/OperatorSampleWithObservable.java

\* /opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-

jar/rx/internal/operators/OnSubscribeTimerPeriodically.java

\* /opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-

jar/rx/internal/schedulers/ExecutorScheduler.java

\* /opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-

jar/rx/internal/operators/OperatorBufferWithSize.java

\* /opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-

jar/rx/internal/operators/OperatorDebounceWithSelector.java

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/opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/OperatorDebounceWithTime.java  
\* /opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/OperatorWindowWithStartEndObservable.java  
\* /opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/util/RxThreadFactory.java  
\* /opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/OnSubscribeDelaySubscription.java  
\* /opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/OperatorWindowWithObservable.java  
\* /opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/OnSubscribeDelaySubscriptionOther.java  
\* /opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/OnSubscribeSkipTimed.java  
\*  
/opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/OperatorSkipUntil.java  
\* /opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/OnSubscribeTimerOnce.java  
\* /opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/OperatorWindowWithObservableFactory.java  
\* /opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/OperatorDistinctUntilChanged.java  
\* /opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/SingleOnSubscribeDelaySubscriptionOther.java  
\* /opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/OperatorPublish.java  
\* /opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/OperatorBufferWithStartEndObservable.java  
\* /opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/util/PlatformDependent.java  
\*  
/opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/OperatorRetryWithPredicate.java  
\* /opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/OnSubscribeDelaySubscriptionWithSelector.java  
\* /opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/OperatorBufferWithSingleObservable.java  
\* /opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/OperatorDelayWithSelector.java  
\* /opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/OperatorDoAfterTerminate.java  
\* /opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/OperatorTakeTimed.java  
\* /opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/OperatorWindowWithSize.java  
\* /opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/OperatorSwitch.java  
\*

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/opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
jar/rx/internal/schedulers/NewThreadWorker.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
jar/rx/internal/operators/OperatorOnBackpressureLatest.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
jar/rx/internal/operators/OperatorSampleWithTime.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
jar/rx/internal/operators/OperatorWindowWithTime.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
jar/rx/internal/operators/OperatorWithLatestFrom.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
jar/rx/internal/operators/OnSubscribeRefCount.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
jar/rx/internal/util/atomic/SpScLinkedListArrayQueue.java
```

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*/
```

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```
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
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\*/

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\* /opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/util/unsafe/SpScLinkedListQueue.java

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/**
* This plugin class provides 2 ways to customize {@link Scheduler} functionality
* 1. You may redefine entire schedulers, if you so choose. To do so, override
* the 3 methods that return Scheduler (io(), computation(), newThread()).
* 2. You may wrap/decorate an {@link Action0}, before it is handed off to a Scheduler. The
system-
* supplied Schedulers (Schedulers.ioScheduler, Schedulers.computationScheduler,
* Scheduler.newThreadScheduler) all use this hook, so it's a convenient way to
* modify Scheduler functionality without redefining Schedulers wholesale.
*
* Also, when redefining Schedulers, you are free to use/not use the onSchedule decoration hook.
* <p>
* See {@link RxJavaPlugins} or the RxJava GitHub Wiki for information on configuring plugins:
* <a
href="https://github.com/ReactiveX/RxJava/wiki/Plugins">https://github.com/ReactiveX/RxJava/wiki/Plugins</a>.
*/

```

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```

* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/plugins/RxJavaSchedulersHook.java
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* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/util/UtilityFunctions.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/Observable.java
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\* Original location: <https://github.com/JCTools/JCTools/blob/master/jctools-core/src/main/java/org/jctools/queues/atomic/SpscAtomicArrayQueue.java>  
\*/

Found in path(s):

\* /opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/util/atomic/SpscExactAtomicArrayQueue.java  
\*

/opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/util/atomic/SpscAtomicArrayQueue.java

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\* /opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/OnSubscribeToMultimap.java

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core/src/main/java/org/jctools/queues/ConcurrentSequencedCircularArrayQueue.java
*/
```

Found in path(s):

```
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
jar/rx/internal/util/unsafe/ConcurrentSequencedCircularArrayQueue.java
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jar/rx/internal/operators/OnSubscribeDetach.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/Emitter.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
jar/rx/internal/operators/SingleTakeUntilObservable.java
*
/opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/observables/package-info.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
jar/rx/observers/SafeCompletableSubscriber.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/util/ActionObserver.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-
jar/rx/internal/operators/OnSubscribeThrow.java
* /opt/cola/permits/1199767188_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/observers/package-info.java
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\* /opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/SingleTakeUntilCompletable.java  
 \* /opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/CompletableFlatMapSingleToCompletable.java  
 \* /opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/annotations/package-info.java  
 \* /opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/util/InternalObservableUtils.java  
 \*  
 /opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/BackpressureOverflow.java  
 \* /opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/plugins/RxJavaCompletableExecutionHook.java  
 \* /opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/SingleDoOnUnsubscribe.java  
 \* /opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/subscriptions/Unsubscribed.java  
 \* /opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/OnSubscribeLift.java  
 \* /opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/SingleLiftObservableOperator.java  
 \* /opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/plugins/RxJavaSingleExecutionHook.java  
 \* /opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/SingleOnErrorReturn.java  
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 /opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/OnSubscribeOnAssembly.java  
 \* /opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/functions/package-info.java  
 \* /opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/SingleFromObservable.java  
 \* /opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/OnSubscribeOnAssemblyCompletable.java  
 \* /opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/SingleFromEmitter.java  
 \* /opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/OnSubscribeCreate.java  
 \* /opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/util/ActionNotificationObserver.java  
 \* /opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/OnSubscribeOnAssemblySingle.java  
 \* /opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/subscriptions/CancellableSubscription.java  
 \*  
 /opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/SingleObserveOn.java  
 \* /opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/schedulers/GenericScheduledExecutorServiceFactory.java  
 \* /opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/observers/AssertableSubscriber.java  
 \* /opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/subjects/package-info.java

\* /opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/plugins/RxJavaSingleExecutionHookDefault.java  
\* /opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/observers/AssertableSubscriberObservable.java  
\* /opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/SingleFromCallable.java  
\* /opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/util/ObserverSubscriber.java  
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/opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/plugins/package-info.java  
\* /opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/exceptions/package-info.java  
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\* /opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/EmptyObservableHolder.java  
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/opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/NeverObservableHolder.java  
\* /opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/observers/AsyncCompletableSubscriber.java  
\* /opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/schedulers/SchedulePeriodicHelper.java  
\* /opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/OnSubscribeFlattenIterable.java  
\* /opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/plugins/RxJavaHooks.java  
\* /opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/singles/package-info.java  
\* /opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/subscriptions/package-info.java  
\* /opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/SingleDelay.java  
\* /opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/SingleTimeout.java  
\*  
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\*/

Found in path(s):

\* /opt/cola/permits/1199767188\_1630583074.7/0/rxjava-1-3-8-sources-4-jar/rx/internal/operators/OperatorGroupByEvicting.java

## 1.177 lvm2 1.02.170-6.el7\_9.5

### 1.177.1 Available under license :

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Version 2.1, February 1999

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## 1.178 junit 4.13.1

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@c Local Variables:

@c ispell-local-pdict: "ispell-dict"

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Any

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- a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever

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The

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```
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@appendixsubsec Preamble

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@var{signature of Ty Coon}, 1 April 1990

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That's all there is to it!

(This file is under construction.) -\*- text -\*-

If you've contributed to gas and your name isn't listed here, it is not meant as a slight. I just don't know about it. Email me, nickc@redhat.com and I'll correct the situation.

This file will eventually be deleted: The general info will go into the documentation, and info on specific files will go into an AUTHORS file, as requested by the FSF.

+++++

Dean Elsner wrote the original gas for vax. [more details?]

Jay Fenlason maintained gas for a while, adding support for gdb-specific debug information and the 68k series machines, most of the preprocessing pass, and extensive changes in messages.c, input-file.c, write.c.

K. Richard Pixley maintained gas for a while, adding various

enhancements and many bug fixes, including merging support for several processors, breaking gas up to handle multiple object file format backends (including heavy rewrite, testing, an integration of the coff and b.out backends), adding configuration including heavy testing and verification of cross assemblers and file splits and renaming, converted gas to strictly ansi C including full prototypes, added support for m680[34]0 & cpu32, considerable work on i960 including a coff port (including considerable amounts of reverse engineering), a sparc opcode file rewrite, decstation, rs6000, and hp300hpux host ports, updated "know" assertions and made them work, much other reorganization, cleanup, and lint.

Ken Raeburn wrote the high-level BFD interface code to replace most of the code in format-specific I/O modules.

The original Vax-VMS support was contributed by David L. Kashtan. Eric Youngdale and Pat Rankin have done much work with it since.

The Intel 80386 machine description was written by Eliot Dresselhaus.

Minh Tran-Le at IntelliCorp contributed some AIX 386 support.

The Motorola 88k machine description was contributed by Devon Bowen of Buffalo University and Torbjorn Granlund of the Swedish Institute of Computer Science.

Keith

Knowles at the Open Software Foundation wrote the original MIPS back end (tc-mips.c, tc-mips.h), and contributed Rose format support that hasn't been merged in yet. Ralph Campbell worked with the MIPS code to support a.out format.

Support for the Zilog Z8k and Hitachi H8/300, H8/500 and SH processors (tc-z8k, tc-h8300, tc-h8500, tc-sh), and IEEE 695 object file format (obj-ieee), was written by Steve Chamberlain of Cygnus Solutions. Steve also modified the COFF back end (obj-coffbfd) to use BFD for some low-level operations, for use with the Hitachi, 29k and Zilog targets.

John Gilmore built the AMD 29000 support, added .include support, and simplified the configuration of which versions accept which pseudo-ops. He updated the 68k machine description so that Motorola's opcodes always produced fixed-size instructions (e.g. jsr), while synthetic instructions remained shrinkable (jbsr). John fixed many bugs, including true tested cross-compilation support, and one bug in relaxation

that took a week and required the proverbial one-bit fix.

Ian Lance Taylor of Cygnus Solutions merged the Motorola and MIT syntaxes for the 68k, completed support for some COFF targets (68k, i386 SVR3, and SCO Unix), wrote the ECOFF support based on Michael Meissner's mips-tfile program, wrote the PowerPC and RS/6000 support, and made a few other minor patches. He handled the binutils releases for versions 2.7 through 2.9.

David Edelsohn contributed fixes for the PowerPC and AIX support.

Steve Chamberlain made gas able to generate listings.

Support for the HP9000/300 was contributed by Glenn Engel of HP.

Support for ELF format files has been worked on by Mark Eichin of Cygnus Solutions (original, incomplete implementation), Pete Hoogenboom at the University of Utah (HPPA mainly), Michael Meissner of the Open Software Foundation (i386 mainly), and Ken Raeburn of Cygnus Solutions (sparc, initial 64-bit support).

Several engineers at Cygnus Solutions have also provided many small bug fixes and configuration enhancements.

The initial Alpha support was contributed by Carnegie-Mellon University. Additional work was done by Ken Raeburn of Cygnus Solutions. Richard Henderson then rewrote much of the Alpha support.

Ian Dall updated the support code for the National Semiconductor 32000 series, and added support for Mach 3 and NetBSD running on the PC532.

Klaus Kaempf ported the assembler and the binutils to openVMS/Alpha.

Steve Haworth contributed the support for the Texas Instruction c30 (tms320c30).

H.J. Lu has contributed many patches and much testing.

Alan Modra reworked much of the i386 backend, improving the error checking, updating the code, and improving the 16 bit support, using patches from the work of Martynas Kunigelis and H.J. Lu.

Many others have contributed large or small bugfixes and enhancements. If you've contributed significant work and are not mentioned on this list, and want to be, let us know. Some of the history has been lost; we aren't intentionally leaving anyone out.

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```
<one line to give the program's name and a brief idea of what it does.>  
Copyright (C) 19yy <name of author>
```

```
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the Free Software Foundation; either version 2 of the License, or  
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```

```
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```

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```
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Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
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```

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```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
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```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

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-----  
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The reason we have a separate public license for some libraries is that they blur the distinction we usually make between modifying or adding to a program and simply using it. Linking a program with a library, without changing the library, is in some sense simply using the library, and is analogous to running a utility program or application program. However, in a textual and legal sense, the linked executable is a combined work, a derivative of the original library, and the ordinary General Public License treats it as such.

Because of this blurred distinction, using the ordinary General Public License for libraries did not effectively promote software sharing, because most developers did not use the libraries. We concluded that weaker conditions might promote sharing better.

However, unrestricted linking of non-free programs would deprive the users of those programs of all benefit from the free status of the libraries themselves. This Library General Public License is intended to permit developers of non-free programs to use free libraries, while preserving your freedom as a user of such programs to change the free libraries that are incorporated in them. (We have not seen how to achieve this as regards changes in header files, but we have achieved it as regards changes in the actual functions of the Library.) The hope is that this will lead to faster development of free libraries.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library".

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Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

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# 1.184 jackson 2.15.0

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# Jackson JSON processor

Jackson is a high-performance, Free/Open Source JSON processing library. It was originally written by Tatu Saloranta (tatu.saloranta@iki.fi), and has been in development since 2007. It is currently developed by a community of developers.

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## 1.186 libxml2 2.9.1-6.el7\_9.6

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## 1.187 log4j-api 2.17.1

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# 1.189 log4j-jcl 2.17.1

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# 1.190 unzip 6.0-24.el7\_9

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---

FIRST NOTE:

This file contains some details about the copyright history of contributions to the UnZip project.

Additionally, it summarises some exceptions to the general BSD-like copyright found in LICENSE that covers our generic code and most of the system specific ports.

Please read LICENSE first to find out what is allowed to do with Info-ZIP's UnZip code.

-----

There are currently two explicit copyrights on portions of UnZip code (at least, of which Info-ZIP is aware): Jim Luther's Mac OS File Manager interface code; and Christopher Evans' MacBinaryIII coding code (for the MacOS port).. These copyrights are discussed in more detail below.

All remaining code is now (starting with UnZip version 5.41) covered by the new Info-ZIP license. For details, please read the accompanying file LICENSE. The terms and conditions in this license supersede the copyright conditions of the contributions by Igor Mandrichenko (vms/vms.c), Greg Roelofs (zipinfo.c, new version of unshrink.c), Mike White (Windows DLL code in "windll/\*"), Steve P. Miller (Pocket UnZip GUI "wince/\*"), and Mark Adler (inflate/explode decompression core routines, previously put into the public domain). All these Info-ZIP contributors (or "primary" authors) have permitted us to replace their copyright notes by the Info-ZIP License.

Frequently Asked Questions regarding (re)distribution of Zip and UnZip are near the end of this file.

There are no known patents on any of the code in UnZip. Unisys claims a patent on LZW encoding and on LZW decoding in an apparatus that performs LZW encoding, but the patent appears to exempt a stand-alone decoder (as in UnZip's unshrink.c). Unisys has publicly claimed otherwise, but the issue has never been tested in court. Since this point is unclear, unshrinking is not enabled by default. It is the responsibility of the user to make his or her peace with Unisys and its licensing requirements. (unshrink.c may be removed from future

releases altogether.)

---

The original unzip source code has been extensively modified and almost entirely rewritten (changes include random zipfile access rather than sequential; replacement of unimplode() with explode(); replacement of old unshrink() with new (unrelated) unshrink(); replacement of output routines; addition of inflate(), wildcards, filename-mapping, text translation, ...; etc.). As far as we can tell, only the core code of the unreduce method remained substantially similar to Mr. Smith's original source. As of UnZip

5.42, the complete

core code is now covered by the Info-ZIP Licence. Therefore, support for the reduce method has been removed.

The drop of the reduce method should only affect some test archives, reducing was never used in any publically distributed Zip program.

For pathologic cases where support for reduced archive entries is needed, the unreduce code copyrighted by Samuel H. Smith is available as a separate distribution (the restricted copyright of this code is cited below in the "historical" section).

The following copyright applies to the Mac OS File Manager interface code (macos/source/macstuff.[ch]), distributed with UnZip 5.4 and later:

```
* MoreFiles
*
* A collection of File Manager and related routines
*
* by Jim Luther (Apple Macintosh Developer Technical Support Emeritus)
* with significant code contributions by Nitin Ganatra
* (Apple Macintosh Developer Technical Support Emeritus)
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\*  
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\*  
\* Basic encoding and decoding of Macintosh files to the  
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\* -----  
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-----  
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Regarding the first stipulation, Mr. Smith was tracked down in southern California some years back [Samuel H. Smith, The Tool Shop; as of mid-May 1994, (213) 851-9969 (voice), (213) 887-2127(?) (subscription BBS), 71150.2731@compuserve.com]:

"He says that he thought that whoever contacted him understood that he has no objection to the Info-ZIP group's inclusion of his code.

His primary concern is that it remain freely distributable, he said."

Despite the fact that our "normal" code has been entirely rewritten and by default no longer contains any of Mr. Smith's code, Info-ZIP remains indebted and grateful to him. We hope he finds our contributions as useful as we have his.

Note that the third and fourth stipulations still apply to any company that wishes to incorporate the unreduced code into its products; if you wish to do so, you must contact Mr. Smith directly regarding licensing.

-----

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-----

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-----

The remaining code was written by many people associated with the  
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Greg Roelofs (overall program logic, ZipInfo, unshrink, filename  
mapping/portability, etc.), Mark Adler (inflate, explode, funzip),  
Kai Uwe Rommel (OS/2), John Bush and Paul Kienitz (Amiga), Antoine  
Verheijen (Macintosh), Hunter Goatley (more VMS), Mike White (Windows  
DLLs), Christian Spieler (overall logic, optimization, VMS, etc.) and  
others. See the file CONTRIBS in the source distribution for a much  
more complete list of contributors.

The decompression core code for the deflate method (inflate.[ch],  
explode.c) was originally written by Mark Adler who submitted it  
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-----

## 1.191 dom 1.0

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\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/dom3/as/ASNotationDeclaration.java

\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/dom3/as/ASObject.java

\*

/opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/dom3/as/CharacterDataEditAS.java

\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/dom3/as/DOMImplementationAS.java

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\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/dom3/as/ASElementDeclaration.java

\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/dom3/as/ASEntityDeclaration.java

\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/dom3/as/ASNamedObjectMap.java

\*

/opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/dom3/as/ASDataType.java

\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/dom3/as/ASContentModel.java

\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/dom3/as/DOMASWriter.java



```
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/xerces/dom3/as/DocumentEditAS.java
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/xerces/dom3/as/ASObjectList.java
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/xerces/dom3/as/DOMASBuilder.java
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/xerces/dom3/as/DOMASException.java
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/xerces/dom3/as/NodeEditAS.java
```

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```

```
*/
```

```
/**
```

```
 * Checks if this content model has had its min/maxOccurs values reduced for
 * purposes of speeding up UPA. If
so, this content model should not be used
 * for any purpose other than checking unique particle attribution
 *
 * @return a boolean that says whether this content has been compacted for UPA
 */
```

Found in path(s):

```
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/xerces/impl/xs/models/XSCMValidator.java
```

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\*/

/\*\*

\* DOM Level 3 LS CR - Experimental.

\* Create a new `LSParser`. The newly constructed parser may

\*

then be configured by means of its `DOMConfiguration`

\* object, and used to parse documents by means of its `parse`

\* method.

\* @param mode The `mode` argument is either

\* `MODE_SYNCHRONOUS` or `MODE_ASYNCHRONOUS`, if

\* `mode` is `MODE_SYNCHRONOUS` then the

\* `LSParser` that is created will operate in synchronous

\* mode, if it's `MODE_ASYNCHRONOUS` then the

\* `LSParser` that is created will operate in asynchronous

\* mode.

\* @param schemaType An absolute URI representing the type of the schema

\* language used during the load of a `Document` using the

\* newly created `LSParser`. Note that no lexical checking

\* is done on the absolute URI. In order to create a

\* `LSParser` for any kind of schema types (i.e. the

\* `LSParser` will be free to use any schema

found), use the value

\* `null`.

\* 

>>>Note:<<< For W3C XML Schema [<http://www.w3.org/TR/2001/REC-xmlschema-1-20010502>] XML Schema Part 1</a>]

\* , applications must use the value

\* `"http://www.w3.org/2001/XMLSchema"`. For XML DTD [<http://www.w3.org/TR/2000/REC-xml-20001006>] XML 1.0</a>],

\* applications must use the value

\* `"http://www.w3.org/TR/REC-xml"`. Other Schema languages

\* are outside the scope of the W3C and therefore should recommend an

\* absolute URI in order to use this method.

\* @return The newly created `LSParser` object. This

\* `LSParser` is either synchronous or asynchronous

\* depending on the value of the `mode` argument.

\* 

>>>Note:<<< By default, the newly created `LSParser`

\* does not contain a `DOMErrorHandler`, i.e. the value of

\* the "<http://www.w3.org/TR/2003/WD-DOM-Level-3-Core-20030609/core.html#parameter-error-handler>">

- \* error-handler</a>" configuration parameter is <code>null</code>. However, implementations
- \* may provide a default error handler at creation time. In that case,
- \* the initial value of the <code>"error-handler"</code> configuration
- \* parameter on the new created <code>LSParser</code> contains a
- \* reference to the default error handler.
- \* @exception DOMException
- \* NOT\_SUPPORTED\_ERR: Raised if the requested mode or schema type is
- \* not supported.

\*/

Found in path(s):

\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/dom/CoreDOMImplementationImpl.java

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Found in path(s):

\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/impl/xs/traversers/XSDocumentInfo.java

\*

/opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/impl/xs/traversers/XSDElementTraverser.java

\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/xni/parser/XMLErrorHandler.java

\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/html/dom/HTMLFrameElementImpl.java

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\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/wml/dom/WMLImgElementImpl.java

\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/wml/WMLOptgroupElement.java

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\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/dom/DeferredCDATASectionImpl.java

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\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-  
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\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/util/XMLLocatorWrapper.java  
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jar/org/apache/xerces/impl/xs/traversers/XSDAbstractParticleTraverser.java  
\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-  
jar/org/apache/xerces/jaxp/validation/StAXStreamResultBuilder.java  
\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-  
jar/org/apache/xerces/jaxp/datatype/XMLGregorianCalendarImpl.java  
\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-  
jar/org/apache/xerces/impl/xs/util/XInt.java  
\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-

jar/org/apache/xerces/xs/XSConstants.java  
\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-  
jar/org/apache/xml/serialize/Serializer.java  
\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-  
jar/org/apache/xerces/impl/xs/SubstitutionGroupHandler.java  
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/opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-  
jar/org/apache/xerces/impl/dv/xs/TypeValidator.java  
\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-  
jar/org/apache/xerces/jaxp/SAXParserImpl.java  
\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-  
jar/org/apache/xerces/parsers/XMLParser.java  
\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-  
jar/org/apache/xerces/impl/xs/XSGroupDecl.java  
\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-  
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\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-  
jar/org/apache/xerces/impl/Version.java  
\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-  
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\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-  
jar/org/apache/xerces/impl/io/ASCIIReader.java  
\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-  
jar/org/apache/xerces/xs/XSIDCDefinition.java  
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/opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-  
jar/org/apache/wml/WMLCardElement.java  
\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-  
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\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-  
jar/org/apache/xerces/dom/AttrImpl.java  
\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-  
jar/org/apache/wml/dom/WMLAElementImpl.java  
\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-  
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jar/org/apache/wml/dom/WMLPrevElementImpl.java  
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jar/org/apache/xerces/impl/dv/util/HexBin.java  
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\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-  
jar/org/apache/xerces/xni/parser/XMLDTDCContentModelFilter.java

\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-  
 jar/org/apache/xerces/xs/XSModelGroup.java  
 \* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-  
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 \* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-  
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 \* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-  
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 \* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-  
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 \* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-  
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jar/org/apache/wml/dom/WMLTrElementImpl.java  
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 jar/org/apache/xerces/impl/xs/models/XSCMUniOp.java  
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 \* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-  
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 \* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-  
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 \* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-  
 jar/org/apache/xerces/dom/AttributeMap.java  
 \* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-  
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 \* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-  
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 \* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-  
 jar/org/apache/xerces/xs/datatypes/XSFloat.java  
 \* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-  
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 /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-  
 jar/org/apache/xerces/impl/xs/models/XSCMRepeatingLeaf.java  
 \* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-  
 jar/org/apache/xerces/dom/PSVIAAttrNSImpl.java  
 \* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-  
 jar/org/apache/xerces/impl/XMLDocumentFragmentScannerImpl.java  
 \* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-  
 jar/org/apache/xerces/impl/dv/ValidationContext.java  
 \* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-  
 jar/org/apache/xerces/xni/grammars/Grammar.java  
 \* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-  
 jar/org/apache/wml/dom/WMLAccessElementImpl.java  
 \* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-  
 jar/org/apache/xerces/impl/xpath/regex/Match.java  
 \* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-  
 jar/org/apache/xerces/impl/xs/XSMessageFormatter.java  
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/opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xml/serialize/TextSerializer.java  
\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/stax/events/NamespaceImpl.java  
\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/xs/XSAttributeDeclaration.java  
\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/jaxp/JAXPCConstants.java  
\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/wml/WMLAElement.java  
\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/util/EntityResolverWrapper.java  
\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/dom/DOMOutputImpl.java  
\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/dom/DOMImplementationImpl.java  
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/opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/parsers/SecuritySupport.java  
\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/impl/ExternalSubsetResolver.java  
\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/dom/NodeListCache.java  
\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/dom/PSVIElementNSImpl.java  
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\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/util/SAXMessageFormatter.java  
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\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/util/DOMEntityResolverWrapper.java  
\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/impl/xpath/regex/RegexParser.java  
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 \* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-  
 jar/org/apache/xerces/parsers/DOMASBuilderImpl.java  
 \* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-  
 jar/org/apache/html/dom/NameNodeListImpl.java  
 \* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-  
 jar/org/apache/wml/dom/WMLDOMImplementationImpl.java  
 \* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-  
 jar/org/apache/xerces/impl/io/UCSReader.java  
 \* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-  
 jar/org/apache/xerces/parsers/XIncludeAwareParserConfiguration.java  
 \* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-  
 jar/org/apache/xerces/impl/RevalidationHandler.java  
 \*  
 /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/xs/XSValue.java  
 \* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-  
 jar/org/apache/xerces/dom/NodeImpl.java  
 \* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-  
 jar/org/apache/xerces/impl/dv/dtd/XML11IDREFDatatypeValidator.java



\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/xni/parser/XMLConfigurationException.java  
\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/util/AttributesProxy.java  
\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/jaxp/validation/ValidatorImpl.java  
\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/parsers/XMLGrammarParser.java  
\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/impl/dtd/XMLSimpleType.java  
\*  
/opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/impl/xs/SchemaNamespaceSupport.java  
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\* used to check the 3 constraints against each complex type

\* (should be each model group):

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jar/org/apache/xerces/xs/datatypes/package.html

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jar/org/apache/xerces/impl/xs/models/XSDFACM.java

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\*

/opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-  
jar/org/apache/xerces/impl/dv/xs/YearDV.java

\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-  
jar/org/apache/xerces/impl/xs/traversers/XSDKeyrefTraverser.java

\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-  
jar/org/apache/xerces/impl/dv/xs/DateDV.java

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jar/org/apache/xerces/impl/dv/xs/DateDV.java

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jar/org/apache/xerces/impl/xs/traversers/XSDUniqueOrKeyTraverser.java

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jar/org/apache/xerces/impl/dv/xs/MonthDV.java

\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-

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jar/org/apache/xerces/impl/dv/xs/DurationDV.java
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/xerces/impl/dv/xs/MonthDayDV.java
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jar/org/apache/xerces/impl/dv/xs/TimeDV.java
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/xerces/impl/xs/traversers/XSAttributeChecker.java
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/xerces/impl/dv/xs/YearMonthDV.java
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/xerces/impl/xs/XSModelGroupImpl.java
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/xerces/impl/dv/xs/XSSimpleTypeDecl.java
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/xerces/impl/xs/traversers/XSDHandler.java
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/xerces/impl/dv/xs/DayDV.java
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/xerces/impl/xs/XMLSchemaValidator.java
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jar/org/apache/xerces/impl/xpath/regex/message.properties
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/xerces/impl/msg/DOMMessages.properties
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jar/org/apache/xerces/impl/msg/XPointerMessages.properties
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jar/org/apache/xerces/impl/msg/SAXMessages.properties
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jar/org/apache/xerces/impl/msg/XMLMessages.properties
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* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/xerces/impl/msg/XMLSerializerMessages.properties
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/xerces/impl/xpath/regex/message_ja.properties
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
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 jar/net/sourceforge/argparse4j/helper/CJKTextWidthCounter.java  
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 jar/net/sourceforge/argparse4j/helper/TextWidthCounter.java  
 \*  
 /opt/cola/permits/1257333064\_1642801966.95/0/argparse4j-0-8-1-sources-  
 jar/net/sourceforge/argparse4j/impl/action/StoreArgumentAction.java  
 \* /opt/cola/permits/1257333064\_1642801966.95/0/argparse4j-0-8-1-sources-  
 jar/net/sourceforge/argparse4j/inf/Namespace.java  
 \* /opt/cola/permits/1257333064\_1642801966.95/0/argparse4j-0-8-1-sources-  
 jar/net/sourceforge/argparse4j/impl/action/StoreFalseArgumentAction.java  
 \* /opt/cola/permits/1257333064\_1642801966.95/0/argparse4j-0-8-1-sources-  
 jar/net/sourceforge/argparse4j/inf/FeatureControl.java  
 \* /opt/cola/permits/1257333064\_1642801966.95/0/argparse4j-0-8-1-sources-  
 jar/net/sourceforge/argparse4j/impl/choice/CollectionArgumentChoice.java  
 \* /opt/cola/permits/1257333064\_1642801966.95/0/argparse4j-0-8-1-sources-  
 jar/net/sourceforge/argparse4j/inf/ArgumentChoice.java  
 \* /opt/cola/permits/1257333064\_1642801966.95/0/argparse4j-0-8-1-sources-  
 jar/net/sourceforge/argparse4j/internal/ArgumentGroupImpl.java  
 \*  
 /opt/cola/permits/1257333064\_1642801966.95/0/argparse4j-0-8-1-sources-  
 jar/net/sourceforge/argparse4j/impl/type/FileVerification.java  
 \* /opt/cola/permits/1257333064\_1642801966.95/0/argparse4j-0-8-1-sources-  
 jar/net/sourceforge/argparse4j/impl/type/EnumArgumentType.java  
 \* /opt/cola/permits/1257333064\_1642801966.95/0/argparse4j-0-8-1-sources-  
 jar/net/sourceforge/argparse4j/inf/ArgumentParserException.java  
 \* /opt/cola/permits/1257333064\_1642801966.95/0/argparse4j-0-8-1-sources-  
 jar/net/sourceforge/argparse4j/inf/Subparser.java  
 \* /opt/cola/permits/1257333064\_1642801966.95/0/argparse4j-0-8-1-sources-  
 jar/net/sourceforge/argparse4j/helper/ASCIITextWidthCounter.java  
 \* /opt/cola/permits/1257333064\_1642801966.95/0/argparse4j-0-8-1-sources-  
 jar/net/sourceforge/argparse4j/helper/ReflectHelper.java  
 \* /opt/cola/permits/1257333064\_1642801966.95/0/argparse4j-0-8-1-sources-  
 jar/net/sourceforge/argparse4j/internal/ParseState.java  
 \* /opt/cola/permits/1257333064\_1642801966.95/0/argparse4j-0-8-1-sources-  
 jar/net/sourceforge/argparse4j/helper/TextHelper.java  
 \*  
 /opt/cola/permits/1257333064\_1642801966.95/0/argparse4j-0-8-1-sources-  
 jar/net/sourceforge/argparse4j/impl/action/StoreTrueArgumentAction.java  
 \* /opt/cola/permits/1257333064\_1642801966.95/0/argparse4j-0-8-1-sources-  
 jar/net/sourceforge/argparse4j/ArgumentParsers.java  
 \* /opt/cola/permits/1257333064\_1642801966.95/0/argparse4j-0-8-1-sources-

```
jar/net/sourceforge/argparse4j/internal/SubparsersImpl.java
* /opt/cola/permits/1257333064_1642801966.95/0/argparse4j-0-8-1-sources-
jar/net/sourceforge/argparse4j/inf/Argument.java
* /opt/cola/permits/1257333064_1642801966.95/0/argparse4j-0-8-1-sources-
jar/net/sourceforge/argparse4j/internal/ArgumentParserImpl.java
* /opt/cola/permits/1257333064_1642801966.95/0/argparse4j-0-8-1-sources-
jar/net/sourceforge/argparse4j/impl/choice/RangeArgumentChoice.java
* /opt/cola/permits/1257333064_1642801966.95/0/argparse4j-0-8-1-sources-
jar/net/sourceforge/argparse4j/impl/Arguments.java
*
/opt/cola/permits/1257333064_1642801966.95/0/argparse4j-0-8-1-sources-
jar/net/sourceforge/argparse4j/impl/action/AppendArgumentAction.java
* /opt/cola/permits/1257333064_1642801966.95/0/argparse4j-0-8-1-sources-
jar/net/sourceforge/argparse4j/impl/type/StringArgumentType.java
* /opt/cola/permits/1257333064_1642801966.95/0/argparse4j-0-8-1-sources-
jar/net/sourceforge/argparse4j/inf/ArgumentParser.java
* /opt/cola/permits/1257333064_1642801966.95/0/argparse4j-0-8-1-sources-
jar/net/sourceforge/argparse4j/impl/action/HelpArgumentAction.java
* /opt/cola/permits/1257333064_1642801966.95/0/argparse4j-0-8-1-sources-
jar/net/sourceforge/argparse4j/impl/action/StoreConstArgumentAction.java
* /opt/cola/permits/1257333064_1642801966.95/0/argparse4j-0-8-1-sources-
jar/net/sourceforge/argparse4j/internal/ArgumentImpl.java
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```
* /opt/cola/permits/1257333064_1642801966.95/0/argparse4j-0-8-1-sources-
jar/net/sourceforge/argparse4j/impl/type/FileArgumentType.java
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Found in path(s):

```

* /opt/cola/permits/1257333064_1642801966.95/0/argparse4j-0-8-1-sources-
jar/net/sourceforge/argparse4j/inf/MutuallyExclusiveGroup.java

```

## 1.194 jetty-setuid-java 1.0.4

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```

Found in path(s):

```

* /opt/cola/permits/1257333122_1642801905.86/0/jetty-setuid-java-1-0-4-sources-
jar/org/eclipse/jetty/setuid/SetUIDListener.java
* /opt/cola/permits/1257333122_1642801905.86/0/jetty-setuid-java-1-0-4-sources-
jar/org/eclipse/jetty/setuid/SetUIDServer.java
* /opt/cola/permits/1257333122_1642801905.86/0/jetty-setuid-java-1-0-4-sources-

```



```
jar/org/eclipse/jetty/setuid/SetUID.java
* /opt/cola/permits/1257333122_1642801905.86/0/jetty-setuid-java-1-0-4-sources-
jar/org/eclipse/jetty/setuid/Group.java
* /opt/cola/permits/1257333122_1642801905.86/0/jetty-setuid-java-1-0-4-sources-
jar/org/eclipse/jetty/setuid/RLimit.java
*
/opt/cola/permits/1257333122_1642801905.86/0/jetty-setuid-java-1-0-4-sources-
jar/org/eclipse/jetty/setuid/Passwd.java
```

# 1.195 profiler 1.1.1

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```
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* http://jquery.org/license
*
* Includes Sizzle.js
* http://sizzlejs.com/
* Copyright 2011, The Dojo Foundation
* Released under the MIT, BSD, and GPL Licenses.
*
* Date: Thu Jun 30 14:16:56 2011 -0400
*/
```

Found in path(s):

```
* /opt/cola/permits/1257333100_1642801922.15/0/gae-mini-profiler-1-1-1-sources-
jar/ca/jimr/gae/profiler/resources/jquery-1.6.2.min.js
```

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```
/*
* jQuery Templates Plugin 1.0.0pre
* http://github.com/jquery/jquery-tmpl
* Requires jQuery 1.4.2
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*/
```

Found in path(s):

```
* /opt/cola/permits/1257333100_1642801922.15/0/gae-mini-profiler-1-1-1-sources-
```

jar/ca/jimr/gae/profiler/resources/jquery.tmpl.min.js

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\* /opt/cola/permits/1257333100\_1642801922.15/0/gae-mini-profiler-1-1-1-sources-jar/com/google/appengine/tools/appstats/MiniProfilerAppstats.java

\* /opt/cola/permits/1257333100\_1642801922.15/0/gae-mini-profiler-1-1-1-sources-jar/ca/jimr/gae/profiler/MiniProfiler.java

\* /opt/cola/permits/1257333100\_1642801922.15/0/gae-mini-profiler-1-1-1-sources-jar/ca/jimr/gae/profiler/MiniProfilerFilter.java

\* /opt/cola/permits/1257333100\_1642801922.15/0/gae-mini-profiler-1-1-1-sources-jar/ca/jimr/gae/profiler/resources/MiniProfilerResourceLoader.java

\* /opt/cola/permits/1257333100\_1642801922.15/0/gae-mini-profiler-1-1-1-sources-jar/ca/jimr/gae/profiler/MiniProfilerServlet.java

## 1.196 dagger 2.4

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\* /opt/cola/permits/1257772315\_1643010337.24/0/dagger-2-4-sources-jar/dagger/MapKey.java

\* /opt/cola/permits/1257772315\_1643010337.24/0/dagger-2-4-sources-jar/dagger/internal/MapFactory.java

\* /opt/cola/permits/1257772315\_1643010337.24/0/dagger-2-4-sources-jar/dagger/Component.java

\*

/opt/cola/permits/1257772315\_1643010337.24/0/dagger-2-4-sources-jar/dagger/internal/InstanceFactory.java

\* /opt/cola/permits/1257772315\_1643010337.24/0/dagger-2-4-sources-jar/dagger/internal/SingleCheck.java

\* /opt/cola/permits/1257772315\_1643010337.24/0/dagger-2-4-sources-jar/dagger/internal/Factory.java

\* /opt/cola/permits/1257772315\_1643010337.24/0/dagger-2-4-sources-jar/dagger/internal/MapProviderFactory.java

\* /opt/cola/permits/1257772315\_1643010337.24/0/dagger-2-4-sources-jar/dagger/internal/Collections.java

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\* /opt/cola/permits/1257772315\_1643010337.24/0/dagger-2-4-sources-jar/dagger/Multibindings.java  
\* /opt/cola/permits/1257772315\_1643010337.24/0/dagger-2-4-sources-jar/dagger/package-info.java  
\* /opt/cola/permits/1257772315\_1643010337.24/0/dagger-2-4-sources-jar/dagger/multibindings/IntKey.java  
\* /opt/cola/permits/1257772315\_1643010337.24/0/dagger-2-4-sources-jar/dagger/multibindings/StringKey.java  
\*  
/opt/cola/permits/1257772315\_1643010337.24/0/dagger-2-4-sources-jar/dagger/multibindings/LongKey.java  
\* /opt/cola/permits/1257772315\_1643010337.24/0/dagger-2-4-sources-jar/dagger/internal/Beta.java  
\* /opt/cola/permits/1257772315\_1643010337.24/0/dagger-2-4-sources-jar/dagger/multibindings/ClassKey.java  
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\* /opt/cola/permits/1257772315\_1643010337.24/0/dagger-2-4-sources-jar/dagger/internal/ProviderOfLazy.java  
\* /opt/cola/permits/1257772315\_1643010337.24/0/dagger-2-4-sources-jar/dagger/Binds.java  
\* /opt/cola/permits/1257772315\_1643010337.24/0/dagger-2-4-sources-jar/dagger/internal/Preconditions.java  
\*  
/opt/cola/permits/1257772315\_1643010337.24/0/dagger-2-4-sources-jar/dagger/internal/DoubleCheck.java  
\* /opt/cola/permits/1257772315\_1643010337.24/0/dagger-2-4-sources-  
jar/dagger/multibindings/ElementsIntoSet.java  
\* /opt/cola/permits/1257772315\_1643010337.24/0/dagger-2-4-sources-jar/dagger/multibindings/IntoMap.java  
\* /opt/cola/permits/1257772315\_1643010337.24/0/dagger-2-4-sources-jar/dagger/multibindings/package-info.java  
\* /opt/cola/permits/1257772315\_1643010337.24/0/dagger-2-4-sources-jar/dagger/multibindings/IntoSet.java

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*/opt/cola/permits/1257772315_1643010337.24/0/dagger-2-4-sources-jar/dagger/MembersInjector.java
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## 1.197 paranamer 2.5.1

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```
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jar/com/thoughtworks/paranamer/BytecodeReadingParanamer.java
```

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\* /opt/cola/permits/1257772269\_1643010353.74/0/paranamer-2-5-1-sources-  
jar/com/thoughtworks/paranamer/Paranamer.java

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\* /opt/cola/permits/1257772269\_1643010353.74/0/paranamer-2-5-1-sources-jar/com/thoughtworks/paranamer/NullParanamer.java

\* /opt/cola/permits/1257772269\_1643010353.74/0/paranamer-2-5-1-sources-jar/com/thoughtworks/paranamer/AdaptiveParanamer.java

\* /opt/cola/permits/1257772269\_1643010353.74/0/paranamer-2-5-1-sources-jar/com/thoughtworks/paranamer/ParameterNamesNotFoundException.java

\*

/opt/cola/permits/1257772269\_1643010353.74/0/paranamer-2-5-1-sources-jar/com/thoughtworks/paranamer/CachingParanamer.java

\* /opt/cola/permits/1257772269\_1643010353.74/0/paranamer-2-5-1-sources-jar/com/thoughtworks/paranamer/DefaultParanamer.java

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\* /opt/cola/permits/1257772269\_1643010353.74/0/paranamer-2-5-1-sources-jar/com/thoughtworks/paranamer/JavadocParanamer.java

## 1.198 metrics-httpclient 4.1.25

### 1.198.1 Available under license :

Apache-2.0

## 1.199 netty-reactive-streams-http 2.0.5

### 1.199.1 Available under license :

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## 1.200 netty-reactive-streams 2.0.5

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\* /opt/cola/permits/1258811491\_1643111603.33/0/annotations-4-1-1-4-sources-

jar/android/annotation/SuppressLint.java  
\* /opt/cola/permits/1258811491\_1643111603.33/0/annotations-4-1-1-4-sources-  
jar/android/annotation/TargetApi.java

## 1.202 animal-sniffer-annotation 1.19

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\* /opt/cola/permits/1258876677\_1643115784.16/0/animal-sniffer-annotations-1-19-sources-jar/META-INF/maven/org.codehaus.mojo/animal-sniffer-annotations/pom.xml

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\*/opt/cola/permits/1258876677\_1643115784.16/0/animal-sniffer-annotations-1-19-sources-jar/org/codehaus/mojo/animal\_sniffer/IgnoreJRERequirement.java

## 1.203 aws-java-sdk-swf-libraries 1.11.22

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\*/opt/cola/permits/1260641552\_1643189279.01/0/aws-java-sdk-swf-libraries-1-11-22-sources-jar/com/amazonaws/services/simpleworkflow/flow/generic/StartChildWorkflowExecutionParameters.java

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\* /opt/cola/permits/1260641552\_1643189279.01/0/aws-java-sdk-swf-libraries-1-11-22-sources-jar/com/amazonaws/services/simpleworkflow/flow/worker/ActivityTypeExecutionOptions.java  
\*  
/opt/cola/permits/1260641552\_1643189279.01/0/aws-java-sdk-swf-libraries-1-11-22-sources-jar/com/amazonaws/services/simpleworkflow/flow/WorkflowWorker.java  
\* /opt/cola/permits/1260641552\_1643189279.01/0/aws-java-sdk-swf-libraries-1-11-22-sources-jar/com/amazonaws/services/simpleworkflow/flow/SignalExternalWorkflowException.java  
\* /opt/cola/permits/1260641552\_1643189279.01/0/aws-java-sdk-swf-libraries-1-11-22-sources-jar/com/amazonaws/services/simpleworkflow/flow/generic/ContinueAsNewWorkflowExecutionParameters.java  
\* /opt/cola/permits/1260641552\_1643189279.01/0/aws-java-sdk-swf-libraries-1-11-22-sources-jar/com/amazonaws/services/simpleworkflow/flow/worker/DecisionTaskPoller.java  
\* /opt/cola/permits/1260641552\_1643189279.01/0/aws-java-sdk-swf-libraries-1-11-22-sources-jar/com/amazonaws/services/simpleworkflow/flow/annotations/Execute.java  
\* /opt/cola/permits/1260641552\_1643189279.01/0/aws-java-sdk-swf-libraries-1-11-22-sources-jar/com/amazonaws/services/simpleworkflow/flow/common/FlowDefaults.java  
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/opt/cola/permits/1260641552\_1643189279.01/0/aws-java-sdk-swf-libraries-1-11-22-sources-jar/com/amazonaws/services/simpleworkflow/flow/DynamicWorkflowClientExternal.java  
\* /opt/cola/permits/1260641552\_1643189279.01/0/aws-java-sdk-swf-libraries-1-11-22-sources-jar/com/amazonaws/services/simpleworkflow/flow/ActivityTaskException.java  
\* /opt/cola/permits/1260641552\_1643189279.01/0/aws-java-sdk-swf-libraries-1-11-22-sources-jar/com/amazonaws/services/simpleworkflow/flow/StartWorkflowOptions.java  
\* /opt/cola/permits/1260641552\_1643189279.01/0/aws-java-sdk-swf-libraries-1-11-22-sources-jar/com/amazonaws/services/simpleworkflow/flow/test/TestDecisionContext.java  
\* /opt/cola/permits/1260641552\_1643189279.01/0/aws-java-sdk-swf-libraries-1-11-22-sources-jar/com/amazonaws/services/simpleworkflow/flow/worker/Throttler.java  
\* /opt/cola/permits/1260641552\_1643189279.01/0/aws-java-sdk-swf-libraries-1-11-22-sources-jar/com/amazonaws/services/simpleworkflow/flow/core/TryCatch.java  
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/opt/cola/permits/1260641552\_1643189279.01/0/aws-java-sdk-swf-libraries-1-11-22-sources-jar/com/amazonaws/services/simpleworkflow/flow/WorkflowClientExternal.java  
\* /opt/cola/permits/1260641552\_1643189279.01/0/aws-java-sdk-swf-libraries-1-11-22-sources-

jar/com/amazonaws/services/simpleworkflow/flow/worker/CompleteWorkflowStateMachine.java  
 \* /opt/cola/permits/1260641552\_1643189279.01/0/aws-java-sdk-swf-libraries-1-11-22-sources-  
 jar/com/amazonaws/services/simpleworkflow/flow/common/FlowConstants.java  
 \* /opt/cola/permits/1260641552\_1643189279.01/0/aws-java-sdk-swf-libraries-1-11-22-sources-  
 jar/com/amazonaws/services/simpleworkflow/flow/test/TestPOJOActivityImplementationWorker.java  
 \* /opt/cola/permits/1260641552\_1643189279.01/0/aws-java-sdk-swf-libraries-1-11-22-sources-  
 jar/com/amazonaws/services/simpleworkflow/flow/annotations/WorkflowRegistrationOptions.java  
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 jar/com/amazonaws/services/simpleworkflow/flow/core/AsyncContextAware.java  
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 jar/com/amazonaws/services/simpleworkflow/flow/WorkflowClientFactoryExternal.java  
 \* /opt/cola/permits/1260641552\_1643189279.01/0/aws-java-sdk-swf-libraries-1-11-22-sources-  
 jar/com/amazonaws/services/simpleworkflow/flow/generic/ActivityImplementation.java  
 \* /opt/cola/permits/1260641552\_1643189279.01/0/aws-java-sdk-swf-libraries-1-11-22-sources-  
 jar/com/amazonaws/services/simpleworkflow/flow/WorkerLifecycle.java  
 \* /opt/cola/permits/1260641552\_1643189279.01/0/aws-java-sdk-swf-libraries-1-11-22-sources-  
 jar/com/amazonaws/services/simpleworkflow/flow/aspectj/AsynchronousAspectTask.java  
 \* /opt/cola/permits/1260641552\_1643189279.01/0/aws-java-sdk-swf-libraries-1-11-22-sources-  
 jar/com/amazonaws/services/simpleworkflow/flow/worker/WorkfowContextImpl.java  
 \* /opt/cola/permits/1260641552\_1643189279.01/0/aws-java-sdk-swf-libraries-1-11-22-sources-  
 jar/com/amazonaws/services/simpleworkflow/flow/aspectj/AsynchronousAspect.java  
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 jar/com/amazonaws/services/simpleworkflow/flow/ManualActivityCompletionClient.java  
 \* /opt/cola/permits/1260641552\_1643189279.01/0/aws-java-sdk-swf-libraries-1-11-22-sources-  
 jar/com/amazonaws/services/simpleworkflow/flow/ActivityTaskFailedException.java  
 \* /opt/cola/permits/1260641552\_1643189279.01/0/aws-java-sdk-swf-libraries-1-11-22-sources-  
 jar/com/amazonaws/services/simpleworkflow/flow/worker/DecisionContextImpl.java  
 \* /opt/cola/permits/1260641552\_1643189279.01/0/aws-java-sdk-swf-libraries-1-11-22-sources-  
 jar/com/amazonaws/services/simpleworkflow/flow/WorkflowTypeRegistrationOptions.java  
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 jar/com/amazonaws/services/simpleworkflow/flow/DecisionContextProvider.java  
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 jar/com/amazonaws/services/simpleworkflow/flow/worker/ExponentialRetryParameters.java  
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 jar/com/amazonaws/services/simpleworkflow/flow/test/TestWorkflowContext.java  
 \* /opt/cola/permits/1260641552\_1643189279.01/0/aws-java-sdk-swf-libraries-1-11-22-sources-  
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 jar/com/amazonaws/services/simpleworkflow/flow/annotations/Activities.java  
 \* /opt/cola/permits/1260641552\_1643189279.01/0/aws-java-sdk-swf-libraries-1-11-22-sources-  
 jar/com/amazonaws/services/simpleworkflow/flow/pojo/MethodConverterPair.java

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\* /opt/cola/permits/1260641552\_1643189279.01/0/aws-java-sdk-swf-libraries-1-11-22-sources-jar/com/amazonaws/services/simpleworkflow/flow/ChildWorkflowException.java  
\* /opt/cola/permits/1260641552\_1643189279.01/0/aws-java-sdk-swf-libraries-1-11-22-sources-jar/com/amazonaws/services/simpleworkflow/flow/common/WorkflowExecutionUtils.java  
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jar/com/amazonaws/services/simpleworkflow/flow/WorkflowClient.java
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jar/com/amazonaws/services/simpleworkflow/flow/worker/DecisionStateMachine.java
* /opt/cola/permits/1260641552_1643189279.01/0/aws-java-sdk-swf-libraries-1-11-22-sources-
jar/com/amazonaws/services/simpleworkflow/flow/generic/ActivityImplementationBase.java
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/opt/cola/permits/1260641552_1643189279.01/0/aws-java-sdk-swf-libraries-1-11-22-sources-
jar/com/amazonaws/services/simpleworkflow/flow/annotations/NullDataConverter.java
* /opt/cola/permits/1260641552_1643189279.01/0/aws-java-sdk-swf-libraries-1-11-22-sources-
jar/com/amazonaws/services/simpleworkflow/flow/spring/WorkflowScopeBeanNames.java
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jar/com/amazonaws/services/simpleworkflow/flow/WorkflowExecutionLocal.java
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jar/com/amazonaws/services/simpleworkflow/flow/generic/ActivityImplementationFactory.java
* /opt/cola/permits/1260641552_1643189279.01/0/aws-java-sdk-swf-libraries-1-11-22-sources-
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jar/com/amazonaws/services/simpleworkflow/flow/pojo/POJOActivityImplementation.java
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\* /opt/cola/permits/1260641552\_1643189279.01/0/aws-java-sdk-swf-libraries-1-11-22-sources-jar/com/amazonaws/services/simpleworkflow/flow/worker/DecisionState.java

\*

/opt/cola/permits/1260641552\_1643189279.01/0/aws-java-sdk-swf-libraries-1-11-22-sources-jar/com/amazonaws/services/simpleworkflow/flow/interceptors/ScheduleDecorator.java

\* /opt/cola/permits/1260641552\_1643189279.01/0/aws-java-sdk-swf-libraries-1-11-22-sources-jar/com/amazonaws/services/simpleworkflow/flow/core/Task.java

\* /opt/cola/permits/1260641552\_1643189279.01/0/aws-java-sdk-swf-libraries-1-11-22-sources-jar/com/amazonaws/services/simpleworkflow/flow/ManualActivityCompletionClientImpl.java

\* /opt/cola/permits/1260641552\_1643189279.01/0/aws-java-sdk-swf-libraries-1-11-22-sources-jar/com/amazonaws/services/simpleworkflow/flow/ActivityWorker.java

\* /opt/cola/permits/1260641552\_1643189279.01/0/aws-java-sdk-swf-libraries-1-11-22-sources-jar/com/amazonaws/services/simpleworkflow/flow/core/AsyncScopeContext.java

\* /opt/cola/permits/1260641552\_1643189279.01/0/aws-java-sdk-swf-libraries-1-11-22-sources-jar/com/amazonaws/services/simpleworkflow/flow/junit/spring/SpringWorkflowTest.java

\*

/opt/cola/permits/1260641552\_1643189279.01/0/aws-java-sdk-swf-libraries-1-11-22-sources-jar/com/amazonaws/services/simpleworkflow/flow/worker/GenericActivityClientImpl.java

\* /opt/cola/permits/1260641552\_1643189279.01/0/aws-java-sdk-swf-libraries-1-11-22-sources-jar/com/amazonaws/services/simpleworkflow/flow/annotations/Wait.java

\* /opt/cola/permits/1260641552\_1643189279.01/0/aws-java-sdk-swf-libraries-1-11-22-sources-jar/com/amazonaws/services/simpleworkflow/flow/Suspendable.java

\* /opt/cola/permits/1260641552\_1643189279.01/0/aws-java-sdk-swf-libraries-1-11-22-sources-

```

jar/com/amazonaws/services/simpleworkflow/flow/DynamicWorkflowClientImpl.java
* /opt/cola/permits/1260641552_1643189279.01/0/aws-java-sdk-swf-libraries-1-11-22-sources-
jar/com/amazonaws/services/simpleworkflow/flow/interceptors/RetryDecorator.java
* /opt/cola/permits/1260641552_1643189279.01/0/aws-java-sdk-swf-libraries-1-11-22-sources-
jar/com/amazonaws/services/simpleworkflow/flow/WorkflowReplayer.java
*
/opt/cola/permits/1260641552_1643189279.01/0/aws-java-sdk-swf-libraries-1-11-22-sources-
jar/com/amazonaws/services/simpleworkflow/flow/core/TryCatchFinally.java
* /opt/cola/permits/1260641552_1643189279.01/0/aws-java-sdk-swf-libraries-1-11-22-sources-
jar/com/amazonaws/services/simpleworkflow/flow/worker/SignalDecisionStateMachine.java
* /opt/cola/permits/1260641552_1643189279.01/0/aws-java-sdk-swf-libraries-1-11-22-sources-
jar/com/amazonaws/services/simpleworkflow/flow/test/TestPOJOActivityImplementationGenericActivityClient.jav
a
* /opt/cola/permits/1260641552_1643189279.01/0/aws-java-sdk-swf-libraries-1-11-22-sources-
jar/com/amazonaws/services/simpleworkflow/flow/WorkflowClientBase.java
* /opt/cola/permits/1260641552_1643189279.01/0/aws-java-sdk-swf-libraries-1-11-22-sources-
jar/com/amazonaws/services/simpleworkflow/flow/junit/spring/SpringTestPOJOWorkflowImplementationGeneric
WorkflowClient.java
*
/opt/cola/permits/1260641552_1643189279.01/0/aws-java-sdk-swf-libraries-1-11-22-sources-
jar/com/amazonaws/services/simpleworkflow/flow/core/TryCatchFinallyContext.java
* /opt/cola/permits/1260641552_1643189279.01/0/aws-java-sdk-swf-libraries-1-11-22-sources-
jar/com/amazonaws/services/simpleworkflow/flow/aspectj/ExponentialRetryAspect.java
* /opt/cola/permits/1260641552_1643189279.01/0/aws-java-sdk-swf-libraries-1-11-22-sources-
jar/com/amazonaws/services/simpleworkflow/flow/worker/GenericActivityWorker.java
* /opt/cola/permits/1260641552_1643189279.01/0/aws-java-sdk-swf-libraries-1-11-22-sources-
jar/com/amazonaws/services/simpleworkflow/flow/worker/AsyncDecisionTaskHandler.java
* /opt/cola/permits/1260641552_1643189279.01/0/aws-java-sdk-swf-libraries-1-11-22-sources-
jar/com/amazonaws/services/simpleworkflow/flow/worker/AsyncDecider.java
* /opt/cola/permits/1260641552_1643189279.01/0/aws-java-sdk-swf-libraries-1-11-22-sources-
jar/com/amazonaws/services/simpleworkflow/flow/annotations/Asynchronous.java
*
/opt/cola/permits/1260641552_1643189279.01/0/aws-java-sdk-swf-libraries-1-11-22-sources-
jar/com/amazonaws/services/simpleworkflow/flow/test/TestWorkflowClock.java
* /opt/cola/permits/1260641552_1643189279.01/0/aws-java-sdk-swf-libraries-1-11-22-sources-
jar/com/amazonaws/services/simpleworkflow/flow/LambdaFunctionFailedException.java
* /opt/cola/permits/1260641552_1643189279.01/0/aws-java-sdk-swf-libraries-1-11-22-sources-
jar/com/amazonaws/services/simpleworkflow/flow/ActivityExecutionContext.java
* /opt/cola/permits/1260641552_1643189279.01/0/aws-java-sdk-swf-libraries-1-11-22-sources-
jar/com/amazonaws/services/simpleworkflow/flow/worker/ActivityDecisionStateMachine.java
* /opt/cola/permits/1260641552_1643189279.01/0/aws-java-sdk-swf-libraries-1-11-22-sources-
jar/com/amazonaws/services/simpleworkflow/flow/pojo/POJOActivityImplementationFactory.java
* /opt/cola/permits/1260641552_1643189279.01/0/aws-java-sdk-swf-libraries-1-11-22-sources-
jar/com/amazonaws/services/simpleworkflow/flow/annotations/NoWait.java
*
/opt/cola/permits/1260641552_1643189279.01/0/aws-java-sdk-swf-libraries-1-11-22-sources-
jar/com/amazonaws/services/simpleworkflow/flow/worker/GenericWorkflowClientExternalImpl.java
* /opt/cola/permits/1260641552_1643189279.01/0/aws-java-sdk-swf-libraries-1-11-22-sources-

```

```
jar/com/amazonaws/services/simpleworkflow/flow/WorkflowClientFactoryBase.java
* /opt/cola/permits/1260641552_1643189279.01/0/aws-java-sdk-swf-libraries-1-11-22-sources-
jar/com/amazonaws/services/simpleworkflow/flow/generic/GenericWorkflowClient.java
```

## 1.204 error\_prone\_annotations 2.3.3

### 1.204.1 Available under license :

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```
* /opt/cola/permits/1264660152_1643871085.34/0/error-prone-annotations-2-3-3-sources-
jar/com/google/errorprone/annotations/CompatibleWith.java
* /opt/cola/permits/1264660152_1643871085.34/0/error-prone-annotations-2-3-3-sources-
jar/com/google/errorprone/annotations/FormatMethod.java
* /opt/cola/permits/1264660152_1643871085.34/0/error-prone-annotations-2-3-3-sources-
jar/com/google/errorprone/annotations/MustBeClosed.java
*
/opt/cola/permits/1264660152_1643871085.34/0/error-prone-annotations-2-3-3-sources-
jar/com/google/errorprone/annotations/RestrictedApi.java
* /opt/cola/permits/1264660152_1643871085.34/0/error-prone-annotations-2-3-3-sources-
jar/com/google/errorprone/annotations/FormatString.java
```

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\* /opt/cola/permits/1264660152\_1643871085.34/0/error-prone-annotations-2-3-3-sources-jar/com/google/errorprone/annotations/OverridingMethodsMustInvokeSuper.java  
\* /opt/cola/permits/1264660152\_1643871085.34/0/error-prone-annotations-2-3-3-sources-jar/com/google/errorprone/annotations/DoNotCall.java  
\* /opt/cola/permits/1264660152\_1643871085.34/0/error-prone-annotations-2-3-3-sources-jar/com/google/errorprone/annotations/concurrent/GuardedBy.java  
\*

/opt/cola/permits/1264660152\_1643871085.34/0/error-prone-annotations-2-3-3-sources-jar/com/google/errorprone/annotations/CheckReturnValue.java

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\* /opt/cola/permits/1264660152\_1643871085.34/0/error-prone-annotations-2-3-3-sources-jar/com/google/errorprone/annotations/NoAllocation.java  
\* /opt/cola/permits/1264660152\_1643871085.34/0/error-prone-annotations-2-3-3-sources-jar/com/google/errorprone/annotations/concurrent/LockMethod.java  
\* /opt/cola/permits/1264660152\_1643871085.34/0/error-prone-annotations-2-3-3-sources-jar/com/google/errorprone/annotations/concurrent/UnlockMethod.java

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* /opt/cola/permits/1264660152_1643871085.34/0/error-prone-annotations-2-3-3-sources-
jar/com/google/errorprone/annotations/CompileTimeConstant.java
* /opt/cola/permits/1264660152_1643871085.34/0/error-prone-annotations-2-3-3-sources-
jar/com/google/errorprone/annotations/SuppressPackageLocation.java
* /opt/cola/permits/1264660152_1643871085.34/0/error-prone-annotations-2-3-3-sources-
jar/com/google/errorprone/annotations/Immutable.java
*
/opt/cola/permits/1264660152_1643871085.34/0/error-prone-annotations-2-3-3-sources-
jar/com/google/errorprone/annotations/RequiredModifiers.java
* /opt/cola/permits/1264660152_1643871085.34/0/error-prone-annotations-2-3-3-sources-
jar/com/google/errorprone/annotations/Var.java
* /opt/cola/permits/1264660152_1643871085.34/0/error-prone-annotations-2-3-3-sources-
jar/com/google/errorprone/annotations/ForOverride.java
* /opt/cola/permits/1264660152_1643871085.34/0/error-prone-annotations-2-3-3-sources-
jar/com/google/errorprone/annotations/concurrent/LazyInit.java
* /opt/cola/permits/1264660152_1643871085.34/0/error-prone-annotations-2-3-3-sources-
jar/com/google/errorprone/annotations/CanIgnoreReturnValue.java
* /opt/cola/permits/1264660152_1643871085.34/0/error-prone-annotations-2-3-3-sources-
jar/com/google/errorprone/annotations/IncompatibleModifiers.java

```

# 1.205 picocontainer 2.15

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- \* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/injectors/ProviderAdapter.java
- \* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/ComponentLifecycle.java
- \* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/security/CustomPermissionsURLClassLoader.java
- \*
- /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/ComponentMonitorStrategy.java
- \* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/behaviors/Stored.java
- \* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/injectors/FactoryInjector.java
- \* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/references/SimpleReference.java
- \* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/behaviors/Guarded.java
- \* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/injectors/Provider.java
- \* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/injectors/CompositeInjector.java
- \* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/Injector.java
- \*
- /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/injectors/InjectInto.java
- \* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/references/ThreadLocalMapObjectReference.java
- \* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/injectors/CompositeInjection.java
- \* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/injectors/Injector.java
- \* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/injectors/MultiInjector.java
- \* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/ObjectReference.java
- \* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/behaviors/Decorated.java
- \* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/injectors/Reinjection.java
- \*
- /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/references/ThreadLocalReference.java
- \* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/injectors/Reinjector.java
- \* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/injectors/MultiInjection.java

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jar/org/picocontainer/classname/ClassPathElement.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/classname/ClassName.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/classname/ClassLoadingPicoContainer.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/parameters/DefaultConstructorParameter.java
*
/opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/classname/DefaultClassLoadingPicoContainer.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/parameters/NullParameter.java

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jar/org/picocontainer/lifecycle/LifecycleState.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/lifecycle/StartableLifecycleStrategy.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/visitors/MethodCallingVisitor.java
*
/opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/lifecycle/AbstractMonitoringLifecycleStrategy.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/visitors/TraversalCheckingVisitor.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/converters/Converter.java

```

\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/lifecycle/ReflectionLifecycleStrategy.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/PicoVisitor.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/ComponentAdapter.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/lifecycle/JavaEE5LifecycleStrategy.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/Converters.java  
\*

/opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/LifecycleStrategy.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/visitors/VerifyingVisitor.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/lifecycle/DefaultLifecycleState.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/lifecycle/CompositeLifecycleStrategy.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/lifecycle/ReflectionLifecycleException.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/visitors/AbstractPicoVisitor.java

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\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/injectors/NamedFieldInjector.java  
\*

/opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/behaviors/Automated.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/behaviors/Locked.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/NameBinding.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-

jar/org/picocontainer/behaviors/AdaptingBehavior.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-  
jar/org/picocontainer/behaviors/PropertyApplicator.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-  
jar/org/picocontainer/injectors/AnnotatedFieldInjector.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-  
jar/org/picocontainer/monitors/LifecycleComponentMonitor.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-  
jar/org/picocontainer/PicoContainer.java  
\*  
/opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-  
jar/org/picocontainer/behaviors/Automating.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-  
jar/org/picocontainer/ComponentFactory.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-  
jar/org/picocontainer/adapters/AbstractAdapter.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-  
jar/org/picocontainer/injectors/Injectors.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-  
jar/org/picocontainer/Characteristics.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-  
jar/org/picocontainer/behaviors/PropertyApplying.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-  
jar/org/picocontainer/annotations/Inject.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-  
jar/org/picocontainer/containers/TransientPicoContainer.java  
\*  
/opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-  
jar/org/picocontainer/DefaultPicoContainer.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-  
jar/org/picocontainer/lifecycle/NullLifecycleStrategy.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-  
jar/org/picocontainer/parameters/BasicComponentParameter.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-  
jar/org/picocontainer/behaviors/Synchronizing.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-  
jar/org/picocontainer/injectors/NamedMethodInjector.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-  
jar/org/picocontainer/PicoVerificationException.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-  
jar/org/picocontainer/PicoException.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-  
jar/org/picocontainer/annotations/Cache.java  
\*  
/opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-  
jar/org/picocontainer/containers/CommandLinePicoContainer.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-  
jar/org/picocontainer/injectors/TypedFieldInjection.java

\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/adapters/InstanceAdapter.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/injectors/TypedFieldInjector.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/injectors/NamedFieldInjection.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/parameters/CollectionComponentParameter.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/behaviors/Locking.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/annotations/Nullable.java  
\*

/opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/behaviors/Behaviors.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/injectors/AbstractInjector.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/BehaviorFactory.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/PicoBuilder.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/InjectionFactory.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/injectors/AnnotatedMethodInjector.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/behaviors/ImplementationHiding.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/behaviors/HiddenImplementation.java  
\*

/opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/parameters/ComponentParameter.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/containers/ImmutablePicoContainer.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/behaviors/Synchronized.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/injectors/SetterInjector.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/PicoClassNotFoundException.java

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\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-  
jar/org/picocontainer/monitors/NullComponentMonitor.java  
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jar/org/picocontainer/behaviors/Decorating.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-  
jar/org/picocontainer/behaviors/FieldDecorating.java  
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jar/org/picocontainer/monitors/ComponentMonitorHelper.java

\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-  
jar/org/picocontainer/monitors/WriterComponentMonitor.java

\*

/opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-  
jar/org/picocontainer/monitors/ConsoleComponentMonitor.java

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jar/org/picocontainer/containers/AbstractDelegatingMutablePicoContainer.java

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\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-  
jar/org/picocontainer/injectors/PrimitiveMemberChecker.java

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* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/BindKey.java
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* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/ComponentMonitor.java
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* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/containers/CompositePicoContainer.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/MutablePicoContainer.java
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\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/monitors/AbstractComponentMonitor.java

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\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/containers/PropertiesPicoContainer.java

\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/injectors/MethodInjector.java

\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/behaviors/Intercepting.java

\*

/opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/PicoLifecycleException.java

\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/injectors/ForgetfulConstructorInjection.java

\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/behaviors/Intercepted.java

\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/containers/SystemPropertiesPicoContainer.java

\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/containers/CommandLineArgumentsPicoContainer.java

\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-

jar/org/picocontainer/injectors/ParameterNameBinding.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-  
jar/org/picocontainer/parameters/AbstractParameter.java

\*  
/opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-  
jar/org/picocontainer/injectors/SingleMemberInjector.java

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jar/org/picocontainer/composers/RegexComposer.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-  
jar/org/picocontainer/monitors/ComposingMonitor.java

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jar/org/picocontainer/parameters/ConstantParameter.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/Parameter.java

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\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/containers/EmptyPicoContainer.java

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\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/Startable.java

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\*

/opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/injectors/SetterInjection.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/injectors/MethodInjection.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/injectors/AnnotatedMethodInjection.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/injectors/AdaptingInjection.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-

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jar/org/picocontainer/injectors/ConstructorInjection.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/behaviors/ThreadCaching.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/injectors/ConstructorInjector.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/behaviors/Storing.java
*
/opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/behaviors/Caching.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/PicoCompositionException.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/behaviors/OptInCaching.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/behaviors/Cached.java
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jar/com/damnhandy/uri/template/impl/Operator.java
* /opt/cola/permits/1273317603_1645099869.69/0/handy-uri-templates-2-1-8-sources-
jar/com/damnhandy/uri/template/Expression.java
* /opt/cola/permits/1273317603_1645099869.69/0/handy-uri-templates-2-1-8-sources-
jar/com/damnhandy/uri/template/UriUtil.java
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/opt/cola/permits/1273317603\_1645099869.69/0/handy-uri-templates-2-1-8-sources-jar/com/damnhandy/uri/template/UriTransient.java  
\* /opt/cola/permits/1273317603\_1645099869.69/0/handy-uri-templates-2-1-8-sources-jar/com/damnhandy/uri/template/impl/Modifier.java  
\* /opt/cola/permits/1273317603\_1645099869.69/0/handy-uri-templates-2-1-8-sources-jar/com/damnhandy/uri/template/VariableExpansionException.java  
\* /opt/cola/permits/1273317603\_1645099869.69/0/handy-uri-templates-2-1-8-sources-jar/com/damnhandy/uri/template/VarName.java  
\* /opt/cola/permits/1273317603\_1645099869.69/0/handy-uri-templates-2-1-8-sources-jar/com/damnhandy/uri/template/VarExploder.java  
\* /opt/cola/permits/1273317603\_1645099869.69/0/handy-uri-templates-2-1-8-sources-jar/com/damnhandy/uri/template/impl/VarSpec.java  
\* /opt/cola/permits/1273317603\_1645099869.69/0/handy-uri-templates-2-1-8-sources-jar/com/damnhandy/uri/template/UriTemplate.java  
\* /opt/cola/permits/1273317603\_1645099869.69/0/handy-uri-templates-2-1-8-sources-jar/com/damnhandy/uri/template/DefaultVarExploder.java  
\*  
/opt/cola/permits/1273317603\_1645099869.69/0/handy-uri-templates-2-1-8-sources-jar/com/damnhandy/uri/template/impl/UriTemplateParser.java  
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\* /opt/cola/permits/1273317603\_1645099869.69/0/handy-uri-templates-2-1-8-sources-

# 1.207 classgraph 4.8.21

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```
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 * This file is part of ClassGraph.
 *
 * Author: Michael J. Simons
 *
 * Hosted at: https://github.com/classgraph/classgraph
 *
 * --
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 */
```

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```
*/opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/nonapi/io/github/classgraph/classloaderhandler/SpringBootRestartClassLoaderHandler.java
```

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```
/*
 * This file is part of ClassGraph.
```



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\*  
\* Hosted at: <https://github.com/classgraph/classgraph>  
\*  
\* --  
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Found in path(s):

\* /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-  
jar/nonapi/io/github/classgraph/json/FieldTypeInfo.java  
\* /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-  
jar/nonapi/io/github/classgraph/json/Id.java  
\* /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-  
jar/nonapi/io/github/classgraph/utils/FileUtils.java  
\* /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-  
jar/io/github/classgraph/ClasspathElementModule.java  
\* /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-  
jar/nonapi/io/github/classgraph/classloaderhandler/EquinoxClassLoaderHandler.java  
\*  
/opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-  
jar/nonapi/io/github/classgraph/utils/JarUtils.java  
\* /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-  
jar/nonapi/io/github/classgraph/json/JSONUtils.java  
\* /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-

```

jar/io/github/classgraph/ModulePathInfo.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/io/github/classgraph/PackageInfoList.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/nonapi/io/github/classgraph/types/TypeUtils.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/nonapi/io/github/classgraph/urls/URLPathEncoder.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/nonapi/io/github/classgraph/classpath/SystemJarFinder.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/nonapi/io/github/classgraph/fastzipfilereader/FastZipEntry.java
*
/opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/nonapi/io/github/classgraph/classloaderhandler/URLClassLoaderHandler.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/nonapi/io/github/classgraph/recycler/Resetable.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/nonapi/io/github/classgraph/classloaderhandler/TomcatWebappClassLoaderBaseHandler.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/io/github/classgraph/MethodParameterInfo.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/io/github/classgraph/GraphvizDotfileGenerator.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-jar/io/github/classgraph/Classfile.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/nonapi/io/github/classgraph/urls/FastPathResolver.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/nonapi/io/github/classgraph/classloaderhandler/ClassLoaderHandlerRegistry.java
*
/opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/io/github/classgraph/AnnotationClassRef.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/nonapi/io/github/classgraph/WhiteBlackList.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/io/github/classgraph/AnnotationInfoList.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/io/github/classgraph/HierarchicalTypeSignature.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/io/github/classgraph/TypeParameter.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/nonapi/io/github/classgraph/json/JSONReference.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/nonapi/io/github/classgraph/fastzipfilereader/NestedJarHandler.java
*
/opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/io/github/classgraph/ArrayTypeSignature.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/nonapi/io/github/classgraph/classloaderhandler/OSGiDefaultClassLoaderHandler.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-

```

```

jar/io/github/classgraph/MethodTypeSignature.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/io/github/classgraph/ClasspathElementZip.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/nonapi/io/github/classgraph/json/TypeResolutions.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/nonapi/io/github/classgraph/recycler/RecycleOnClose.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/nonapi/io/github/classgraph/classloaderhandler/FallbackClassLoaderHandler.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/nonapi/io/github/classgraph/json/JSONSerializer.java
*
/opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/io/github/classgraph/ClassInfoList.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/nonapi/io/github/classgraph/fastzipfilereader/LogicalZipFile.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/io/github/classgraph/ModuleInfo.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/nonapi/io/github/classgraph/ScanSpec.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/nonapi/io/github/classgraph/Utils/LogNode.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/nonapi/io/github/classgraph/types/Parser.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/io/github/classgraph/ModuleRef.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/io/github/classgraph/ClassRefTypeSignature.java
*
/opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-jar/io/github/classgraph/HasName.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/io/github/classgraph/FieldInfo.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/nonapi/io/github/classgraph/classloaderhandler/WeblogicClassLoaderHandler.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/io/github/classgraph/ClassInfo.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/io/github/classgraph/ObjectTypedValueWrapper.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/nonapi/io/github/classgraph/recycler/Recycler.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/io/github/classgraph/ClassGraphException.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/io/github/classgraph/ClassRefOrTypeVariableSignature.java
*
/opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/nonapi/io/github/classgraph/Utils/ReflectionUtils.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-

```

```

jar/io/github/classgraph/ClasspathElementDir.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/nonapi/io/github/classgraph/classpath/CallStackReader.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/nonapi/io/github/classgraph/Utils/CollectionUtils.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/nonapi/io/github/classgraph/json/JSONObject.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/io/github/classgraph/AnnotationParameterValue.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/io/github/classgraph/AnnotationInfo.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/io/github/classgraph/ModuleReaderProxy.java
*
/opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/io/github/classgraph/ScanResult.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/io/github/classgraph/ReferenceTypeSignature.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/nonapi/io/github/classgraph/concurrency/InterruptedException.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/nonapi/io/github/classgraph/classloaderhandler/ClassLoaderHandler.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/nonapi/io/github/classgraph/classloaderhandler/ParentLastDelegationOrderTestClassLoaderHandler.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/io/github/classgraph/ScanResultObject.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/io/github/classgraph/ModuleInfoList.java
*
/opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/io/github/classgraph/TypeVariableSignature.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/nonapi/io/github/classgraph/classpath/ClassLoaderAndModuleFinder.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/nonapi/io/github/classgraph/classpath/ClasspathFinder.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/nonapi/io/github/classgraph/fastzipfilereader/ZipFileSlice.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/nonapi/io/github/classgraph/json/JSONArray.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/nonapi/io/github/classgraph/json/JSONDeserializer.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/io/github/classgraph/MethodInfo.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/nonapi/io/github/classgraph/fastzipfilereader/PhysicalZipFile.java
*
/opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/nonapi/io/github/classgraph/classloaderhandler/EquinoxContextFinderClassLoaderHandler.java

```

\* /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-jar/nonapi/io/github/classgraph/concurrency/SingletonMap.java  
 \* /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-jar/io/github/classgraph/PackageInfo.java  
 \* /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-jar/nonapi/io/github/classgraph/types/ParseException.java  
 \* /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-jar/nonapi/io/github/classgraph/json/ClassFields.java  
 \* /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-jar/io/github/classgraph/BaseTypeSignature.java  
 \* /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-jar/io/github/classgraph/TypeSignature.java  
 \*  
 /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-jar/nonapi/io/github/classgraph/Utils/Join.java  
 \* /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-jar/nonapi/io/github/classgraph/classloaderhandler/JPMSCClassLoaderHandler.java  
 \* /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-jar/io/github/classgraph/Resource.java  
 \* /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-jar/io/github/classgraph/MappableInfoList.java  
 \* /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-jar/io/github/classgraph/ClasspathElement.java  
 \* /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-jar/io/github/classgraph/MethodInfoList.java  
 \* /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-jar/io/github/classgraph/ClassGraph.java  
 \* /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-jar/io/github/classgraph/Scanner.java  
 \* /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-jar/nonapi/io/github/classgraph/Utils/InputStreamOrByteBufferAdapter.java  
 \*  
 /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-jar/nonapi/io/github/classgraph/Utils/VersionFinder.java  
 \* /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-jar/nonapi/io/github/classgraph/json/ReferenceEqualityKey.java  
 \* /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-jar/io/github/classgraph/AnnotationParameterValueList.java  
 \* /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-jar/nonapi/io/github/classgraph/fastzipfilereader/ZipFileSliceReader.java  
 \* /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-jar/io/github/classgraph/InfoList.java  
 \* /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-jar/io/github/classgraph/FieldInfoList.java  
 \* /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-jar/io/github/classgraph/AnnotationEnumValue.java  
 \*  
 /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-jar/nonapi/io/github/classgraph/fastzipfilereader/RecyclableInflater.java  
 \* /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-

jar/io/github/classgraph/ClassTypeSignature.java  
\* /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-  
jar/nonapi/io/github/classgraph/classloaderhandler/PlexusClassWorldsClassRealmClassLoaderHandler.java  
\* /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-  
jar/nonapi/io/github/classgraph/classpath/ClassLoaderOrder.java  
\* /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-  
jar/io/github/classgraph/ClassGraphClassLoader.java  
\* /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-  
jar/nonapi/io/github/classgraph/classpath/ClasspathOrder.java  
\* /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-  
jar/nonapi/io/github/classgraph/json/ParameterizedTypeImpl.java  
\*  
/opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-  
jar/nonapi/io/github/classgraph/concurrency/WorkQueue.java  
\* /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-  
jar/io/github/classgraph/TypeArgument.java  
\* /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-  
jar/nonapi/io/github/classgraph/json/ClassFieldCache.java  
\* /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-  
jar/nonapi/io/github/classgraph/json/JSONParser.java  
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\* This file is part of ClassGraph.

\*

\* Author: R. Kempees

\*

\* Hosted at: <https://github.com/classgraph/classgraph>

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\*/opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-  
jar/nonapi/io/github/classgraph/classloaderhandler/WebsphereLibertyClassLoaderHandler.java  
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\* This file is part of ClassGraph.

\*

\* Author: Johno Crawford (johno@sulake.com)

\*

\* Hosted at: <https://github.com/classgraph/classgraph>

\*

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\* /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-jar/nonapi/io/github/classgraph/concurrency/AutoCloseableExecutorService.java  
\* /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-jar/nonapi/io/github/classgraph/concurrency/SimpleThreadFactory.java  
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\* This file is part of ClassGraph.

\*

\* Author: Luke Hutchison (luke.hutch@gmail.com)

\*

\* Hosted at: <https://github.com/classgraph/classgraph>

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## 1.208 amazon-dax-client 1.0.200704.0

### 1.208.1 Available under license :

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## 1.209 curl 7.81.0

### 1.209.1 Available under license :

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```
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```

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\* /opt/cola/permits/1287386049\_1647249958.14/0/error-prone-annotations-2-10-0-sources-jar/com/google/errorprone/annotations/CheckReturnValue.java  
\* /opt/cola/permits/1287386049\_1647249958.14/0/error-prone-annotations-2-10-0-sources-jar/com/google/errorprone/annotations/concurrent/GuardedBy.java  
\*

/opt/cola/permits/1287386049\_1647249958.14/0/error-prone-annotations-2-10-0-sources-jar/com/google/errorprone/annotations/OverridingMethodsMustInvokeSuper.java

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\* /opt/cola/permits/1287386049\_1647249958.14/0/error-prone-annotations-2-10-0-sources-jar/com/google/errorprone/annotations/CanIgnoreReturnValue.java  
\* /opt/cola/permits/1287386049\_1647249958.14/0/error-prone-annotations-2-10-0-sources-jar/com/google/errorprone/annotations/concurrent/LazyInit.java  
\*

/opt/cola/permits/1287386049\_1647249958.14/0/error-prone-annotations-2-10-0-sources-jar/com/google/errorprone/annotations/Var.java

\* /opt/cola/permits/1287386049\_1647249958.14/0/error-prone-annotations-2-10-0-sources-jar/com/google/errorprone/annotations/CompileTimeConstant.java

```
* /opt/cola/permits/1287386049_1647249958.14/0/error-prone-annotations-2-10-0-sources-
jar/com/google/errorprone/annotations/Immutable.java
* /opt/cola/permits/1287386049_1647249958.14/0/error-prone-annotations-2-10-0-sources-
jar/com/google/errorprone/annotations/IncompatibleModifiers.java
* /opt/cola/permits/1287386049_1647249958.14/0/error-prone-annotations-2-10-0-sources-
jar/com/google/errorprone/annotations/SuppressPackageLocation.java
* /opt/cola/permits/1287386049_1647249958.14/0/error-prone-annotations-2-10-0-sources-
jar/com/google/errorprone/annotations/ForOverride.java
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slf4j/pom.xml
```

## 1.217 logback-access 1.2.11

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## 1.222 libqrencode 3.4.1-3.el7

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## 1.224 dropwizard-auth-ldap 1.0.4

### 1.224.1 Available under license :

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Found in path(s):

\* /opt/cola/permits/1309839528\_1650278640.46/0/dropwizard-auth-ldap-1-0-4-sources-1-jar/META-INF/maven/com.yammer.dropwizard/dropwizard-auth-ldap/pom.xml

## 1.225 guava 31.0.1-android

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\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/math/Quantiles.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-

```
jar/com/google/common/eventbus/SubscriberRegistry.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/eventbus/Dispatcher.java
*
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/base/MoreObjects.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/util/concurrent/TrustedListenableFutureTask.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/util/concurrent/ListenerCallQueue.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/eventbus/Subscriber.java
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```
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/Tables.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/RegularImmutableMap.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/ImmutableMapValues.java
*
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/StandardRowSortedTable.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/Collections2.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/Platform.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/ImmutableSortedSet.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/Table.java
```

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* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/Range.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/PeekingIterator.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/ImmutableCollection.java
*
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/HashBasedTable.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/Serialization.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/ImmutableMapKeySet.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/RegularImmutableBiMap.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/StandardTable.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/ImmutableMultimap.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/ImmutableBiMap.java
*
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/ImmutableMultiset.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/ImmutableEntry.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/thirdparty/publicsuffix/PublicSuffixPatterns.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/TreeBasedTable.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/ImmutableMapEntrySet.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/ImmutableMap.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/ImmutableListMultimap.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/UnmodifiableIterator.java
*
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/EmptyImmutableListMultimap.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/CollectPreconditions.java
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\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/hash/ImmutableSupplier.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/util/concurrent/ExecutionSequencer.java  
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\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/io/Java8Compatibility.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/base/Java8Compatibility.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/math/ToDoubleRounder.java  
\*  
/opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/util/concurrent/OverflowAvoidingLockSupport.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/hash/Java8Compatibility.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/math/BigDecimalMath.java



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jar/com/google/common/util/concurrent/AtomicLongMap.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/base/Present.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/util/concurrent/ListeningScheduledExecutorService.java
*
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/primitives/UnsignedInts.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/cache/RemovalListeners.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/hash/Hashing.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/cache/CacheStats.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/math/MathPreconditions.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/util/concurrent/FutureCallback.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/hash/AbstractCompositeHashFunction.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/math/package-info.java
*
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/util/concurrent/AsyncFunction.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/math/DoubleMath.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/hash/Funnels.java
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\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/EmptyContiguousSet.java  
 \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/hash/Hasher.java  
 \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/WrappingExecutorService.java  
 \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/hash/BloomFilter.java  
 \*  
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 \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/hash/Murmur3\_32HashFunction.java  
 \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/hash/HashCode.java  
 \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/cache/ForwardingLoadingCache.java  
 \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/reflect/TypeParameter.java  
 \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/cache/package-info.java  
 \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/primitives/UnsignedLongs.java  
 \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/math/DoubleUtils.java  
 \*  
 /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/net/MediaType.java  
 \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/cache/RemovalCause.java  
 \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/base/Optional.java  
 \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/hash/HashFunction.java  
 \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/cache/RemovalListener.java  
 \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/math/LongMath.java  
 \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/ForwardingExecutorService.java  
 \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/hash/Murmur3\_128HashFunction.java  
 \*  
 /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/AbstractScheduledService.java  
 \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/AbstractSortedMultiset.java  
 \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-

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jar/com/google/common/primitives/UnsignedLong.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/hash/Funnel.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/base/Ticker.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/primitives/UnsignedInteger.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/util/concurrent/ForwardingListeningExecutorService.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/base/FunctionalEquivalence.java
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/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/reflect/Types.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/cache/RemovalNotification.java
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jar/com/google/common/math/IntMath.java
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jar/com/google/common/hash/BloomFilterStrategies.java
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jar/com/google/common/base/Enums.java
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jar/com/google/common/cache/ForwardingCache.java
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jar/com/google/common/net/HostAndPort.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/RegularContiguousSet.java
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jar/com/google/common/hash/AbstractNonStreamingHashFunction.java
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jar/com/google/common/math/BigIntegerMath.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/util/concurrent/ExecutionError.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/cache/LoadingCache.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/util/concurrent/AbstractListeningExecutorService.java
*
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/hash/MessageDigestHashFunction.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/cache/AbstractCache.java

```

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/CycleDetectingLockFactory.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/base/PairwiseEquivalence.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/RegularImmutableMultiset.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/UncheckedExecutionException.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/TreeRangeSet.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/DescendingImmutableSortedMultiset.java  
\*

/opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/net/HttpHeaders.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/hash/HashingOutputStream.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/BoundType.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/cache/AbstractLoadingCache.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/hash/PrimitiveSink.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/primitives/ParseRequest.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/Queues.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/hash/AbstractStreamingHasher.java  
\*

/opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/base/Absent.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/cache/Weigher.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/hash/Crc32cHashFunction.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/hash/AbstractHasher.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/Uninterruptibles.java

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```
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/util/concurrent/ForwardingLock.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/primitives/ImmutableDoubleArray.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/primitives/ImmutableIntArray.java
*
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/hash/AbstractHashFunction.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/primitives/ImmutableLongArray.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/util/concurrent/ForwardingCondition.java
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express
* or implied. See the License for the specific language governing permissions and limitations under
* the License.
*/
/**
* Holder for web specializations of methods of { @code Shorts}. Intended to be empty for regular
* version.
*/
```

Found in path(s):

```
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/primitives/ShortsMethodsForWeb.java
```

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```
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/BaseImmutableMultimap.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/IndexedImmutableSet.java
```

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* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/ForwardingSetMultimap.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/AbstractSequentialIterator.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/SortedMapDifference.java
```

\*  
/opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/ForwardingSortedSetMultimap.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/RowSortedTable.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/UnmodifiableListIterator.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/ForwardingImmutableCollection.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/ForwardingListMultimap.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/MinMaxPriorityQueue.java  
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\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/CompactHashing.java  
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- \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/Runnables.java
  - \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/eventbus/SubscriberExceptionContext.java
  - \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/reflect/TypeVisitor.java
  - \*
  - /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/hash/HashingInputStream.java
  - \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/WrappingScheduledExecutorService.java
  - \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/io/CharSequenceReader.java
  - \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/base/Utf8.java
  - \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/AbstractTable.java
  - \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/base/VerifyException.java
  - \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/thirdparty/publicsuffix/PublicSuffixType.java
  - \*
  - /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/eventbus/SubscriberExceptionHandler.java
  - \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/base/Verify.java
  - \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/FilteredMultimapValues.java
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```

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*/
/**
 * Returns an array containing all of the elements in the specified collection. This method
 * returns the elements in the order they are returned by the collection's iterator. The returned
 * array is "safe" in that no references to it are maintained by the collection. The caller is
 * thus free to modify the returned
array.
 *
 * <p>This method assumes that the collection size doesn't change while the method is running.
 *
 * <p>TODO(kevinb): support concurrently modified collections?
 *
 * @param c the collection for which to return an array of elements
 */

```

Found in path(s):

```

* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/ObjectArrays.java

```

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```

* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/GwtTransient.java

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\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/ThreadFactoryBuilder.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/Atomics.java  
\*  
/opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/SortedLists.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/Monitor.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/base/Ascii.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/ForwardingBlockingQueue.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/annotations/package-info.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/ListeningExecutorService.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/ContiguousSet.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/annotations/Beta.java  
\*  
/opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/primitives/package-info.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/base/Equivalence.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/UncaughtExceptionHandler.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/net/package-info.java  
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express  
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\*/  
/\*\*  
\* Holder for web specializations of methods of { @code Floats }. Intended to be empty for regular  
\* version.  
\*/

Found in path(s):

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/primitives/FloatsMethodsForWeb.java

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jar/com/google/common/graph/AbstractValueGraph.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/graph/MapRetrievalCache.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/graph/DirectedNetworkConnections.java

\*

/opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/graph/ForwardingNetwork.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-

```

jar/com/google/common/collect/HashMultimapGwtSerializationDependencies.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/graph/UndirectedGraphConnections.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/Comparators.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/graph/EdgesConnecting.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/graph/NetworkBuilder.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/graph/StandardMutableValueGraph.java
*
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/graph/StandardNetwork.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/graph/ForwardingValueGraph.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/graph/ValueGraphBuilder.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/graph/MapIteratorCache.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/graph/StandardMutableGraph.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/graph/NetworkConnections.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/graph/GraphBuilder.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/ArrayListMultimapGwtSerializationDependencies.java
*
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/graph/AbstractDirectedNetworkConnections.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/LinkedHashMultimapGwtSerializationDependencies.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/graph/StandardValueGraph.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/graph/GraphConstants.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/RangeGwtSerializationDependencies.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/graph/EndpointPairIterator.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/graph/ImmutableValueGraph.java
*
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/graph/EndpointPair.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/graph/GraphConnections.java

```

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/graph/UndirectedMultiNetworkConnections.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/graph/ValueGraph.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/graph/ForwardingGraph.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/graph/MultiEdgesConnecting.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/graph/MutableValueGraph.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/graph/UndirectedNetworkConnections.java  
\*  
/opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/graph/AbstractGraphBuilder.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/graph/AbstractUndirectedNetworkConnections.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/graph/DirectedMultiNetworkConnections.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/graph/StandardMutableNetwork.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/graph/DirectedGraphConnections.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/graph/AbstractNetwork.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/graph/ElementOrder.java  
\*  
/opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/ImmutableMultisetGwtSerializationDependencies.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/graph/AbstractGraph.java  
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/\*\*

\* Holder for extra methods of { @code Objects } only in web. Intended to be empty for regular  
\* version.  
\*/

Found in path(s):

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/base/ExtraObjectsMethodsForWeb.java

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\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/collect/SortedMultisets.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/collect/SortedMultiset.java

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Found in path(s):

- \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/DescendingImmutableSortedSet.java
- \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/CompactLinkedHashSet.java
- \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/RangeMap.java
- \*
- /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/ForwardingDeque.java
- \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/RegularImmutableAsList.java
- \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/FilteredMultimap.java
- \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/ForwardingImmutableMap.java
- \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/FilteredEntrySetMultimap.java
- \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/EvictingQueue.java
- \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/FilteredEntryMultimap.java
- \*
- /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/AbstractSortedKeySortedSetMultimap.java
- \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/FilteredKeyListMultimap.java
- \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/FilteredSetMultimap.java
- \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/AbstractNavigableMap.java
- \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/UnmodifiableSortedMultiset.java
- \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/TransformedIterator.java
- \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/TreeRangeMap.java
- \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/TreeTraverser.java
- \*
- /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/ForwardingImmutableSet.java
- \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/SortedMultisetBridge.java
- \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/AllEqualOrdering.java
- \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-

```
jar/com/google/common/collect/CompactHashSet.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/util/concurrent/ForwardingBlockingDeque.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/ForwardingNavigableMap.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/CompactHashMap.java
*
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/ImmutableEnumMap.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/AbstractMultimap.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/ForwardingNavigableSet.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/ForwardingBlockingDeque.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/ForwardingImmutableList.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/DescendingMultiset.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/FilteredKeySetMultimap.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/CompactLinkedHashMap.java
*
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/TransformedListIterator.java
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```
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/util/concurrent/AsyncCallable.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
```



jar/com/google/common/hash/LittleEndianByteArray.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/util/concurrent/AggregateFutureState.java  
\*  
/opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/hash/MacHashFunction.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/hash/FarmHashFingerprint64.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/util/concurrent/Platform.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/io/ReaderInputStream.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/collect/ConsumingQueueIterator.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/util/concurrent/InterruptibleTask.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/util/concurrent/CombinedFuture.java  
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jar/com/google/common/hash/Striped64.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/hash/LongAdder.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/cache/LongAdder.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/util/concurrent/AtomicDoubleArray.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/cache/Striped64.java  
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\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/io/MultiInputStream.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/base/Objects.java

\*

/\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/base/FinalizableSoftReference.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/io/LineReader.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/base/Charsets.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/base/FinalizableWeakReference.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/io/LineBuffer.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/base/Predicate.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/ExecutionList.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/io/ByteStreams.java

\*

/opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/base/Function.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/io/Files.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/eventbus/AsyncEventBus.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/base/AbstractIterator.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/eventbus/DeadEvent.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/eventbus/package-info.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/base/FinalizablePhantomReference.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/base/FinalizableReferenceQueue.java

\*

/opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/Interners.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/base/Predicates.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/io/CountingInputStream.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/io/CharStreams.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/base/Suppliers.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/ListenableFuture.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/base/Supplier.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/primitives/Primitives.java

\*

/opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/AbstractFuture.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/eventbus/EventBus.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/io/CountingOutputStream.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/io/Closeables.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/base/Defaults.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-

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jar/com/google/common/io/Flushables.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/base/Throwables.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/HashBiMap.java
*
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/eventbus/AllowConcurrentEvents.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/io/LittleEndianDataInputStream.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/base/Functions.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/io/Resources.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/base/FinalizableReference.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/base/package-info.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/EnumMultiset.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/io/package-info.java
*
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/util/concurrent/package-info.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/base/Preconditions.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/io/LittleEndianDataOutputStream.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/util/concurrent/DirectExecutor.java
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- \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/graph/Graph.java
- \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/graph/SuccessorsFunction.java
- \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/graph/MutableGraph.java
- \*
- /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/graph/Network.java
- \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/graph/PredecessorsFunction.java
- \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/graph/Graphs.java
- \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/TopKSelector.java
- \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/graph/MutableNetwork.java
- \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/graph/ImmutableGraph.java
- \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/graph/ImmutableNetwork.java

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- \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/MultimapBuilder.java

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```
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/graph/package-info.java
```

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*/
```

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/*
* This method was written by Doug Lea with assistance from members of JCP JSR-166 Expert Group
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*
* As of 2010/06/11, this method is identical to the (package private) hash method in OpenJDK 7's
* java.util.HashMap
class.
*/
```

Found in path(s):

```
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/util/concurrent/Striped.java
```

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 */
/**
 * Not supported. <b>You are attempting to create a map that may contain a non-{@code Comparable}
 * key.</b> Proper calls will resolve to the version in { @code ImmutableSortedMap}, not this dummy
 * version.
 *
 * @throws UnsupportedOperationException always
 * @deprecated <b>Pass a key of type { @code Comparable}
 * to use { @link
 *   ImmutableSortedMap#of(Comparable, Object)}.</b>
 */

```

Found in path(s):

```

* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/ImmutableSortedMapFauxverideShim.java
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* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-

```

jar/com/google/common/primitives/Platform.java

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\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/html/package-info.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/io/BaseEncoding.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/io/ByteSink.java

\*

/opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/base/StandardSystemProperty.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/reflect/ImmutableTypeToInstanceMap.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/collect/CartesianList.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/util/concurrent/ServiceManager.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/collect/ImmutableRangeMap.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/math/PairedStatsAccumulator.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/hash/AbstractByteHasher.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/io/Closer.java

\*

/opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/math/PairedStats.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/hash/SipHashFunction.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-



```

jar/com/google/common/hash/LongAddable.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/xml/package-info.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/reflect/ClassPath.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/io/CharSink.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/reflect/package-info.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/hash/ChecksumHashFunction.java
*
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/reflect/TypeCapture.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/escape/package-info.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/FilteredKeyMultimap.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/io/FileWriteMode.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/reflect/Invokable.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/ImmutableRangeSet.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/cache/LongAddable.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/io/CharSource.java
*
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/reflect/MutableTypeToInstanceMap.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/reflect/TypeToInstanceMap.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/math/LinearTransformation.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/util/concurrent/ListenableScheduledFuture.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/util/concurrent/SmoothRateLimiter.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/util/concurrent/RateLimiter.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/hash/LongAddables.java
*
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/io/ByteSource.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/math/StatsAccumulator.java

```

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/math/Stats.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/cache/LongAddables.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/reflect/Parameter.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/reflect/AbstractInvocationHandler.java

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\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/ClosingFuture.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/graph/AbstractBaseGraph.java

\*

/\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/graph/Traverser.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/graph/BaseGraph.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/ObjectCountHashMap.java

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jar/com/google/common/primitives/Floats.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/util/concurrent/SequentialExecutor.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/primitives/Shorts.java
*
```

```
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/primitives/Ints.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/net/InetAddresses.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/primitives/Longs.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/io/MultiReader.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/escape/UnicodeEscaper.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/primitives/Doubles.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/util/concurrent/ListenableFutureTask.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/primitives/Chars.java
*
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/net/PercentEscaper.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/base/internal/Finalizer.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/base/CharMatcher.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/thirdparty/publicsuffix/TrieParser.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/base/Joiner.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/escape/Escaper.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/base/Converter.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/primitives/Booleans.java
*
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/base/Stopwatch.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/FluentIterable.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/primitives/Bytes.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/io/FileBackedOutputStream.java
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- \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/ImmutableSortedMap.java
- \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/ArrayTable.java
- \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/ImmutableSetMultimap.java
- \*
- /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/RegularImmutableSortedSet.java
- \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/ImmutableTable.java
- \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/ComputationException.java
- \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/AbstractIndexedListIterator.java
- \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/EmptyImmutableSetMultimap.java
- \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/ImmutableClassToInstanceMap.java
- \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/ImmutableEnumSet.java
- \*
- /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/ComparisonChain.java
- \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/ImmutableAsList.java
- \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/SingletonImmutableTable.java
- \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/RegularImmutableList.java
- \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/DiscreteDomain.java
- \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/ImmutableSortedSetFauxverideShim.java
- \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-

jar/com/google/common/collect/ForwardingTable.java

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/\*\*

\* Outer class that exists solely to let us write { @code Partially.GwtIncompatible } instead of plain  
\* { @code GwtIncompatible }. This is more accurate for { @link Futures#catching }, which is available  
\* under GWT but with a slightly different signature.

\*

\* <p>We can't use { @code PartiallyGwtIncompatible } because then the GWT compiler  
wouldn't recognize

\* it as a { @code GwtIncompatible } annotation. And for { @code Futures.catching }, we need the GWT  
\* compiler to autostrip the normal server method in order to expose the special, inherited GWT  
\* version.

\*/

Found in path(s):

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/util/concurrent/Partially.java

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\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/ForwardingMapEntry.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/ExplicitOrdering.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/Multiset.java  
\*  
/opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/LexicographicalOrdering.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/AbstractIterator.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/AbstractSortedSetMultimap.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/UsingToStringOrdering.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/RegularImmutableSet.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/ForwardingObject.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/ForwardingQueue.java  
\*  
/opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/EnumBiMap.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/EnumHashMap.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/ConcurrentHashMultiset.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/NullsFirstOrdering.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/ImmutableList.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/HashMultiset.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/Multimap.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/CompoundOrdering.java  
\*  
/opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/AbstractSetMultimap.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/AbstractMapBasedMultiset.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/ByFunctionOrdering.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/SortedSetMultimap.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/ForwardingList.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/ForwardingMap.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/HashMultimap.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/ForwardingSet.java  
\*  
/opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/AbstractMapEntry.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/package-info.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/AbstractMultiset.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/Lists.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/ForwardingListIterator.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/LinkedListMultimap.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/NaturalOrdering.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/ForwardingMultiset.java  
\*  
/opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/AbstractBiMap.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/LinkedHashMultimap.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/ForwardingMultimap.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/ReverseNaturalOrdering.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/AbstractListMultimap.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/ForwardingSortedMap.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/SetMultimap.java  
\*  
/opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/Multisets.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/SingletonImmutableSet.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-



```

jar/com/google/common/collect/MutableClassToInstanceMap.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/MapDifference.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/NullsLastOrdering.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/Ordering.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/ImmutableSet.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/TreeMultiset.java
*
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/Sets.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/ForwardingCollection.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/Synchronized.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/ListMultimap.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/ReverseOrdering.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/AbstractMapBasedMultimap.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/Multimaps.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/ArrayListMultimap.java
*
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/ForwardingSortedSet.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/ForwardingConcurrentMap.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/TreeMultimap.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/ForwardingIterator.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/ClassToInstanceMap.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/Iterators.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/Maps.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/ComparatorOrdering.java
*
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/LinkedHashMultiset.java

```

```
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/Interner.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/BiMap.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/Iterables.java
```

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```
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/util/concurrent/ServiceManagerBridge.java
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```
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/hash/package-info.java
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 */
/*
 * This method was rewritten in Java from an intermediate step of the Murmur hash function in
 * http://code.google.com/p/smhasher/source/browse/trunk/MurmurHash3.cpp, which contained the
 * following header:
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 */
```

Found in path(s):

```
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/Hashing.java
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\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/base/PatternCompiler.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/base/CommonPattern.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/base/JdkPattern.java  
\*

/opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/base/CommonMatcher.java

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\* the License.

\*/

/\*

\* This method was rewritten in Java from an intermediate step of the Murmur hash function in  
\* <http://code.google.com/p/smhasher/source/browse/trunk/MurmurHash3.cpp>, which contained the  
\* following header:

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\*/

Found in path(s):

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\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/escape/ArrayBasedUnicodeEscaper.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/MapMakerInternalMap.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/AbstractExecutionThreadService.java  
\*  
/opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/net/HostSpecifier.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/reflect/TypeResolver.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/base/Platform.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/annotations/GwtIncompatible.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/annotations/GwtCompatible.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/AbstractIdleService.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/cache/ReferenceEntry.java  
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/opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/primitives/UnsignedBytes.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/ForwardingFuture.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/escape/ArrayBasedCharEscaper.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/io/ByteProcessor.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/html/HtmlEscapers.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/net/UrlEscapers.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/Cut.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/Callables.java  
\*

/opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/net/InternetDomainName.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/io/ByteArrayDataInput.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/escape/ArrayBasedEscaperMap.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/RegularImmutableTable.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/MapMaker.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/ForwardingFluentFuture.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/JdkFutureAdapters.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/ForwardingListenableFuture.java  
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/opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/escape/Escapers.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/DenseImmutableTable.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/cache/CacheBuilder.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/io/ByteArrayDataOutput.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/SettableFuture.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/Service.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/escape/Platform.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/AbstractService.java  
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/opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/cache/LocalCache.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/io/LineProcessor.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/xml/XmlEscapers.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/SparseImmutableTable.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/base/Splitter.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/primitives/SignedBytes.java  
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jar/com/google/common/util/concurrent/FuturesGetChecked.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/util/concurrent/TimeoutFuture.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/util/concurrent/FluentFuture.java
*
 /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/escape/CharEscaper.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/util/concurrent/UncheckedTimeoutException.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/util/concurrent/GwtFuturesCatchingSpecialization.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/util/concurrent/AbstractTransformFuture.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/util/concurrent/SimpleTimeLimiter.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/io/PatternFilenameFilter.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/util/concurrent/CollectionFuture.java
*
 /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/util/concurrent/ImmediateFuture.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/reflect/TypeToken.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/annotations/VisibleForTesting.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/util/concurrent/Futures.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/util/concurrent/AbstractCatchingFuture.java
```

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/base/CaseFormat.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/io/AppendableWriter.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/GwtFluentFutureCatchingSpecialization.java  
\*  
/opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/TimeLimiter.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/FakeTimeLimiter.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/escape/CharEscaperBuilder.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/AggregateFuture.java  
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\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/base/NullnessCasts.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/NullnessCasts.java  
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* Holder for web specializations of methods of { @code Doubles}. Intended to be empty for regular
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*/
```

Found in path(s):

```
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/primitives/DoublesMethodsForWeb.java
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jar/com/google/common/base/ParametricNullness.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/hash/ParametricNullness.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/math/ParametricNullness.java
*
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/net/ElementTypesAreNonnullByDefault.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/html/ElementTypesAreNonnullByDefault.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/primitives/ParametricNullness.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
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jar/com/google/common/cache/ParametricNullness.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/eventbus/ElementTypesAreNonnullByDefault.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
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jar/com/google/common/escape/ParametricNullness.java  
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\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
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jar/com/google/common/html/ParametricNullness.java  
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\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/primitives/ElementTypesAreNonnullByDefault.java  
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jar/com/google/common/graph/ElementTypesAreNonnullByDefault.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/util/concurrent/ParametricNullness.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
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\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
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\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/io/ElementTypesAreNonnullByDefault.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/base/ElementTypesAreNonnullByDefault.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/cache/ElementTypesAreNonnullByDefault.java  
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\* Holder for web specializations of methods of { @code Ints }. Intended to be empty for regular  
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* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/Count.java
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jar/com/google/common/collect/RangeSet.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/ForwardingSortedMultiset.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/ImmutableSortedMultisetFauxverideShim.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
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* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/RegularImmutableSortedMultiset.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/AbstractRangeSet.java
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```

```
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```

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\* /opt/cola/permits/1330613678\_1652979131.328877/0/gson-2-8-9-sources-2-jar/com/google/gson/internal/bind/TypeAdapterRuntimeTypeWrapper.java

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/opt/cola/permits/1330613678\_1652979131.328877/0/gson-2-8-9-sources-2-jar/com/google/gson/internal/bind/CollectionTypeAdapterFactory.java

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\* /opt/cola/permits/1330613678\_1652979131.328877/0/gson-2-8-9-sources-2-jar/com/google/gson/internal/JsonReaderInternalAccess.java

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\* /opt/cola/permits/1330613678\_1652979131.328877/0/gson-2-8-9-sources-2-



jar/com/google/gson/internal/bind/TypeAdapters.java  
\* /opt/cola/permits/1330613678\_1652979131.328877/0/gson-2-8-9-sources-2-  
jar/com/google/gson/internal/bind/ObjectTypeAdapter.java  
\* /opt/cola/permits/1330613678\_1652979131.328877/0/gson-2-8-9-sources-2-  
jar/com/google/gson/TypeAdapter.java  
\*  
/opt/cola/permits/1330613678\_1652979131.328877/0/gson-2-8-9-sources-2-  
jar/com/google/gson/internal/bind/JsonTreeWriter.java

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jar/com/google/gson/JsonElement.java  
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\* /opt/cola/permits/1330613678\_1652979131.328877/0/gson-2-8-9-sources-2-jar/com/google/gson/JsonArray.java  
\*  
/opt/cola/permits/1330613678\_1652979131.328877/0/gson-2-8-9-sources-2-  
jar/com/google/gson/FieldNamingStrategy.java  
\* /opt/cola/permits/1330613678\_1652979131.328877/0/gson-2-8-9-sources-2-  
jar/com/google/gson/annotations/SerializedName.java  
\* /opt/cola/permits/1330613678\_1652979131.328877/0/gson-2-8-9-sources-2-  
jar/com/google/gson/JsonDeserializationContext.java  
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\* /opt/cola/permits/1330613678\_1652979131.328877/0/gson-2-8-9-sources-2-  
jar/com/google/gson/internal/bind/DefaultDateTypeAdapter.java  
\* /opt/cola/permits/1330613678\_1652979131.328877/0/gson-2-8-9-sources-2-  
jar/com/google/gson/JsonSerializationContext.java

\* /opt/cola/permits/1330613678\_1652979131.328877/0/gson-2-8-9-sources-2-jar/com/google/gson/JsonParseException.java  
\*  
/opt/cola/permits/1330613678\_1652979131.328877/0/gson-2-8-9-sources-2-jar/com/google/gson/internal/ObjectConstructor.java  
\* /opt/cola/permits/1330613678\_1652979131.328877/0/gson-2-8-9-sources-2-jar/com/google/gson/Gson.java  
\* /opt/cola/permits/1330613678\_1652979131.328877/0/gson-2-8-9-sources-2-jar/com/google/gson/JsonIOException.java  
\* /opt/cola/permits/1330613678\_1652979131.328877/0/gson-2-8-9-sources-2-jar/com/google/gson/reflect/TypeToken.java  
\* /opt/cola/permits/1330613678\_1652979131.328877/0/gson-2-8-9-sources-2-jar/com/google/gson/JsonDeserializer.java  
\* /opt/cola/permits/1330613678\_1652979131.328877/0/gson-2-8-9-sources-2-jar/com/google/gson/annotations/Expose.java  
\* /opt/cola/permits/1330613678\_1652979131.328877/0/gson-2-8-9-sources-2-jar/com/google/gson/internal/Primitives.java  
\* /opt/cola/permits/1330613678\_1652979131.328877/0/gson-2-8-9-sources-2-jar/com/google/gson/GsonBuilder.java  
\*  
/opt/cola/permits/1330613678\_1652979131.328877/0/gson-2-8-9-sources-2-jar/com/google/gson/JsonSerializer.java  
\* /opt/cola/permits/1330613678\_1652979131.328877/0/gson-2-8-9-sources-2-jar/com/google/gson/annotations/Since.java  
\* /opt/cola/permits/1330613678\_1652979131.328877/0/gson-2-8-9-sources-2-jar/com/google/gson/JsonPrimitive.java  
\* /opt/cola/permits/1330613678\_1652979131.328877/0/gson-2-8-9-sources-2-jar/com/google/gson/ExclusionStrategy.java  
\* /opt/cola/permits/1330613678\_1652979131.328877/0/gson-2-8-9-sources-2-jar/com/google/gson/annotations/Until.java  
\* /opt/cola/permits/1330613678\_1652979131.328877/0/gson-2-8-9-sources-2-jar/com/google/gson/InstanceCreator.java  
\* /opt/cola/permits/1330613678\_1652979131.328877/0/gson-2-8-9-sources-2-jar/com/google/gson/JsonNull.java  
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\* /opt/cola/permits/1330613678\_1652979131.328877/0/gson-2-8-9-sources-2-jar/com/google/gson/internal/bind/JsonAdapterAnnotationTypeAdapterFactory.java

\* /opt/cola/permits/1330613678\_1652979131.328877/0/gson-2-8-9-sources-2-jar/com/google/gson/annotations/JsonAdapter.java

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\* /opt/cola/permits/1330613678\_1652979131.328877/0/gson-2-8-9-sources-2-jar/com/google/gson/internal/LinkedTreeMap.java

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\* /opt/cola/permits/1330613678\_1652979131.328877/0/gson-2-8-9-sources-2-jar/com/google/gson/stream/JsonReader.java

\* /opt/cola/permits/1330613678\_1652979131.328877/0/gson-2-8-9-sources-2-jar/com/google/gson/stream/MalformedJsonException.java

\* /opt/cola/permits/1330613678\_1652979131.328877/0/gson-2-8-9-sources-2-jar/com/google/gson/stream/JsonScope.java

\*

/opt/cola/permits/1330613678\_1652979131.328877/0/gson-2-8-9-sources-2-jar/com/google/gson/stream/JsonToken.java

\* /opt/cola/permits/1330613678\_1652979131.328877/0/gson-2-8-9-sources-2-jar/com/google/gson/stream/JsonWriter.java

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\* /opt/cola/permits/1330613678\_1652979131.328877/0/gson-2-8-9-sources-2-jar/com/google/gson/internal/reflect/PreJava9ReflectionAccessor.java

\* /opt/cola/permits/1330613678\_1652979131.328877/0/gson-2-8-9-sources-2-jar/com/google/gson/internal/reflect/ReflectionAccessor.java

\* /opt/cola/permits/1330613678\_1652979131.328877/0/gson-2-8-9-sources-2-jar/com/google/gson/internal/reflect/UnsafeReflectionAccessor.java

\*

/opt/cola/permits/1330613678\_1652979131.328877/0/gson-2-8-9-sources-2-jar/com/google/gson/internal/PreJava9DateFormatProvider.java

\* /opt/cola/permits/1330613678\_1652979131.328877/0/gson-2-8-9-sources-2-jar/com/google/gson/internal/JavaVersion.java

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\* /opt/cola/permits/1330613678\_1652979131.328877/0/gson-2-8-9-sources-2-  
jar/com/google/gson/internal/bind/NumberTypeAdapter.java  
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\* /opt/cola/permits/1330613678\_1652979131.328877/0/gson-2-8-9-sources-2-  
jar/com/google/gson/ToNumberPolicy.java  
\* /opt/cola/permits/1330613678\_1652979131.328877/0/gson-2-8-9-sources-2-  
jar/com/google/gson/ToNumberStrategy.java  
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\* /opt/cola/permits/1330613678\_1652979131.328877/0/gson-2-8-9-sources-2-jar/com/google/gson/JsonSyntaxException.java  
\* /opt/cola/permits/1330613678\_1652979131.328877/0/gson-2-8-9-sources-2-jar/com/google/gson/internal/Streams.java

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\* /opt/cola/permits/1330613678\_1652979131.328877/0/gson-2-8-9-sources-2-jar/com/google/gson/internal/\$Gson\$Types.java

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\* /opt/cola/permits/1330613678\_1652979131.328877/0/gson-2-8-9-sources-2-jar/com/google/gson/LongSerializationPolicy.java

\* /opt/cola/permits/1330613678\_1652979131.328877/0/gson-2-8-9-sources-2-jar/com/google/gson/FieldAttributes.java

\*

/opt/cola/permits/1330613678\_1652979131.328877/0/gson-2-8-9-sources-2-jar/com/google/gson/JsonParser.java

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@subheading END OF TERMS AND CONDITIONS

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@end
smallexample
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```

```
@var{signature of Ty Coon}, 1 April 1990
Ty Coon, President of Vice
@end smallexample
```

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## 1.233 zstd-jni 1.5.2-1

### 1.233.1 Available under license :

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Manifest-Version: 1.0

Automatic-Module-Name: com.github.luben.zstd\_jni

Bnd-LastModified: 1642851452470

Bundle-Description: JNI bindings for Zstd native library that provides fast and high compression lossless algorithm for Java and all JVM languages.

Bundle-License: <https://opensource.org/licenses/BSD-2-Clause>;description=BSD 2-Clause License

Bundle-ManifestVersion: 2

Bundle-Name: zstd-jni

Bundle-NativeCode: darwin/x86\_64/libzstd-jni-1.5.2-1.dylib;osname=MacOS;osname=MacOSX;processor=x86\_64, darwin/aarch64/libzstd-jni-1.5.2-1.dylib;osname=MacOS;osname=MacOSX;processor=aarch64, freebsd/amd64/libzstd-jni-1.5.2-1.so;osname=FreeBSD;processor=amd64, freebsd/i386/libzstd-jni-1.5.2-1.so;osname=FreeBSD;processor=i386, linux/aarch64/libzstd-jni-1.5.2-1.so;osname=Linux;processor=aarch64, linux/amd64/libzstd-jni-1.5.2-1.so;osname=Linux;processor=amd64, linux/arm/libzstd-jni-1.5.2-1.so;osname=Linux;processor=arm, linux/i386/libzstd-jni-1.5.2-1.so;osname=Linux;processor=i386, linux/mips64/libzstd-jni-1.5.2-1.so;osname=Linux;processor=mips64, linux/ppc64/libzstd-jni-1.5.2-1.so;osname=Linux;processor=ppc64, linux/ppc64le/libzstd-jni-1.5.2-1.so;osname=Linux;processor=ppc64le, linux/s390x/libzstd-jni-1.5.2-1.so;osname=Linux;processor=s390x, win/amd64/libzstd-jni-1.5.2-1.dll;osname=Win32;processor=amd64, win/x86/libzstd-jni-1.5.2-1.dll;osname=Win32;processor=x86

Bundle-SymbolicName: com.github.luben.zstd-jni

Bundle-Vendor: com.github.luben

Bundle-Version: 1.5.2.1

Created-By: 11.0.14 (Debian)

Export-Package: com.github.luben.zstd;version="1.5.2.1",com.github.luben.zstd.util;version="1.5.2.1"  
Implementation-Title: zstd-jni  
Implementation-Vendor: com.github.luben  
Implementation-Vendor-Id: com.github.luben  
Implementation-Version: 1.5.2-1  
Import-Package: org.osgi.framework;resolution:=optional  
Private-Package: linux.amd64,linux.i386,linux.aarch64,linux.arm,linux.ppc64,linux.ppc64le,linux.mips64,linux.s390x,darwin.x86\_64,darwin.armch64,win.amd64,win.x86,freebsd.amd64,freebsd.i386  
Require-Capability: osgi.ee;filter="(&(osgi.ee=JavaSE)(version=11.0))"  
"  
Specification-Title: zstd-jni  
Specification-Vendor: com.github.luben  
Specification-Version: 1.5.2-1  
Tool: Bnd-4.0.0.201805111645

Found in path(s):

\* /opt/cola/permits/1337889408\_1654234488.39181/0/zstd-jni-1-5-2-1-jar/META-INF/MANIFEST.MF

## 1.234 xz 5.2.2-2.el7\_9

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Version 2, June 1991

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## 1.238 reactive-streams 1.0.4

### 1.238.1 Available under license :

MIT-0

## 1.239 zlib 1.2.11

### 1.239.1 Available under license :

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/\* zlib.h -- interface of the 'zlib' general purpose compression library  
version 1.2.11, January 15th, 2017

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Jean-loup Gailly      Mark Adler  
jloup@gzip.org      madler@alumni.caltech.edu

The data format used by the zlib library is described by RFCs (Request for Comments) 1950 to 1952 in the files <http://tools.ietf.org/html/rfc1950> (zlib format), rfc1951 (deflate format) and rfc1952 (gzip format).

\*/

## 1.240 logback-throttling-appender 1.1.9

### 1.240.1 Available under license :

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Found in path(s):

\* /opt/cola/permits/1368298591\_1658301187.6939363/0/logback-throttling-appender-1-1-9-1-jar/META-INF/maven/io.dropwizard.logback/logback-throttling-appender/pom.xml

## 1.241 glibc-common 2.17-326.el7\_9

### 1.241.1 Available under license :

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The reason we have a separate public license for some libraries is that they blur the distinction we usually make between modifying or adding to a program and simply using it. Linking a program with a library, without changing the library, is in some sense simply using the library, and is analogous to running a utility program or application program. However, in a textual and legal sense, the linked executable is a combined work, a derivative of the original library, and the ordinary General Public License treats it as such.

Because of this blurred distinction, using the ordinary General Public License for libraries did not effectively promote software sharing, because most developers did not use the libraries. We concluded that weaker conditions might promote sharing better.

However, unrestricted linking of non-free programs would deprive the users of those programs of all benefit from the free status of the libraries themselves. This Library General Public License is intended to permit developers of non-free programs to use free libraries, while preserving your freedom as a user of such programs to change the free libraries that are incorporated in them. (We have not seen how to achieve this as regards changes in header files, but we have achieved it as regards changes in the actual functions of the Library.) The hope is that this will lead to faster development of free libraries.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, while the latter only works together with the library.

Note that it is possible for a library to be covered by the ordinary

General Public License rather than by this special one.

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TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Library General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy,

and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition,

mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License.

Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also compile or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

- a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application

to use the modified definitions.)

- b) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.
- c) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.
- d) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

- a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.
- b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute

the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made



generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Library General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

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#### END OF TERMS AND CONDITIONS

#### Appendix: How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the library's name and a brief idea of what it does.>  
Copyright (C) <year>  
<name of author>
```

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Library General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

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You should have received a copy of the GNU Library General Public

License along with this library; if not, write to the Free Software Foundation, Inc., 59 Temple Place - Suite 330, Boston, MA 02111-1307, USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990  
Ty Coon, President of Vice

That's all there is to it!  
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@center Version 2.1, February 1999

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[This is the first released version of the Lesser GPL. It also counts as the successor of the GNU Library Public License, version 2, hence the version number 2.1.]  
@end display

@subheading Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software---to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software---typically libraries---of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this

license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use

this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the @dfn{Lesser} General Public License because it does @emph{Less} to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a ``work based on the library" and a ``work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

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A ``library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

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``Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

@item

You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy,

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You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

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The modified work must itself be a software library.

@item

You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.

@item

You must

cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.

@item

If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

@end enumerate

These requirements apply to the modified work as a whole. If identifiable sections

of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the

entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

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You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

@item

You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

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A program that contains no derivative of any portion of the



Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

@item

As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

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Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable ``work that uses the Library'', as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

@item

Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

@item

Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

@item

If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

@item

Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

@end enumerate

For an executable, the required form of the ``work that uses the Library'' must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is

normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on

which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

@item

You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

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Accompany the combined library with a copy of the same work based on the Library,  
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## 1.242 jakarta xml bind api 4.0.0

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# 1.243 libnsl 2.17

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## 1.245 python-urlgrabber 3.10

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Found in path(s):

\* /opt/cola/permits/1403963770\_1661913703.6112542/0/wsgiref-0-1-2-2-zip/wsgiref-0.1.2/wsgiref/validate.py

No license file was found, but licenses were detected in source scan.

Metadata-Version: 1.0

Name: wsgiref

Version: 0.1.2

Summary: WSGI (PEP 333) Reference Library

Home-page: <http://cheeseshop.python.org/pypi/wsgiref>

Author: Phillip J. Eby

Author-email: [web-sig@python.org](mailto:web-sig@python.org)

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Description: This is a standalone release of the ``wsgiref`` library to be included in Python 2.5. For the standalone version's documentation, see:

HTML

[http://peak.telecommunity.com/wsgiref\\_docs/](http://peak.telecommunity.com/wsgiref_docs/)

PDF

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Platform: UNKNOWN

Found in path(s):

\* /opt/cola/permits/1403963770\_1661913703.6112542/0/wsgiref-0-1-2-2-zip/wsgiref-0.1.2/wsgiref.egg-info/PKG-INFO

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# 1.248 rpm-python 4.11.3-48.el7\_9

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```
Gnomovision version 69, Copyright (C) 19yy name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

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```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
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```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

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The reason we have a separate public license for some libraries is that they blur the distinction we usually make between modifying or adding to a program and simply using it. Linking a program with a library, without changing the library, is in some sense simply using the library, and is analogous to running a utility program or application program. However, in a textual and legal sense, the linked executable is a combined work, a derivative of the original library, and the ordinary General Public License treats it as such.

Because of this blurred distinction, using the ordinary General Public License for libraries did not effectively promote software sharing, because most developers did not use the libraries. We concluded that weaker conditions might promote sharing better.

However, unrestricted linking of non-free programs would deprive the users of those programs of all benefit from the free status of the libraries themselves. This Library General Public License is intended to permit developers of non-free programs to use free libraries, while preserving your freedom as a user of such programs to change the free libraries that are incorporated in them. (We have not seen how to achieve this as regards changes in header files, but we have achieved it as regards changes in the actual functions of the Library.) The hope is that this will lead to faster development of free libraries.

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(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

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```
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For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

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Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

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(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves,

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Any

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b) Use a suitable shared library mechanism for linking with the



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# 1.250 pyliblzma 0.5.3

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## 1.251 systemd 219-78.el7\_9.7

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```
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This is free software, and you are welcome to redistribute
it
under certain conditions; type `show c' for details.
```

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```
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```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

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## 1.256 javassist 3.29.2-GA

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Found in path(s):

\* /opt/cola/permits/1434218610\_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/bytecode/ByteStream.java

\* /opt/cola/permits/1434218610\_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/tools/Callback.java

\*

/opt/cola/permits/1434218610\_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/CtConstructor.java

\* /opt/cola/permits/1434218610\_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/bytecode/InnerClassesAttribute.java

\* /opt/cola/permits/1434218610\_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/compiler/Lex.java

\* /opt/cola/permits/1434218610\_1664996210.5127783/0/javassist-3-29-2-ga-sources-

```

jar/javassist/scopedpool/ScopedClassPoolFactoryImpl.java
* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/CtNewClass.java
* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-
jar/javassist/compiler/ast/NewExpr.java
* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-
jar/javassist/bytecode/CodeIterator.java
* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-
jar/javassist/CtNewWrappedConstructor.java
* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-
jar/javassist/expr/FieldAccess.java
*
/opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-
jar/javassist/tools/reflect/Loader.java
* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-
jar/javassist/bytecode/analysis/IntQueue.java
* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-
jar/javassist/compiler/ast/Member.java
* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-
jar/javassist/scopedpool/ScopedClassPool.java
* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-
jar/javassist/bytecode/LineNumberAttribute.java
* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-
jar/javassist/compiler/ast/BinExpr.java
* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-
jar/javassist/bytecode/StackMap.java
* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/runtime/Desc.java
*
/opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-
jar/javassist/scopedpool/SoftValueHashMap.java
* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-
jar/javassist/tools/web/Viewer.java
* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-
jar/javassist/bytecode/stackmap/BasicBlock.java
* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-
jar/javassist/util/proxy/FactoryHelper.java
* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/Modifier.java
* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-
jar/javassist/bytecode/analysis/Type.java
* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-
jar/javassist/bytecode/NestMembersAttribute.java
* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-
jar/javassist/ByteArrayClassPath.java
*
/opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-
jar/javassist/compiler/MemberCodeGen.java
* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-
jar/javassist/bytecode/NestHostAttribute.java
* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-

```

jar/javassist/compiler/KeywordTable.java  
\* /opt/cola/permits/1434218610\_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/expr/Expr.java  
\* /opt/cola/permits/1434218610\_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/compiler/ast/Pair.java  
\* /opt/cola/permits/1434218610\_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/ClassClassPath.java  
\* /opt/cola/permits/1434218610\_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/bytecode/AccessFlag.java  
\* /opt/cola/permits/1434218610\_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/convert/Transformer.java  
\* /opt/cola/permits/1434218610\_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/util/HotSwapAgent.java  
\*  
/opt/cola/permits/1434218610\_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/compiler/ProceedHandler.java  
\* /opt/cola/permits/1434218610\_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/CtClassType.java  
\* /opt/cola/permits/1434218610\_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/bytecode/FieldInfo.java  
\* /opt/cola/permits/1434218610\_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/tools/rmi/ObjectNotFoundException.java  
\* /opt/cola/permits/1434218610\_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/convert/TransformNewClass.java  
\* /opt/cola/permits/1434218610\_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/runtime/Inner.java  
\* /opt/cola/permits/1434218610\_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/ClassMap.java  
\* /opt/cola/permits/1434218610\_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/ClassPoolTail.java  
\*  
/opt/cola/permits/1434218610\_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/ClassPath.java  
\* /opt/cola/permits/1434218610\_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/bytecode/ClassFilePrinter.java  
\* /opt/cola/permits/1434218610\_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/compiler/TypeChecker.java  
\* /opt/cola/permits/1434218610\_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/bytecode/ParameterAnnotationsAttribute.java  
\* /opt/cola/permits/1434218610\_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/convert/TransformAfter.java  
\* /opt/cola/permits/1434218610\_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/bytecode/ConstantAttribute.java  
\* /opt/cola/permits/1434218610\_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/ClassPool.java  
\* /opt/cola/permits/1434218610\_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/bytecode/DeprecatedAttribute.java  
\*  
/opt/cola/permits/1434218610\_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/tools/web/BadHttpRequest.java  
\* /opt/cola/permits/1434218610\_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/util/proxy/ProxyFactory.java  
\* /opt/cola/permits/1434218610\_1664996210.5127783/0/javassist-3-29-2-ga-sources-



jar/javassist/compiler/ast/CastExpr.java  
\* /opt/cola/permits/1434218610\_1664996210.5127783/0/javassist-3-29-2-ga-sources-  
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jar/javassist/CtNewMethod.java  
\* /opt/cola/permits/1434218610\_1664996210.5127783/0/javassist-3-29-2-ga-sources-  
jar/javassist/bytecode/stackmap/TypeData.java  
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jar/javassist/CtPrimitiveType.java  
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/opt/cola/permits/1434218610\_1664996210.5127783/0/javassist-3-29-2-ga-sources-  
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jar/javassist/util/proxy/SerializedProxy.java  
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jar/javassist/expr/ExprEditor.java  
\* /opt/cola/permits/1434218610\_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/Translator.java  
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jar/javassist/LoaderClassPath.java  
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jar/javassist/scopedpool/ScopedClassPoolFactory.java  
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jar/javassist/bytecode/annotation/NoSuchClassError.java  
\* /opt/cola/permits/1434218610\_1664996210.5127783/0/javassist-3-29-2-ga-sources-  
jar/javassist/bytecode/BadBytecode.java  
\* /opt/cola/permits/1434218610\_1664996210.5127783/0/javassist-3-29-2-ga-sources-  
jar/javassist/compiler/ast/Stmnt.java  
\* /opt/cola/permits/1434218610\_1664996210.5127783/0/javassist-3-29-2-ga-sources-  
jar/javassist/bytecode/ByteArray.java  
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jar/javassist/compiler/ast/Symbol.java  
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jar/javassist/convert/TransformCall.java  
\* /opt/cola/permits/1434218610\_1664996210.5127783/0/javassist-3-29-2-ga-sources-  
jar/javassist/convert/TransformFieldAccess.java  
\*  
/opt/cola/permits/1434218610\_1664996210.5127783/0/javassist-3-29-2-ga-sources-  
jar/javassist/tools/rmi/AppletServer.java

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* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-
jar/javassist/compiler/Parser.java
* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-
jar/javassist/util/proxy/Proxy.java
* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-
jar/javassist/compiler/ast/Keyword.java
* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-
jar/javassist/expr/NewArray.java
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jar/javassist/compiler/ast/CallExpr.java
* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-
jar/javassist/CodeConverter.java
* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-
jar/javassist/compiler/ast/DoubleConst.java
*
/opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-
jar/javassist/convert/TransformAccessArrayField.java
* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-
jar/javassist/tools/rmi/ObjectImporter.java
* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-
jar/javassist/tools/reflect/CannotReflectException.java
* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-
jar/javassist/convert/TransformWriteField.java
* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-
jar/javassist/bytecode/Opcodes.java
* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-
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* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-
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* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/CtBehavior.java
* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-
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* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-
jar/javassist/expr/MethodCall.java
* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-
jar/javassist/tools/framedump.java
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/opt/cola/permits/1434218610\_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/util/proxy/DefinePackageHelper.java  
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\* /opt/cola/permits/1434218610\_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/compiler/ast/CondExpr.java

\* /opt/cola/permits/1434218610\_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/CtNewConstructor.java

\* /opt/cola/permits/1434218610\_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/expr/ConstructorCall.java

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\* /opt/cola/permits/1434218610\_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/NotFoundException.java

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\* /opt/cola/permits/1434218610\_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/bytecode/SyntheticAttribute.java

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\* /opt/cola/permits/1434218610\_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/bytecode/AnnotationDefaultAttribute.java  
\* /opt/cola/permits/1434218610\_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/expr/Instanceof.java  
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\* /opt/cola/permits/1434218610\_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/expr/Cast.java  
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jar/javassist/URLClassPath.java
* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-
jar/javassist/bytecode/Descriptor.java
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jar/javassist/util/HotSwapper.java
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/opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-
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jar/javassist/compiler/MemberResolver.java
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* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-
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jar/javassist/bytecode/SignatureAttribute.java
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jar/javassist/tools/reflect/Reflection.java

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\* /opt/cola/permits/1434218610\_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/bytecode/AnnotationsAttribute.java  
\* /opt/cola/permits/1434218610\_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/bytecode/analysis/SubroutineScanner.java  
\* /opt/cola/permits/1434218610\_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/CtField.java  
\* /opt/cola/permits/1434218610\_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/expr/NewExpr.java  
\* /opt/cola/permits/1434218610\_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/bytecode/CodeAnalyzer.java  
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Found in path(s):

\* /opt/cola/permits/1434218610\_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/bytecode/annotation/FloatMemberValue.java  
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## 1.258 protobuf-java 3.19.6



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Manifest-Version: 1.0  
Automatic-Module-Name: com.google.protobuf  
Bnd-LastModified: 1664485905970  
Build-Jdk: 1.8.0\_181-google-v7  
Built-By: mkruskal  
Bundle-Description: Core Protocol Buffers library. Protocol Buffers are a way of encoding structured data in an efficient yet extensible format.  
Bundle-DocURL: <https://developers.google.com/protocol-buffers/>  
Bundle-License: <https://opensource.org/licenses/BSD-3-Clause>  
Bundle-ManifestVersion: 2  
Bundle-Name: Protocol Buffers [Core]  
Bundle-SymbolicName: com.google.protobuf  
Bundle-Version: 3.19.6  
Created-By: Apache Maven Bundle Plugin  
Export-Package: com.google.protobuf;version="3.19.6"  
Import-Package: sun.misc;resolution:=optional,com.google.protobuf;version="[3.19,4)"  
Require-Capability: osgi.ee;filter="(&(osgi.ee=JavaSE)(version=1.7))"  
Tool: Bnd-3.0.0.201509101326

Found in path(s):

\* /opt/cola/permits/1444789790\_1666041710.804059/0/protobuf-java-3-19-6-jar/META-INF/MANIFEST.MF  
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```
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```

Found in path(s):

\* /opt/cola/permits/1444789790\_1666041710.804059/0/protobuf-java-3-19-6-jar/google/protobuf/timestamp.proto  
\* /opt/cola/permits/1444789790\_1666041710.804059/0/protobuf-java-3-19-6-jar/google/protobuf/struct.proto  
\* /opt/cola/permits/1444789790\_1666041710.804059/0/protobuf-java-3-19-6-jar/google/protobuf/wrappers.proto  
\*  
/opt/cola/permits/1444789790\_1666041710.804059/0/protobuf-java-3-19-6-jar/google/protobuf/type.proto  
\* /opt/cola/permits/1444789790\_1666041710.804059/0/protobuf-java-3-19-6-jar/google/protobuf/empty.proto  
\* /opt/cola/permits/1444789790\_1666041710.804059/0/protobuf-java-3-19-6-jar/google/protobuf/any.proto  
\* /opt/cola/permits/1444789790\_1666041710.804059/0/protobuf-java-3-19-6-jar/google/protobuf/descriptor.proto

\* /opt/cola/permits/1444789790\_1666041710.804059/0/protobuf-java-3-19-6-jar/google/protobuf/duration.proto  
\* /opt/cola/permits/1444789790\_1666041710.804059/0/protobuf-java-3-19-6-jar/google/protobuf/field\_mask.proto  
\* /opt/cola/permits/1444789790\_1666041710.804059/0/protobuf-java-3-19-6-jar/google/protobuf/compiler/plugin.proto  
\* /opt/cola/permits/1444789790\_1666041710.804059/0/protobuf-java-3-19-6-jar/google/protobuf/source\_context.proto  
\* /opt/cola/permits/1444789790\_1666041710.804059/0/protobuf-java-3-19-6-jar/google/protobuf/api.proto

# 1.259 kpartx 0.4.9-136.el7\_9

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<signature of Ty Coon>, 1 April 1990  
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## 1.260 joda-time 2.12.0

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## 1.261 schema-registry-serde 1.1.1

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jar/com/amazonaws/services/schemaregistry/serializers/GlueSchemaRegistrySerializerFactory.java
* /opt/cola/permits/1463017602_1667606503.2021558/0/schema-registry-serde-1-1-1-sources-
jar/com/amazonaws/services/schemaregistry/serializers/json/JsonSerializer.java
*
/opt/cola/permits/1463017602_1667606503.2021558/0/schema-registry-serde-1-1-1-sources-
jar/com/amazonaws/services/schemaregistry/deserializers/GlueSchemaRegistryDeserializer.java
* /opt/cola/permits/1463017602_1667606503.2021558/0/schema-registry-serde-1-1-1-sources-
jar/com/amazonaws/services/schemaregistry/deserializers/json/JsonDeserializer.java
* /opt/cola/permits/1463017602_1667606503.2021558/0/schema-registry-serde-1-1-1-sources-
jar/com/amazonaws/services/schemaregistry/serializers/json/JsonValidator.java
* /opt/cola/permits/1463017602_1667606503.2021558/0/schema-registry-serde-1-1-1-sources-
jar/com/amazonaws/services/schemaregistry/serializers/GlueSchemaRegistrySerializationFacade.java
* /opt/cola/permits/1463017602_1667606503.2021558/0/schema-registry-serde-1-1-1-sources-
jar/com/amazonaws/services/schemaregistry/deserializers/GlueSchemaRegistryDeserializerFactory.java
* /opt/cola/permits/1463017602_1667606503.2021558/0/schema-registry-serde-1-1-1-sources-
jar/com/amazonaws/services/schemaregistry/serializers/json/JsonDataWithSchema.java
*
/opt/cola/permits/1463017602_1667606503.2021558/0/schema-registry-serde-1-1-1-sources-
jar/com/amazonaws/services/schemaregistry/utils/AVROUtils.java
* /opt/cola/permits/1463017602_1667606503.2021558/0/schema-registry-serde-1-1-1-sources-
jar/com/amazonaws/services/schemaregistry/deserializers/GlueSchemaRegistryKafkaDeserializer.java
* /opt/cola/permits/1463017602_1667606503.2021558/0/schema-registry-serde-1-1-1-sources-
jar/com/amazonaws/services/schemaregistry/serializers/avro/AWSKafkaAvroSerializer.java
* /opt/cola/permits/1463017602_1667606503.2021558/0/schema-registry-serde-1-1-1-sources-
jar/com/amazonaws/services/schemaregistry/deserializers/avro/AWSKafkaAvroDeserializer.java
* /opt/cola/permits/1463017602_1667606503.2021558/0/schema-registry-serde-1-1-1-sources-
jar/com/amazonaws/services/schemaregistry/serializers/GlueSchemaRegistrySerializerImpl.java
* /opt/cola/permits/1463017602_1667606503.2021558/0/schema-registry-serde-1-1-1-sources-
jar/com/amazonaws/services/schemaregistry/serializers/avro/AvroSerializer.java
*
```

```
/opt/cola/permits/1463017602_1667606503.2021558/0/schema-registry-serde-1-1-1-sources-
jar/com/amazonaws/services/schemaregistry/serializers/SerializationDataEncoder.java
* /opt/cola/permits/1463017602_1667606503.2021558/0/schema-registry-serde-1-1-1-sources-
jar/com/amazonaws/services/schemaregistry/deserializers/GlueSchemaRegistryDeserializerDataParser.java
* /opt/cola/permits/1463017602_1667606503.2021558/0/schema-registry-serde-1-1-1-sources-
jar/com/amazonaws/services/schemaregistry/deserializers/avro/AvroDeserializer.java
* /opt/cola/permits/1463017602_1667606503.2021558/0/schema-registry-serde-1-1-1-sources-
jar/com/amazonaws/services/schemaregistry/deserializers/GlueSchemaRegistryDeserializationFacade.java
* /opt/cola/permits/1463017602_1667606503.2021558/0/schema-registry-serde-1-1-1-sources-
jar/com/amazonaws/services/schemaregistry/deserializers/SecondaryDeserializer.java
*
/opt/cola/permits/1463017602_1667606503.2021558/0/schema-registry-serde-1-1-1-sources-
jar/com/amazonaws/services/schemaregistry/deserializers/GlueSchemaRegistryDeserializerImpl.java
* /opt/cola/permits/1463017602_1667606503.2021558/0/schema-registry-serde-1-1-1-sources-
jar/com/amazonaws/services/schemaregistry/serializers/GlueSchemaRegistrySerializer.java
```

# 1.262 s3 2.17.85

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## 1.265 kafka-streams-avro-serde 4.1.0

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# Jackson JSON processor

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It was originally written by Tatu Saloranta ([tatu.saloranta@iki.fi](mailto:tatu.saloranta@iki.fi)), and has been in development since 2007.

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<link rel="icon" type="image/png" href="/favicons/android-chrome-192x192.png" sizes="192x192">
<link rel="icon" type="image/png" href="/favicons/favicon-16x16.png" sizes="16x16">
<link rel="manifest" href="/favicons/manifest.json">
<link rel="shortcut icon" href="/favicons/favicon.ico">
<meta name="msapplication-TileColor" content="#603cba">
<meta name="msapplication-TileImage" content="/favicons/mstile-144x144.png">
<meta name="msapplication-config" content="/favicons/browserconfig.xml">
<meta name="theme-color" content="#303284">
```

```
<title>Apache License, Version 2.0</title>
<link href='https://fonts.googleapis.com/css?family=Source+Sans+Pro:400,700%7cDroid+Serif:400,700'
rel='stylesheet' type='text/css'>
<link href="/css/min.bootstrap.css" rel="stylesheet">
<link href="/css/styles.css" rel="stylesheet">
```

```
<!-- Licensed to the Apache Software Foundation (ASF) under one or more contributor license agreements. See
the NOTICE file distributed with this work for additional information regarding copyright ownership. The ASF
licenses this file to you under the Apache License, Version 2.0 (the &quot;License&quot;); you may not use this file
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http://www.apache.org/licenses/LICENSE-2.0 . Unless required by applicable law or agreed to in writing, software
distributed under the License is distributed on an &quot;AS IS&quot; BASIS, WITHOUT WARRANTIES OR
CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing
permissions and limitations under the License.
-->
```

```
</head>
```

```
<body>
```

```
<!-- Navigation -->
```

```
<header>
```

```
<nav class="navbar navbar-default navbar-fixed-top">
```

```
<div class="container">
```

```
<div class="navbar-header">
```

```
<button class="navbar-toggle" type="button" data-toggle="collapse" data-target="#mainnav-collapse">
```

```
<span class="sr-only">Toggle navigation</span>
```

```
<span class="icon-bar"></span>
```

```
<span class="icon-bar"></span>
```

```
<span class="icon-bar"></span>
```

```
</button>
```

```
<a href="#" class="navbar-brand"><span class="glyphicon glyphicon-home"></span></a>
```

```
</div>
```

```
<div class="collapse navbar-collapse" id="mainnav-collapse">
```

```
<div style="line-height:20px; padding-top:5px; float:left"><a href="/">Home</a>&nbsp;&raquo;&nbsp;&lt;a
href="/licenses/">Licenses</a></div>
```

```
<ul class="nav navbar-nav navbar-right">
```

```
<li class="dropdown">
```

```
<a href="#" class="dropdown-toggle" data-toggle="dropdown">About <span class="caret"></span></a>
```

```
<ul class="dropdown-menu"
```

```
role="menu">
```

```
<li><a href="/foundation">Overview</a></li>
```

```
<li><a href="/foundation/members.html">Members</a></li>
```

```
<li><a href="/foundation/how-it-works.html">Process</a></li>
```

```
<li><a href="/foundation/sponsorship.html">Sponsorship</a></li>
```

```
<li><a href="/foundation/glossary.html">Glossary</a></li>
```

```
<li><a href="/foundation/preFAQ.html">FAQ</a></li>
```

```
<li><a href="/foundation/contact.html ">Contact</a></li>
```

```

    </ul>
  </li>
</li><a href="/index.html#projects-list">Projects</a></li>
<li class="dropdown">
  <a href="#" class="dropdown-toggle" data-toggle="dropdown">People <span class="caret"></span></a>
  <ul class="dropdown-menu" role="menu">
    <li><a href="http://people.apache.org/">Overview</a></li>
    <li><a href="http://people.apache.org/committer-index.html">Committers</a></li>
    <li><a href="/foundation/how-it-works.html#meritocracy">Meritocracy</a></li>
    <li><a href="/foundation/how-it-works.html#roles">Roles</a></li>
    <li><a href="http://planet.apache.org/">Planet Apache</a></li>
  </ul>
</li>
<li class="dropdown">
  <a href="#" class="dropdown-toggle" data-toggle="dropdown">Get Involved <span
class="caret"></span></a>
  <ul class="dropdown-menu" role="menu">
    <li><a href="/foundation/getinvolved.html">Overview</a></li>
    <li><a href="http://community.apache.org/">Community Development</a></li>
    <li><a href="http://helpwanted.apache.org/">Help Wanted</a></li>
    <li><a href="http://www.apachecon.com/">ApacheCon</a></li>
  </ul>
</li>
<li><a href="/dyn/closer.cgi">Download</a></li>
<li class="dropdown">
  <a href="#" class="dropdown-toggle" data-toggle="dropdown">Support Apache <span
class="caret"></span></a>
  <ul class="dropdown-menu" role="menu">
    <li><a href="/foundation/sponsorship.html">Sponsorship</a></li>
    <li><a href="/foundation/contributing.html">Donations</a></li>
    <li><a href="/foundation/buy_stuff.html">Buy Stuff</a></li>
    <li><a href="/foundation/thanks.html">Thanks</a></li>
  </ul>
</li>
</ul>
</div>
</div>
</div>
</nav>
</header>
<!-- / Navigation -->
<div class="container">
<div class="row">
<div class="col-md-9 col-sm-8 col-xs-12">
  
</div>
<div class="col-md-3 col-sm-4 col-xs-12">
  <div class="input-group" style="margin-bottom: 5px;">

```

```

<script>
(function() {
  var cx = '005703438322411770421:5mgshgrgx2u';
  var gcse = document.createElement('script');
  gcse.type = 'text/javascript';
  gcse.async = true;
  gcse.src = (document.location.protocol == 'https:' ? 'https:' : 'http:') +
    '//cse.google.com/cse.js?cx=' + cx;
  var s = document.getElementsByTagName('script')[0];
  s.parentNode.insertBefore(gcse, s);
})();
</script>
<gcse:searchbox-only></gcse:searchbox-only>
</div>
<a role="button" class="btn btn-block btn-default btn-xs" href="/foundation/governance/">The Apache Way</a>
<a role="button" class="btn btn-block btn-default btn-xs"
href="https://community.apache.org/contributors/">Contribute</a>
<a role="button" class="btn btn-block btn-default btn-xs" href="/foundation/thanks.html">ASF Sponsors</a>
</div>
</div>
</div>
<div class="container"><style type="text/css">
/* The following code is added by mdx_elementid.py
It was originally lifted from http://subversion.apache.org/style/site.css */
/*
* Hide class="elementid-permalink", except when an enclosing heading
* has the :hover property.
*/
.headerlink, .elementid-permalink {
  visibility: hidden;
}
h2:hover > .headerlink, h3:hover > .headerlink, h1:hover > .headerlink, h6:hover > .headerlink, h4:hover >
.headerlink, h5:hover >
.headerlink, dt:hover > .elementid-permalink { visibility: visible }</style>
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power, direct or indirect, to cause the direction or management of such
entity, whether by contract or otherwise, or (ii) ownership of fifty
percent (50%)

```



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</pre></div></div>

<!-- Footer -->

<footer class="bg-primary">

<div class="container">

<div class="row">

<br />

<div class="col-sm-1">

</div>

<div class="col-sm-2">

<h5 class="white">Community</h5>

<ul class="list-unstyled white" role="menu">

<li><a href="http://community.apache.org/">Overview</a></li>

<li><a href="/foundation/conferences.html">Conferences</a></li>

<li><a href="http://community.apache.org/gsoc.html">Summer of Code</a></li>

<li><a href="http://community.apache.org/newcomers/">Getting Started</a></li>

<li><a href="/foundation/how-it-works.html">The Apache Way</a></li>

```
<li><a href="/travel/">Travel Assistance</a></li>
<li><a href="/foundation/getinvolved.html">Get Involved</a></li>
<li><a href="http://community.apache.org/newbiefaq.html">Community
FAQ</a></li>
</ul>
</div>
```

```
<div class="col-sm-2">
<h5 class="white">Innovation</h5>
<ul class="list-unstyled white" role="menu">
<li><a href="http://incubator.apache.org/">Incubator</a></li>
<li><a href="http://labs.apache.org/">Labs</a></li>
<li><a href="/licenses/">Licensing</a></li>
<li><a href="/foundation/license-faq.html">Licensing FAQ</a></li>
<li><a href="/foundation/marks/">Trademark Policy</a></li>
<li><a href="/foundation/contact.html">Contacts</a></li>
</ul>
</div>
```

```
<div class="col-sm-2">
<h5 class="white">Tech Operations</h5>
<ul class="list-unstyled white" role="menu">
<li><a href="/dev/">Developer Information</a></li>
<li><a href="/dev/infrastructure.html">Infrastructure</a></li>
<li><a href="/security/">Security</a></li>
<li><a href="http://status.apache.org">Status</a></li>
<li><a href="/foundation/contact.html">Contacts</a></li>
</ul>
</div>
```

```
<div class="col-sm-2">
<h5 class="white">Press</h5>
<ul class="list-unstyled white" role="menu">
<li><a href="/press/">Overview</a></li>
<li><a href="https://blogs.apache.org/">ASF News</a></li>
<li><a href="https://blogs.apache.org/foundation/">Announcements</a></li>
<li><a href="https://twitter.com/TheASF">Twitter Feed</a></li>
<li><a href="/press/#contact">Contacts</a></li>
</ul>
</div>
```

```
<div class="col-sm-2">
<h5 class="white">Legal</h5>
<ul class="list-unstyled white" role="menu">
<li><a href="/legal/">Legal Affairs</a></li>
<li><a href="/licenses/">Licenses</a></li>
<li><a href="/foundation/marks/">Trademark Policy</a></li>
</ul>
```

```
<li><a href="/foundation/records/">Public Records</a></li>
  <li><a href="/foundation/policies/privacy.html">Privacy Policy</a></li>
  <li><a href="/licenses/exports/">Export Information</a></li>
  <li><a
href="/foundation/license-faq.html">License/Distribution FAQ</a></li>
  <li><a href="/foundation/contact.html">Contacts</a></li>
</ul>
</div>

<div class="col-sm-1">
</div>

</div>
<hr class="col-lg-12 hr-white" />
<div class="row">
  <div class="col-lg-12">
    <p class="text-center">Copyright &#169; 2016 The Apache Software Foundation, Licensed under the <a
class="white" href="http://www.apache.org/licenses/LICENSE-2.0">Apache License, Version 2.0</a>.</p>
    <p class="text-center">Apache and the Apache feather logo are trademarks of The Apache Software
Foundation.</p>
  </div>
</div>
</div>

</footer>

<!-- / Footer -->

<script src="/js/jquery-2.1.1.min.js"></script>
<script src="/js/bootstrap.js"></script>
</body>
</html>
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<!DOCTYPE HTML PUBLIC "-//IETF//DTD HTML 2.0//EN">
<html><head>
```

```
<title>301 Moved Permanently</title>
</head><body>
<h1>Moved Permanently</h1>
<p>The document has moved <a href="https://opensource.org/licenses/mit-license.php">here</a>.</p>
</body></html>
```

The following commands were used to generate license and notice files. Replace <VERSION> with the Schema Registry version, <SRC\_PATH> with the path to the Schema Registry source directory, and <LICENSE\_TOOL\_PATH> with the path of the license tool.

```
cd <SRC_PATH>
mvn package -DskipTests
mkdir /tmp/jars
mkdir /tmp/overrides
cp package-schema-registry/target/kafka-schema-registry-package-<VERSION>-package/share/java/schema-registry/*.jar /tmp/jars/
cp package-kafka-serde-tools/target/kafka-serde-tools-package-<VERSION>-package/share/java/kafka-serde-tools/*.jar /tmp/jars/
cd <LICENSE_TOOL_PATH>
./bin/run_license_job.bash -i /tmp/jars -l <SRC_PATH>/licenses -n <SRC_PATH>/notices -h <SRC_PATH>/licenses-and-notices.html -o /tmp/overrides
```

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```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
```

```
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
```

```
<html xmlns="http://www.w3.org/1999/xhtml">
```

```
<head>
```

```
<meta http-equiv="Content-Type" content="text/html; charset=iso-8859-1" />
```

```
<title>Untitled Document</title>
```

```
</head>
```

```
<body>
```

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.0 Transitional//EN">
```

```
<HTML>
```

```
<!-- @page { margin: 0.79in } P { margin-bottom: 0.08in } H1 { margin-top: 0in; margin-bottom: 0.17in; widows: 0; orphans: 0 } H1.western { font-family: "Times New Roman", serif; font-size: 12pt; font-weight: normal } H1.cjk { font-family: "Andale Sans UI"; font-size: 12pt; font-weight: normal } H1.cnl { font-family: "Tahoma"; font-size: 12pt; font-weight: normal } -->
```

```
<BODY DIR="LTR">
```

```
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</body>

</html>

Apache log4j

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<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN"
"http://www.w3.org/TR/html4/loose.dtd">
```

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<html lang="en-US">
```

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<head>
```

```
<title>GlassFish Dual License Header and License Notice GPL v2 and CDDL</title>
```

```
<meta http-equiv="content-type" content="text/html; charset=UTF-8">
```

```
<style type="text/css">
```

```
li {display: block;}
```

```
</style>
```

```
</head>
```

```
<body leftmargin="0" topmargin="0" marginheight="0" marginwidth="0" bgcolor="#ffffff">
```

```
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<li><p><b>1. Definitions.</b></p>
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<b>1.1. "Contributor" means each individual or
entity that creates or contributes to the creation of
Modifications.
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<b>1.3. "Covered Software" means (a)
the Original Software, or (b) Modifications, or (c) the
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combination of files containing Original Software with files containing Modifications, in each case including portions thereof.

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<b>1.4. &ldquo;Executable&rdquo;</b> means the Covered Software in any form other than Source Code.

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<b>1.5. &ldquo;Initial Developer&rdquo;</b> means the individual or entity that first makes Original Software available under this License.

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<b>1.6. &ldquo;Larger Work&rdquo;</b> means a work which combines Covered Software or portions thereof with code not governed by the terms of this License.

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<b>1.7. &ldquo;License&rdquo;</b>

means this document.

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<b>1.8. &ldquo;Licensable&rdquo;</b> means having the right to grant, to the maximum extent possible, whether at the time of the initial grant or subsequently acquired, any and all of the rights conveyed herein.

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<b>1.9. &ldquo;Modifications&rdquo;</b> means the

Source Code and Executable form of any of the following:

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<b>A.</b> Any file that results from an addition to, deletion from or modification of the contents of a file containing Original Software or previous Modifications;

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<b>B.</b> Any new file that contains any part of the Original Software or previous Modification; or

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<b>C.</b> Any new file that is contributed or otherwise

made available under the terms of this

License.

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<b>1.10. &ldquo;Original Software&rdquo;</b> means the Source Code and Executable form of computer software code that is originally released under this License.

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<b>1.11. &ldquo;Patent Claims&rdquo;</b> means any patent claim(s), now owned or hereafter acquired, including without limitation, method, process, and apparatus claims, in any patent Licensable by grantor.

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<b>1.12. &ldquo;Source Code&rdquo;</b> means (a) the

common form of computer software code in which modifications are made and (b) associated documentation included in or with such code.

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<b>1.13. &ldquo;You&rdquo; (or &ldquo;Your&rdquo;)</b> means an individual or a legal

entity exercising rights under, and complying with all of the terms of, this License. For legal entities, &ldquo;You&rdquo; includes any entity which controls, is controlled by, or is under common control with You. For purposes of this definition, &ldquo;control&rdquo; means (a)&nbsp;the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (b)&nbsp;ownership of more than fifty percent (50%) of the outstanding shares or beneficial ownership of such entity.

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<p><b>2. License Grants.</b></p>

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Conditioned upon Your compliance with Section 3.1 below and subject to third party intellectual property claims, the Initial Developer hereby grants You a world-wide, royalty-free, non-exclusive license:

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terms of this License.

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sublicense and distribute the Modifications created by such Contributor (or portions thereof), either on an

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<p><b>3. Distribution Obligations.</b></p>

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<p><b>3.1. Availability of Source Code.</b></p>

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with terms herein and fail to cure such breach within 30  
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<p>

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<p>

b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

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<p>

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if the Program itself is interactive

but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

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<p>

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<p>

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<p>

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<p>

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<p>

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</p>

<p>

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

</p>

</li>

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<p>

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</p>

</li>

<li>

<p>

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</p>

<p>

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</p>

</li>

<li>

<p>

**10.** If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for

permission. For software which is copyrighted by the Free Software

Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

</p>

</li>

<li>

<p>NO WARRANTY</p>

</li>

<li>

<p>

<b>11.</b> BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

</p>

</li>

<li>

<p>

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</p>

</li>

<li>

<p>END OF TERMS AND CONDITIONS</p>

</li>

<li>

<p><b>How to Apply These Terms to Your New Programs</b></p>

<p>

If you develop a new program, and you want it to be of the greatest possible

use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

</p>

<p>

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

</p>

```
<ul>
<li>
<p>
One line to give the program's name and a brief idea of what it does.
</p>
</li>
<li>
<p>
Copyright (C) <year> <name of author>
</p>
</li>
<li>
<p>
This program is free software; you can redistribute it and/or modify it
under the terms of the GNU General Public License as published by the
Free Software Foundation; either version 2 of the License, or (at your
option) any later version.
</p>

</li>
<li>
<p>
This program is distributed in the hope that it will be useful, but
WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY
or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License
for more details.
</p>
</li>
<li>
<p>
You should have received a copy of the GNU General Public License along
with this program; if not, write to the Free Software Foundation, Inc.,
59 Temple Place, Suite 330, Boston, MA 02111-1307 USA
</p>
</li>
</ul>
<p>
Also add information on how to contact you by electronic and paper mail.
</p>
<p>
If the program is interactive, make it output a short notice like this
when it starts in an interactive mode:
</p>
<ul>
<li>
<p>
Gnomovision version 69, Copyright (C) year name of author<br />
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type
```

`show w'.

This is free software, and you are welcome to redistribute it under certain conditions; type `show c' for details.

</p>

</li>

</ul>

<p>

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

</p>

<p>

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

</p>

<ul>

<li>

<p>

Yoyodyne, Inc., hereby disclaims all copyright interest in the program `Gnomovision' (which makes passes at compilers) written by James Hacker.

</p>

<p>

signature of Ty Coon, 1 April 1989<br />

Ty Coon, President of Vice

</p>

</li>

</ul>

<p>

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

</p>

</li>

<li style="background-color:yellow;">

<p><b>"CLASSPATH" EXCEPTION TO THE GPL VERSION 2</b></p>

<p>

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"Sun designates this particular file as subject to the "Classpath" exception as provided by Sun in the License file that accompanied this code."

</p>

<p>  
Linking this library statically or dynamically with  
other modules is making  
a combined work based on this library. Thus, the terms and conditions of the  
GNU General Public License Version 2 cover the whole combination.

</p>

<p>

As a special exception, the copyright holders of this library give you  
permission to link this library with independent modules to produce an  
executable, regardless of the license terms of these independent modules,  
and to copy and distribute the resulting executable under terms of your  
choice, provided that you also meet, for each linked independent module,  
the terms and conditions of the license of that module.? An independent  
module is a module which is not derived from or based on this library.? If  
you modify this library, you may extend this exception to your version of  
the library, but you are not obligated to do so.? If you do not wish to do  
so, delete this exception statement from your version.

</p>

</li>

</ul>

</body>

</html>

# Jackson JSON processor

Jackson is a high-performance, Free/Open Source JSON processing library.  
It was originally written by Tatu Saloranta (tatu.saloranta@iki.fi), and has  
been in development since 2007.

It is currently developed by a community of developers, as well as supported  
commercially by FasterXML.com.

## Licensing

Jackson core and extension components may be licensed under different licenses.  
To find the details that apply to this artifact see the accompanying LICENSE file.  
For more information, including possible other licensing options, contact  
FasterXML.com (<http://fasterxml.com>).

## Credits

A list of contributors may be found from CREDITS file, which is included  
in some artifacts (usually source distributions); but is always available  
from the source code management (SCM) system project uses.

<!DOCTYPE html>

<html lang="en">

<head>

<meta charset="utf-8">

```

<meta http-equiv="X-UA-Compatible" content="IE=edge">
<meta name="viewport" content="width=device-width, initial-scale=1">
<meta name="description" content="Home page of The Apache Software Foundation">

<link rel="apple-touch-icon" sizes="57x57" href="/favicons/apple-touch-icon-57x57.png">
<link rel="apple-touch-icon" sizes="60x60" href="/favicons/apple-touch-icon-60x60.png">
<link rel="apple-touch-icon" sizes="72x72" href="/favicons/apple-touch-icon-72x72.png">
<link rel="apple-touch-icon" sizes="76x76" href="/favicons/apple-touch-icon-76x76.png">
<link rel="apple-touch-icon" sizes="114x114" href="/favicons/apple-touch-icon-114x114.png">
<link rel="apple-touch-icon" sizes="120x120" href="/favicons/apple-touch-icon-120x120.png">
<link rel="apple-touch-icon" sizes="144x144" href="/favicons/apple-touch-icon-144x144.png">
<link rel="apple-touch-icon" sizes="152x152" href="/favicons/apple-touch-icon-152x152.png">
<link rel="apple-touch-icon" sizes="180x180" href="/favicons/apple-touch-icon-180x180.png">
<link rel="icon" type="image/png" href="/favicons/favicon-32x32.png" sizes="32x32">
<link rel="icon" type="image/png" href="/favicons/favicon-194x194.png" sizes="194x194">
<link rel="icon" type="image/png" href="/favicons/favicon-96x96.png" sizes="96x96">
<link rel="icon" type="image/png" href="/favicons/android-chrome-192x192.png" sizes="192x192">
<link rel="icon" type="image/png" href="/favicons/favicon-16x16.png" sizes="16x16">
<link rel="manifest" href="/favicons/manifest.json">
<link rel="shortcut icon" href="/favicons/favicon.ico">
<meta name="msapplication-TileColor" content="#603cba">
<meta name="msapplication-TileImage" content="/favicons/mstile-144x144.png">
<meta name="msapplication-config" content="/favicons/browserconfig.xml">
<meta name="theme-color" content="#303284">

<title>Licenses</title>
<link href='https://fonts.googleapis.com/css?family=Source+Sans+Pro:400,700%7cDroid+Serif:400,700'
rel='stylesheet' type='text/css'>
<link href="/css/min.bootstrap.css" rel="stylesheet">
<link href="/css/styles.css" rel="stylesheet">

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licenses this file to you under the Apache License, Version 2.0 (the "License"); you may not use this file
except in compliance with the License. You may obtain a copy of the License at
http://www.apache.org/licenses/LICENSE-2.0 . Unless required by applicable law or agreed to in writing, software
distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR
CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing
permissions and limitations under the License. -->

</head>

<body>
<!--
Navigation -->
<header>
<nav class="navbar navbar-default navbar-fixed-top">

```



```

<div class="container">
  <div class="navbar-header">
    <button class="navbar-toggle" type="button" data-toggle="collapse" data-target="#mainnav-collapse">
      <span class="sr-only">Toggle navigation</span>
      <span class="icon-bar"></span>
      <span class="icon-bar"></span>
      <span class="icon-bar"></span>
    </button>
    <a href="#" class="navbar-brand"><span class="glyphicon glyphicon-home"></span></a>
  </div>
  <div class="collapse navbar-collapse" id="mainnav-collapse">
    <div style="line-height:20px; padding-top:5px; float:left"><a href="/">Home</a>&nbsp;&raquo;&nbsp;&lt;a href="/licenses/">Licenses</a></div>
    <ul class="nav navbar-nav navbar-right">
      <li class="dropdown">
        <a href="#" class="dropdown-toggle" data-toggle="dropdown">About <span class="caret"></span></a>
        <ul class="dropdown-menu" role="menu">
          <li><a href="/foundation">Overview</a></li>
          <li><a href="/foundation/members.html">Members</a></li>
          <li><a href="/foundation/how-it-works.html">Process</a></li>
          <li><a href="/foundation/sponsorship.html">Sponsorship</a></li>
          <li><a href="/foundation/glossary.html">Glossary</a></li>
          <li><a href="/foundation/preFAQ.html">FAQ</a></li>
          <li><a href="/foundation/contact.html">Contact</a></li>
        </ul>
      </li>
      <li><a href="/index.html#projects-list">Projects</a></li>
      <li class="dropdown">
        <a href="#" class="dropdown-toggle" data-toggle="dropdown">People <span class="caret"></span></a>
        <ul class="dropdown-menu" role="menu">
          <li><a href="http://people.apache.org/">Overview</a></li>
          <li><a href="http://people.apache.org/committer-index.html">Committers</a></li>
          <li><a href="/foundation/how-it-works.html#meritocracy">Meritocracy</a></li>
          <li><a href="/foundation/how-it-works.html#roles">Roles</a></li>
          <li><a href="http://planet.apache.org/">Planet Apache</a></li>
        </ul>
      </li>
      <li class="dropdown">
        <a href="#" class="dropdown-toggle" data-toggle="dropdown">Get Involved <span class="caret"></span></a>
        <ul class="dropdown-menu" role="menu">
          <li><a href="/foundation/getinvolved.html">Overview</a></li>
          <li><a href="http://community.apache.org/">Community Development</a></li>
          <li><a href="http://helpwanted.apache.org/">Help Wanted</a></li>
          <li><a href="http://www.apachecon.com/">ApacheCon</a></li>
        </ul>
      </li>
      <li><a href="/dyn/closer.cgi">Download</a></li>

```

```

    <li class="dropdown">
      <a href="#" class="dropdown-toggle" data-toggle="dropdown">Support Apache <span
class="caret"></span></a>
      <ul class="dropdown-menu" role="menu">
        <li><a href="/foundation/sponsorship.html">Sponsorship</a></li>
        <li><a href="/foundation/contributing.html">Donations</a></li>
        <li><a href="/foundation/buy_stuff.html">Buy Stuff</a></li>
        <li><a href="/foundation/thanks.html">Thanks</a></li>
      </ul>
    </li>
  </ul>
</div>
</div>
</nav>
</header>
<!-- / Navigation -->
<div class="container">
  <div class="row">
    <div class="col-md-9 col-sm-8 col-xs-12">
      
    </div>
    <div class="col-md-3 col-sm-4 col-xs-12">
      <div class="input-group" style="margin-bottom: 5px;">
        <script>
(function() {
var cx = '005703438322411770421:5mgshgrgx2u';
var gcse = document.createElement('script');
gcse.type = 'text/javascript';
gcse.async = true;
gcse.src = (document.location.protocol == 'https:' ? 'https:' : 'http:') +
  '//cse.google.com/cse.js?cx=' + cx;
var s = document.getElementsByTagName('script')[0];
s.parentNode.insertBefore(gcse, s);
})();
</script>
      <gcse:searchbox-only></gcse:searchbox-only>
    </div>
    <a role="button" class="btn btn-block btn-default btn-xs" href="/foundation/governance/">The Apache Way</a>
    <a role="button" class="btn btn-block btn-default btn-xs"
href="https://community.apache.org/contributors/">Contribute</a>
    <a role="button" class="btn btn-block btn-default btn-xs" href="/foundation/thanks.html">ASF Sponsors</a>
  </div>
</div>
</div>
<div class="container"><style type="text/css">
/* The following code is added by mdx_elementid.py
It was originally lifted from http://subversion.apache.org/style/site.css */
/*

```

```

* Hide class="elementid-permalink", except when an enclosing heading
* has the :hover property.
*/
.headerlink, .elementid-permalink {
  visibility: hidden;
}
h2:hover > .headerlink, h3:hover > .headerlink, h1:hover > .headerlink, h6:hover > .headerlink, h4:hover >
.headerlink, h5:hover > .headerlink, dt:hover
> .elementid-permalink { visibility: visible }</style>
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larger <a href="#grants">grants of existing software products</a>.</p>
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their work within Apache.</p>
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projects or subjects is licensed according to the terms
of the documents
listed below.</p>
<h3 id="2.0">Apache License, Version 2.0 (current)<a class="headerlink" href="#2.0" title="Permanent
link">&para;</a></h3>
<p><a href="LICENSE-2.0">http://www.apache.org/licenses/LICENSE-2.0</a> (
<a href="LICENSE-2.0.txt">TXT</a> or <a href="LICENSE-2.0.html">HTML</a> )</p>
<p>The 2.0 version of the Apache License was approved by the ASF in 2004. The
goals of this license revision have been to reduce the number of frequently
asked questions, to allow the license to be reusable without modification
by any project (including non-ASF projects), to allow the license to be
included by reference instead of listed in every file, to clarify the
license on submission of contributions, to require a patent license on
contributions that necessarily infringe the contributor's own patents, and
to move comments regarding Apache and other inherited attribution notices
to a location outside the license terms (the <a href="example-NOTICE.txt">NOTICE
file</a> ).</p>
<p>The
result is a license that is supposed to be compatible with other open
source licenses, while remaining true to the original goals of the Apache
Group and supportive of collaborative development across both nonprofit and
commercial organizations. The Apache Software Foundation is still trying to
determine if this version of the Apache License is <a href="GPL-compatibility.html">compatible with the
GPL</a>.</p>
<p>All packages produced by the ASF are implicitly licensed under the Apache
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```

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\*.</p>

<h3 id="1.1">Apache License, Version 1.1 (historic)<a class="headerlink" href="#1.1" title="Permanent link">&para;</a></h3>

<p><a href="http://www.apache.org/licenses/LICENSE-1.1">http://www.apache.org/licenses/LICENSE-1.1</a> </p>

<p>The 1.1 version of the Apache License was approved by the ASF in 2000. The

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<p>This is the original Apache License which applies only to older versions of Apache packages (such as version 1.2 of the Web server).</p>

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<p>The ASF desires that all contributors of ideas, code, or documentation to any Apache projects

complete, sign, and submit (via fax or

email) an [Individual Contributor License Agreement](#) (ICLA).

The purpose of this agreement is to clearly define the

terms under which intellectual property has been contributed to the ASF and thereby allow us to defend the project should there be a legal dispute

regarding the software at some future time. A signed ICLA is required to be on file before an individual is given commit rights to an ASF project.</p>

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part of an employment agreement. Note that a Corporate CLA does not remove the need for every developer to sign their own ICLA as an individual, to

cover any of their contributions which are not owned by the corporation signing the CCLA.</p>

<p>The ICLA is not tied to any employer you

may have, so it is recommended to

use one's personal email address in the contact details, rather than an @work address.</p>

<p>Your Full name will be published unless you provide an alternative Public name.

For example if your full name is Andrew Bernard Charles Dickens, but you wish to be known as Andrew Dickens, please enter the latter as your Public name.</p>

<p>The email address and other contact details are not published.</p>

<h1 id="grants">Software Grants<a class="headerlink" href="#grants" title="Permanent link">&para;</a></h1>

<p>When an individual or corporation decides to donate a body of existing software or documentation to one of the Apache projects, they need to

execute a formal [Software Grant Agreement](software-grant-template.pdf) (SGA) with the ASF. Typically, this is done after negotiating approval with the ASF [Incubator](http://incubator.apache.org/) or one of the PMCs, since the ASF will not accept software unless there is a viable community available to support a collaborative project.

## Submitting License Agreements and Grants

Documents may be submitted by fax or email.

If submitting by fax, please print, sign, and fax all pages of the document to +1-919-573-9199. Please send documents right-side-up, first page first; and send only one document per fax.

If submitting by email, please fill the form with a pdf viewer, print, sign, scan all pages into a single pdf file, and email the pdf file as an attachment to [secretary@apache.org](mailto:secretary@apache.org). If possible, send the attachment from the email address in the document. Please send only one document per email.

If you prefer to sign electronically, please fill the form, save it locally (e.g. icla.pdf), and sign the file by preparing a detached PGP signature. For example,

```
gpg --armor --detach-sign icla.pdf
```

The above will create

```
icla.pdf.asc
```

Send both the file and signature

as attachments in the same email to [secretary@apache.org](mailto:secretary@apache.org). Please send only one

document (file plus signature) per email. Please do not submit your public key to Apache.

Instead, please upload your public key to [pgpkeys.mit.edu](http://pgpkeys.mit.edu).

The files typically are named

icla.pdf and icla.pdf.asc for individual agreements;

ccla.pdf and ccla.pdf.asc for corporate agreements;

software-grant.pdf and software-grant.pdf.asc for grants.

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## Questions?

For answers to frequently asked licensing questions, please consult our

[Licensing Frequently Asked Questions](/foundation/license-faq.html) page.

Footer

Footer

Container

Row

<br />

<div class="col-sm-1">

</div>

<div class="col-sm-2">

<h5 class="white">Community</h5>

<ul class="list-unstyled white" role="menu">

<li><a href="http://community.apache.org/">Overview</a></li>

<li><a href="/foundation/conferences.html">Conferences</a></li>

<li><a href="http://community.apache.org/gsoc.html">Summer of Code</a></li>

<li><a href="http://community.apache.org/newcomers/">Getting Started</a></li>

<li><a href="/foundation/how-it-works.html">The Apache Way</a></li>

<li><a href="/travel/">Travel Assistance</a></li>

<li><a href="/foundation/getinvolved.html">Get

Involved</a></li>

<li><a href="http://community.apache.org/newbiefaq.html">Community FAQ</a></li>

</ul>

</div>

<div class="col-sm-2">

<h5 class="white">Innovation</h5>

<ul class="list-unstyled white" role="menu">

<li><a href="http://incubator.apache.org/">Incubator</a></li>

<li><a href="http://labs.apache.org/">Labs</a></li>

<li><a href="/licenses/">Licensing</a></li>

<li><a href="/foundation/license-faq.html">Licensing FAQ</a></li>

<li><a href="/foundation/marks/">Trademark Policy</a></li>

<li><a href="/foundation/contact.html">Contacts</a></li>

</ul>

</div>

<div class="col-sm-2">

<h5 class="white">Tech Operations</h5>

<ul class="list-unstyled white" role="menu">

<li><a href="/dev/">Developer Information</a></li>

<li><a href="/dev/infrastructure.html">Infrastructure</a></li>

<li><a href="/security/">Security</a></li>

<li><a href="http://status.apache.org">Status</a></li>

<li><a href="/foundation/contact.html">Contacts</a></li>

</ul>

</div>

<div class="col-sm-2">

<h5 class="white">Press</h5>

<ul class="list-unstyled white" role="menu">

<li><a href="/press/">Overview</a></li>

<li><a href="https://blogs.apache.org/">ASF News</a></li>

<li><a href="https://blogs.apache.org/foundation/">Announcements</a></li>

```
<li><a href="https://twitter.com/TheASF">Twitter Feed</a></li>
<li><a href="/press/#contact">Contacts</a></li>
</ul>
</div>
```

```
<div class="col-sm-2">
<h5 class="white">Legal</h5>
<ul class="list-unstyled white" role="menu">
<li><a href="/legal/">Legal Affairs</a></li>
<li><a href="/licenses/">Licenses</a></li>
<li><a href="/foundation/marks/">Trademark Policy</a></li>
<li><a href="/foundation/records/">Public Records</a></li>
<li><a href="/foundation/policies/privacy.html">Privacy
Policy</a></li>
<li><a href="/licenses/exports/">Export Information</a></li>
<li><a href="/foundation/license-faq.html">License/Distribution FAQ</a></li>
<li><a href="/foundation/contact.html">Contacts</a></li>
</ul>
</div>
```

```
<div class="col-sm-1">
</div>
```

```
</div>
<hr class="col-lg-12 hr-white" />
<div class="row">
<div class="col-lg-12">
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class="white" href="http://www.apache.org/licenses/LICENSE-2.0">Apache License, Version 2.0</a>.</p>
<p class="text-center">Apache and the Apache feather logo are trademarks of The Apache Software
Foundation.</p>
</div>
</div>
</div>
```

```
</footer>
```

```
<!-- / Footer -->
```

```
<script src="/js/jquery-2.1.1.min.js"></script>
<script src="/js/bootstrap.js"></script>
</body>
</html>
```

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Source: <https://github.com/confluentinc/schema-registry>

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jar/software/amazon/awssdk/http/crt/internal/AwsCrtRequestBodySubscriber.java
* /opt/cola/permits/1463015931_1667606579.5067983/0/aws-crt-client-2-14-13-preview-sources-1-
jar/software/amazon/awssdk/http/crt/internal/AwsCrtAsyncHttpStreamAdapter.java
* /opt/cola/permits/1463015931_1667606579.5067983/0/aws-crt-client-2-14-13-preview-sources-1-
jar/software/amazon/awssdk/http/crt/internal/CrtRequestExecutor.java
* /opt/cola/permits/1463015931_1667606579.5067983/0/aws-crt-client-2-14-13-preview-sources-1-
jar/software/amazon/awssdk/http/crt/internal/AwsCrtResponseBodyPublisher.java
No license file was found, but licenses were detected in source scan.
```

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-->

Found in path(s):

\* /opt/cola/permits/1463015931\_1667606579.5067983/0/aws-crt-client-2-14-13-preview-sources-1-jar/META-INF/maven/software.amazon.awssdk/aws-crt-client/pom.xml

# 1.273 metrics-spi 2.17.85

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# Jackson JSON processor

Jackson is a high-performance, Free/Open Source JSON processing library.  
It was originally written by Tatu Saloranta ([tatu.saloranta@iki.fi](mailto:tatu.saloranta@iki.fi)), and has  
been in development since 2007.  
It is currently developed by a community of developers, as well as supported  
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Other developers who have contributed code are:

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```
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="utf-8">
<meta http-equiv="X-UA-Compatible" content="IE=edge">
<meta name="viewport" content="width=device-width, initial-scale=1">
<meta name="description" content="Home page of The Apache Software Foundation">

<link rel="apple-touch-icon" sizes="57x57" href="/favicons/apple-touch-icon-57x57.png">
```

```
<link rel="apple-touch-icon" sizes="60x60" href="/favicons/apple-touch-icon-60x60.png">
<link rel="apple-touch-icon" sizes="72x72" href="/favicons/apple-touch-icon-72x72.png">
<link rel="apple-touch-icon" sizes="76x76" href="/favicons/apple-touch-icon-76x76.png">
<link rel="apple-touch-icon" sizes="114x114" href="/favicons/apple-touch-icon-114x114.png">
<link rel="apple-touch-icon" sizes="120x120" href="/favicons/apple-touch-icon-120x120.png">
<link rel="apple-touch-icon" sizes="144x144" href="/favicons/apple-touch-icon-144x144.png">
<link rel="apple-touch-icon" sizes="152x152" href="/favicons/apple-touch-icon-152x152.png">
<link rel="apple-touch-icon" sizes="180x180" href="/favicons/apple-touch-icon-180x180.png">
<link rel="icon" type="image/png" href="/favicons/favicon-32x32.png" sizes="32x32">
<link rel="icon" type="image/png" href="/favicons/favicon-194x194.png" sizes="194x194">
<link rel="icon" type="image/png" href="/favicons/favicon-96x96.png" sizes="96x96">
<link rel="icon" type="image/png" href="/favicons/android-chrome-192x192.png" sizes="192x192">
<link rel="icon" type="image/png" href="/favicons/favicon-16x16.png" sizes="16x16">
<link rel="manifest" href="/favicons/manifest.json">
<link rel="shortcut icon" href="/favicons/favicon.ico">
<meta name="msapplication-TileColor" content="#603cba">
<meta name="msapplication-TileImage" content="/favicons/mstile-144x144.png">
<meta name="msapplication-config" content="/favicons/browserconfig.xml">
<meta name="theme-color" content="#303284">
```

```
<title>Apache License, Version 2.0</title>
<link href='https://fonts.googleapis.com/css?family=Source+Sans+Pro:400,700%7cDroid+Serif:400,700'
rel='stylesheet' type='text/css'>
<link href="/css/min.bootstrap.css" rel="stylesheet">
<link href="/css/styles.css" rel="stylesheet">
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-->
```

```
</head>
```

```
<body>
```

```
<!-- Navigation -->
```

```
<header>
```

```
<nav class="navbar navbar-default navbar-fixed-top">
```

```
<div class="container">
```

```
<div class="navbar-header">
```

```
<button class="navbar-toggle" type="button" data-toggle="collapse" data-target="#mainnav-collapse">
```

```
<span class="sr-only">Toggle navigation</span>
```

```
<span class="icon-bar"></span>
```

```

    <span class="icon-bar"></span>
    <span class="icon-bar"></span>
  </button>
  <a href="#" class="navbar-brand"><span class="glyphicon glyphicon-home"></span></a>
</div>
<div class="collapse navbar-collapse" id="mainnav-collapse">
  <div style="line-height:20px; padding-top:5px; float:left"><a href="/">Home</a>&nbsp;&raquo&nbsp;&nbsp;&nbsp;<a
href="/licenses/">Licenses</a></div>
  <ul class="nav navbar-nav navbar-right">
    <li class="dropdown">
      <a href="#" class="dropdown-toggle" data-toggle="dropdown">About <span class="caret"></span></a>
      <ul class="dropdown-menu"
role="menu">
        <li><a href="/foundation">Overview</a></li>
        <li><a href="/foundation/members.html">Members</a></li>
        <li><a href="/foundation/how-it-works.html">Process</a></li>
        <li><a href="/foundation/sponsorship.html">Sponsorship</a></li>
        <li><a href="/foundation/glossary.html">Glossary</a></li>
        <li><a href="/foundation/preFAQ.html">FAQ</a></li>
        <li><a href="/foundation/contact.html ">Contact</a></li>
      </ul>
    </li>
    <li><a href="/index.html#projects-list">Projects</a></li>
    <li class="dropdown">
      <a href="#" class="dropdown-toggle" data-toggle="dropdown">People <span class="caret"></span></a>
      <ul class="dropdown-menu" role="menu">
        <li><a href="http://people.apache.org/">Overview</a></li>
        <li><a href="http://people.apache.org/committer-index.html">Committers</a></li>
        <li><a href="/foundation/how-it-works.html#meritocracy">Meritocracy</a></li>
        <li><a href="/foundation/how-it-works.html#roles">Roles</a></li>
        <li><a href="http://planet.apache.org/">Planet Apache</a></li>
      </ul>
    </li>
    <li class="dropdown">
      <a href="#" class="dropdown-toggle" data-toggle="dropdown">Get Involved <span
class="caret"></span></a>
      <ul class="dropdown-menu" role="menu">
        <li><a href="/foundation/getinvolved.html">Overview</a></li>
        <li><a href="http://community.apache.org/">Community Development</a></li>
        <li><a href="http://helpwanted.apache.org/">Help Wanted</a></li>
        <li><a href="http://www.apachecon.com/">ApacheCon</a></li>
      </ul>
    </li>
    <li><a href="/dyn/closer.cgi">Download</a></li>
    <li class="dropdown">
      <a href="#" class="dropdown-toggle" data-toggle="dropdown">Support Apache <span
class="caret"></span></a>
      <ul class="dropdown-menu" role="menu">

```

```

<li><a href="/foundation/sponsorship.html">Sponsorship</a></li>
  <li><a href="/foundation/contributing.html">Donations</a></li>
  <li><a href="/foundation/buy_stuff.html">Buy Stuff</a></li>
  <li><a href="/foundation/thanks.html">Thanks</a></li>
</ul>
</li>
</ul>
</div>
</div>
</nav>
</header>
<!-- / Navigation -->
<div class="container">
<div class="row">
  <div class="col-md-9 col-sm-8 col-xs-12">
    
  </div>
  <div class="col-md-3 col-sm-4 col-xs-12">
    <div class="input-group" style="margin-bottom: 5px;">
      <script>
(function() {
  var cx = '005703438322411770421:5mgshgrgx2u';
  var gcse = document.createElement('script');
  gcse.type = 'text/javascript';
  gcse.async = true;
  gcse.src = (document.location.protocol == 'https:' ? 'https:' : 'http:') +
    '//cse.google.com/cse.js?cx=' + cx;
  var s = document.getElementsByTagName('script')[0];
  s.parentNode.insertBefore(gcse, s);
})();
</script>
  <gcse:searchbox-only></gcse:searchbox-only>
</div>
  <a role="button" class="btn btn-block btn-default btn-xs" href="/foundation/governance/">The Apache Way</a>
  <a role="button" class="btn btn-block btn-default btn-xs"
href="https://community.apache.org/contributors/">Contribute</a>
  <a role="button" class="btn btn-block btn-default btn-xs" href="/foundation/thanks.html">ASF Sponsors</a>
</div>
</div>
</div>
<div class="container"><style type="text/css">
/* The following code is added by mdx_elementid.py
  It was originally lifted from http://subversion.apache.org/style/site.css */
/*
* Hide class="elementid-permalink", except when an enclosing heading
* has the :hover property.
*/

```

```
.headerlink, .elementid-permalink {
visibility: hidden;
}
h2:hover > .headerlink, h3:hover > .headerlink, h1:hover > .headerlink, h6:hover > .headerlink, h4:hover >
.headerlink, h5:hover >
.headerlink, dt:hover > .elementid-permalink { visibility: visible }</style>
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```
</pre></div></div>
```

```
<!-- Footer -->
```

```
<footer class="bg-primary">
```

```
<div class="container">
```

```
<div class="row">
```

```
<br />
```

```
<div class="col-sm-1">
```

```
</div>
```

```
<div class="col-sm-2">
```

```
<h5 class="white">Community</h5>
```

```
<ul class="list-unstyled white" role="menu">
```

```
<li><a href="http://community.apache.org/">Overview</a></li>
```

```
<li><a href="/foundation/conferences.html">Conferences</a></li>
```

```
<li><a href="http://community.apache.org/gsoc.html">Summer of Code</a></li>
```

```
<li><a href="http://community.apache.org/newcomers/">Getting Started</a></li>
```

```
<li><a href="/foundation/how-it-works.html">The Apache Way</a></li>
```

```
<li><a href="/travel/">Travel Assistance</a></li>
```

```
<li><a href="/foundation/getinvolved.html">Get Involved</a></li>
```

```
<li><a href="http://community.apache.org/newbiefaq.html">Community  
FAQ</a></li>
```

```
</ul>
```

```
</div>
```

```
<div class="col-sm-2">
```

```
<h5 class="white">Innovation</h5>
```

```
<ul class="list-unstyled white" role="menu">
```

```
<li><a href="http://incubator.apache.org/">Incubator</a></li>
```

```
<li><a href="http://labs.apache.org/">Labs</a></li>
```

```
<li><a href="/licenses/">Licensing</a></li>
```

```
<li><a href="/foundation/license-faq.html">Licensing FAQ</a></li>
```

```
<li><a href="/foundation/marks/">Trademark Policy</a></li>
```

```
<li><a href="/foundation/contact.html">Contacts</a></li>
```

```
</ul>
```

```
</div>
```

```
<div class="col-sm-2">
```

```
<h5 class="white">Tech Operations</h5>
```

```
<ul class="list-unstyled white" role="menu">
```

```
<li><a href="/dev/">Developer Information</a></li>
```

```
<li><a href="/dev/infrastructure.html">Infrastructure</a></li>
```

```
<li><a href="/security/">Security</a></li>
```

```
<li><a href="http://status.apache.org">Status</a></li>
```

```
<li><a href="/foundation/contact.html">Contacts</a></li>
```

</ul>

</div>

<div class="col-sm-2">

<h5 class="white">Press</h5>

<ul class="list-unstyled white" role="menu">

<li><a href="/press/">Overview</a></li>

<li><a href="https://blogs.apache.org/">ASF News</a></li>

<li><a href="https://blogs.apache.org/foundation/">Announcements</a></li>

<li><a href="https://twitter.com/TheASF">Twitter Feed</a></li>

<li><a href="/press/#contact">Contacts</a></li>

</ul>

</div>

<div class="col-sm-2">

<h5 class="white">Legal</h5>

<ul class="list-unstyled white" role="menu">

<li><a href="/legal/">Legal Affairs</a></li>

<li><a href="/licenses/">Licenses</a></li>

<li><a href="/foundation/marks/">Trademark Policy</a></li>

<li><a href="/foundation/records/">Public Records</a></li>

<li><a href="/foundation/policies/privacy.html">Privacy Policy</a></li>

<li><a href="/licenses/exports/">Export Information</a></li>

<li><a

href="/foundation/license-faq.html">License/Distribution FAQ</a></li>

<li><a href="/foundation/contact.html">Contacts</a></li>

</ul>

</div>

<div class="col-sm-1">

</div>

</div>

<hr class="col-lg-12 hr-white" />

<div class="row">

<div class="col-lg-12">

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</div>

</div>

</div>

</footer>

<!-- / Footer -->

```
<script src="/js/jquery-2.1.1.min.js"></script>
<script src="/js/bootstrap.js"></script>
</body>
</html>
```

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```
<!DOCTYPE HTML PUBLIC "-//IETF//DTD HTML 2.0//EN">
```

```
<html><head>
```

```
<title>301 Moved Permanently</title>
```

```
</head><body>
```

```
<h1>Moved Permanently</h1>
```

```
<p>The document has moved <a href="https://opensource.org/licenses/mit-license.php">here</a>.</p>
```

```
</body></html>
```

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```
cd <SRC_PATH>
mvn package -DskipTests
mkdir /tmp/jars
mkdir /tmp/overrides
cp package-schema-registry/target/kafka-schema-registry-package-<VERSION>-package/share/java/schema-registry/*.jar /tmp/jars/
cp package-kafka-serde-tools/target/kafka-serde-tools-package-<VERSION>-package/share/java/kafka-serde-tools/*.jar /tmp/jars/
cd <LICENSE_TOOL_PATH>
./bin/run_license_job.bash -i /tmp/jars -l <SRC_PATH>/licenses -n <SRC_PATH>/notices -h <SRC_PATH>/licenses-and-notices.html -o /tmp/overrides
```

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```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
```

```
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
```

```
<html xmlns="http://www.w3.org/1999/xhtml">
```

```
<head>
```

```
<meta http-equiv="Content-Type" content="text/html; charset=iso-8859-1" />
```

```
<title>Untitled Document</title>
```

```
</head>
```

```
<body>
```

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.0 Transitional//EN">
```

```
<HTML>
```

```
<!-- @page { margin: 0.79in } P { margin-bottom: 0.08in } H1 { margin-top: 0in; margin-bottom: 0.17in; widows: 0; orphans: 0 } H1.western { font-family: "Times New Roman", serif; font-size: 12pt; font-weight: normal } H1.cjk { font-family: "Andale Sans UI"; font-size: 12pt; font-weight: normal } H1.clt { font-family: "Tahoma"; font-size: 12pt; font-weight: normal } -->
```

<BODY DIR="LTR">

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```
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```

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```
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Apache log4j

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```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN"
"http://www.w3.org/TR/html4/loose.dtd">
```

```
<html lang="en-US">
```

```
<head>
```

```
<title>GlassFish Dual License Header and License Notice GPL v2 and CDDL</title>
```

```
<meta http-equiv="content-type" content="text/html; charset=UTF-8">
```

```
<style type="text/css">
```

```
li { display: block; }
```

```
</style>
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```
</head>
```

```
<body leftmargin="0" topmargin="0" marginheight="0" marginwidth="0" bgcolor="#ffffff">
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```
<h3>COMMON DEVELOPMENT AND DISTRIBUTION LICENSE (CDDL) Version 1.0</h3>
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<li><p><b>1. Definitions.</b></p>
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<b>1.1. &ldquo;Contributor&rdquo;</b> means each individual or  
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<ul>

<li>

<p>

One line to give the program's name and a brief idea of what it does.

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<p>

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</p>

<p>

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<ul>

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<ul>

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<p>

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# Jackson JSON processor

Jackson is a high-performance, Free/Open Source JSON processing library. It was originally written by Tatu Saloranta (tatu.saloranta@iki.fi), and has been in development since 2007.

It is currently developed by a community of developers, as well as supported commercially by FasterXML.com.

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<meta name="viewport" content="width=device-width, initial-scale=1">
<meta name="description" content="Home page of The Apache Software Foundation">

<link rel="apple-touch-icon" sizes="57x57" href="/favicons/apple-touch-icon-57x57.png">
<link rel="apple-touch-icon" sizes="60x60" href="/favicons/apple-touch-icon-60x60.png">
<link rel="apple-touch-icon" sizes="72x72" href="/favicons/apple-touch-icon-72x72.png">
<link rel="apple-touch-icon" sizes="76x76" href="/favicons/apple-touch-icon-76x76.png">
<link rel="apple-touch-icon" sizes="114x114" href="/favicons/apple-touch-icon-114x114.png">
<link rel="apple-touch-icon" sizes="120x120" href="/favicons/apple-touch-icon-120x120.png">
<link rel="apple-touch-icon" sizes="144x144" href="/favicons/apple-touch-icon-144x144.png">
<link rel="apple-touch-icon" sizes="152x152" href="/favicons/apple-touch-icon-152x152.png">
<link rel="apple-touch-icon" sizes="180x180" href="/favicons/apple-touch-icon-180x180.png">
<link rel="icon" type="image/png" href="/favicons/favicon-32x32.png" sizes="32x32">
<link rel="icon" type="image/png" href="/favicons/favicon-194x194.png" sizes="194x194">
<link rel="icon" type="image/png" href="/favicons/favicon-96x96.png" sizes="96x96">
<link rel="icon" type="image/png" href="/favicons/android-chrome-192x192.png" sizes="192x192">
<link rel="icon" type="image/png" href="/favicons/favicon-16x16.png" sizes="16x16">
<link rel="manifest" href="/favicons/manifest.json">
<link rel="shortcut icon" href="/favicons/favicon.ico">
<meta name="msapplication-TileColor" content="#603cba">
<meta name="msapplication-TileImage" content="/favicons/mstile-144x144.png">
<meta name="msapplication-config" content="/favicons/browserconfig.xml">
<meta name="theme-color" content="#303284">

<title>Licenses</title>
<link href='https://fonts.googleapis.com/css?family=Source+Sans+Pro:400,700%7cDroid+Serif:400,700'
rel='stylesheet' type='text/css'>
<link href="/css/min.bootstrap.css" rel="stylesheet">
<link href="/css/styles.css" rel="stylesheet">
```

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</head>

<body>

<!--

Navigation -->

<header>

<nav class="navbar navbar-default navbar-fixed-top">

<div class="container">

<div class="navbar-header">

<button class="navbar-toggle" type="button" data-toggle="collapse" data-target="#mainnav-collapse">

<span class="sr-only">Toggle navigation</span>

<span class="icon-bar"></span>

<span class="icon-bar"></span>

<span class="icon-bar"></span>

</button>

<a href="#" class="navbar-brand"><span class="glyphicon glyphicon-home"></span></a>

</div>

<div class="collapse navbar-collapse" id="mainnav-collapse">

<div style="line-height:20px; padding-top:5px; float:left"><a href="/">Home</a>&nbsp;&raquo;&nbsp;&nbsp;<a href="/licenses/">Licenses</a></div>

<ul class="nav navbar-nav navbar-right">

<li class="dropdown">

<a href="#" class="dropdown-toggle" data-toggle="dropdown">About <span class="caret"></span></a>

<ul class="dropdown-menu" role="menu">

<li><a href="/foundation">Overview</a></li>

<li><a href="/foundation/members.html">Members</a></li>

<li><a href="/foundation/how-it-works.html">Process</a></li>

<li><a href="/foundation/sponsorship.html">Sponsorship</a></li>

<li><a href="/foundation/glossary.html">Glossary</a></li>

<li><a href="/foundation/preFAQ.html">FAQ</a></li>

<li><a href="/foundation/contact.html ">Contact</a></li>

</ul>

</li>

<li><a href="/index.html#projects-list">Projects</a></li>

<li class="dropdown">

<a href="#" class="dropdown-toggle" data-toggle="dropdown">People <span class="caret"></span></a>

<ul class="dropdown-menu" role="menu">

<li><a href="http://people.apache.org/">Overview</a></li>

```

<li><a href="http://people.apache.org/committer-index.html">Committers</a></li>
<li><a href="/foundation/how-it-works.html#meritocracy">Meritocracy</a></li>
<li><a href="/foundation/how-it-works.html#roles">Roles</a></li>
<li><a href="http://planet.apache.org/">Planet Apache</a></li>
</ul>
</li>
<li class="dropdown">
  <a href="#" class="dropdown-toggle" data-toggle="dropdown">Get Involved <span
class="caret"></span></a>
  <ul class="dropdown-menu" role="menu">
    <li><a href="/foundation/getinvolved.html">Overview</a></li>
    <li><a href="http://community.apache.org/">Community Development</a></li>
    <li><a href="http://helpwanted.apache.org/">Help Wanted</a></li>
    <li><a href="http://www.apachecon.com/">ApacheCon</a></li>
  </ul>
</li>
<li><a href="/dyn/closer.cgi">Download</a></li>
<li class="dropdown">
  <a href="#" class="dropdown-toggle" data-toggle="dropdown">Support Apache <span
class="caret"></span></a>
  <ul class="dropdown-menu" role="menu">
    <li><a href="/foundation/sponsorship.html">Sponsorship</a></li>
    <li><a href="/foundation/contributing.html">Donations</a></li>
    <li><a href="/foundation/buy_stuff.html">Buy Stuff</a></li>
    <li><a href="/foundation/thanks.html">Thanks</a></li>
  </ul>
</li>
</ul>
</div>
</div>
</nav>
</header>
<!-- / Navigation -->
<div class="container">
<div class="row">
  <div class="col-md-9 col-sm-8 col-xs-12">
    
  </div>
  <div class="col-md-3 col-sm-4 col-xs-12">
    <div class="input-group" style="margin-bottom: 5px;">
      <script>
(function() {
var cx = '005703438322411770421:5mgshgrgx2u';
var gcse = document.createElement('script');
gcse.type = 'text/javascript';
gcse.async = true;
gcse.src = (document.location.protocol == 'https:' ? 'https:' : 'http:') +
  '//cse.google.com/cse.js?cx=' + cx;

```

```

var s = document.getElementsByTagName('script')[0];
s.parentNode.insertBefore(gcse, s);
})();
</script>
<gcse:searchbox-only></gcse:searchbox-only>
</div>
<a role="button" class="btn btn-block btn-default btn-xs" href="/foundation/governance/">The Apache Way</a>
<a role="button" class="btn btn-block btn-default btn-xs"
href="https://community.apache.org/contributors/">Contribute</a>
<a role="button" class="btn btn-block btn-default btn-xs" href="/foundation/thanks.html">ASF Sponsors</a>
</div>
</div>
</div>
<div class="container"><style type="text/css">
/* The following code is added by mdx_elementid.py
It was originally lifted from http://subversion.apache.org/style/site.css */
/*
* Hide class="elementid-permalink", except when an enclosing heading
* has the :hover property.
*/
.headerlink, .elementid-permalink {
visibility: hidden;
}
h2:hover > .headerlink, h3:hover > .headerlink, h1:hover > .headerlink, h6:hover > .headerlink, h4:hover >
.headerlink, h5:hover > .headerlink, dt:hover
> .elementid-permalink { visibility: visible }</style>
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link">&para;</a></h3>
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goals of this license revision have been to reduce the number of frequently

```



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Please send only one document per email.

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```
<blockquote>
```

```
<p>gpg --armor --detach-sign icla.pdf</p>
```

```
</blockquote>
```

The above will create a file icla.pdf.asc. Send both the file and signature as attachments in the same email to [secretary@apache.org](mailto:secretary@apache.org). Please send only one document (file plus signature) per email. Please do not submit your public key to Apache. Instead, please upload your public key to [pgpkeys.mit.edu](http://pgpkeys.mit.edu).

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<!-- Footer -->

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- [Conferences](/foundation/conferences.html)
- [Summer of Code](http://community.apache.org/gsoc.html)
- [Getting Started](http://community.apache.org/newcomers/)
- [The Apache Way](/foundation/how-it-works.html)
- [Travel Assistance](/travel/)
- [Get Involved](/foundation/getinvolved.html)
- [Community FAQ](http://community.apache.org/newbiefaq.html)

[Innovation](#)

- [Incubator](http://incubator.apache.org/)
- [Labs](http://labs.apache.org/)
- [Licensing](/licenses/)
- [Licensing FAQ](/foundation/license-faq.html)
- [Trademark Policy](/foundation/marks/)
- [Contacts](/foundation/contact.html)

```
<div class="col-sm-2">
  <h5 class="white">Tech Operations</h5>
  <ul class="list-unstyled white" role="menu">
    <li><a href="/dev/">Developer Information</a></li>
    <li><a href="/dev/infrastructure.html">Infrastructure</a></li>
    <li><a href="/security/">Security</a></li>
    <li><a href="http://status.apache.org">Status</a></li>
    <li><a href="/foundation/contact.html">Contacts</a></li>
  </ul>
</div>
```

```
<div class="col-sm-2">
  <h5 class="white">Press</h5>
  <ul class="list-unstyled white" role="menu">
    <li><a href="/press/">Overview</a></li>
    <li><a href="https://blogs.apache.org/">ASF News</a></li>
    <li><a href="https://blogs.apache.org/foundation/">Announcements</a></li>
    <li><a href="https://twitter.com/TheASF">Twitter Feed</a></li>
    <li><a href="/press/#contact">Contacts</a></li>
  </ul>
</div>
```

```
<div class="col-sm-2">
  <h5 class="white">Legal</h5>
  <ul class="list-unstyled white" role="menu">
    <li><a href="/legal/">Legal Affairs</a></li>
    <li><a href="/licenses/">Licenses</a></li>
    <li><a href="/foundation/marks/">Trademark Policy</a></li>
    <li><a href="/foundation/records/">Public Records</a></li>
    <li><a href="/foundation/policies/privacy.html">Privacy
Policy</a></li>
    <li><a href="/licenses/exports/">Export Information</a></li>
    <li><a href="/foundation/license-faq.html">License/Distribution FAQ</a></li>
    <li><a href="/foundation/contact.html">Contacts</a></li>
  </ul>
</div>
```

```
<div class="col-sm-1">
</div>
```

```
</div>
<hr class="col-lg-12 hr-white" />
<div class="row">
  <div class="col-lg-12">
    <p class="text-center">Copyright © 1999-2016 The Apache Software Foundation, Licensed under the <a
class="white" href="http://www.apache.org/licenses/LICENSE-2.0">Apache License, Version 2.0</a>.</p>
    <p class="text-center">Apache and the Apache feather logo are trademarks of The Apache Software
Foundation.</p>
```

</div>

</div>

</div>

</footer>

<!-- / Footer -->

<script src="/js/jquery-2.1.1.min.js"></script>

<script src="/js/bootstrap.js"></script>

</body>

</html>

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Format: <http://www.debian.org/doc/packaging-manuals/copyright-format/1.0/>

Upstream-Name: schema-registry

Source: <https://github.com/confluentinc/schema-registry>

Files: \*

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# 1.275 json-utils 2.17.85

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```
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* /opt/cola/permits/1463018035_1667607008.204585/0/schema-registry-common-1-1-1-sources-jar/com/amazonaws/services/schemaregistry/utils/GlueSchemaRegistryUtils.java  
* /opt/cola/permits/1463018035_1667607008.204585/0/schema-registry-common-1-1-1-sources-jar/com/amazonaws/services/schemaregistry/common/GlueSchemaRegistryCompressionHandler.java  
*  
/opt/cola/permits/1463018035_1667607008.204585/0/schema-registry-common-1-1-1-sources-jar/com/amazonaws/services/schemaregistry/common/AWSSchemaRegistryClient.java
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\* /opt/cola/permits/1463018035\_1667607008.204585/0/schema-registry-common-1-1-1-sources-jar/com/amazonaws/services/schemaregistry/common/GlueSchemaRegistryCompressionFactory.java

\* /opt/cola/permits/1463018035\_1667607008.204585/0/schema-registry-common-1-1-1-sources-jar/com/amazonaws/services/schemaregistry/common/AWSSchemaRegistryGlueClientRetryPolicyHelper.java

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/opt/cola/permits/1463018035\_1667607008.204585/0/schema-registry-common-1-1-1-sources-jar/com/amazonaws/services/schemaregistry/caching/GlueSchemaRegistryDeserializerCache.java

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## 1.285 apache-client 2.17.85

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Other developers who have contributed code are:

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```
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="utf-8">
<meta http-equiv="X-UA-Compatible" content="IE=edge">
<meta name="viewport" content="width=device-width, initial-scale=1">
<meta name="description" content="Home page of The Apache Software Foundation">
```

```

<link rel="apple-touch-icon" sizes="57x57" href="/favicons/apple-touch-icon-57x57.png">
<link rel="apple-touch-icon" sizes="60x60" href="/favicons/apple-touch-icon-60x60.png">
<link rel="apple-touch-icon" sizes="72x72" href="/favicons/apple-touch-icon-72x72.png">
<link rel="apple-touch-icon" sizes="76x76" href="/favicons/apple-touch-icon-76x76.png">
<link rel="apple-touch-icon" sizes="114x114" href="/favicons/apple-touch-icon-114x114.png">
<link rel="apple-touch-icon" sizes="120x120" href="/favicons/apple-touch-icon-120x120.png">
<link rel="apple-touch-icon" sizes="144x144" href="/favicons/apple-touch-icon-144x144.png">
<link rel="apple-touch-icon" sizes="152x152" href="/favicons/apple-touch-icon-152x152.png">
<link rel="apple-touch-icon" sizes="180x180" href="/favicons/apple-touch-icon-180x180.png">
<link rel="icon" type="image/png" href="/favicons/favicon-32x32.png" sizes="32x32">
<link rel="icon" type="image/png" href="/favicons/favicon-194x194.png" sizes="194x194">
<link rel="icon" type="image/png" href="/favicons/favicon-96x96.png" sizes="96x96">
<link rel="icon" type="image/png" href="/favicons/android-chrome-192x192.png" sizes="192x192">
<link rel="icon" type="image/png" href="/favicons/favicon-16x16.png" sizes="16x16">
<link rel="manifest" href="/favicons/manifest.json">
<link rel="shortcut icon" href="/favicons/favicon.ico">
<meta name="msapplication-TileColor" content="#603cba">
<meta name="msapplication-TileImage" content="/favicons/mstile-144x144.png">
<meta name="msapplication-config" content="/favicons/browserconfig.xml">
<meta name="theme-color" content="#303284">

<title>Apache License, Version 2.0</title>
<link href='https://fonts.googleapis.com/css?family=Source+Sans+Pro:400,700%7cDroid+Serif:400,700'
rel='stylesheet' type='text/css'>
<link href="/css/min.bootstrap.css" rel="stylesheet">
<link href="/css/styles.css" rel="stylesheet">

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CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing
permissions and limitations under the License.
-->

</head>

<body>
<!-- Navigation -->
<header>
<nav class="navbar navbar-default navbar-fixed-top">
<div class="container">
<div class="navbar-header">
<button class="navbar-toggle" type="button" data-toggle="collapse" data-target="#mainnav-collapse">

```

```

    <span class="sr-only">Toggle navigation</span>
    <span class="icon-bar"></span>
    <span class="icon-bar"></span>
    <span class="icon-bar"></span>
  </button>
  <a href="#" class="navbar-brand"><span class="glyphicon glyphicon-home"></span></a>
</div>
<div class="collapse navbar-collapse" id="mainnav-collapse">
  <div style="line-height:20px; padding-top:5px; float:left"><a href="/">Home</a>&nbsp;&raquo;&nbsp;&nbsp;<a
href="/licenses/">Licenses</a></div>
  <ul class="nav navbar-nav navbar-right">
    <li class="dropdown">
      <a href="#" class="dropdown-toggle" data-toggle="dropdown">About <span class="caret"></span></a>
      <ul class="dropdown-menu"
role="menu">
        <li><a href="/foundation">Overview</a></li>
        <li><a href="/foundation/members.html">Members</a></li>
        <li><a href="/foundation/how-it-works.html">Process</a></li>
        <li><a href="/foundation/sponsorship.html">Sponsorship</a></li>
        <li><a href="/foundation/glossary.html">Glossary</a></li>
        <li><a href="/foundation/preFAQ.html">FAQ</a></li>
        <li><a href="/foundation/contact.html ">Contact</a></li>
      </ul>
    </li>
    <li><a href="/index.html#projects-list">Projects</a></li>
    <li class="dropdown">
      <a href="#" class="dropdown-toggle" data-toggle="dropdown">People <span class="caret"></span></a>
      <ul class="dropdown-menu" role="menu">
        <li><a href="http://people.apache.org/">Overview</a></li>
        <li><a href="http://people.apache.org/committer-index.html">Committers</a></li>
        <li><a href="/foundation/how-it-works.html#meritocracy">Meritocracy</a></li>
        <li><a href="/foundation/how-it-works.html#roles">Roles</a></li>
        <li><a href="http://planet.apache.org/">Planet Apache</a></li>
      </ul>
    </li>
    <li class="dropdown">
      <a href="#" class="dropdown-toggle" data-toggle="dropdown">Get Involved <span
class="caret"></span></a>
      <ul class="dropdown-menu" role="menu">
        <li><a href="/foundation/getinvolved.html">Overview</a></li>
        <li><a href="http://community.apache.org/">Community Development</a></li>
        <li><a href="http://helpwanted.apache.org/">Help Wanted</a></li>
        <li><a href="http://www.apachecon.com/">ApacheCon</a></li>
      </ul>
    </li>
    <li><a href="/dyn/closer.cgi">Download</a></li>
    <li class="dropdown">
      <a href="#" class="dropdown-toggle" data-toggle="dropdown">Support Apache <span

```

```

class="caret"></span></a>
  <ul class="dropdown-menu" role="menu">

    <li><a href="/foundation/sponsorship.html">Sponsorship</a></li>
    <li><a href="/foundation/contributing.html">Donations</a></li>
    <li><a href="/foundation/buy_stuff.html">Buy Stuff</a></li>
    <li><a href="/foundation/thanks.html">Thanks</a></li>
  </ul>
</li>
</ul>
</div>
</div>
</nav>
</header>
<!-- / Navigation -->
<div class="container">
  <div class="row">
    <div class="col-md-9 col-sm-8 col-xs-12">
      
    </div>
    <div class="col-md-3 col-sm-4 col-xs-12">
      <div class="input-group" style="margin-bottom: 5px;">
        <script>
(function() {
  var cx = '005703438322411770421:5mgshgrgx2u';
  var gcse = document.createElement('script');
  gcse.type = 'text/javascript';
  gcse.async = true;
  gcse.src = (document.location.protocol == 'https:' ? 'https:' : 'http:') +
    '//cse.google.com/cse.js?cx=' + cx;
  var s = document.getElementsByTagName('script')[0];
  s.parentNode.insertBefore(gcse, s);
})();
</script>
  <gcse:searchbox-only></gcse:searchbox-only>
</div>
  <a role="button" class="btn btn-block btn-default btn-xs" href="/foundation/governance/">The Apache Way</a>
  <a role="button" class="btn btn-block btn-default btn-xs"
href="https://community.apache.org/contributors/">Contribute</a>
  <a role="button" class="btn btn-block btn-default btn-xs" href="/foundation/thanks.html">ASF Sponsors</a>
</div>
</div>
</div>
<div class="container"><style type="text/css">
/* The following code is added by mdx_elementid.py
  It was originally lifted from http://subversion.apache.org/style/site.css */
/*
* Hide class="elementid-permalink", except when an enclosing heading

```

\* has the :hover property.

\*/

```
.headerlink, .elementid-permalink {  
  visibility: hidden;  
}
```

```
h2:hover > .headerlink, h3:hover > .headerlink, h1:hover > .headerlink, h6:hover > .headerlink, h4:hover >  
.headerlink, h5:hover >
```

```
.headerlink, dt:hover > .elementid-permalink { visibility: visible }</style>
```

```
<p>Apache License<br></br>Version 2.0, January 2004<br></br>
```

```
<a href="http://www.apache.org/licenses/">http://www.apache.org/licenses/</a> </p>
```

```
<p>TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION</p>
```

```
<p><strong><a name="definitions">1. Definitions</a></strong>.</p>
```

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```

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```

```
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power, direct or indirect, to cause the direction or management of such  
entity, whether by contract or otherwise, or (ii) ownership of fifty  
percent (50%)
```

```
or more of the outstanding shares, or (iii) beneficial  
ownership of such entity.</p>
```

```
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```

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```

```
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or translation of a Source form, including but not limited to compiled  
object code, generated documentation, and conversions to other media types.</p>
```

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```

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```

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```
</pre></div></div>
```

```
<!-- Footer -->
```

```
<footer class="bg-primary">
```

```
<div class="container">
```

```
<div class="row">
```

```
<br />
```

```
<div class="col-sm-1">
```

```
</div>
```

```
<div class="col-sm-2">
```

```
<h5 class="white">Community</h5>
```

```
<ul class="list-unstyled white" role="menu">
```

```
<li><a href="http://community.apache.org/">Overview</a></li>
```

```
<li><a href="/foundation/conferences.html">Conferences</a></li>
```

```
<li><a href="http://community.apache.org/gsoc.html">Summer of Code</a></li>
```

```
<li><a href="http://community.apache.org/newcomers/">Getting Started</a></li>
```

```
<li><a href="/foundation/how-it-works.html">The Apache Way</a></li>
```

```
<li><a href="/travel/">Travel Assistance</a></li>
```

```
<li><a href="/foundation/getinvolved.html">Get Involved</a></li>
```

```
<li><a href="http://community.apache.org/newbiefaq.html">Community  
FAQ</a></li>
```

```
</ul>
```

```
</div>
```

```
<div class="col-sm-2">
```

```
<h5 class="white">Innovation</h5>
```

```
<ul class="list-unstyled white" role="menu">
```

```
<li><a href="http://incubator.apache.org/">Incubator</a></li>
```

```
<li><a href="http://labs.apache.org/">Labs</a></li>
```

```
<li><a href="/licenses/">Licensing</a></li>
```

```
<li><a href="/foundation/license-faq.html">Licensing FAQ</a></li>
```

```
<li><a href="/foundation/marks/">Trademark Policy</a></li>
```

```
<li><a href="/foundation/contact.html">Contacts</a></li>
```

```
</ul>
```

```
</div>
```

```
<div class="col-sm-2">
```

```
<h5 class="white">Tech Operations</h5>
```

```
<ul class="list-unstyled white" role="menu">
```

```
<li><a href="/dev/">Developer Information</a></li>
```

```
<li><a href="/dev/infrastructure.html">Infrastructure</a></li>
```

```
<li><a href="/security/">Security</a></li>
```

```
<li><a href="http://status.apache.org">Status</a></li>
```

<li><a href="/foundation/contact.html">Contacts</a></li>

</ul>

</div>

<div class="col-sm-2">

<h5 class="white">Press</h5>

<ul class="list-unstyled white" role="menu">

<li><a href="/press/">Overview</a></li>

<li><a href="https://blogs.apache.org/">ASF News</a></li>

<li><a href="https://blogs.apache.org/foundation/">Announcements</a></li>

<li><a href="https://twitter.com/TheASF">Twitter Feed</a></li>

<li><a href="/press/#contact">Contacts</a></li>

</ul>

</div>

<div class="col-sm-2">

<h5 class="white">Legal</h5>

<ul class="list-unstyled white" role="menu">

<li><a href="/legal/">Legal Affairs</a></li>

<li><a href="/licenses/">Licenses</a></li>

<li><a href="/foundation/marks/">Trademark Policy</a></li>

<li><a href="/foundation/records/">Public Records</a></li>

<li><a href="/foundation/policies/privacy.html">Privacy Policy</a></li>

<li><a href="/licenses/exports/">Export Information</a></li>

<li><a

href="/foundation/license-faq.html">License/Distribution FAQ</a></li>

<li><a href="/foundation/contact.html">Contacts</a></li>

</ul>

</div>

<div class="col-sm-1">

</div>

</div>

<hr class="col-lg-12 hr-white" />

<div class="row">

<div class="col-lg-12">

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</div>

</div>

</div>

</footer>

<!-- / Footer -->

```
<script src="/js/jquery-2.1.1.min.js"></script>
<script src="/js/bootstrap.js"></script>
</body>
</html>
```

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```
<!DOCTYPE HTML PUBLIC "-//IETF//DTD HTML 2.0//EN">
<html><head>
<title>301 Moved Permanently</title>
</head><body>
<h1>Moved Permanently</h1>
<p>The document has moved <a href="https://opensource.org/licenses/mit-license.php">here</a>.</p>
</body></html>
```

The following commands were used to generate license and notice files. Replace <VERSION> with the Schema Registry version, <SRC\_PATH> with the path to the Schema Registry source directory, and <LICENSE\_TOOL\_PATH> with the path of the license tool.

```
cd <SRC_PATH>
mvn package -DskipTests
mkdir /tmp/jars
mkdir /tmp/overrides
cp package-schema-registry/target/kafka-schema-registry-package-<VERSION>-package/share/java/schema-registry/*.jar /tmp/jars/
cp package-kafka-serde-tools/target/kafka-serde-tools-package-<VERSION>-package/share/java/kafka-serde-tools/*.jar /tmp/jars/
cd <LICENSE_TOOL_PATH>
./bin/run_license_job.bash -i /tmp/jars -l <SRC_PATH>/licenses -n <SRC_PATH>/notices -h <SRC_PATH>/licenses-and-notices.html -o /tmp/overrides
```

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```
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```

```
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
```

```
<html xmlns="http://www.w3.org/1999/xhtml">
```

```
<head>
```

```
<meta http-equiv="Content-Type" content="text/html; charset=iso-8859-1" />
```

```
<title>Untitled Document</title>
```

```
</head>
```

```
<body>
```

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.0 Transitional//EN">
```

```
<HTML>
```

```
<!-- @page { margin: 0.79in } P { margin-bottom: 0.08in } H1 { margin-top: 0in; margin-bottom: 0.17in; widows:
```

0; orphans: 0 } H1.western { font-family: "Times New Roman", serif; font-size: 12pt; font-weight: normal } H1.cjk { font-family: "Andale Sans UI"; font-size: 12pt; font-weight: normal } H1.ctl { font-family: "Tahoma"; font-size: 12pt; font-weight: normal } -->  
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Apache log4j

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```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN"  
"http://www.w3.org/TR/html4/loose.dtd">
```

```
<html lang="en-US">
```

```
<head>
```

```
<title>GlassFish Dual License Header and License Notice GPL v2 and CDDL</title>
```

```
<meta http-equiv="content-type" content="text/html; charset=UTF-8">
```

```
<style type="text/css">
```

```
li { display: block; }
```

```
</style>
```

```
</head>
```

```
<body leftmargin="0" topmargin="0" marginheight="0" marginwidth="0" bgcolor="#ffffff">
```

```
<h3>COMMON DEVELOPMENT AND DISTRIBUTION LICENSE (CDDL) Version 1.0</h3>
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<li><p><b>1. Definitions.</b></p>
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<p>

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

</p>

<p>

Thus, it is not the intent of this section to claim rights or contest your rights to work written

entirely by you; rather, the intent is to

exercise the right to control the distribution of derivative or collective works based on the Program.

</p>

<p>

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

</p>

</li>

<li>

<p>

**3.** You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

</p>

<ul>

<li>

<p>

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

</p>

</li>

<li>

<p>

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

</p>

</li>

<li>

<p>

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

</p>

</li>

</ul>

<p>

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the

source code for all modules it contains, plus any

associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

</p>

<p>

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

</p>

</li>

<li>

<p>  
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</p>  
</li>

<li>

<p>  
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</p>  
</li>

<li>

<p>  
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</p>  
</li>

<li>

<p>  
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as a consequence you may not distribute the Program at all.

For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be

to refrain entirely from distribution of the Program.

</p>

<p>

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

</p>

<p>

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to the wide range of software

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</p>

<p>

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

</p>

</li>

<li>

<p>

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</p>

</li>

<li>

<p>

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</p>

<p>

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</p>

</li>

<li>

<p>

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free status of all derivatives of our free software and of promoting the

sharing and reuse of software generally.

</p>

</li>

<li>

<p>NO WARRANTY</p>

</li>

<li>

<p>

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YOU ASSUME THE COST OF ALL NECESSARY

SERVICING, REPAIR OR CORRECTION.

</p>

</li>

<li>

<p>

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DAMAGES.

</p>

</li>

<li>

<p>END OF TERMS AND CONDITIONS</p>

</li>

<li>

<p><b>How to Apply These Terms to Your New Programs</b></p>

<p>

If you develop a new program, and you want it to be of the greatest possible

use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

</p>

<p>

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

</p>

<ul>

<li>

<p>

One line to give the program's name and a brief idea of what it does.

</p>

</li>

<li>

<p>

Copyright (C) <year> <name of author>

</p>

</li>

<li>

<p>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

</p>

</li>

<li>

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</p>

</li>

<li>

<p>

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</p>

</li>

</ul>

<p>

Also add information on how to contact you by electronic and paper mail.

</p>

<p>

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

</p>

<ul>

<li>

<p>

Gnomovision version 69, Copyright (C) year name of author<br />

Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.

This is free software, and you are welcome to redistribute it under certain conditions; type `show c' for details.

</p>

</li>

</ul>

<p>

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

</p>

<p>

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

</p>

<ul>

<li>

<p>

Yoyodyne, Inc., hereby disclaims all copyright interest in the program `Gnomovision' (which makes passes at compilers) written by James Hacker.

</p>

<p>

signature of Ty Coon, 1 April 1989<br />

Ty Coon, President of Vice

</p>

</li>

</ul>

<p>

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

</p>

</li>

<li style="background-color:yellow;">

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"Sun designates this particular file as subject to the "Classpath" exception as provided by Sun in the License file that accompanied this code."

</p>

<p>

Linking this library statically or dynamically with other modules is making a combined work based on this library. Thus, the terms and conditions of the GNU General Public License Version 2 cover the whole combination.

</p>

<p>

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</p>

</li>

</ul>

</body>

</html>

# Jackson JSON processor

Jackson is a high-performance, Free/Open Source JSON processing library. It was originally written by Tatu Saloranta (tatu.saloranta@iki.fi), and has been in development since 2007. It is currently developed by a community of developers, as well as supported commercially by FasterXML.com.

## ## Licensing

Jackson core and extension components may be licensed under different licenses. To find the details that apply to this artifact see the accompanying LICENSE file. For more information, including possible other licensing options, contact FasterXML.com (<http://fasterxml.com>).

## ## Credits

A list of contributors may be found from CREDITS file, which is included in some artifacts (usually source distributions); but is always available from the source code management (SCM) system project uses.

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="utf-8">
  <meta http-equiv="X-UA-Compatible" content="IE=edge">
  <meta name="viewport" content="width=device-width, initial-scale=1">
  <meta name="description" content="Home page of The Apache Software Foundation">

  <link rel="apple-touch-icon" sizes="57x57" href="/favicons/apple-touch-icon-57x57.png">
  <link rel="apple-touch-icon" sizes="60x60" href="/favicons/apple-touch-icon-60x60.png">
  <link rel="apple-touch-icon" sizes="72x72" href="/favicons/apple-touch-icon-72x72.png">
  <link rel="apple-touch-icon" sizes="76x76" href="/favicons/apple-touch-icon-76x76.png">
  <link rel="apple-touch-icon" sizes="114x114" href="/favicons/apple-touch-icon-114x114.png">
  <link rel="apple-touch-icon" sizes="120x120" href="/favicons/apple-touch-icon-120x120.png">
  <link rel="apple-touch-icon" sizes="144x144" href="/favicons/apple-touch-icon-144x144.png">
  <link rel="apple-touch-icon" sizes="152x152" href="/favicons/apple-touch-icon-152x152.png">
  <link rel="apple-touch-icon" sizes="180x180" href="/favicons/apple-touch-icon-180x180.png">
  <link rel="icon" type="image/png" href="/favicons/favicon-32x32.png" sizes="32x32">
  <link rel="icon" type="image/png" href="/favicons/favicon-194x194.png" sizes="194x194">
  <link rel="icon" type="image/png" href="/favicons/favicon-96x96.png" sizes="96x96">
  <link rel="icon" type="image/png" href="/favicons/android-chrome-192x192.png" sizes="192x192">
  <link rel="icon" type="image/png" href="/favicons/favicon-16x16.png" sizes="16x16">
  <link rel="manifest" href="/favicons/manifest.json">
  <link rel="shortcut icon" href="/favicons/favicon.ico">
  <meta name="msapplication-TileColor" content="#603cba">
  <meta name="msapplication-TileImage" content="/favicons/mstile-144x144.png">
  <meta name="msapplication-config" content="/favicons/browserconfig.xml">
  <meta name="theme-color" content="#303284">

</head>
<title>Licenses</title>
```

```
<link href='https://fonts.googleapis.com/css?family=Source+Sans+Pro:400,700%7cDroid+Serif:400,700'
rel='stylesheet' type='text/css'>
<link href="/css/min.bootstrap.css" rel="stylesheet">
<link href="/css/styles.css" rel="stylesheet">
```

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```
</head>
```

```
<body>
```

```
<!--
```

```
Navigation -->
```

```
<header>
```

```
<nav class="navbar navbar-default navbar-fixed-top">
```

```
<div class="container">
```

```
<div class="navbar-header">
```

```
<button class="navbar-toggle" type="button" data-toggle="collapse" data-target="#mainnav-collapse">
```

```
<span class="sr-only">Toggle navigation</span>
```

```
<span class="icon-bar"></span>
```

```
<span class="icon-bar"></span>
```

```
<span class="icon-bar"></span>
```

```
</button>
```

```
<a href="#" class="navbar-brand"><span class="glyphicon glyphicon-home"></span></a>
```

```
</div>
```

```
<div class="collapse navbar-collapse" id="mainnav-collapse">
```

```
<div style="line-height:20px; padding-top:5px; float:left"><a href="/">Home</a>&nbsp;&raquo;&nbsp;&nbsp;<a href="/licenses/">Licenses</a></div>
```

```
<ul class="nav navbar-nav navbar-right">
```

```
<li class="dropdown">
```

```
<a href="#" class="dropdown-toggle" data-toggle="dropdown">About <span class="caret"></span></a>
```

```
<ul class="dropdown-menu" role="menu">
```

```
<li><a href="/foundation">Overview</a></li>
```

```
<li><a href="/foundation/members.html">Members</a></li>
```

```
<li><a href="/foundation/how-it-works.html">Process</a></li>
```

```
<li><a href="/foundation/sponsorship.html">Sponsorship</a></li>
```

```
<li><a href="/foundation/glossary.html">Glossary</a></li>
```

```
<li><a href="/foundation/preFAQ.html">FAQ</a></li>
```

```
<li><a href="/foundation/contact.html ">Contact</a></li>
```

```
</ul>
```

```
</li>
```

```

<li><a href="/index.html#projects-list">Projects</a></li>
<li class="dropdown">
  <a href="#" class="dropdown-toggle" data-toggle="dropdown">People <span class="caret"></span></a>
  <ul class="dropdown-menu" role="menu">
<li><a href="http://people.apache.org/">Overview</a></li>
<li><a href="http://people.apache.org/committer-index.html">Committers</a></li>
<li><a href="/foundation/how-it-works.html#meritocracy">Meritocracy</a></li>
<li><a href="/foundation/how-it-works.html#roles">Roles</a></li>
<li><a href="http://planet.apache.org/">Planet Apache</a></li>
  </ul>
</li>
<li class="dropdown">
  <a href="#" class="dropdown-toggle" data-toggle="dropdown">Get Involved <span
class="caret"></span></a>
  <ul class="dropdown-menu" role="menu">
    <li><a href="/foundation/getinvolved.html">Overview</a></li>
<li><a href="http://community.apache.org/">Community Development</a></li>
    <li><a href="http://helpwanted.apache.org/">Help Wanted</a></li>
<li><a href="http://www.apachecon.com/">ApacheCon</a></li>
  </ul>
</li>
<li><a href="/dyn/closer.cgi">Download</a></li>
<li class="dropdown">
  <a href="#" class="dropdown-toggle" data-toggle="dropdown">Support Apache <span
class="caret"></span></a>
  <ul class="dropdown-menu" role="menu">
<li><a href="/foundation/sponsorship.html">Sponsorship</a></li>
<li><a href="/foundation/contributing.html">Donations</a></li>
<li><a href="/foundation/buy_stuff.html">Buy Stuff</a></li>
<li><a href="/foundation/thanks.html">Thanks</a></li>
  </ul>
</li>
</ul>
</div>
</div>
</nav>
</header>
<!-- / Navigation -->
<div class="container">
<div class="row">
<div class="col-md-9 col-sm-8 col-xs-12">
  
</div>
<div class="col-md-3 col-sm-4 col-xs-12">
  <div class="input-group" style="margin-bottom: 5px;">
  <script>
(function() {
var cx = '005703438322411770421:5mgshgrgx2u';

```

```

var gcse = document.createElement('script');
gcse.type = 'text/javascript';
gcse.async = true;
gcse.src = (document.location.protocol == 'https:' ? 'https:' : 'http:') +
  '//cse.google.com/cse.js?cx=' + cx;
var s = document.getElementsByTagName('script')[0];
s.parentNode.insertBefore(gcse, s);
})();
</script>
<gcse:searchbox-only></gcse:searchbox-only>
</div>
<a role="button" class="btn btn-block btn-default btn-xs" href="/foundation/governance/">The Apache Way</a>
<a role="button" class="btn btn-block btn-default btn-xs"
href="https://community.apache.org/contributors/">Contribute</a>
<a role="button" class="btn btn-block btn-default btn-xs" href="/foundation/thanks.html">ASF Sponsors</a>
</div>
</div>
</div>
<div class="container"><style type="text/css">
/* The following code is added by mdx_elementid.py
It was originally lifted from http://subversion.apache.org/style/site.css */
/*
* Hide class="elementid-permalink", except when an enclosing heading
* has the :hover property.
*/
.headerlink, .elementid-permalink {
visibility: hidden;
}
h2:hover > .headerlink, h3:hover > .headerlink, h1:hover > .headerlink, h6:hover > .headerlink, h4:hover >
.headerlink, h5:hover > .headerlink, dt:hover
> .elementid-permalink { visibility: visible }</style>
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of the documents
listed below.</p>
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```



link">&para;</a></h3>

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<p>The

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<p>The 1.1 version of the Apache License was approved by the ASF in 2000. The

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<p>The ICLA is not tied to any employer you may have, so it is recommended to use one's personal email address in the contact details, rather than an @work address.</p>

<p>Your Full name will be published unless you provide an alternative Public name. For example if your full name is Andrew Bernard Charles Dickens, but you wish to be known as Andrew Dickens, please enter the latter as your Public name.</p>

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<blockquote>

<p>gpg --armor --detach-sign icla.pdf</p>

</blockquote>

<p>The above will create

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**Footer**

**Community**

**Overview**

**Conferences**

**Summer of Code**

**Getting Started**

**The Apache Way**

**Travel Assistance**

**Get Involved**

**Community FAQ**

**Innovation**

**Incubator**

**Labs**

**Licensing**

**Licensing FAQ**

```
<li><a href="/foundation/marks/">Trademark Policy</a></li>
<li><a href="/foundation/contact.html">Contacts</a></li>
</ul>
</div>
```

```
<div class="col-sm-2">
<h5 class="white">Tech Operations</h5>
<ul class="list-unstyled white" role="menu">
<li><a href="/dev/">Developer Information</a></li>
<li><a href="/dev/infrastructure.html">Infrastructure</a></li>
<li><a href="/security/">Security</a></li>
<li><a href="http://status.apache.org">Status</a></li>
<li><a href="/foundation/contact.html">Contacts</a></li>
</ul>
</div>
```

```
<div class="col-sm-2">
<h5 class="white">Press</h5>
<ul class="list-unstyled white" role="menu">
<li><a href="/press/">Overview</a></li>
<li><a href="https://blogs.apache.org/">ASF News</a></li>
<li><a href="https://blogs.apache.org/foundation/">Announcements</a></li>
<li><a href="https://twitter.com/TheASF">Twitter Feed</a></li>
<li><a href="/press/#contact">Contacts</a></li>
</ul>
</div>
```

```
<div class="col-sm-2">
<h5 class="white">Legal</h5>
<ul class="list-unstyled white" role="menu">
<li><a href="/legal/">Legal Affairs</a></li>
<li><a href="/licenses/">Licenses</a></li>
<li><a href="/foundation/marks/">Trademark Policy</a></li>
<li><a href="/foundation/records/">Public Records</a></li>
<li><a href="/foundation/policies/privacy.html">Privacy
Policy</a></li>
<li><a href="/licenses/exports/">Export Information</a></li>
<li><a href="/foundation/license-faq.html">License/Distribution FAQ</a></li>
<li><a href="/foundation/contact.html">Contacts</a></li>
</ul>
</div>
```

```
<div class="col-sm-1">
</div>
```

```
</div>
<hr class="col-lg-12 hr-white" />
<div class="row">
```

```
<div class="col-lg-12">
  <p class="text-center">Copyright © 2016 The Apache Software Foundation, Licensed under the <a
class="white" href="http://www.apache.org/licenses/LICENSE-2.0">Apache License, Version 2.0</a>.</p>
  <p class="text-center">Apache and the Apache feather logo are trademarks of The Apache Software
Foundation.</p>
</div>
</div>
</div>
```

```
</footer>
```

```
<!-- / Footer -->
```

```
<script src="/js/jquery-2.1.1.min.js"></script>
<script src="/js/bootstrap.js"></script>
</body>
</html>
```

Format: <http://www.debian.org/doc/packaging-manuals/copyright-format/1.0/>

Upstream-Name: schema-registry

Source: <https://github.com/confluentinc/schema-registry>

Files: \*

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# 1.290 aws-json-protocol 2.16.92

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```
* /opt/cola/permits/1463015750_1667606408.5553079/0/schema-registry-build-tools-1-1-1-sources-jar/META-INF/maven/software.amazon.glue/schema-registry-build-tools/pom.xml
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```
* /opt/cola/permits/1463015750_1667606408.5553079/0/schema-registry-build-tools-1-1-1-sources-jar/checkstyle.xml
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# 1.293 commons-compress 1.21.0.redhat-00001

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## 1.294 common-config 4.1.0

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# 1.297 metrics-jvm 4.1.33

## 1.297.1 Available under license :

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Manifest-Version: 1.0

Automatic-Module-Name: com.codahale.metrics.jvm

Build-Jdk-Spec: 1.8

Bundle-Description: A set of classes which allow you to monitor critical aspects of your Java Virtual Machine using Metrics.

Bundle-License: <https://www.apache.org/licenses/LICENSE-2.0.html>

Bundle-ManifestVersion: 2

Bundle-Name: JVM Integration for Metrics

Bundle-SymbolicName: io.dropwizard.metrics.jvm

Bundle-Version: 4.1.33

Created-By: Apache Maven Bundle Plugin 5.1.8

Export-Package: com.codahale.metrics.jvm;uses:="com.codahale.metrics,javax.management";version="4.1.33"  
Implementation-Title: JVM Integration for Metrics  
Implementation-Version: 4.1.33  
Import-Package: org.slf4j;version="[1.6.0,2.0.0)",com.sun.management;resolution:=optional,com.codahale.metrics;version="[4.1,5)",javax.management  
Require-Capability: osgi.ee;filter="(&(osgi.ee=JavaSE)(version=1.8))"  
Tool: Bnd-6.3.1.202206071316

Found in path(s):

\* /opt/cola/permits/1480501873\_1668971438.6468465/0/metrics-jvm-4-1-33-jar/META-INF/MANIFEST.MF

## 1.298 dropwizard-logging 2.0.34

### 1.298.1 Available under license :

Apache-2.0

## 1.299 dropwizard-servlets 2.0.34

### 1.299.1 Available under license :

Apache-2.0

## 1.300 dropwizard-util 2.0.34

### 1.300.1 Available under license :

Apache-2.0

## 1.301 metrics-servlets 4.1.33

### 1.301.1 Available under license :

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Manifest-Version: 1.0

Automatic-Module-Name: com.codahale.metrics.servlets

Build-Jdk-Spec: 1.8

Bundle-Description: A set of utility servlets for Metrics, allowing you to expose valuable information about your production environment.

Bundle-License: <https://www.apache.org/licenses/LICENSE-2.0.html>

Bundle-ManifestVersion: 2

Bundle-Name: Metrics Utility Servlets

Bundle-SymbolicName: io.dropwizard.metrics.servlets

Bundle-Version: 4.1.33

Created-By: Apache Maven Bundle Plugin 5.1.8  
Export-Package: com.codahale.metrics.servlets;uses="com.codahale.metrics,com.codahale.metrics.health,com.fasterxml.jackson.databind,javax.servlet,javax.servlet.http";version="4.1.33"  
Implementation-Title: Metrics Utility Servlets  
Implementation-Version: 4.1.33  
Import-Package: javax.servlet;version="[2.5.0,4.0.0)",javax.servlet.http;version="[2.5.0,4.0.0)",com.codahale.metrics;version="[4.1,5)",com.codahale.metrics.health;version="[4.1,5)",com.codahale.metrics.json;version="[4.1,5)",com.codahale.metrics.jvm;version="[4.1,5)",com.fasterxml.jackson.databind;version="[2.9,3)",com.fasterxml.jackson.databind.util;version="[2.9,3)",com.papertrail.profiler;version="[1.1,2)"  
Require-Capability: osgi.ee;filter="(&(osgi.ee=JavaSE)(version=1.8))"  
Tool: Bnd-6.3.1.202206071316

Found in path(s):

\* /opt/cola/permits/1480501845\_1668971417.0605376/0/metrics-servlets-4-1-33-jar/META-INF/MANIFEST.MF

# 1.302 drop-wizard-metrics 2.0.34

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# 1.303 dropwizard-jersey 2.0.34

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# 1.304 metrics-jetty 4.1.33

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Manifest-Version: 1.0

Automatic-Module-Name: com.codahale.metrics.jetty9

Build-Jdk-Spec: 1.8

Bundle-Description: A set of extensions for Jetty 9.3 and higher which  
provide instrumentation of thread pools, connector metrics, a  
nd application latency and utilization.

Bundle-License: <https://www.apache.org/licenses/LICENSE-2.0.html>

Bundle-ManifestVersion: 2

Bundle-Name: Metrics Integration for Jetty 9.3 and higher

Bundle-SymbolicName: io.dropwizard.metrics.jetty9

Bundle-Version: 4.1.33

Created-By: Apache Maven Bundle Plugin 5.1.8

Export-Package: com.codahale.metrics.jetty9;uses:="com.codahale.metric  
s,javax.servlet,javax.servlet.http,org.eclipse.jetty.io,org.eclipse.j



etty.server,org.eclipse.jetty.server.handler,org.eclipse.jetty.util.annotation,org.eclipse.jetty.util.component,org.eclipse.jetty.util.thread";version="4.1.33"  
Implementation-Title: Metrics Integration for Jetty 9.3 and higher  
Implementation-Version:  
4.1.33  
Import-Package: javax.servlet;version="[2.5.0,4.0.0)",javax.servlet.http;version="[2.5.0,4.0.0)",com.codahale.metrics;version="[4.1,5)",org.eclipse.jetty.http;version="[9.4,10)",org.eclipse.jetty.io;version="[9.4,10)",org.eclipse.jetty.server;version="[9.4,10)",org.eclipse.jetty.server.handler;version="[9.4,10)",org.eclipse.jetty.util.annotation;version="[9.4,10)",org.eclipse.jetty.util.component;version="[9.4,10)",org.eclipse.jetty.util.thread;version="[9.4,10)"  
Require-Capability: osgi.ee;filter="(&(osgi.ee=JavaSE)(version=1.8))"  
Tool: Bnd-6.3.1.202206071316

Found in path(s):

\* /opt/cola/permits/1480501782\_1668971450.344051/0/metrics-jetty9-4-1-33-jar/META-INF/MANIFEST.MF

## 1.305 metrics-logback 4.1.33

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Manifest-Version: 1.0  
Automatic-Module-Name: com.codahale.metrics.logback  
Build-Jdk-Spec: 1.8  
Bundle-Description: An instrumented appender for Logback.  
Bundle-License: <https://www.apache.org/licenses/LICENSE-2.0.html>  
Bundle-ManifestVersion: 2  
Bundle-Name: Metrics Integration for Logback  
Bundle-SymbolicName: io.dropwizard.metrics.logback  
Bundle-Version: 4.1.33  
Created-By: Apache Maven Bundle Plugin 5.1.8  
Export-Package: com.codahale.metrics.logback;uses="ch.qos.logback.classic.spi,ch.qos.logback.core,com.codahale.metrics";version="4.1.33"  
Implementation-Title: Metrics Integration for Logback  
Implementation-Version: 4.1.33  
Import-Package: ch.qos.logback.classic;version="[1.2,2)",ch.qos.logback.classic.spi;version="[1.2,2)",ch.qos.logback.core;version="[1.2,2)",com.codahale.metrics;version="[4.1,5)"  
Require-Capability: osgi.ee;filter="(&(osgi.ee=JavaSE)(version=1.8))"  
Tool: Bnd-6.3.1.202206071316

Found in path(s):

\*

# 1.306 dropwizard-request-logging 2.0.34

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# 1.307 metrics-jmx 4.1.33

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Manifest-Version: 1.0

Automatic-Module-Name: com.codahale.metrics.jmx

Build-Jdk-Spec: 1.8

Bundle-Description: A set of classes which allow you to report metrics via JMX.

Bundle-License: <https://www.apache.org/licenses/LICENSE-2.0.html>

Bundle-ManifestVersion: 2

Bundle-Name: Metrics Integration with JMX

Bundle-SymbolicName: io.dropwizard.metrics.jmx

Bundle-Version: 4.1.33

Created-By: Apache Maven Bundle Plugin 5.1.8

Export-Package: com.codahale.metrics.jmx;uses:="com.codahale.metrics,javax.management";version="4.1.33"  
Implementation-Title: Metrics Integration with JMX  
Implementation-Version: 4.1.33  
Import-Package: org.slf4j;version="[1.6.0,2.0.0)",com.codahale.metrics;version="[4.1,5)",javax.management  
Require-Capability: osgi.ee;filter:="(&(osgi.ee=JavaSE)(version=1.8))"  
Tool: Bnd-6.3.1.202206071316

Found in path(s):

\* /opt/cola/permits/1480501768\_1668971443.6143289/0/metrics-jmx-4-1-33-jar/META-INF/MANIFEST.MF

## 1.308 dropwizard-validation 2.0.34

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## 1.311 dropwizard-jetty 2.0.34

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## 1.312 metrics-json 4.1.33

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Manifest-Version: 1.0

Automatic-Module-Name: com.codahale.metrics.json

Build-Jdk-Spec: 1.8

Bundle-Description: A set of Jackson modules which provide serializers  
for most Metrics classes.

Bundle-License: <https://www.apache.org/licenses/LICENSE-2.0.html>

Bundle-ManifestVersion: 2

Bundle-Name: Jackson Integration for Metrics

Bundle-SymbolicName: io.dropwizard.metrics.json

Bundle-Version: 4.1.33

Created-By: Apache Maven Bundle Plugin 5.1.8

Export-Package: com.codahale.metrics.json;uses:="com.codahale.metrics,  
com.fasterxml.jackson.core,com.fasterxml.jackson.databind";version="4  
.1.33"

Implementation-Title: Jackson Integration for Metrics

Implementation-Version: 4.1.33

Import-Package: com.codahale.metrics;version="[4.1,5)",com.codahale.me  
trics.health;version="[4.1,5)";resolution:=optional,com.fasterxml.jac  
kson.core;version="[2.9,3)",com.fasterxml.jackson.databind;version="[  
2.9,3)",com.fasterxml.jackson.databind.module;version="[2.9,3)",com.f  
asterxml.jackson.databind.ser;version="[2.9,3)",com.fasterxml.jackson  
.databind.ser.std;version="[2.9,3)"

Require-Capability: osgi.ee;filter="(&(osgi.ee=JavaSE)(version=1.8))"

Tool: Bnd-6.3.1.202206071316

Found in path(s):

\* /opt/cola/permits/1480501740\_1668971447.245473/0/metrics-json-4-1-33-jar/META-INF/MANIFEST.MF

## 1.313 metrics-jersey2 4.1.33

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Manifest-Version: 1.0  
Automatic-Module-Name: com.codahale.metrics.jersey2  
Build-Jdk-Spec: 1.8  
Bundle-Description: A set of class providing Metrics integration for Jersey, the reference JAX-RS implementation.  
Bundle-License: <https://www.apache.org/licenses/LICENSE-2.0.html>  
Bundle-ManifestVersion: 2  
Bundle-Name: Metrics Integration for Jersey 2.x  
Bundle-SymbolicName: io.dropwizard.metrics.jersey2  
Bundle-Version: 4.1.33  
Created-By: Apache Maven Bundle Plugin 5.1.8  
Export-Package: com.codahale.metrics.jersey2;uses:="com.codahale.metrics.javax.ws.rs.core,javax.ws.rs.ext,org.glassfish.jersey.server.model,org.glassfish.jersey.server.monitoring";version="4.1.33"  
Implementation-Title: Metrics Integration for Jersey 2.x  
Implementation-Version: 4.1.33  
Import-Package: com.codahale.metrics;version="[4.1,5)",com.codahale.metrics.annotation;version="[4.1,5)",javax.ws.rs.core;version="[2.1,3)",javax.ws.rs.ext;version="[2.1,3)",org.glassfish.jersey.server;version="[2.36,3)",org.glassfish.jersey.server.model;version="[2.36,3)",org.glassfish.jersey.server.monitoring;version="[2.36,3)"  
Require-Capability: osgi.ee;filter="(&(osgi.ee=JavaSE)(version=1.8))"  
Tool: Bnd-6.3.1.202206071316

Found in path(s):

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# 1.315 device-mapper-multipath 0.4.9-136.el7\_9

## 1.315.1 Available under license :

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# 1.316 jctools-core 4.0.1

## 1.316.1 Available under license :

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Manifest-Version: 1.0  
Bnd-LastModified: 1662622707903  
Build-Jdk-Spec: 11  
Bundle-Description: Java Concurrency Tools Core Library  
Bundle-License: <http://www.apache.org/licenses/LICENSE-2.0.txt>  
Bundle-ManifestVersion: 2  
Bundle-Name: Java Concurrency Tools Core Library  
Bundle-SymbolicName: org.jctools.core  
Bundle-Version: 4.0.1  
Created-By: Apache Maven Bundle Plugin 5.1.6  
Export-Package: org.jctools.maps;version="4.0.1",org.jctools.util;uses  
:="sun.misc";version="4.0.1",org.jctools.queues;version="4.0.1",org.j  
ctools.queues.atomic;uses="org.jctools.queues";version="4.0.1",org.j  
ctools.queues.unpadded;uses="org.jctools.queues";version="4.0.1",org  
.jctools.counters;version="4.0.1"  
Import-Package: sun.misc;resolution:=optional  
Require-Capability: osgi.ee;filter="(&(osgi.ee=JavaSE)(version=1.6))"  
Tool: Bnd-6.2.0.202202251641

Found in path(s):

\* /opt/cola/permits/1500645298\_1670406227.9308958/0/jctools-core-4-0-1-jar/META-INF/MANIFEST.MF

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\* /opt/cola/permits/1500645298\_1670406227.9308958/0/jctools-core-4-0-1-jar/META-  
INF/maven/org.jctools/jctools-core/pom.xml

# 1.317 aws-json-protocol 2.17.52

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lib/libgss/g\_userok.c  
lib/libgss/g\_utils.c  
lib/libgss/g\_verify.c  
lib/libgss/gssd\_pname\_to\_uid.c  
uts/common/gssapi/include/gssapi\_err\_generic.h  
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The implementations of GSSAPI mechglue in GSSAPI-SPNEGO in "src/lib/gssapi", including the following files:

lib/gssapi/generic/gssapi\_err\_generic.et  
lib/gssapi/mechglue/g\_accept\_sec\_context.c  
lib/gssapi/mechglue/g\_acquire\_cred.c  
lib/gssapi/mechglue/g\_canon\_name.c  
lib/gssapi/mechglue/g\_compare\_name.c  
lib/gssapi/mechglue/g\_context\_time.c  
lib/gssapi/mechglue/g\_delete\_sec\_context.c  
lib/gssapi/mechglue/g\_dsp\_name.c  
lib/gssapi/mechglue/g\_dsp\_status.c  
lib/gssapi/mechglue/g\_dup\_name.c  
lib/gssapi/mechglue/g\_exp\_sec\_context.c  
lib/gssapi/mechglue/g\_export\_name.c

lib/gssapi/mechglue/g\_glue.c  
lib/gssapi/mechglue/g\_imp\_name.c  
lib/gssapi/mechglue/g\_imp\_sec\_context.c  
lib/gssapi/mechglue/g\_init\_sec\_context.c  
lib/gssapi/mechglue/g\_initialize.c  
lib/gssapi/mechglue/g\_inquire\_context.c  
lib/gssapi/mechglue/g\_inquire\_cred.c  
lib/gssapi/mechglue/g\_inquire\_names.c  
lib/gssapi/mechglue/g\_process\_context.c  
lib/gssapi/mechglue/g\_rel\_buffer.c  
lib/gssapi/mechglue/g\_rel\_cred.c  
lib/gssapi/mechglue/g\_rel\_name.c  
lib/gssapi/mechglue/g\_rel\_oid\_set.c  
lib/gssapi/mechglue/g\_seal.c  
lib/gssapi/mechglue/g\_sign.c  
lib/gssapi/mechglue/g\_store\_cred.c  
lib/gssapi/mechglue/g\_unseal.c  
lib/gssapi/mechglue/g\_userok.c  
lib/gssapi/mechglue/g\_utils.c  
lib/gssapi/mechglue/g\_verify.c  
lib/gssapi/mechglue/gssd\_pname\_to\_uid.c  
lib/gssapi/mechglue/mglueP.h  
lib/gssapi/mechglue/oid\_ops.c  
lib/gssapi/spnego/gssapiP\_spnego.h  
lib/gssapi/spnego/spnego\_mech.c

and the initial implementation of incremental propagation, including  
the

following new or changed files:

include/iprop\_hdr.h  
kadmin/server/ipropd\_svc.c  
lib/kdb/iprop.x  
lib/kdb/kdb\_convert.c  
lib/kdb/kdb\_log.c  
lib/kdb/kdb\_log.h  
lib/krb5/error\_tables/kdb5\_err.et  
slave/kpropd\_rpc.c  
slave/kproplog.c

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Manifest-Version: 1.0  
Automatic-Module-Name: com.codahale.metrics.caffeine  
Build-Jdk-Spec: 1.8  
Bundle-Description: Metrics Integration for Caffeine.  
Bundle-License: <https://www.apache.org/licenses/LICENSE-2.0.html>  
Bundle-ManifestVersion: 2  
Bundle-Name: Metrics Integration for Caffeine  
Bundle-SymbolicName: io.dropwizard.metrics.caffeine  
Bundle-Version: 4.1.33  
Created-By: Apache Maven Bundle Plugin 5.1.8  
Export-Package: com.codahale.metrics.caffeine;uses:="com.codahale.metrics,com.github.benmanes.caffeine.cache,com.github.benmanes.caffeine.cache.stats,org.checkerframework.checker.index.qual";version="4.1.33"  
Implementation-Title: Metrics Integration for Caffeine  
Implementation-Version: 4.1.33  
Import-Package: com.codahale.metrics;version="[4.1,5)",com.github.benmanes.caffeine.cache;version="[2.9,3)",com.github.benmanes.caffeine.cache.stats;version="[2.9,3)",org.checkerframework.checker.index.qual;version="[3.24,4)"  
Require-Capability: osgi.ee;filter:="(&(osgi.ee=JavaSE)(version=1.8))"  
Tool: Bnd-6.3.1.202206071316

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\* /opt/cola/permits/1567311949\_1676541721.967031/0/schema-registry-serde-1-1-8-sources-jar/com/amazonaws/services/schemaregistry/serializers/GlueSchemaRegistrySerializer.java  
\* /opt/cola/permits/1567311949\_1676541721.967031/0/schema-registry-serde-1-1-8-sources-jar/com/amazonaws/services/schemaregistry/serializers/avro/AWSKafkaAvroSerializer.java  
\*  
/opt/cola/permits/1567311949\_1676541721.967031/0/schema-registry-serde-1-1-8-sources-jar/com/amazonaws/services/schemaregistry/deserializers/GlueSchemaRegistryDeserializer.java  
\* /opt/cola/permits/1567311949\_1676541721.967031/0/schema-registry-serde-1-1-8-sources-jar/com/amazonaws/services/schemaregistry/deserializers/GlueSchemaRegistryKafkaDeserializer.java  
\* /opt/cola/permits/1567311949\_1676541721.967031/0/schema-registry-serde-1-1-8-sources-jar/com/amazonaws/services/schemaregistry/serializers/avro/AvroSerializer.java  
\* /opt/cola/permits/1567311949\_1676541721.967031/0/schema-registry-serde-1-1-8-sources-jar/com/amazonaws/services/schemaregistry/deserializers/GlueSchemaRegistryDeserializerImpl.java  
\* /opt/cola/permits/1567311949\_1676541721.967031/0/schema-registry-serde-1-1-8-sources-

```

jar/com/amazonaws/services/schemaregistry/deserializers/avro/AvroDeserializer.java
* /opt/cola/permits/1567311949_1676541721.967031/0/schema-registry-serde-1-1-8-sources-
jar/com/amazonaws/services/schemaregistry/deserializers/GlueSchemaRegistryDeserializerDataParser.java
*
/opt/cola/permits/1567311949_1676541721.967031/0/schema-registry-serde-1-1-8-sources-
jar/com/amazonaws/services/schemaregistry/deserializers/avro/AWSKafkaAvroDeserializer.java
* /opt/cola/permits/1567311949_1676541721.967031/0/schema-registry-serde-1-1-8-sources-
jar/com/amazonaws/services/schemaregistry/serializers/SerializationDataEncoder.java
* /opt/cola/permits/1567311949_1676541721.967031/0/schema-registry-serde-1-1-8-sources-
jar/com/amazonaws/services/schemaregistry/serializers/json/JsonValidator.java
* /opt/cola/permits/1567311949_1676541721.967031/0/schema-registry-serde-1-1-8-sources-
jar/com/amazonaws/services/schemaregistry/serializers/json/JsonSerializer.java
* /opt/cola/permits/1567311949_1676541721.967031/0/schema-registry-serde-1-1-8-sources-
jar/com/amazonaws/services/schemaregistry/serializers/json/JsonDataWithSchema.java
* /opt/cola/permits/1567311949_1676541721.967031/0/schema-registry-serde-1-1-8-sources-
jar/com/amazonaws/services/schemaregistry/deserializers/json/JsonDeserializer.java
* /opt/cola/permits/1567311949_1676541721.967031/0/schema-registry-serde-1-1-8-sources-
jar/com/amazonaws/services/schemaregistry/deserializers/GlueSchemaRegistryDeserializationFacade.java
* /opt/cola/permits/1567311949_1676541721.967031/0/schema-registry-serde-1-1-8-sources-
jar/com/amazonaws/services/schemaregistry/serializers/GlueSchemaRegistrySerializerImpl.java
*
/opt/cola/permits/1567311949_1676541721.967031/0/schema-registry-serde-1-1-8-sources-
jar/com/amazonaws/services/schemaregistry/deserializers/GlueSchemaRegistryDeserializerFactory.java
* /opt/cola/permits/1567311949_1676541721.967031/0/schema-registry-serde-1-1-8-sources-
jar/com/amazonaws/services/schemaregistry/serializers/GlueSchemaRegistrySerializationFacade.java

```

## 1.325 schema-registry-common 1.1.8

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- \* /opt/cola/permits/1567311965\_1676541727.2445447/0/schema-registry-common-1-1-8-sources-jar/com/amazonaws/services/schemaregistry/common/GlueSchemaRegistryDataFormatSerializer.java
- \* /opt/cola/permits/1567311965\_1676541727.2445447/0/schema-registry-common-1-1-8-sources-jar/com/amazonaws/services/schemaregistry/utills/AWSSchemaRegistryConstants.java
- \*
- /opt/cola/permits/1567311965\_1676541727.2445447/0/schema-registry-common-1-1-8-sources-jar/com/amazonaws/services/schemaregistry/common/AWSSchemaRegistryClient.java
- \* /opt/cola/permits/1567311965\_1676541727.2445447/0/schema-registry-common-1-1-8-sources-jar/com/amazonaws/services/schemaregistry/caching/GlueSchemaRegistrySerializerCache.java
- \* /opt/cola/permits/1567311965\_1676541727.2445447/0/schema-registry-common-1-1-8-sources-jar/com/amazonaws/services/schemaregistry/common/GlueSchemaRegistryDefaultCompression.java
- \* /opt/cola/permits/1567311965\_1676541727.2445447/0/schema-registry-common-1-1-8-sources-jar/com/amazonaws/services/schemaregistry/common/AWSSchemaNamingStrategy.java
- \* /opt/cola/permits/1567311965\_1676541727.2445447/0/schema-registry-common-1-1-8-sources-jar/com/amazonaws/services/schemaregistry/common/AWSSchemaRegistryGlueClientRetryPolicyHelper.java
- \* /opt/cola/permits/1567311965\_1676541727.2445447/0/schema-registry-common-1-1-8-sources-jar/com/amazonaws/services/schemaregistry/common/GlueSchemaRegistryCompressionFactory.java
- \*
- /opt/cola/permits/1567311965\_1676541727.2445447/0/schema-registry-common-1-1-8-sources-jar/com/amazonaws/services/schemaregistry/common/Schema.java
- \* /opt/cola/permits/1567311965\_1676541727.2445447/0/schema-registry-common-1-1-8-sources-jar/com/amazonaws/services/schemaregistry/common/GlueSchemaRegistryDataFormatDeserializer.java
- \* /opt/cola/permits/1567311965\_1676541727.2445447/0/schema-registry-common-1-1-8-sources-jar/com/amazonaws/services/schemaregistry/common/GlueSchemaRegistryCompressionHandler.java
- \* /opt/cola/permits/1567311965\_1676541727.2445447/0/schema-registry-common-1-1-8-sources-jar/com/amazonaws/services/schemaregistry/caching/GlueSchemaRegistryCache.java
- \* /opt/cola/permits/1567311965\_1676541727.2445447/0/schema-registry-common-1-1-8-sources-jar/com/amazonaws/services/schemaregistry/caching/GlueSchemaRegistryDeserializerCache.java
- \* /opt/cola/permits/1567311965\_1676541727.2445447/0/schema-registry-common-1-1-8-sources-jar/com/amazonaws/services/schemaregistry/common/AWSSchemaNamingStrategyDefaultImpl.java
- \*
- /opt/cola/permits/1567311965\_1676541727.2445447/0/schema-registry-common-1-1-8-sources-jar/com/amazonaws/services/schemaregistry/exception/AWSSchemaRegistryException.java
- \* /opt/cola/permits/1567311965\_1676541727.2445447/0/schema-registry-common-1-1-8-sources-jar/com/amazonaws/services/schemaregistry/exception/GlueSchemaRegistryIncompatibleDataException.java
- \* /opt/cola/permits/1567311965\_1676541727.2445447/0/schema-registry-common-1-1-8-sources-jar/com/amazonaws/services/schemaregistry/common/AWSSerializerInput.java
- \* /opt/cola/permits/1567311965\_1676541727.2445447/0/schema-registry-common-1-1-8-sources-jar/com/amazonaws/services/schemaregistry/common/configs/GlueSchemaRegistryConfiguration.java
- \* /opt/cola/permits/1567311965\_1676541727.2445447/0/schema-registry-common-1-1-8-sources-jar/com/amazonaws/services/schemaregistry/common/AWSDeserializerInput.java

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*
/opt/cola/permits/1567311965_1676541727.2445447/0/schema-registry-common-1-1-8-sources-
jar/com/amazonaws/services/schemaregistry/AvroRecordType.java
* /opt/cola/permits/1567311965_1676541727.2445447/0/schema-registry-common-1-1-8-sources-
jar/com/amazonaws/services/schemaregistry/AvroRecordType.java
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```
* /opt/cola/permits/1567311965_1676541727.2445447/0/schema-registry-common-1-1-8-sources-jar/META-
INF/maven/software.amazon.glue/schema-registry-common/pom.xml
```

## 1.326 url-connection-client 2.17.52

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\* /opt/cola/permits/1568287334\_1676583766.5955327/0/aws-java-sdk-kinesis-1-12-402-sources-jar/com/amazonaws/services/kinesisfirehose/model/AmazonopensearchserviceIndexRotationPeriod.java

\* /opt/cola/permits/1568287334\_1676583766.5955327/0/aws-java-sdk-kinesis-1-12-402-sources-jar/com/amazonaws/services/kinesisfirehose/model/transform/ListDeliveryStreamsRequestProtocolMarshaller.java

\*

/opt/cola/permits/1568287334\_1676583766.5955327/0/aws-java-sdk-kinesis-1-12-402-sources-jar/com/amazonaws/services/kinesisfirehose/model/transform/UntagDeliveryStreamResultJsonUnmarshaller.java

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\* /opt/cola/permits/1568287334\_1676583766.5955327/0/aws-java-sdk-kinesis-1-12-402-sources-jar/com/amazonaws/services/kinesisanalytics/model/transform/AddApplicationReferenceDataSourceResultJsonUnmarshaller.java

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\* /opt/cola/permits/1568287334\_1676583766.5955327/0/aws-java-sdk-kinesis-1-12-402-sources-jar/com/amazonaws/services/kinesis/model/ListShardsRequest.java

\*

/opt/cola/permits/1568287334\_1676583766.5955327/0/aws-java-sdk-kinesis-1-12-402-sources-jar/com/amazonaws/services/kinesisfirehose/model/transform/HttpEndpointCommonAttributeJsonUnmarshaller.java

\* /opt/cola/permits/1568287334\_1676583766.5955327/0/aws-java-sdk-kinesis-1-12-402-sources-jar/com/amazonaws/services/kinesisanalytics/model/transform/DeleteApplicationReferenceDataSourceResultJsonUnmarshaller.java

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* /opt/cola/permits/1568287334_1676583766.5955327/0/aws-java-sdk-kinesis-1-12-402-sources-
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* /opt/cola/permits/1568287334_1676583766.5955327/0/aws-java-sdk-kinesis-1-12-402-sources-
jar/com/amazonaws/services/kinesisanalytics/model/DeleteApplicationOutputRequest.java
* /opt/cola/permits/1568287334_1676583766.5955327/0/aws-java-sdk-kinesis-1-12-402-sources-
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\* /opt/cola/permits/1568287334\_1676583766.5955327/0/aws-java-sdk-kinesis-1-12-402-sources-jar/com/amazonaws/services/kinesisanalytics/model/TagResourceRequest.java

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/opt/cola/permits/1568287334\_1676583766.5955327/0/aws-java-sdk-kinesis-1-12-402-sources-jar/com/amazonaws/services/kinesis/model/transform/DisableEnhancedMonitoringRequestProtocolMarshaller.java

\* /opt/cola/permits/1568287334\_1676583766.5955327/0/aws-java-sdk-kinesis-1-12-402-sources-jar/com/amazonaws/services/kinesis/model/AddTagsToStreamRequest.java

\* /opt/cola/permits/1568287334\_1676583766.5955327/0/aws-java-sdk-kinesis-1-12-402-sources-jar/com/amazonaws/services/kinesisfirehose/model/transform/ExtendedS3DestinationDescriptionMarshaller.java

\* /opt/cola/permits/1568287334\_1676583766.5955327/0/aws-java-sdk-kinesis-1-12-402-sources-jar/com/amazonaws/services/kinesis/model/transform/EnhancedMetricsMarshaller.java

\* /opt/cola/permits/1568287334\_1676583766.5955327/0/aws-java-sdk-kinesis-1-12-402-sources-jar/com/amazonaws/services/kinesis/model/ShardIteratorType.java

\* /opt/cola/permits/1568287334\_1676583766.5955327/0/aws-java-sdk-kinesis-1-12-402-sources-jar/com/amazonaws/services/kinesisfirehose/model/ParquetWriterVersion.java

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/opt/cola/permits/1568287334\_1676583766.5955327/0/aws-java-sdk-kinesis-1-12-402-sources-jar/com/amazonaws/services/kinesisfirehose/model/HttpEndpointDestinationDescription.java

\* /opt/cola/permits/1568287334\_1676583766.5955327/0/aws-java-sdk-kinesis-1-12-402-sources-jar/com/amazonaws/services/kinesisanalytics/model/transform/OutputDescriptionJsonUnmarshaller.java

\* /opt/cola/permits/1568287334\_1676583766.5955327/0/aws-java-sdk-kinesis-1-12-402-sources-jar/com/amazonaws/services/kinesis/model/transform/UpdateShardCountRequestMarshaller.java

\* /opt/cola/permits/1568287334\_1676583766.5955327/0/aws-java-sdk-kinesis-1-12-402-sources-jar/com/amazonaws/services/kinesis/AmazonKinesis.java

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\* /opt/cola/permits/1568287334\_1676583766.5955327/0/aws-java-sdk-kinesis-1-12-402-sources-jar/com/amazonaws/services/kinesis/model/transform/DeregisterStreamConsumerResultJsonUnmarshaller.java

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/opt/cola/permits/1568287334\_1676583766.5955327/0/aws-java-sdk-kinesis-1-12-402-sources-jar/com/amazonaws/services/kinesis/model/transform/StartStreamEncryptionResultJsonUnmarshaller.java

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\* /opt/cola/permits/1568287334\_1676583766.5955327/0/aws-java-sdk-kinesis-1-12-402-sources-jar/com/amazonaws/services/kinesisfirehose/model/transform/ElasticsearchBufferingHintsMarshaller.java

\* /opt/cola/permits/1568287334\_1676583766.5955327/0/aws-java-sdk-kinesis-1-12-402-sources-jar/com/amazonaws/services/kinesisfirehose/model/transform/EncryptionConfigurationMarshaller.java

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/opt/cola/permits/1568287334\_1676583766.5955327/0/aws-java-sdk-kinesis-1-12-402-sources-jar/com/amazonaws/services/kinesisanalytics/model/InputStartingPosition.java

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\* /opt/cola/permits/1568287334\_1676583766.5955327/0/aws-java-sdk-kinesis-1-12-402-sources-jar/com/amazonaws/services/kinesis/model/transform/DescribeStreamRequestMarshaller.java

\* /opt/cola/permits/1568287334\_1676583766.5955327/0/aws-java-sdk-kinesis-1-12-402-sources-jar/com/amazonaws/services/kinesisanalytics/model/InputConfiguration.java

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/opt/cola/permits/1568287334\_1676583766.5955327/0/aws-java-sdk-kinesis-1-12-402-sources-jar/com/amazonaws/services/kinesis/model/ExpiredIteratorException.java

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\* /opt/cola/permits/1568287334\_1676583766.5955327/0/aws-java-sdk-kinesis-1-12-402-sources-jar/com/amazonaws/services/kinesis/model/transform/ValidationExceptionUnmarshaller.java

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/opt/cola/permits/1568287334\_1676583766.5955327/0/aws-java-sdk-kinesis-1-12-402-sources-jar/com/amazonaws/services/kinesis/model/transform/StreamModeDetailsJsonUnmarshaller.java

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\* /opt/cola/permits/1568287334\_1676583766.5955327/0/aws-java-sdk-kinesis-1-12-402-sources-jar/com/amazonaws/services/kinesis/model/transform/ListShardsRequestMarshaller.java

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\* /opt/cola/permits/1568287334\_1676583766.5955327/0/aws-java-sdk-kinesis-1-12-402-sources-  
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\* /opt/cola/permits/1568287334\_1676583766.5955327/0/aws-java-sdk-kinesis-1-12-402-sources-jar/com/amazonaws/services/kinesis/model/transform/DeregisterStreamConsumerRequestMarshaller.java

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/opt/cola/permits/1568287334\_1676583766.5955327/0/aws-java-sdk-kinesis-1-12-402-sources-jar/com/amazonaws/services/kinesisfirehose/model/transform/KMSEncryptionConfigJsonUnmarshaller.java

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\* /opt/cola/permits/1568287334\_1676583766.5955327/0/aws-java-sdk-kinesis-1-12-402-sources-jar/com/amazonaws/services/kinesisanalytics/model/transform/ApplicationUpdateMarshaller.java

\* /opt/cola/permits/1568287334\_1676583766.5955327/0/aws-java-sdk-kinesis-1-12-402-sources-jar/com/amazonaws/services/kinesisanalytics/model/transform/InputLambdaProcessorDescriptionMarshaller.java

\* /opt/cola/permits/1568287334\_1676583766.5955327/0/aws-java-sdk-kinesis-1-12-402-sources-jar/com/amazonaws/services/kinesisfirehose/model/ElasticsearchBufferingHints.java

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/opt/cola/permits/1568287334\_1676583766.5955327/0/aws-java-sdk-kinesis-1-12-402-sources-jar/com/amazonaws/services/kinesisfirehose/model/transform/AmazonOpenSearchServerlessDestinationDescriptionJsonUnmarshaller.java

\* /opt/cola/permits/1568287334\_1676583766.5955327/0/aws-java-sdk-kinesis-1-12-402-sources-jar/com/amazonaws/services/kinesisanalytics/model/transform/DeleteApplicationCloudWatchLoggingOptionResultJsonUnmarshaller.java

\* /opt/cola/permits/1568287334\_1676583766.5955327/0/aws-java-sdk-kinesis-1-12-402-sources-jar/com/amazonaws/services/kinesis/model/ConsumerDescription.java

\* /opt/cola/permits/1568287334\_1676583766.5955327/0/aws-java-sdk-kinesis-1-12-402-sources-jar/com/amazonaws/services/kinesisanalytics/model/transform/StartApplicationResultJsonUnmarshaller.java

\* /opt/cola/permits/1568287334\_1676583766.5955327/0/aws-java-sdk-kinesis-1-12-402-sources-jar/com/amazonaws/services/kinesisfirehose/model/transform/CreateDeliveryStreamResultJsonUnmarshaller.java

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/opt/cola/permits/1568287334\_1676583766.5955327/0/aws-java-sdk-kinesis-1-12-402-sources-jar/com/amazonaws/services/kinesisfirehose/model/transform/ProcessingConfigurationMarshaller.java

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\* /opt/cola/permits/1568287334\_1676583766.5955327/0/aws-java-sdk-kinesis-1-12-402-sources-jar/com/amazonaws/services/kinesisfirehose/model/EncryptionConfiguration.java

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/opt/cola/permits/1568287334\_1676583766.5955327/0/aws-java-sdk-kinesis-1-12-402-sources-jar/com/amazonaws/services/kinesis/model/transform/StreamDescriptionSummaryJsonUnmarshaller.java

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## 1.328 jmespath-java 1.12.402

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/opt/cola/permits/1568286971\_1676583562.1942158/0/jmespath-java-1-12-402-sources-jar/com/amazonaws/jmespath/Comparator.java

\* /opt/cola/permits/1568286971\_1676583562.1942158/0/jmespath-java-1-12-402-sources-jar/com/amazonaws/jmespath/InvalidTypeException.java

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# 1.329 aws-java-sdk-core 1.12.402

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```
* /opt/cola/permits/1568286937_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-
jar/com/amazonaws/annotation/SdkProtectedApi.java
* /opt/cola/permits/1568286937_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-
jar/com/amazonaws/annotation/SdkTestInternalApi.java
* /opt/cola/permits/1568286937_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-
jar/com/amazonaws/annotation/NotThreadSafe.java
*
/opt/cola/permits/1568286937_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-
jar/com/amazonaws/annotation/SdkInternalApi.java
* /opt/cola/permits/1568286937_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-
jar/com/amazonaws/annotation/Immutable.java
* /opt/cola/permits/1568286937_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-
jar/com/amazonaws/annotation/GuardedBy.java
* /opt/cola/permits/1568286937_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-
jar/com/amazonaws/annotation/ThreadSafe.java
* /opt/cola/permits/1568286937_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-
jar/com/amazonaws/annotation/Beta.java
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\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/regions/LegacyRegionXmlMetadataBuilder.java  
\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/partitions/PartitionRegionImpl.java  
\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/partitions/PartitionMetadataProvider.java  
\*  
/opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/protocol/json/SdkIonGenerator.java  
\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/partitions/model/Service.java  
\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/http/apache/SdkProxyRoutePlanner.java  
\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/regions/LegacyRegionXmlLoadUtils.java  
\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/partitions/model/CredentialScope.java  
\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/partitions/model/Endpoint.java  
\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/regions/InMemoryRegionImpl.java  
\*  
/opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/http/apache/client/impl/CRC32ChecksumResponseInterceptor.java  
\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/partitions/model/Region.java  
\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/regions/AbstractRegionMetadataProvider.java  
\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/regions/InMemoryRegionsProvider.java  
\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/regions/RegionMetadataProvider.java  
\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/partitions/PartitionsLoader.java  
\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/transform/SimpleTypeCborUnmarshallers.java  
\*

/opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/protocol/json/SdkStructuredIonFactory.java  
\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/regions/RegionMetadataFactory.java  
\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/regions/RegionImpl.java  
\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/partitions/model/Partition.java

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jar/com/amazonaws/util/JodaTime.java

\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-

jar/com/amazonaws/util/StringMapBuilder.java

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jar/com/amazonaws/util/ReflectionMethodInvoker.java

\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-

jar/com/amazonaws/transform/EnhancedJsonErrorUnmarshaller.java

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\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/protocol/json/IonFactory.java  
\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/protocol/json/IonParser.java  
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\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/ImmutableRequest.java  
\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/auth/SignerAsRequestSigner.java  
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jar/com/amazonaws/internal/config/SignerConfig.java
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```
* /opt/cola/permits/1568286937_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-
jar/com/amazonaws/util/ImmutableMapParameter.java
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* /opt/cola/permits/1568286937_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-
jar/com/amazonaws/Protocol.java
```

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*
 * /opt/cola/permits/1568286937_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-
jar/com/amazonaws/internal/config/Builder.java
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\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/internal/config/SignerConfigJsonHelper.java  
\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/internal/config/JsonIndex.java  
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\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/internal/http/IonErrorCodeParser.java  
\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/internal/http/ErrorCodeParser.java

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jar/com/amazonaws/internal/SdkSSLContext.java
* /opt/cola/permits/1568286937_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-
jar/com/amazonaws/annotation/package-info.java
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/**
 * Interface for providing AWS region information. Implementations are free to use any strategy for
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 */
```

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```
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jar/com/amazonaws/regions/AwsRegionProvider.java
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jar/com/amazonaws/waiters/WaiterExecutorServiceFactory.java
* /opt/cola/permits/1568286937_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-
jar/com/amazonaws/util/NamedDefaultThreadFactory.java
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jar/com/amazonaws/http/conn/ssl/TLSProtocol.java
* /opt/cola/permits/1568286937_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-
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- \* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/AmazonWebServiceRequest.java
- \* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/internal/config/InternalConfig.java
- \*
- /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/transform/VoidJsonUnmarshaller.java
- \* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/monitoring/internal/AsynchronousAgentDispatcher.java
- \* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/endpointdiscovery/EndpointDiscoveryProviderChain.java
- \* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/AmazonWebServiceClient.java
- \* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/monitoring/EnvironmentVariableCsmConfigurationProvider.java
- \* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/handlers/HandlerAfterAttemptContext.java
- \* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/util/AWSServiceMetrics.java
- \*
- /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/util/AWSRequestMetricsFullSupport.java
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- \* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/Response.java
- \* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/metrics/SimpleMetricType.java
- \* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/event/ProgressEvent.java
- \* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/util/AwsClientSideMonitoringMetrics.java
- \* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/waiters/Waiter.java

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/opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/ResponseMetadata.java  
\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/internal/SdkPredicate.java  
\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/auth/policy/conditions/DateCondition.java  
\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/arn/ArnConverter.java  
\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/metrics/SimpleThroughputMetricType.java  
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\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/http/impl/client/HttpRequestNoRetryHandler.java

\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/http/apache/request/impl/HttpGetWithBody.java

\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/util/VersionInfoUtils.java

\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/HttpClientConfig.java

\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/auth/NoOpSigner.java

\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-

jar/com/amazonaws/auth/PropertiesFileCredentialsProvider.java  
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/opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-  
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jar/com/amazonaws/transform/SimpleTypeStaxUnmarshaller.java  
\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-  
jar/com/amazonaws/util/XpathUtils.java  
\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-  
jar/com/amazonaws/metrics/package-info.java  
\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-  
jar/com/amazonaws/waiters/WaiterBuilder.java  
\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-  
jar/com/amazonaws/monitoring/ApiMonitoringEvent.java  
\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-  
jar/com/amazonaws/waiters/WaiterUnrecoverableException.java  
\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-  
jar/com/amazonaws/auth/policy/internal/JsonDocumentFields.java  
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/opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-  
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jar/com/amazonaws/endpointdiscovery/DefaultEndpointDiscoveryProviderChain.java  
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jar/com/amazonaws/handlers/HandlerBeforeAttemptContext.java  
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jar/com/amazonaws/retry/internal/AuthRetryParameters.java  
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jar/com/amazonaws/endpointdiscovery/EnvironmentVariableEndpointDiscoveryProvider.java  
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jar/com/amazonaws/handlers/AbstractRequestHandler.java  
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\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-  
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\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-  
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\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/waiters/HttpSuccessStatusAcceptor.java  
\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/auth/SignerTypeAware.java  
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\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/event/ProgressEventType.java  
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\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/waiters/WaiterParameters.java  
\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/util/ResponseMetadataCache.java  
\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/auth/policy/Resource.java  
\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/retry/RetryPolicy.java

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\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/jmx/JmxInfoProviderSupport.java

\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/util/json/Jackson.java

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/opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/auth/AWSSessionCredentials.java

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\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/retry/ClockSkewAdjuster.java

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jar/com/amazonaws/adapters/types/TypeAdapter.java  
\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-  
jar/com/amazonaws/internal/auth/NoOpSignerProvider.java  
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/opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-  
jar/com/amazonaws/adapters/types/StringToByteBufferAdapter.java  
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jar/com/amazonaws/util/NullResponseMetadataCache.java  
\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-  
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jar/com/amazonaws/internal/auth/SignerProviderContext.java  
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jar/com/amazonaws/http/apache/utills/ApacheUtils.java

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\* Interface for providing AWS credentials. Implementations are free to use any  
\* strategy for providing AWS credentials, such as simply providing static  
\* credentials that don't change, or more complicated implementations, such as  
\* integrating with existing key management systems.

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jar/com/amazonaws/auth/AWSCredentialsProvider.java

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jar/com/amazonaws/util/BinaryUtils.java

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jar/com/amazonaws/util/DateUtils.java

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\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/http/apache/client/impl/ApacheConnectionFactory.java  
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\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/client/ClientHandlerParams.java

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 \* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/util/NameValuePair.java  
 \* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/util/BasicNameValuePair.java

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 \* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-

jar/com/amazonaws/internal/CRC32MismatchException.java  
\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-  
jar/com/amazonaws/HandlerContextAware.java  
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jar/com/amazonaws/auth/ClasspathPropertiesFileCredentialsProvider.java  
\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-  
jar/com/amazonaws/internal/DynamoDBBackoffStrategy.java  
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jar/com/amazonaws/internal/CustomBackoffStrategy.java  
\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-  
jar/com/amazonaws/auth/AWSCredentialsProviderChain.java  
\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-  
jar/com/amazonaws/auth/DefaultAWSCredentialsProviderChain.java  
\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-  
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\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-  
jar/com/amazonaws/auth/EnvironmentVariableCredentialsProvider.java  
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/opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-  
jar/com/amazonaws/auth/SystemPropertiesCredentialsProvider.java  
\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-  
jar/com/amazonaws/http/IdleConnectionReaper.java  
\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-  
jar/com/amazonaws/util/AwsHostNameUtils.java  
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\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-

jar/com/amazonaws/protocol/json/SdkCborGenerator.java  
\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-  
jar/com/amazonaws/protocol/json/SdkStructuredCborFactory.java  
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jar/com/amazonaws/protocol/json/SdkStructuredPlainJsonFactory.java  
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jar/com/amazonaws/handlers/HandlerContextKey.java
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\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-  
jar/com/amazonaws/http/timers/client/ClientExecutionTimeoutException.java  
\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-  
jar/com/amazonaws/util/NumberUtils.java  
\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-  
jar/com/amazonaws/internal/DelegateSocket.java  
\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-  
jar/com/amazonaws/log/InternalLog.java  
\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-  
jar/com/amazonaws/internal/SdkIOUtils.java  
\*  
/opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-  
jar/com/amazonaws/internal/http/JsonErrorMessageParser.java  
\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-  
jar/com/amazonaws/SystemDefaultDnsResolver.java  
\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-  
jar/com/amazonaws/util/UriResourcePathUtils.java  
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Found in path(s):

\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/internal/ResettableInputStream.java  
\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/internal/ReleasableInputStream.java

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Found in path(s):

\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/auth/ProcessCredentialsProvider.java

\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/event/ProgressTracker.java

\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/event/ResponseProgressInputStream.java

\*

\*/opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/auth/profile/internal/securitytoken/STSPProfileCredentialsServiceLoader.java

\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/event/DeliveryMode.java

\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/auth/internal/AWS4SignerUtils.java

\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/internal/DelegateSSLSocket.java

\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/internal/Releasable.java

\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/event/SDKProgressPublisher.java

\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/internal/BoundedLinkedHashMap.java

\*

/opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/auth/profile/internal/Profile.java

\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/auth/profile/package-info.java

\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/util/LengthCheckInputStream.java

\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/auth/profile/ProfilesConfigFile.java

\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/event/ProgressInputStream.java

\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/internal/FIFOCache.java

\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/auth/profile/internal/BasicProfileConfigLoader.java

\*

/opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/auth/profile/internal/securitytoken/RoleInfo.java

\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/event/SyncProgressListener.java

\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/auth/internal/SignerConstants.java

\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/util/Platform.java

\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/event/request/Progress.java

\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/internal/SdkSSLSocket.java

\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/event/ProgressEventFilter.java

\*

/opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/http/UnreliableTestConfig.java

\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/auth/profile/internal/securitytoken/STSProfileCredentialsServiceProvider.java

\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/util/UnreliableFilterInputStream.java

\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-jar/com/amazonaws/internal/SdkInputStream.java

\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-

jar/com/amazonaws/auth/profile/internal/ProfileProcessCredentialsProvider.java  
\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-  
jar/com/amazonaws/auth/profile/ProfilesConfigFileWriter.java  
\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-  
jar/com/amazonaws/event/RequestProgressInputStream.java  
\*  
/opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-  
jar/com/amazonaws/auth/profile/ProfileCredentialsProvider.java  
\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-  
jar/com/amazonaws/auth/profile/internal/securitytoken/ProfileCredentialsService.java  
\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-  
jar/com/amazonaws/internal/SdkSocket.java  
\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-  
jar/com/amazonaws/auth/internal/SignerKey.java  
\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-  
jar/com/amazonaws/auth/profile/internal/AbstractProfilesConfigFileScanner.java  
\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-  
jar/com/amazonaws/event/request/ProgressSupport.java  
\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-  
jar/com/amazonaws/auth/internal/AWS4SignerRequestParams.java  
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Found in path(s):  
\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-  
jar/com/amazonaws/log/InternalLogApi.java  
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\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-  
jar/com/amazonaws/util/CredentialUtils.java

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jar/com/amazonaws/auth/BaseCredentialsFetcher.java

\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-  
jar/com/amazonaws/auth/ContainerCredentialsFetcher.java

\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-  
jar/com/amazonaws/internal/CredentialsEndpointProvider.java

\*

/opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-  
jar/com/amazonaws/auth/EndpointPrefixAwareSigner.java

\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-  
jar/com/amazonaws/internal/ConnectionUtils.java

\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-

jar/com/amazonaws/internal/TokenBucket.java  
\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-  
jar/com/amazonaws/auth/ContainerCredentialsProvider.java  
\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-  
jar/com/amazonaws/auth/EC2ContainerCredentialsProviderWrapper.java  
\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-  
jar/com/amazonaws/retry/RetryMode.java  
\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-  
jar/com/amazonaws/auth/InstanceMetadataServiceCredentialsFetcher.java  
\*  
/opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-  
jar/com/amazonaws/auth/ContainerCredentialsRetryPolicy.java  
\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-  
jar/com/amazonaws/retry/internal/CredentialsEndpointRetryPolicy.java  
\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-  
jar/com/amazonaws/internal/InstanceMetadataServiceResourceFetcher.java  
\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-  
jar/com/amazonaws/internal/EC2ResourceFetcher.java  
\* /opt/cola/permits/1568286937\_1676583714.4084063/0/aws-java-sdk-core-1-12-402-sources-  
jar/com/amazonaws/retry/internal/CredentialsEndpointRetryParameters.java

## 1.330 gson 2.10.1

### 1.330.1 Available under license :

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Manifest-Version: 1.0  
Created-By: 11.0.16.1 (Azul Systems, Inc.)  
Build-Jdk-Spec: 11  
Bnd-LastModified: 1673019830620  
Bundle-ContactAddress: <https://github.com/google/gson>  
Bundle-Description: Gson JSON library  
Bundle-Developers: google;organization=Google;organizationUrl="https://www.google.com"  
Bundle-DocURL: <https://github.com/google/gson/gson>  
Bundle-License: "Apache-2.0";link="https://www.apache.org/licenses/LICENSE-2.0.txt"  
Bundle-ManifestVersion: 2  
Bundle-Name: Gson  
Bundle-RequiredExecutionEnvironment: JavaSE-1.7, JavaSE-1.8  
Bundle-SCM: url="https://github.com/google/gson/gson/",connection="scm:git:https://github.com/google/gson.git/gson",developer-connection="scm:git:git@github.com:google/gson.git/gson",tag="gson-parent-2.10.1"  
Bundle-SymbolicName: com.google.gson  
Bundle-Vendor: Google Gson Project  
Bundle-Version: 2.10.1  
Export-Package: com.google.gson;uses:="com.google.gson.reflect,com.google"

```
e.gson.stream";version="2.10.1",com.google.gson.annotations;version="2.10.1",com.google.gson.reflect;version="2.10.1",com.google.gson.stream;version="2.10.1"
Import-Package: sun.misc;resolution:=optional,com.google.gson.annotations
Require-Capability: osgi.ee;filter="(&(osgi.ee=JavaSE)(version=1.7))"
Tool: Bnd-6.4.0.202211291949
Multi-Release: true
```

Found in path(s):

\* /opt/cola/permits/1570533427\_1676891842.8285189/0/gson-2-10-1-jar/META-INF/MANIFEST.MF

## 1.331 proto-google-common-protos 2.9.0

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```

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\* /opt/cola/permits/1572890195\_1677106955.5681205/0/proto-google-common-protos-2-9-0-1-jar/google/api/launch\_stage.proto

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```

Found in path(s):

\* /opt/cola/permits/1572890195\_1677106955.5681205/0/proto-google-common-protos-2-9-0-1-jar/google/api/usage.proto

\* /opt/cola/permits/1572890195\_1677106955.5681205/0/proto-google-common-protos-2-9-0-1-jar/google/api/endpoint.proto

\* /opt/cola/permits/1572890195\_1677106955.5681205/0/proto-google-common-protos-2-9-0-1-jar/google/api/service.proto

\* /opt/cola/permits/1572890195\_1677106955.5681205/0/proto-google-common-protos-2-9-0-1-jar/google/api/consumer.proto

\* /opt/cola/permits/1572890195\_1677106955.5681205/0/proto-google-common-protos-2-9-0-1-jar/google/api/distribution.proto

\* /opt/cola/permits/1572890195\_1677106955.5681205/0/proto-google-common-protos-2-9-0-1-

jar/google/api/error\_reason.proto  
\*  
/opt/cola/permits/1572890195\_1677106955.5681205/0/proto-google-common-protos-2-9-0-1-  
jar/google/api/context.proto  
\* /opt/cola/permits/1572890195\_1677106955.5681205/0/proto-google-common-protos-2-9-0-1-  
jar/google/type/date.proto  
\* /opt/cola/permits/1572890195\_1677106955.5681205/0/proto-google-common-protos-2-9-0-1-  
jar/google/api/quota.proto  
\* /opt/cola/permits/1572890195\_1677106955.5681205/0/proto-google-common-protos-2-9-0-1-  
jar/google/api/field\_behavior.proto  
\* /opt/cola/permits/1572890195\_1677106955.5681205/0/proto-google-common-protos-2-9-0-1-  
jar/google/api/httpbody.proto  
\* /opt/cola/permits/1572890195\_1677106955.5681205/0/proto-google-common-protos-2-9-0-1-  
jar/google/api/routing.proto  
\* /opt/cola/permits/1572890195\_1677106955.5681205/0/proto-google-common-protos-2-9-0-1-  
jar/google/api/system\_parameter.proto  
\* /opt/cola/permits/1572890195\_1677106955.5681205/0/proto-google-common-protos-2-9-0-1-  
jar/google/type/datetime.proto  
\*  
/opt/cola/permits/1572890195\_1677106955.5681205/0/proto-google-common-protos-2-9-0-1-  
jar/google/type/color.proto  
\* /opt/cola/permits/1572890195\_1677106955.5681205/0/proto-google-common-protos-2-9-0-1-  
jar/google/api/billing.proto  
\* /opt/cola/permits/1572890195\_1677106955.5681205/0/proto-google-common-protos-2-9-0-1-  
jar/google/logging/type/log\_severity.proto  
\* /opt/cola/permits/1572890195\_1677106955.5681205/0/proto-google-common-protos-2-9-0-1-  
jar/google/type/decimal.proto  
\* /opt/cola/permits/1572890195\_1677106955.5681205/0/proto-google-common-protos-2-9-0-1-  
jar/google/api/config\_change.proto  
\* /opt/cola/permits/1572890195\_1677106955.5681205/0/proto-google-common-protos-2-9-0-1-  
jar/google/type/latlng.proto  
\* /opt/cola/permits/1572890195\_1677106955.5681205/0/proto-google-common-protos-2-9-0-1-  
jar/google/api/metric.proto  
\* /opt/cola/permits/1572890195\_1677106955.5681205/0/proto-google-common-protos-2-9-0-1-  
jar/google/api/control.proto  
\* /opt/cola/permits/1572890195\_1677106955.5681205/0/proto-google-common-protos-2-9-0-1-  
jar/google/type/money.proto  
\*  
/opt/cola/permits/1572890195\_1677106955.5681205/0/proto-google-common-protos-2-9-0-1-  
jar/google/type/month.proto  
\* /opt/cola/permits/1572890195\_1677106955.5681205/0/proto-google-common-protos-2-9-0-1-  
jar/google/api/logging.proto  
\* /opt/cola/permits/1572890195\_1677106955.5681205/0/proto-google-common-protos-2-9-0-1-  
jar/google/api/client.proto  
\* /opt/cola/permits/1572890195\_1677106955.5681205/0/proto-google-common-protos-2-9-0-1-  
jar/google/api/log.proto  
\* /opt/cola/permits/1572890195\_1677106955.5681205/0/proto-google-common-protos-2-9-0-1-  
jar/google/type/timeofday.proto

\* /opt/cola/permits/1572890195\_1677106955.5681205/0/proto-google-common-protos-2-9-0-1-jar/google/geo/type/viewport.proto  
\* /opt/cola/permits/1572890195\_1677106955.5681205/0/proto-google-common-protos-2-9-0-1-jar/google/rpc/status.proto  
\* /opt/cola/permits/1572890195\_1677106955.5681205/0/proto-google-common-protos-2-9-0-1-jar/google/type/fraction.proto  
\*  
/opt/cola/permits/1572890195\_1677106955.5681205/0/proto-google-common-protos-2-9-0-1-jar/google/api/documentation.proto  
\* /opt/cola/permits/1572890195\_1677106955.5681205/0/proto-google-common-protos-2-9-0-1-jar/google/type/interval.proto  
\* /opt/cola/permits/1572890195\_1677106955.5681205/0/proto-google-common-protos-2-9-0-1-jar/google/type/postal\_address.proto  
\* /opt/cola/permits/1572890195\_1677106955.5681205/0/proto-google-common-protos-2-9-0-1-jar/google/logging/type/http\_request.proto  
\* /opt/cola/permits/1572890195\_1677106955.5681205/0/proto-google-common-protos-2-9-0-1-jar/google/type/dayofweek.proto  
\* /opt/cola/permits/1572890195\_1677106955.5681205/0/proto-google-common-protos-2-9-0-1-jar/google/api/source\_info.proto  
\* /opt/cola/permits/1572890195\_1677106955.5681205/0/proto-google-common-protos-2-9-0-1-jar/google/api/label.proto  
\* /opt/cola/permits/1572890195\_1677106955.5681205/0/proto-google-common-protos-2-9-0-1-jar/google/type/quaternion.proto  
\* /opt/cola/permits/1572890195\_1677106955.5681205/0/proto-google-common-protos-2-9-0-1-jar/google/rpc/error\_details.proto  
\*  
/opt/cola/permits/1572890195\_1677106955.5681205/0/proto-google-common-protos-2-9-0-1-jar/google/api/backend.proto  
\* /opt/cola/permits/1572890195\_1677106955.5681205/0/proto-google-common-protos-2-9-0-1-jar/google/type/expr.proto  
\* /opt/cola/permits/1572890195\_1677106955.5681205/0/proto-google-common-protos-2-9-0-1-jar/google/api/annotations.proto  
\* /opt/cola/permits/1572890195\_1677106955.5681205/0/proto-google-common-protos-2-9-0-1-jar/google/longrunning/operations.proto  
\* /opt/cola/permits/1572890195\_1677106955.5681205/0/proto-google-common-protos-2-9-0-1-jar/google/rpc/code.proto  
\* /opt/cola/permits/1572890195\_1677106955.5681205/0/proto-google-common-protos-2-9-0-1-jar/google/type/calendar\_period.proto  
\* /opt/cola/permits/1572890195\_1677106955.5681205/0/proto-google-common-protos-2-9-0-1-jar/google/type/phone\_number.proto  
\* /opt/cola/permits/1572890195\_1677106955.5681205/0/proto-google-common-protos-2-9-0-1-jar/google/api/resource.proto  
\*  
/opt/cola/permits/1572890195\_1677106955.5681205/0/proto-google-common-protos-2-9-0-1-jar/google/api/http.proto  
\* /opt/cola/permits/1572890195\_1677106955.5681205/0/proto-google-common-protos-2-9-0-1-jar/google/cloud/extended\_operations.proto  
\* /opt/cola/permits/1572890195\_1677106955.5681205/0/proto-google-common-protos-2-9-0-1-

jar/google/rpc/context/attribute\_context.proto  
\* /opt/cola/permits/1572890195\_1677106955.5681205/0/proto-google-common-protos-2-9-0-1-  
jar/google/api/monitored\_resource.proto  
\* /opt/cola/permits/1572890195\_1677106955.5681205/0/proto-google-common-protos-2-9-0-1-  
jar/google/api/auth.proto  
\* /opt/cola/permits/1572890195\_1677106955.5681205/0/proto-google-common-protos-2-9-0-1-  
jar/google/api/visibility.proto  
\* /opt/cola/permits/1572890195\_1677106955.5681205/0/proto-google-common-protos-2-9-0-1-  
jar/google/api/monitoring.proto  
\* /opt/cola/permits/1572890195\_1677106955.5681205/0/proto-google-common-protos-2-9-0-1-  
jar/google/type/localized\_text.proto  
\*  
/opt/cola/permits/1572890195\_1677106955.5681205/0/proto-google-common-protos-2-9-0-1-  
jar/google/cloud/audit/audit\_log.proto

# 1.332 commons-fileupload 1.5

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## 1.333 snake-yaml 2.0

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```
/**
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 */
```

Found in path(s):

```
* /opt/cola/permits/1584157893_1677999786.1262538/0/snakeyaml-2-0-sources-
jar/org/yaml/snakeyaml/representer/SafeRepresenter.java
* /opt/cola/permits/1584157893_1677999786.1262538/0/snakeyaml-2-0-sources-
jar/org/yaml/snakeyaml/parser/Parser.java
* /opt/cola/permits/1584157893_1677999786.1262538/0/snakeyaml-2-0-sources-
jar/org/yaml/snakeyaml/env/EnvScalarConstructor.java
*
/opt/cola/permits/1584157893_1677999786.1262538/0/snakeyaml-2-0-sources-
jar/org/yaml/snakeyaml/nodes/ScalarNode.java
* /opt/cola/permits/1584157893_1677999786.1262538/0/snakeyaml-2-0-sources-
jar/org/yaml/snakeyaml/tokens/ValueToken.java
* /opt/cola/permits/1584157893_1677999786.1262538/0/snakeyaml-2-0-sources-
jar/org/yaml/snakeyaml/events/StreamEndEvent.java
* /opt/cola/permits/1584157893_1677999786.1262538/0/snakeyaml-2-0-sources-
jar/org/yaml/snakeyaml/constructor/AbstractConstruct.java
* /opt/cola/permits/1584157893_1677999786.1262538/0/snakeyaml-2-0-sources-
jar/org/yaml/snakeyaml/events/CollectionEndEvent.java
* /opt/cola/permits/1584157893_1677999786.1262538/0/snakeyaml-2-0-sources-
jar/org/yaml/snakeyaml/emitter/ScalarAnalysis.java
* /opt/cola/permits/1584157893_1677999786.1262538/0/snakeyaml-2-0-sources-
jar/org/yaml/snakeyaml/events/AliasEvent.java
* /opt/cola/permits/1584157893_1677999786.1262538/0/snakeyaml-2-0-sources-
jar/org/yaml/snakeyaml/events/ScalarEvent.java
*
/opt/cola/permits/1584157893_1677999786.1262538/0/snakeyaml-2-0-sources-
jar/org/yaml/snakeyaml/emitter/EmitterState.java
* /opt/cola/permits/1584157893_1677999786.1262538/0/snakeyaml-2-0-sources-
jar/org/yaml/snakeyaml/tokens/DirectiveToken.java
* /opt/cola/permits/1584157893_1677999786.1262538/0/snakeyaml-2-0-sources-
```

jar/org/yaml/snakeyaml/events/StreamStartEvent.java  
\* /opt/cola/permits/1584157893\_1677999786.1262538/0/snakeyaml-2-0-sources-  
jar/org/yaml/snakeyaml/events/CommentEvent.java  
\* /opt/cola/permits/1584157893\_1677999786.1262538/0/snakeyaml-2-0-sources-  
jar/org/yaml/snakeyaml/tokens/AliasToken.java  
\* /opt/cola/permits/1584157893\_1677999786.1262538/0/snakeyaml-2-0-sources-  
jar/org/yaml/snakeyaml/constructor/Construct.java  
\* /opt/cola/permits/1584157893\_1677999786.1262538/0/snakeyaml-2-0-sources-  
jar/org/yaml/snakeyaml/events/ImplicitTuple.java  
\* /opt/cola/permits/1584157893\_1677999786.1262538/0/snakeyaml-2-0-sources-  
jar/org/yaml/snakeyaml/constructor/CustomClassLoaderConstructor.java  
\*  
/opt/cola/permits/1584157893\_1677999786.1262538/0/snakeyaml-2-0-sources-  
jar/org/yaml/snakeyaml/introspector/Property.java  
\* /opt/cola/permits/1584157893\_1677999786.1262538/0/snakeyaml-2-0-sources-  
jar/org/yaml/snakeyaml/parser/Production.java  
\* /opt/cola/permits/1584157893\_1677999786.1262538/0/snakeyaml-2-0-sources-  
jar/org/yaml/snakeyaml/resolver/ResolverTuple.java  
\* /opt/cola/permits/1584157893\_1677999786.1262538/0/snakeyaml-2-0-sources-  
jar/org/yaml/snakeyaml/scanner/Scanner.java  
\* /opt/cola/permits/1584157893\_1677999786.1262538/0/snakeyaml-2-0-sources-  
jar/org/yaml/snakeyaml/composer/ComposerException.java  
\* /opt/cola/permits/1584157893\_1677999786.1262538/0/snakeyaml-2-0-sources-  
jar/org/yaml/snakeyaml/nodes/MappingNode.java  
\* /opt/cola/permits/1584157893\_1677999786.1262538/0/snakeyaml-2-0-sources-  
jar/org/yaml/snakeyaml/emitter/Emitable.java  
\* /opt/cola/permits/1584157893\_1677999786.1262538/0/snakeyaml-2-0-sources-  
jar/org/yaml/snakeyaml/tokens/FlowMappingEndToken.java  
\*  
/opt/cola/permits/1584157893\_1677999786.1262538/0/snakeyaml-2-0-sources-  
jar/org/yaml/snakeyaml/DumperOptions.java  
\* /opt/cola/permits/1584157893\_1677999786.1262538/0/snakeyaml-2-0-sources-  
jar/org/yaml/snakeyaml/tokens/FlowSequenceEndToken.java  
\* /opt/cola/permits/1584157893\_1677999786.1262538/0/snakeyaml-2-0-sources-  
jar/org/yaml/snakeyaml/nodes/AnchorNode.java  
\* /opt/cola/permits/1584157893\_1677999786.1262538/0/snakeyaml-2-0-sources-  
jar/org/yaml/snakeyaml/representer/Represent.java  
\* /opt/cola/permits/1584157893\_1677999786.1262538/0/snakeyaml-2-0-sources-  
jar/org/yaml/snakeyaml/nodes/Node.java  
\* /opt/cola/permits/1584157893\_1677999786.1262538/0/snakeyaml-2-0-sources-  
jar/org/yaml/snakeyaml/tokens/FlowMappingStartToken.java  
\* /opt/cola/permits/1584157893\_1677999786.1262538/0/snakeyaml-2-0-sources-  
jar/org/yaml/snakeyaml/reader/ReaderException.java  
\* /opt/cola/permits/1584157893\_1677999786.1262538/0/snakeyaml-2-0-sources-  
jar/org/yaml/snakeyaml/constructor/SafeConstructor.java  
\*  
/opt/cola/permits/1584157893\_1677999786.1262538/0/snakeyaml-2-0-sources-  
jar/org/yaml/snakeyaml/scanner/Constant.java

\* /opt/cola/permits/1584157893\_1677999786.1262538/0/snakeyaml-2-0-sources-  
 jar/org/yaml/snakeyaml/nodes/NodeId.java  
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 jar/org/yaml/snakeyaml/serializer/AnchorGenerator.java  
 \* /opt/cola/permits/1584157893\_1677999786.1262538/0/snakeyaml-2-0-sources-  
 jar/org/yaml/snakeyaml/tokens/DocumentEndToken.java  
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 jar/org/yaml/snakeyaml/parser/ParserImpl.java  
 \* /opt/cola/permits/1584157893\_1677999786.1262538/0/snakeyaml-2-0-sources-  
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 \* /opt/cola/permits/1584157893\_1677999786.1262538/0/snakeyaml-2-0-sources-  
 jar/org/yaml/snakeyaml/introspector/MethodProperty.java  
 \* /opt/cola/permits/1584157893\_1677999786.1262538/0/snakeyaml-2-0-sources-  
 jar/org/yaml/snakeyaml/events/CollectionStartEvent.java  
 \*  
 /opt/cola/permits/1584157893\_1677999786.1262538/0/snakeyaml-2-0-sources-  
 jar/org/yaml/snakeyaml/util/UriEncoder.java  
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 jar/org/yaml/snakeyaml/reader/UnicodeReader.java  
 \* /opt/cola/permits/1584157893\_1677999786.1262538/0/snakeyaml-2-0-sources-  
 jar/org/yaml/snakeyaml/tokens/BlockMappingStartToken.java  
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 \* /opt/cola/permits/1584157893\_1677999786.1262538/0/snakeyaml-2-0-sources-jar/org/yaml/snakeyaml/Yaml.java  
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 \*

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\* /opt/cola/permits/1584157893\_1677999786.1262538/0/snakeyaml-2-0-sources-jar/org/yaml/snakeyaml/introspector/BeanAccess.java  
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\* /opt/cola/permits/1584157893\_1677999786.1262538/0/snakeyaml-2-0-sources-jar/org/yaml/snakeyaml/LoaderOptions.java  
\* /opt/cola/permits/1584157893\_1677999786.1262538/0/snakeyaml-2-0-sources-jar/org/yaml/snakeyaml/tokens/CommentToken.java  
\* /opt/cola/permits/1584157893\_1677999786.1262538/0/snakeyaml-2-0-sources-jar/org/yaml/snakeyaml/extensions/compactnotation/PackageCompactConstructor.java  
\* /opt/cola/permits/1584157893\_1677999786.1262538/0/snakeyaml-2-0-sources-jar/org/yaml/snakeyaml/inspector/TrustedPrefixesTagInspector.java  
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 *
 * <p>
 * This class is used to encode and decode data in Base64 format as described in RFC 1521.
 *
 * <p>
```

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```
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## 1.335 zlib 1.2.7-21.el7\_9

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If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

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b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

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d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

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For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

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(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

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If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

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In 1995, Guido continued his work on Python at the Corporation for National Research Initiatives (CNRI, see <http://www.cnri.reston.va.us>) in Reston, Virginia where he released several versions of the software.

In May 2000, Guido and the Python core development team moved to BeOpen.com to form the BeOpen PythonLabs team. In October of the same year, the PythonLabs team moved to Digital Creations (now Zope Corporation, see <http://www.zope.com>). In 2001, the Python Software Foundation (PSF, see <http://www.python.org/psf/>) was formed, a non-profit organization created specifically to own Python-related Intellectual Property. Zope Corporation is a sponsoring member of the PSF.

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| Release from   | Derived from | Year      | Owner      | GPL-compatible? (1) |
|----------------|--------------|-----------|------------|---------------------|
| 0.9.0 thru 1.2 |              | 1991-1995 | CWI        | yes                 |
| 1.3 thru 1.5.2 | 1.2          | 1995-1999 | CNRI       | yes                 |
| 1.6            | 1.5.2        | 2000      | CNRI       | no                  |
| 2.0            | 1.6          | 2000      | BeOpen.com | no                  |
| 1.6.1          | 1.6          | 2001      | CNRI       | yes (2)             |
| 2.1            | 2.0+1.6.1    | 2001      | PSF        | no                  |
| 2.0.1          | 2.0+1.6.1    | 2001      | PSF        | yes                 |
| 2.1.1          | 2.1+2.0.1    | 2001      | PSF        | yes                 |
| 2.2            | 2.1.1        | 2001      | PSF        | yes                 |
| 2.1.2          | 2.1.1        | 2002      | PSF        | yes                 |
| 2.1.3          | 2.1.2        |           |            |                     |
| 2002           | PSF          | yes       |            |                     |
| 2.2.1          | 2.2          | 2002      | PSF        | yes                 |
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| 2.2.3          | 2.2.2        | 2003      | PSF        | yes                 |
| 2.3            | 2.2.2        | 2002-2003 | PSF        | yes                 |
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## 1.341 libidn 1.28-4.el7

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## 1.342 dbus-python 1.1.1-9.el7

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# 1.346 lua 5.1.4-15.el7

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a)

Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

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operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

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d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

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For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

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## 1.348 libutempter 1.1.6-4.el7

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numbered 2 because it goes with version 2 of the ordinary GPL.]

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```

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# 1.351 pygpgme 0.3-9.el7

## 1.351.1 Available under license :

From RPM File Metadata: LGPLv2+

# 1.352 qrencode 3.4.1-3.e17

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```
-----  
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(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the

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When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

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# 1.354 libassuan 2.1.0-3.el7

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Version 2.1, February 1999

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# 1.357 libsepol 2.5-10.el7

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# 1.358 texinfo 5.1-5.e17

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Ty Coon, President of Vice
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Written by: Philip Hazel  
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#### THE C++ WRAPPER FUNCTIONS

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## 1.364 pinentry 0.8.1-17.el7

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## 1.367 libsemanage-common 2.5-14.el7

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(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

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Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The



threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute

the object code for the work under the terms of Section 6.

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6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will

operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

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# 1.369 libcap-ng 0.7.5-4.el7

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effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

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For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

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- d) If a facility in the modified Library refers to a function or a  
table of data to be supplied by an application program that uses  
the facility, other than as an argument passed when the facility  
is invoked, then you must make a good faith effort to ensure that,  
in the event an application does not supply such function or  
table, the facility still operates, and performs whatever part of  
its purpose remains meaningful.

(For example, a function in a library to compute square roots has  
a purpose that is entirely well-defined independent of the  
application. Therefore, Subsection 2d requires that any  
application-supplied function or table used by this function must  
be optional: if the application does not supply it, the square  
root function must still compute square roots.)

These requirements apply to the modified work as a whole. If  
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themselves, then this License, and its terms, do not apply to those  
sections when you distribute them as separate works. But when you  
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Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

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4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or

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When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

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a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2)

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Julian Seward, jseward@bzip.org  
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## 1.373 findutils 4.5.11-6.el7

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To

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the Front-Cover Texts being @var{list}, and with the Back-Cover Texts  
being @var{list}.

@end group

@end smallexample

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Sections without Cover Texts, or some other  
combination of the three, merge those two alternatives to suit the  
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@c Local Variables:

@c ispell-local-pdict: "ispell-dict"

@c End:

## 1.374 hostname 3.13-3.el7\_7.1

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hostname -- set the host name or show the host/domain name

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## 1.375 rootfiles 8.1-11.el7

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# 1.377 opentelemetry-proto 0.11.0

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# -----
#
$Id: javaee-api.bnd 12591 2008-01-17 09:53:29Z durieuxp $
# -----

# Exclude javax.servlet.*
Import-Package !javax.servlet.*,\
               !com.sun.org.apache.*,\
               javax.xml.namespace,\
               *

Include-Resource @geronimo-activation_1.0.2_spec-1.2.jar!/META-INF/mimetypes.default

# FIXME Some classes in javax.* depends on 'external' packages
# Introduced packages versions
Export-Package javax.el.*;version=2.1,\
               javax.servlet.*;version=2.5;-split-package:=merge-first,\
               javax.transaction;version=1.1.0,\
               javax.mail.*;version=1.4,\
               javax.*,\
               org.apache.taglibs.*;version=2.1

Private-Package org.apache.geronimo.*;-split-package:=merge-first,\
               javax.xml.namespace;-split-package:=merge-first,\
               com.ibm.*
```

-failok

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\* /opt/cola/permits/1610265837\_1679512518.7665615/0/javaee-api-5-0-1-sources-jar/META-INF/javaee-api.bnd

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\* /opt/cola/permits/1611898203\_1680235707.0150697/0/everit-json-schema-1-12-2-sources-4-jar/org/everit/json/schema/JSONPointer.java

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```
* /opt/cola/permits/1611898211_1680234953.7192042/0/classgraph-4-8-120-sources-2-  
jar/nonapi/io/github/classgraph/classloaderhandler/WebsphereLibertyClassLoaderHandler.java  
No license file was found, but licenses were detected in source scan.
```

```
/*
```

```
* This file is part of ClassGraph.
```

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*
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```
* Author: @jacobg on GitHub
```

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```
* Hosted at: https://github.com/classgraph/classgraph
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```
* /opt/cola/permits/1611898211_1680234953.7192042/0/classgraph-4-8-120-sources-2-  
jar/nonapi/io/github/classgraph/classloaderhandler/AntClassLoaderHandler.java  
No license file was found, but licenses were detected in source scan.
```

```
/*
```

```
* This file is part of ClassGraph.
```

```
*
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```
* Author: Luke Hutchison
```

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*
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\* Hosted at: <https://github.com/classgraph/classgraph>

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Found in path(s):

\* /opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-  
 jar/nonapi/io/github/classgraph/fileslice/reader/RandomAccessReader.java  
 \* /opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-  
 jar/nonapi/io/github/classgraph/fileslice/ArraySlice.java  
 \* /opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-  
 jar/nonapi/io/github/classgraph/fileslice/PathSlice.java  
 \* /opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-  
 jar/nonapi/io/github/classgraph/fileslice/FileSlice.java  
 \* /opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-  
 jar/nonapi/io/github/classgraph/fileslice/reader/ClassfileReader.java  
 \*  
 /opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-  
 jar/nonapi/io/github/classgraph/fileslice/reader/RandomAccessByteBufferReader.java  
 \* /opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-  
 jar/nonapi/io/github/classgraph/fileslice/reader/SequentialReader.java  
 \* /opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-  
 jar/nonapi/io/github/classgraph/fileslice/reader/RandomAccessArrayReader.java  
 \* /opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-  
 jar/nonapi/io/github/classgraph/fileslice/reader/RandomAccessFileChannelReader.java

```
* /opt/cola/permits/1611898211_1680234953.7192042/0/classgraph-4-8-120-sources-2-  
jar/nonapi/io/github/classgraph/fileslice/Slice.java
```

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```
/*
```

```
* This file is part of ClassGraph.
```

```
*
```

```
* Author: Johno Crawford (johno@sulake.com)
```

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```
* Hosted at: https://github.com/classgraph/classgraph
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```
* /opt/cola/permits/1611898211_1680234953.7192042/0/classgraph-4-8-120-sources-2-  
jar/nonapi/io/github/classgraph/concurrency/AutoCloseableExecutorService.java
```

```
* /opt/cola/permits/1611898211_1680234953.7192042/0/classgraph-4-8-120-sources-2-  
jar/nonapi/io/github/classgraph/concurrency/SimpleThreadFactory.java
```

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```
/*
```

```
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```

```
*
```

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\* /opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-  
jar/nonapi/io/github/classgraph/classloaderhandler/WebSphereTraditionalClassLoaderHandler.java  
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\*  
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\* /opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-  
 jar/nonapi/io/github/classgraph/types/Parser.java  
 \* /opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-  
 jar/io/github/classgraph/TypeVariableSignature.java  
 \* /opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-  
 jar/io/github/classgraph/MethodParameterInfo.java  
 \* /opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-  
 jar/io/github/classgraph/ClassTypeSignature.java  
 \* /opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-  
 jar/nonapi/io/github/classgraph/json/ParameterizedTypeImpl.java  
 \*  
 /opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-  
 jar/nonapi/io/github/classgraph/classloaderhandler/EquinoxContextFinderClassLoaderHandler.java  
 \* /opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-  
 jar/nonapi/io/github/classgraph/classloaderhandler/FallbackClassLoaderHandler.java  
 \* /opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-  
 jar/nonapi/io/github/classgraph/classloaderhandler/WeblogicClassLoaderHandler.java  
 \* /opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-  
 jar/nonapi/io/github/classgraph/types/TypeUtils.java  
 \* /opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-  
 jar/io/github/classgraph/ClassInfoList.java  
 \* /opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-  
 jar/io/github/classgraph/ModuleInfo.java  
 \* /opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-  
 jar/nonapi/io/github/classgraph/classpath/SystemJarFinder.java  
 \*

/opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-  
 jar/nonapi/io/github/classgraph/json/JSONSerializer.java  
 \* /opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-  
 jar/io/github/classgraph/FieldInfo.java  
 \* /opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-  
 jar/nonapi/io/github/classgraph/classloaderhandler/TomcatWebappClassLoaderBaseHandler.java  
 \* /opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-  
 jar/nonapi/io/github/classgraph/fastzipfilereader/ZipFileSlice.java  
 \* /opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-  
 jar/nonapi/io/github/classgraph/json/ClassFieldCache.java  
 \* /opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-  
 jar/io/github/classgraph/TypeSignature.java  
 \* /opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-  
 jar/io/github/classgraph/ClassGraphClassLoader.java  
 \*  
 /opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-  
 jar/io/github/classgraph/ClassInfo.java  
 \* /opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-  
 jar/io/github/classgraph/ClassRefTypeSignature.java  
 \* /opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-  
 jar/nonapi/io/github/classgraph/Utils/ReflectionUtils.java  
 \* /opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-  
 jar/io/github/classgraph/HierarchicalTypeSignature.java  
 \* /opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-  
 jar/io/github/classgraph/ClassGraphException.java  
 \* /opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-  
 jar/nonapi/io/github/classgraph/classloaderhandler/ParentLastDelegationOrderTestClassLoaderHandler.java  
 \* /opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-  
 jar/io/github/classgraph/ClasspathElementFileDir.java  
 \*  
 /opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-  
 jar/nonapi/io/github/classgraph/classloaderhandler/OSGiDefaultClassLoaderHandler.java  
 \* /opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-  
 jar/nonapi/io/github/classgraph/Utils/URLPathEncoder.java  
 \* /opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-  
 jar/nonapi/io/github/classgraph/json/JSONDeserializer.java  
 \* /opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-  
 jar/nonapi/io/github/classgraph/classpath/ClassLoaderFinder.java  
 \* /opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-  
 jar/nonapi/io/github/classgraph/classpath/ClassLoaderOrder.java  
 \* /opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-  
 jar/io/github/classgraph/AnnotationClassRef.java  
 \* /opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-  
 jar/io/github/classgraph/HasName.java  
 \*  
 /opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-  
 jar/io/github/classgraph/ModuleInfoList.java  
 \* /opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-

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jar/io/github/classgraph/ClasspathElement.java
* /opt/cola/permits/1611898211_1680234953.7192042/0/classgraph-4-8-120-sources-2-
jar/nonapi/io/github/classgraph/classloaderhandler/ClassLoaderHandlerRegistry.java
* /opt/cola/permits/1611898211_1680234953.7192042/0/classgraph-4-8-120-sources-2-
jar/nonapi/io/github/classgraph/Utils/JarUtils.java
* /opt/cola/permits/1611898211_1680234953.7192042/0/classgraph-4-8-120-sources-2-
jar/nonapi/io/github/classgraph/json/JSONParser.java
* /opt/cola/permits/1611898211_1680234953.7192042/0/classgraph-4-8-120-sources-2-
jar/nonapi/io/github/classgraph/classloaderhandler/PlexusClassWorldsClassRealmClassLoaderHandler.java
* /opt/cola/permits/1611898211_1680234953.7192042/0/classgraph-4-8-120-sources-2-
jar/io/github/classgraph/Resource.java
* /opt/cola/permits/1611898211_1680234953.7192042/0/classgraph-4-8-120-sources-2-
jar/io/github/classgraph/ClasspathElementPathDir.java
*
/opt/cola/permits/1611898211_1680234953.7192042/0/classgraph-4-8-120-sources-2-
jar/nonapi/io/github/classgraph/json/TypeResolutions.java
* /opt/cola/permits/1611898211_1680234953.7192042/0/classgraph-4-8-120-sources-2-
jar/io/github/classgraph/BaseTypeSignature.java
* /opt/cola/permits/1611898211_1680234953.7192042/0/classgraph-4-8-120-sources-2-
jar/nonapi/io/github/classgraph/classloaderhandler/URLClassLoaderHandler.java
* /opt/cola/permits/1611898211_1680234953.7192042/0/classgraph-4-8-120-sources-2-
jar/io/github/classgraph/MethodTypeSignature.java
* /opt/cola/permits/1611898211_1680234953.7192042/0/classgraph-4-8-120-sources-2-
jar/io/github/classgraph/PotentiallyUnmodifiableList.java
* /opt/cola/permits/1611898211_1680234953.7192042/0/classgraph-4-8-120-sources-2-
jar/nonapi/io/github/classgraph/concurrency/WorkQueue.java
* /opt/cola/permits/1611898211_1680234953.7192042/0/classgraph-4-8-120-sources-2-
jar/nonapi/io/github/classgraph/json/JSONReference.java
*
/opt/cola/permits/1611898211_1680234953.7192042/0/classgraph-4-8-120-sources-2-
jar/io/github/classgraph/ClassRefOrTypeVariableSignature.java
* /opt/cola/permits/1611898211_1680234953.7192042/0/classgraph-4-8-120-sources-2-
jar/io/github/classgraph/ClasspathElementZip.java
* /opt/cola/permits/1611898211_1680234953.7192042/0/classgraph-4-8-120-sources-2-
jar/nonapi/io/github/classgraph/Utils/FastPathResolver.java
* /opt/cola/permits/1611898211_1680234953.7192042/0/classgraph-4-8-120-sources-2-
jar/nonapi/io/github/classgraph/recycler/Resettable.java
* /opt/cola/permits/1611898211_1680234953.7192042/0/classgraph-4-8-120-sources-2-
jar/io/github/classgraph/FieldInfoList.java
* /opt/cola/permits/1611898211_1680234953.7192042/0/classgraph-4-8-120-sources-2-
jar/nonapi/io/github/classgraph/concurrency/InterruptedException.java
* /opt/cola/permits/1611898211_1680234953.7192042/0/classgraph-4-8-120-sources-2-
jar/nonapi/io/github/classgraph/fastzipfilereader/LogicalZipFile.java
*
/opt/cola/permits/1611898211_1680234953.7192042/0/classgraph-4-8-120-sources-2-
jar/io/github/classgraph/InfoList.java
* /opt/cola/permits/1611898211_1680234953.7192042/0/classgraph-4-8-120-sources-2-
jar/io/github/classgraph/ReferenceTypeSignature.java

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\* /opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-jar/nonapi/io/github/classgraph/json/ReferenceEqualityKey.java  
 \* /opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-jar/nonapi/io/github/classgraph/json/ClassFields.java  
 \* /opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-jar/nonapi/io/github/classgraph/classpath/ClasspathFinder.java  
 \* /opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-jar/nonapi/io/github/classgraph/concurrency/SingletonMap.java  
 \* /opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-jar/io/github/classgraph/AnnotationParameterValueList.java  
 \*  
 /opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-jar/nonapi/io/github/classgraph/classloaderhandler/ClassLoaderHandler.java  
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 \* /opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-jar/nonapi/io/github/classgraph/classloaderhandler/EquinoxClassLoaderHandler.java  
 \* /opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-jar/io/github/classgraph/ModuleRef.java  
 \* /opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-jar/nonapi/io/github/classgraph/classloaderhandler/ClassGraphClassLoaderHandler.java  
 \* /opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-jar/io/github/classgraph/PackageInfoList.java  
 \* /opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-jar/io/github/classgraph/ClasspathElementModule.java  
 \*  
 /opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-jar/io/github/classgraph/TypeArgument.java  
 \* /opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-jar/nonapi/io/github/classgraph/scanspec/ScanSpec.java  
 \* /opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-jar/io/github/classgraph/ArrayTypeSignature.java  
 \* /opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-jar/nonapi/io/github/classgraph/classpath/ClasspathOrder.java  
 \* /opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-jar/nonapi/io/github/classgraph/classpath/CallStackReader.java  
 \* /opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-jar/io/github/classgraph/AnnotationEnumValue.java  
 \* /opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-jar/nonapi/io/github/classgraph/fastzipfilereader/PhysicalZipFile.java  
 \*  
 /opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-jar/nonapi/io/github/classgraph/json/Id.java  
 \* /opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-jar/io/github/classgraph/MethodInfo.java  
 \* /opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-jar/io/github/classgraph/TypeParameter.java  
 \* /opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-

jar/nonapi/io/github/classgraph/classpath/ModuleFinder.java  
\* /opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-  
jar/io/github/classgraph/MappableInfoList.java  
\* /opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-  
jar/nonapi/io/github/classgraph/Utils/FileUtils.java  
\* /opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-  
jar/io/github/classgraph/AnnotationParameterValue.java  
\* /opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-  
jar/io/github/classgraph/Classfile.java  
\*  
/opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-  
jar/nonapi/io/github/classgraph/json/JSONObject.java  
\* /opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-  
jar/nonapi/io/github/classgraph/Utils/LogNode.java  
\* /opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-  
jar/nonapi/io/github/classgraph/Utils/VersionFinder.java  
\* /opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-  
jar/io/github/classgraph/ClassGraph.java  
\* /opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-  
jar/io/github/classgraph/GraphvizDotfileGenerator.java  
\* /opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-  
jar/nonapi/io/github/classgraph/json/JSONArray.java  
\* /opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-  
jar/nonapi/io/github/classgraph/Utils/StringUtils.java  
\* /opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-  
jar/io/github/classgraph/ArrayClassInfo.java  
\*  
/opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-  
jar/nonapi/io/github/classgraph/types/ParseException.java  
\* /opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-  
jar/nonapi/io/github/classgraph/classloaderhandler/UnoOneJarClassLoaderHandler.java  
\* /opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-  
jar/nonapi/io/github/classgraph/json/FieldTypeInfo.java  
\* /opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-  
jar/nonapi/io/github/classgraph/classloaderhandler/JPMSCClassLoaderHandler.java  
\* /opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-  
jar/nonapi/io/github/classgraph/fastzipfilereader/NestedJarHandler.java  
\* /opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-  
jar/nonapi/io/github/classgraph/json/JSONUtils.java  
\* /opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-  
jar/io/github/classgraph/ScanResultObject.java  
\*  
/opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-  
jar/io/github/classgraph/AnnotationInfoList.java  
\* /opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-  
jar/io/github/classgraph/ModulePathInfo.java  
\* /opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-  
jar/nonapi/io/github/classgraph/Utils/CollectionUtils.java

\* /opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-jar/io/github/classgraph/ScanResult.java  
\* /opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-jar/io/github/classgraph/ObjectTypedValueWrapper.java  
\* /opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-jar/io/github/classgraph/PackageInfo.java  
\* /opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-jar/io/github/classgraph/AnnotationInfo.java  
\*  
/opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-jar/nonapi/io/github/classgraph/recycler/Recycler.java  
\* /opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-jar/nonapi/io/github/classgraph/scanspec/AcceptReject.java  
\* /opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-jar/nonapi/io/github/classgraph/recycler/RecycleOnClose.java  
\* /opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-jar/io/github/classgraph/Scanner.java  
\* /opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-jar/io/github/classgraph/ModuleReaderProxy.java  
\* /opt/cola/permits/1611898211\_1680234953.7192042/0/classgraph-4-8-120-sources-2-jar/io/github/classgraph/MethodInfoList.java  
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jar/nonapi/io/github/classgraph/classloaderhandler/FelixClassLoaderHandler.java

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jar/nonapi/io/github/classgraph/classloaderhandler/JBossClassLoaderHandler.java  
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## 1.382 dropwizard-auth 2.0.34

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## 1.383 swagger-annotations 2.0.7

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\* /opt/cola/permits/1618783067\_1681509181.9620898/0/swagger-annotations-2-0-7-sources-1-jar/io/swagger/v3/oas/annotations/Operation.java  
\* /opt/cola/permits/1618783067\_1681509181.9620898/0/swagger-annotations-2-0-7-sources-1-jar/io/swagger/v3/oas/annotations/callbacks/Callbacks.java



\*  
/opt/cola/permits/1618783067\_1681509181.9620898/0/swagger-annotations-2-0-7-sources-1-jar/io/swagger/v3/oas/annotations/media/Schema.java  
\* /opt/cola/permits/1618783067\_1681509181.9620898/0/swagger-annotations-2-0-7-sources-1-jar/io/swagger/v3/oas/annotations/links/LinkParameter.java  
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\*  
/opt/cola/permits/1618783067\_1681509181.9620898/0/swagger-annotations-2-0-7-sources-1-jar/io/swagger/v3/oas/annotations/security/OAuthScope.java  
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\*  
/opt/cola/permits/1618783067\_1681509181.9620898/0/swagger-annotations-2-0-7-sources-1-jar/io/swagger/v3/oas/annotations/security/OAuthFlows.java  
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\* /opt/cola/permits/1618783067\_1681509181.9620898/0/swagger-annotations-2-0-7-sources-1-jar/io/swagger/v3/oas/annotations/ExternalDocumentation.java  
\* /opt/cola/permits/1618783067\_1681509181.9620898/0/swagger-annotations-2-0-7-sources-1-jar/io/swagger/v3/oas/annotations/security/SecurityScheme.java  
\*  
/opt/cola/permits/1618783067\_1681509181.9620898/0/swagger-annotations-2-0-7-sources-1-jar/io/swagger/v3/oas/annotations/info/Contact.java  
\* /opt/cola/permits/1618783067\_1681509181.9620898/0/swagger-annotations-2-0-7-sources-1-jar/io/swagger/v3/oas/annotations/tags/Tag.java

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* /opt/cola/permits/1618783067_1681509181.9620898/0/swagger-annotations-2-0-7-sources-1-
jar/io/swagger/v3/oas/annotations/media/Encoding.java
* /opt/cola/permits/1618783067_1681509181.9620898/0/swagger-annotations-2-0-7-sources-1-
jar/io/swagger/v3/oas/annotations/media/Content.java
* /opt/cola/permits/1618783067_1681509181.9620898/0/swagger-annotations-2-0-7-sources-1-
jar/io/swagger/v3/oas/annotations/extensions/Extensions.java
* /opt/cola/permits/1618783067_1681509181.9620898/0/swagger-annotations-2-0-7-sources-1-
jar/io/swagger/v3/oas/annotations/info/Info.java
* /opt/cola/permits/1618783067_1681509181.9620898/0/swagger-annotations-2-0-7-sources-1-
jar/io/swagger/v3/oas/annotations/servers/Server.java
*
/opt/cola/permits/1618783067_1681509181.9620898/0/swagger-annotations-2-0-7-sources-1-
jar/io/swagger/v3/oas/annotations/security/OAuthFlow.java
* /opt/cola/permits/1618783067_1681509181.9620898/0/swagger-annotations-2-0-7-sources-1-
jar/io/swagger/v3/oas/annotations/security/SecurityRequirements.java
* /opt/cola/permits/1618783067_1681509181.9620898/0/swagger-annotations-2-0-7-sources-1-
jar/io/swagger/v3/oas/annotations/Hidden.java
* /opt/cola/permits/1618783067_1681509181.9620898/0/swagger-annotations-2-0-7-sources-1-
jar/io/swagger/v3/oas/annotations/callbacks/Callback.java
* /opt/cola/permits/1618783067_1681509181.9620898/0/swagger-annotations-2-0-7-sources-1-
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/opt/cola/permits/1636777502\_1681745629.7593193/0/aws-java-sdk-nimblestudio-1-12-377-sources-jar/com/amazonaws/services/nimblestudio/model/transform/StudioComponentJsonUnmarshaller.java  
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\* /opt/cola/permits/1636777502\_1681745629.7593193/0/aws-java-sdk-nimblestudio-1-12-377-sources-jar/com/amazonaws/services/nimblestudio/model/UpdateStudioComponentRequest.java

\* /opt/cola/permits/1636777502\_1681745629.7593193/0/aws-java-sdk-nimblestudio-1-12-377-sources-jar/com/amazonaws/services/nimblestudio/model/transform/StreamConfigurationJsonUnmarshaller.java

\* /opt/cola/permits/1636777502\_1681745629.7593193/0/aws-java-sdk-nimblestudio-1-12-377-sources-jar/com/amazonaws/services/nimblestudio/model/UpdateLaunchProfileMemberResult.java

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/opt/cola/permits/1636777502\_1681745629.7593193/0/aws-java-sdk-nimblestudio-1-12-377-sources-jar/com/amazonaws/services/nimblestudio/model/GetStudioRequest.java

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\* /opt/cola/permits/1636777502\_1681745629.7593193/0/aws-java-sdk-nimblestudio-1-12-377-sources-jar/com/amazonaws/services/nimblestudio/model/transform/CreateStudioResultJsonUnmarshaller.java

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/opt/cola/permits/1636777502\_1681745629.7593193/0/aws-java-sdk-nimblestudio-1-12-377-sources-jar/com/amazonaws/services/nimblestudio/model/AcceptEulasResult.java

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/opt/cola/permits/1636777502\_1681745629.7593193/0/aws-java-sdk-nimblestudio-1-12-377-sources-jar/com/amazonaws/services/nimblestudio/model/GetEulaRequest.java

\* /opt/cola/permits/1636777502\_1681745629.7593193/0/aws-java-sdk-nimblestudio-1-12-377-sources-jar/com/amazonaws/services/nimblestudio/model/LaunchProfileMembership.java

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\* /opt/cola/permits/1636777502\_1681745629.7593193/0/aws-java-sdk-nimblestudio-1-12-377-sources-jar/com/amazonaws/services/nimblestudio/model/transform/ComputeFarmConfigurationMarshaller.java  
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\* /opt/cola/permits/1636777502\_1681745629.7593193/0/aws-java-sdk-nimblestudio-1-12-377-sources-jar/com/amazonaws/services/nimblestudio/model/StreamingSessionStream.java  
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\* /opt/cola/permits/1636777502\_1681745629.7593193/0/aws-java-sdk-nimblestudio-1-12-377-sources-jar/com/amazonaws/services/nimblestudio/model/transform/UpdateStudioRequestMarshaller.java  
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\* /opt/cola/permits/1636777502\_1681745629.7593193/0/aws-java-sdk-nimblestudio-1-12-377-sources-jar/com/amazonaws/services/nimblestudio/model/transform/NewStudioMemberJsonUnmarshaller.java

\* /opt/cola/permits/1636777502\_1681745629.7593193/0/aws-java-sdk-nimblestudio-1-12-377-sources-jar/com/amazonaws/services/nimblestudio/waiters/StudioDeleted.java

\* /opt/cola/permits/1636777502\_1681745629.7593193/0/aws-java-sdk-nimblestudio-1-12-377-sources-jar/com/amazonaws/services/nimblestudio/model/transform/ListTagsForResourceResultJsonUnmarshaller.java

\* /opt/cola/permits/1636777502\_1681745629.7593193/0/aws-java-sdk-nimblestudio-1-12-377-sources-jar/com/amazonaws/services/nimblestudio/model/NewStudioMember.java

\* /opt/cola/permits/1636777502\_1681745629.7593193/0/aws-java-sdk-nimblestudio-1-12-377-sources-jar/com/amazonaws/services/nimblestudio/AbstractAmazonNimbleStudioAsync.java

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/opt/cola/permits/1636777502\_1681745629.7593193/0/aws-java-sdk-nimblestudio-1-12-377-sources-jar/com/amazonaws/services/nimblestudio/model/StreamConfigurationCreate.java

\* /opt/cola/permits/1636777502\_1681745629.7593193/0/aws-java-sdk-nimblestudio-1-12-377-sources-jar/com/amazonaws/services/nimblestudio/model/transform/ListTagsForResourceRequestMarshaller.java

\* /opt/cola/permits/1636777502\_1681745629.7593193/0/aws-java-sdk-nimblestudio-1-12-377-sources-jar/com/amazonaws/services/nimblestudio/waiters/StreamingImageDeleted.java

\* /opt/cola/permits/1636777502\_1681745629.7593193/0/aws-java-sdk-nimblestudio-1-12-377-sources-jar/com/amazonaws/services/nimblestudio/model/transform/StopStreamingSessionResultJsonUnmarshaller.java

\* /opt/cola/permits/1636777502\_1681745629.7593193/0/aws-java-sdk-nimblestudio-1-12-377-sources-jar/com/amazonaws/services/nimblestudio/model/transform/GetStreamingSessionBackupRequestMarshaller.java

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/opt/cola/permits/1636777502\_1681745629.7593193/0/aws-java-sdk-nimblestudio-1-12-377-sources-jar/com/amazonaws/services/nimblestudio/model/transform/DeleteStudioComponentRequestMarshaller.java

\* /opt/cola/permits/1636777502\_1681745629.7593193/0/aws-java-sdk-nimblestudio-1-12-377-sources-jar/com/amazonaws/services/nimblestudio/model/ListLaunchProfilesRequest.java

\* /opt/cola/permits/1636777502\_1681745629.7593193/0/aws-java-sdk-nimblestudio-1-12-377-sources-jar/com/amazonaws/services/nimblestudio/model/ResourceNotFoundException.java

\* /opt/cola/permits/1636777502\_1681745629.7593193/0/aws-java-sdk-nimblestudio-1-12-377-sources-jar/com/amazonaws/services/nimblestudio/model/CreateStudioResult.java

\* /opt/cola/permits/1636777502\_1681745629.7593193/0/aws-java-sdk-nimblestudio-1-12-377-sources-jar/com/amazonaws/services/nimblestudio/model/transform/CreateStudioComponentRequestProtocolMarshaller.java

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/opt/cola/permits/1636777502\_1681745629.7593193/0/aws-java-sdk-nimblestudio-1-12-377-sources-jar/com/amazonaws/services/nimblestudio/waiters/StudioComponentDeleted.java

\* /opt/cola/permits/1636777502\_1681745629.7593193/0/aws-java-sdk-nimblestudio-1-12-377-sources-jar/com/amazonaws/services/nimblestudio/model/StudioComponentSubtype.java

\* /opt/cola/permits/1636777502\_1681745629.7593193/0/aws-java-sdk-nimblestudio-1-12-377-sources-jar/com/amazonaws/services/nimblestudio/model/StudioPersona.java

\* /opt/cola/permits/1636777502\_1681745629.7593193/0/aws-java-sdk-nimblestudio-1-12-377-sources-jar/com/amazonaws/services/nimblestudio/model/transform/ListStudiosResultJsonUnmarshaller.java

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/opt/cola/permits/1636777502\_1681745629.7593193/0/aws-java-sdk-nimblestudio-1-12-377-sources-jar/com/amazonaws/services/nimblestudio/model/transform/GetStudioResultJsonUnmarshaller.java  
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jar/com/amazonaws/services/nimblestudio/model/StreamingInstanceType.java
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* /opt/cola/permits/1636777502_1681745629.7593193/0/aws-java-sdk-nimblestudio-1-12-377-sources-
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jar/com/amazonaws/services/nimblestudio/model/ListEulaAcceptancesRequest.java
* /opt/cola/permits/1636777502_1681745629.7593193/0/aws-java-sdk-nimblestudio-1-12-377-sources-
jar/com/amazonaws/services/nimblestudio/model/launchProfile/ValidationType.java

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## **1.432 aws-java-sdk-quicksight 1.12.377**

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## **1.441 aws-java-sdk-migrationhubrefactorspaces 1.12.377**

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## 1.448 aws-java-sdk-licensemanager 1.12.377

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\* /bin/grep

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## 1.450 aws-java-sdk-codestarconnections

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## **1.457 kotlin-scripting-compiler-embeddable**

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## **1.458 aws-java-sdk-signer 1.12.377**

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## **1.460 aws-java-sdk-chimesdkmeetings**

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## **1.461 aws-java-sdk-redshift 1.12.377**

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## **1.464 aws-java-sdk-wafv2 1.12.377**

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* /opt/cola/permits/1636779561_1681351914.1550384/0/aws-java-sdk-directconnect-1-12-377-sources-
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* /opt/cola/permits/1636779561_1681351914.1550384/0/aws-java-sdk-directconnect-1-12-377-sources-
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jar/com/amazonaws/services/directconnect/model/ConfirmConnectionRequest.java
* /opt/cola/permits/1636779561_1681351914.1550384/0/aws-java-sdk-directconnect-1-12-377-sources-
jar/com/amazonaws/services/directconnect/model/transform/DisassociateMacSecKeyRequestProtocolMarshaller.java
*
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\* /opt/cola/permits/1636779561\_1681351914.1550384/0/aws-java-sdk-directconnect-1-12-377-sources-jar/com/amazonaws/services/directconnect/model/transform/DeleteDirectConnectGatewayAssociationResultJsonUnmarshaller.java

\* /opt/cola/permits/1636779561\_1681351914.1550384/0/aws-java-sdk-directconnect-1-12-377-sources-jar/com/amazonaws/services/directconnect/model/VirtualGateway.java

\* /opt/cola/permits/1636779561\_1681351914.1550384/0/aws-java-sdk-directconnect-1-12-377-sources-jar/com/amazonaws/services/directconnect/model/transform/DirectConnectGatewayAssociationProposalMarshaller.java

\* /opt/cola/permits/1636779561\_1681351914.1550384/0/aws-java-sdk-directconnect-1-12-377-sources-jar/com/amazonaws/services/directconnect/model/CreateTransitVirtualInterfaceResult.java

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\* /opt/cola/permits/1636779561\_1681351914.1550384/0/aws-java-sdk-directconnect-1-12-377-sources-jar/com/amazonaws/services/directconnect/model/transform/AcceptDirectConnectGatewayAssociationProposalResultJsonUnmarshaller.java

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\* /opt/cola/permits/1636779561\_1681351914.1550384/0/aws-java-sdk-directconnect-1-12-377-sources-jar/com/amazonaws/services/directconnect/model/transform/DisassociateMacSecKeyResultJsonUnmarshaller.java

\* /opt/cola/permits/1636779561\_1681351914.1550384/0/aws-java-sdk-directconnect-1-12-377-sources-jar/com/amazonaws/services/directconnect/model/transform/CreateDirectConnectGatewayResultJsonUnmarshaller.java

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/opt/cola/permits/1636779561\_1681351914.1550384/0/aws-java-sdk-directconnect-1-12-377-sources-jar/com/amazonaws/services/directconnect/model/transform/NewPrivateVirtualInterfaceMarshaller.java

\* /opt/cola/permits/1636779561\_1681351914.1550384/0/aws-java-sdk-directconnect-1-12-377-sources-jar/com/amazonaws/services/directconnect/model/transform/NewTransitVirtualInterfaceAllocationJsonUnmarshaller.java

\* /opt/cola/permits/1636779561\_1681351914.1550384/0/aws-java-sdk-directconnect-1-12-377-sources-jar/com/amazonaws/services/directconnect/model/transform/DescribeLoaResultJsonUnmarshaller.java

\* /opt/cola/permits/1636779561\_1681351914.1550384/0/aws-java-sdk-directconnect-1-12-377-sources-jar/com/amazonaws/services/directconnect/model/AssociateMacSecKeyRequest.java

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/opt/cola/permits/1636779561\_1681351914.1550384/0/aws-java-sdk-directconnect-1-12-377-sources-jar/com/amazonaws/services/directconnect/model/GatewayType.java

\* /opt/cola/permits/1636779561\_1681351914.1550384/0/aws-java-sdk-directconnect-1-12-377-sources-jar/com/amazonaws/services/directconnect/model/DescribeRouterConfigurationResult.java

\* /opt/cola/permits/1636779561\_1681351914.1550384/0/aws-java-sdk-directconnect-1-12-377-sources-jar/com/amazonaws/services/directconnect/model/transform/DescribeCustomerMetadataRequestMarshaller.java

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\* /opt/cola/permits/1636779561\_1681351914.1550384/0/aws-java-sdk-directconnect-1-12-377-sources-jar/com/amazonaws/services/directconnect/model/transform/AssociateMacSecKeyResultJsonUnmarshaller.java

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\* /opt/cola/permits/1636779561\_1681351914.1550384/0/aws-java-sdk-directconnect-1-12-377-sources-jar/com/amazonaws/services/directconnect/model/Location.java

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/opt/cola/permits/1636779561\_1681351914.1550384/0/aws-java-sdk-directconnect-1-12-377-sources-jar/com/amazonaws/services/directconnect/model/DescribeInterconnectLoaRequest.java

\* /opt/cola/permits/1636779561\_1681351914.1550384/0/aws-java-sdk-directconnect-1-12-377-sources-jar/com/amazonaws/services/directconnect/model/transform/ConfirmPrivateVirtualInterfaceRequestMarshaller.java

\* /opt/cola/permits/1636779561\_1681351914.1550384/0/aws-java-sdk-directconnect-1-12-377-sources-jar/com/amazonaws/services/directconnect/model/transform/NewTransitVirtualInterfaceMarshaller.java

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/opt/cola/permits/1636779561\_1681351914.1550384/0/aws-java-sdk-directconnect-1-12-377-sources-jar/com/amazonaws/services/directconnect/model/AssociateConnectionWithLagRequest.java

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\* /opt/cola/permits/1636779561\_1681351914.1550384/0/aws-java-sdk-directconnect-1-12-377-sources-jar/com/amazonaws/services/directconnect/model/transform/MacSecKeyMarshaller.java

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\* /opt/cola/permits/1636779561\_1681351914.1550384/0/aws-java-sdk-directconnect-1-12-377-sources-jar/com/amazonaws/services/directconnect/model/transform/CreatePrivateVirtualInterfaceResultJsonUnmarshaller.java

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\* /opt/cola/permits/1636779561\_1681351914.1550384/0/aws-java-sdk-directconnect-1-12-377-sources-jar/com/amazonaws/services/directconnect/model/NewPrivateVirtualInterface.java

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\* /opt/cola/permits/1636779561\_1681351914.1550384/0/aws-java-sdk-directconnect-1-12-377-sources-jar/com/amazonaws/services/directconnect/model/VirtualInterfaceTestHistory.java

\* /opt/cola/permits/1636779561\_1681351914.1550384/0/aws-java-sdk-directconnect-1-12-377-sources-jar/com/amazonaws/services/directconnect/model/DirectConnectGateway.java

\* /opt/cola/permits/1636779561\_1681351914.1550384/0/aws-java-sdk-directconnect-1-12-377-sources-jar/com/amazonaws/services/directconnect/model/transform/UpdateDirectConnectGatewayAssociationRequestProtocolMarshaller.java

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\* /opt/cola/permits/1636779561\_1681351914.1550384/0/aws-java-sdk-directconnect-1-12-377-sources-jar/com/amazonaws/services/directconnect/model/transform/CreateBGPPeerResultJsonUnmarshaller.java

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/opt/cola/permits/1636779561\_1681351914.1550384/0/aws-java-sdk-directconnect-1-12-377-sources-jar/com/amazonaws/services/directconnect/model/AllocatePublicVirtualInterfaceRequest.java

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\* /opt/cola/permits/1636779561\_1681351914.1550384/0/aws-java-sdk-directconnect-1-12-377-sources-jar/com/amazonaws/services/directconnect/model/transform/DescribeLocationsRequestMarshaller.java

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jar/com/amazonaws/services/personalize/AbstractAmazonPersonalize.class: binary file matches  
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jar/com/amazonaws/services/personalize/AmazonPersonalizeAsync.class: binary file matches  
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jar/com/amazonaws/services/personalize/model/MetricAttributionSummary.class: binary file matches  
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Found in path(s):

\* /opt/cola/permits/1638411436\_1681425252.2254884/0/grpc-stub-1-24-0-sources-1-jar/io/grpc/stub/package-

info.java

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Found in path(s):

```
* /opt/cola/permits/1638411436_1681425252.2254884/0/grpc-stub-1-24-0-sources-1-
jar/io/grpc/stub/annotations/RpcMethod.java
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```
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jar/io/grpc/stub/MetadataUtils.java
* /opt/cola/permits/1638411436_1681425252.2254884/0/grpc-stub-1-24-0-sources-1-
jar/io/grpc/stub/ClientCalls.java
* /opt/cola/permits/1638411436_1681425252.2254884/0/grpc-stub-1-24-0-sources-1-
jar/io/grpc/stub/ServerCalls.java
*
```

/opt/cola/permits/1638411436\_1681425252.2254884/0/grpc-stub-1-24-0-sources-1-jar/io/grpc/stub/AbstractStub.java  
\* /opt/cola/permits/1638411436\_1681425252.2254884/0/grpc-stub-1-24-0-sources-1-jar/io/grpc/stub/StreamObserver.java  
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Found in path(s):

\* /opt/cola/permits/1638411436\_1681425252.2254884/0/grpc-stub-1-24-0-sources-1-jar/io/grpc/stub/ClientResponseObserver.java  
\* /opt/cola/permits/1638411436\_1681425252.2254884/0/grpc-stub-1-24-0-sources-1-jar/io/grpc/stub/ClientCallStreamObserver.java  
\* /opt/cola/permits/1638411436\_1681425252.2254884/0/grpc-stub-1-24-0-sources-1-jar/io/grpc/stub/CallStreamObserver.java  
\*  
/opt/cola/permits/1638411436\_1681425252.2254884/0/grpc-stub-1-24-0-sources-1-jar/io/grpc/stub/ServerCallStreamObserver.java  
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\*/

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\* /opt/cola/permits/1638411436\_1681425252.2254884/0/grpc-stub-1-24-0-sources-1-jar/io/grpc/stub/StreamObservers.java

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* /opt/cola/permits/1656638364_1682593601.2844107/0/jsr305-3-0-2-sources-9-jar/javax/annotation/concurrent/NotThreadSafe.java  
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* /opt/cola/permits/1656638364_1682593601.2844107/0/jsr305-3-0-2-sources-9-jar/javax/annotation/concurrent/GuardedBy.java
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Last revised by Reagle \$Date: 2005-06-03 18:49:13 -0400 (Fri, 03 Jun 2005) \$



# 1.726 servlet-api 3.0.1

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Jackson is a high-performance, Free/Open Source JSON processing library. It was originally written by Tatu Saloranta (tatu.saloranta@iki.fi), and has been in development since 2007. It is currently developed by a community of developers.

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jar/com/google/j2objc/annotations/OnDealloc.java
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jar/com/google/j2objc/annotations/RetainedLocalRef.java
* /opt/cola/permits/1704412778_1685746927.655543/0/j2objc-annotations-2-8-sources-
jar/com/google/j2objc/annotations/ReflectionSupport.java
* /opt/cola/permits/1704412778_1685746927.655543/0/j2objc-annotations-2-8-sources-
jar/com/google/j2objc/annotations/Property.java
```

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* /opt/cola/permits/1704412778_1685746927.655543/0/j2objc-annotations-2-8-sources-
jar/com/google/j2objc/annotations/WeakOuter.java
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jar/com/esotericsoftware/kryo/SerializerFactory.java
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* /opt/cola/permits/1707879144_1686172204.8482187/0/kryo-5-5-0-sources-
jar/com/esotericsoftware/kryo/io/KryoObjectInput.java
* /opt/cola/permits/1707879144_1686172204.8482187/0/kryo-5-5-0-sources-
jar/com/esotericsoftware/kryo/serializers/AsmField.java
* /opt/cola/permits/1707879144_1686172204.8482187/0/kryo-5-5-0-sources-
jar/com/esotericsoftware/kryo/serializers/CollectionSerializer.java
* /opt/cola/permits/1707879144_1686172204.8482187/0/kryo-5-5-0-sources-
jar/com/esotericsoftware/kryo/serializers/DefaultArraySerializers.java
* /opt/cola/permits/1707879144_1686172204.8482187/0/kryo-5-5-0-sources-
jar/com/esotericsoftware/kryo/io/OutputChunked.java
* /opt/cola/permits/1707879144_1686172204.8482187/0/kryo-5-5-0-sources-
jar/com/esotericsoftware/kryo/util/DefaultClassResolver.java
*
/opt/cola/permits/1707879144_1686172204.8482187/0/kryo-5-5-0-sources-
jar/com/esotericsoftware/kryo/util/MapReferenceResolver.java
* /opt/cola/permits/1707879144_1686172204.8482187/0/kryo-5-5-0-sources-
jar/com/esotericsoftware/kryo/util/IntArray.java
* /opt/cola/permits/1707879144_1686172204.8482187/0/kryo-5-5-0-sources-
jar/com/esotericsoftware/kryo/unsafe/UnsafeByteBufferInput.java
* /opt/cola/permits/1707879144_1686172204.8482187/0/kryo-5-5-0-sources-
jar/com/esotericsoftware/kryo/serializers/BlowfishSerializer.java
* /opt/cola/permits/1707879144_1686172204.8482187/0/kryo-5-5-0-sources-
jar/com/esotericsoftware/kryo/serializers/VersionFieldSerializer.java
* /opt/cola/permits/1707879144_1686172204.8482187/0/kryo-5-5-0-sources-
jar/com/esotericsoftware/kryo/serializers/DeflateSerializer.java
* /opt/cola/permits/1707879144_1686172204.8482187/0/kryo-5-5-0-sources-
jar/com/esotericsoftware/kryo/util/IdentityObjectIntMap.java
*
/opt/cola/permits/1707879144_1686172204.8482187/0/kryo-5-5-0-sources-
jar/com/esotericsoftware/kryo/serializers/FieldSerializer.java
* /opt/cola/permits/1707879144_1686172204.8482187/0/kryo-5-5-0-sources-
jar/com/esotericsoftware/kryo/io/ByteBufferInput.java
* /opt/cola/permits/1707879144_1686172204.8482187/0/kryo-5-5-0-sources-
jar/com/esotericsoftware/kryo/DefaultSerializer.java
* /opt/cola/permits/1707879144_1686172204.8482187/0/kryo-5-5-0-sources-
jar/com/esotericsoftware/kryo/serializers/ClosureSerializer.java
* /opt/cola/permits/1707879144_1686172204.8482187/0/kryo-5-5-0-sources-
jar/com/esotericsoftware/kryo/KryoSerializable.java
* /opt/cola/permits/1707879144_1686172204.8482187/0/kryo-5-5-0-sources-
jar/com/esotericsoftware/kryo/io/ByteBufferOutputStream.java
* /opt/cola/permits/1707879144_1686172204.8482187/0/kryo-5-5-0-sources-
jar/com/esotericsoftware/kryo/util/GenericsUtil.java

```

\* /opt/cola/permits/1707879144\_1686172204.8482187/0/kryo-5-5-0-sources-jar/com/esotericsoftware/kryo/unsafe/UnsafeOutput.java  
\*  
/opt/cola/permits/1707879144\_1686172204.8482187/0/kryo-5-5-0-sources-jar/com/esotericsoftware/kryo/serializers/OptionalSerializers.java  
\* /opt/cola/permits/1707879144\_1686172204.8482187/0/kryo-5-5-0-sources-jar/com/esotericsoftware/kryo/serializers/EnumNameSerializer.java  
\* /opt/cola/permits/1707879144\_1686172204.8482187/0/kryo-5-5-0-sources-jar/com/esotericsoftware/kryo/util/Util.java  
\* /opt/cola/permits/1707879144\_1686172204.8482187/0/kryo-5-5-0-sources-jar/com/esotericsoftware/kryo/io/InputChunked.java  
\* /opt/cola/permits/1707879144\_1686172204.8482187/0/kryo-5-5-0-sources-jar/com/esotericsoftware/kryo/serializers/UnsafeField.java  
\* /opt/cola/permits/1707879144\_1686172204.8482187/0/kryo-5-5-0-sources-jar/com/esotericsoftware/kryo/util/ListReferenceResolver.java  
\* /opt/cola/permits/1707879144\_1686172204.8482187/0/kryo-5-5-0-sources-jar/com/esotericsoftware/kryo/serializers/ImmutableCollectionsSerializers.java  
\* /opt/cola/permits/1707879144\_1686172204.8482187/0/kryo-5-5-0-sources-jar/com/esotericsoftware/kryo/io/KryoBufferOverflowException.java  
\*  
/opt/cola/permits/1707879144\_1686172204.8482187/0/kryo-5-5-0-sources-jar/com/esotericsoftware/kryo/Registration.java  
\* /opt/cola/permits/1707879144\_1686172204.8482187/0/kryo-5-5-0-sources-jar/com/esotericsoftware/kryo/ClassResolver.java  
\* /opt/cola/permits/1707879144\_1686172204.8482187/0/kryo-5-5-0-sources-jar/com/esotericsoftware/kryo/serializers/ImmutableSerializer.java  
\* /opt/cola/permits/1707879144\_1686172204.8482187/0/kryo-5-5-0-sources-jar/com/esotericsoftware/kryo/util/Pool.java  
\* /opt/cola/permits/1707879144\_1686172204.8482187/0/kryo-5-5-0-sources-jar/com/esotericsoftware/kryo/serializers/CachedFields.java  
\* /opt/cola/permits/1707879144\_1686172204.8482187/0/kryo-5-5-0-sources-jar/com/esotericsoftware/kryo/util/DefaultInstantiatorStrategy.java  
\* /opt/cola/permits/1707879144\_1686172204.8482187/0/kryo-5-5-0-sources-jar/com/esotericsoftware/kryo/util/Null.java  
\*  
/opt/cola/permits/1707879144\_1686172204.8482187/0/kryo-5-5-0-sources-jar/com/esotericsoftware/kryo/io/KryoBufferUnderflowException.java  
\* /opt/cola/permits/1707879144\_1686172204.8482187/0/kryo-5-5-0-sources-jar/com/esotericsoftware/kryo/serializers/BeanSerializer.java  
\* /opt/cola/permits/1707879144\_1686172204.8482187/0/kryo-5-5-0-sources-jar/com/esotericsoftware/kryo/util/DefaultGenerics.java  
\* /opt/cola/permits/1707879144\_1686172204.8482187/0/kryo-5-5-0-sources-jar/com/esotericsoftware/kryo/io/Output.java  
\* /opt/cola/permits/1707879144\_1686172204.8482187/0/kryo-5-5-0-sources-jar/com/esotericsoftware/kryo/serializers/DefaultSerializers.java  
\* /opt/cola/permits/1707879144\_1686172204.8482187/0/kryo-5-5-0-sources-jar/com/esotericsoftware/kryo/serializers/ReflectField.java  
\* /opt/cola/permits/1707879144\_1686172204.8482187/0/kryo-5-5-0-sources-

```
jar/com/esotericsoftware/kryo/io/ByteBufferInputStream.java
* /opt/cola/permits/1707879144_1686172204.8482187/0/kryo-5-5-0-sources-
jar/com/esotericsoftware/kryo/Serializer.java
*
/opt/cola/permits/1707879144_1686172204.8482187/0/kryo-5-5-0-sources-
jar/com/esotericsoftware/kryo/unsafe/UnsafeUtil.java
* /opt/cola/permits/1707879144_1686172204.8482187/0/kryo-5-5-0-sources-
jar/com/esotericsoftware/kryo/util/IntMap.java
* /opt/cola/permits/1707879144_1686172204.8482187/0/kryo-5-5-0-sources-
jar/com/esotericsoftware/kryo/KryoCopyable.java
```

# 1.747 guava 32.0.1-jre

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# 1.748 libnss-nis 2.17

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- b) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.
- c) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.
- d) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

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To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

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Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a ``work based on the library" and a ``work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

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@enumerate 0

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either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term ``modification".)

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@item

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You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.

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(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

@end enumerate

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Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

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If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

@item

A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a ``work that uses the Library''. Such a

work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a ``work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a ``work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

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Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

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Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable ``work that uses the Library'', as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

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@subheading END OF TERMS AND CONDITIONS

@page

@subheading How to Apply These Terms to Your New Libraries

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@smallexample

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smallexample

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@smallexample

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'Frob' (a library for tweaking knobs) written by James Random Hacker.

@var{signature of Ty Coon}, 1 April 1990

Ty Coon, President of Vice

@end smallexample

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derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute

the object code for the work under the terms of Section 6.

Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

^L

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a)

Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a

copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

^L

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

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## 1.749 libnss-nisplus 2.17

### 1.749.1 Available under license :

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Version 2, June 1991

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Because of this blurred distinction, using the ordinary General Public License for libraries did not effectively promote software sharing, because most developers did not use the libraries. We concluded that weaker conditions might promote sharing better.

However, unrestricted linking of non-free programs would deprive the users of those programs of all benefit from the free status of the libraries themselves. This Library General Public License is intended to permit developers of non-free programs to use free libraries, while preserving your freedom as a user of such programs to change the free libraries that are incorporated in them. (We have not seen how to achieve this as regards changes in header files, but we have achieved it as regards changes in the actual functions of the Library.) The hope is that this will lead to faster development of free libraries.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, while the latter only works together with the library.

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(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

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This option is useful when you wish to copy part of the code of the

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4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.



If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

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@end display

@subheading Preamble

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if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

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@subheading END OF TERMS AND CONDITIONS

@page

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@var{signature of Ty Coon}, 1 April 1990  
Ty Coon, President of Vice  
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Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

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 */
```

Found in path(s):

```
* /opt/cola/permits/1722433605_1686901730.8528392/0/snappy-0-3-sources-3-jar/org/iq80/snappy/Memory.java
* /opt/cola/permits/1722433605_1686901730.8528392/0/snappy-0-3-sources-3-
jar/org/iq80/snappy/SnappyCompressor.java
*
/opt/cola/permits/1722433605_1686901730.8528392/0/snappy-0-3-sources-3-jar/org/iq80/snappy/Main.java
* /opt/cola/permits/1722433605_1686901730.8528392/0/snappy-0-3-sources-3-
jar/org/iq80/snappy/UnsafeMemory.java
* /opt/cola/permits/1722433605_1686901730.8528392/0/snappy-0-3-sources-3-
jar/org/iq80/snappy/SnappyDecompressor.java
* /opt/cola/permits/1722433605_1686901730.8528392/0/snappy-0-3-sources-3-
```

```
jar/org/iq80/snappy/SnappyInternalUtils.java
* /opt/cola/permits/1722433605_1686901730.8528392/0/snappy-0-3-sources-3-
jar/org/iq80/snappy/CorruptionException.java
* /opt/cola/permits/1722433605_1686901730.8528392/0/snappy-0-3-sources-3-jar/org/iq80/snappy/Snappy.java
* /opt/cola/permits/1722433605_1686901730.8528392/0/snappy-0-3-sources-3-
jar/org/iq80/snappy/SlowMemory.java
* /opt/cola/permits/1722433605_1686901730.8528392/0/snappy-0-3-sources-3-
jar/org/iq80/snappy/SnappyInputStream.java
* /opt/cola/permits/1722433605_1686901730.8528392/0/snappy-0-3-sources-3-jar/org/iq80/snappy/Crc32C.java
*
/opt/cola/permits/1722433605_1686901730.8528392/0/snappy-0-3-sources-3-
jar/org/iq80/snappy/SnappyOutputStream.java
* /opt/cola/permits/1722433605_1686901730.8528392/0/snappy-0-3-sources-3-
jar/org/iq80/snappy/BufferRecycler.java
* /opt/cola/permits/1722433605_1686901730.8528392/0/snappy-0-3-sources-3-
jar/org/iq80/snappy/HadoopSnappyCodec.java
```

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Python was created in the early 1990s by Guido van Rossum at Stichting Mathematisch Centrum (CWI, see <http://www.cwi.nl>) in the Netherlands as a successor of a language called ABC. Guido remains Python's principal author, although it includes many contributions from others.

In 1995, Guido continued his work on Python at the Corporation for National Research Initiatives (CNRI, see <http://www.cnri.reston.va.us>) in Reston, Virginia where he released several versions of the software.

In May 2000, Guido and the Python core development team moved to BeOpen.com to form the BeOpen PythonLabs team. In October of the same year, the PythonLabs team moved to Digital Creations (now Zope Corporation, see <http://www.zope.com>). In 2001, the Python Software Foundation (PSF, see <http://www.python.org/psf/>) was formed, a non-profit organization created specifically to own Python-related Intellectual Property. Zope Corporation is a sponsoring member of the PSF.

All Python releases are Open Source (see <http://www.opensource.org> for the Open Source Definition). Historically, most, but not all, Python releases have also been GPL-compatible; the table below summarizes the various releases.

| Release        | Derived from | Year      | Owner      | GPL-compatible? (1) |
|----------------|--------------|-----------|------------|---------------------|
| 0.9.0 thru 1.2 |              | 1991-1995 | CWI        | yes                 |
| 1.3 thru 1.5.2 | 1.2          | 1995-1999 | CNRI       | yes                 |
| 1.6            | 1.5.2        | 2000      | CNRI       | no                  |
| 2.0            | 1.6          | 2000      | BeOpen.com | no                  |
| 1.6.1          | 1.6          | 2001      | CNRI       | yes (2)             |
| 2.1            | 2.0+1.6.1    | 2001      | PSF        | no                  |
| 2.0.1          | 2.0+1.6.1    | 2001      | PSF        | yes                 |
| 2.1.1          | 2.1+2.0.1    | 2001      | PSF        | yes                 |
| 2.2            | 2.1.1        | 2001      | PSF        | yes                 |
| 2.1.2          | 2.1.1        | 2002      | PSF        | yes                 |
| 2.1.3          |              |           |            |                     |
| 2.1.2          | 2002         | PSF       | yes        |                     |
| 2.2.1          | 2.2          | 2002      | PSF        | yes                 |
| 2.2.2          | 2.2.1        | 2002      | PSF        | yes                 |
| 2.2.3          | 2.2.2        | 2003      | PSF        | yes                 |
| 2.3            | 2.2.2        | 2002-2003 | PSF        | yes                 |
| 2.3.1          | 2.3          | 2002-2003 | PSF        | yes                 |

|       |       |           |     |     |
|-------|-------|-----------|-----|-----|
| 2.3.2 | 2.3.1 | 2002-2003 | PSF | yes |
| 2.3.3 | 2.3.2 | 2002-2003 | PSF | yes |
| 2.3.4 | 2.3.3 | 2004      | PSF | yes |
| 2.3.5 | 2.3.4 | 2005      | PSF | yes |
| 2.4   | 2.3   | 2004      | PSF | yes |
| 2.4.1 | 2.4   | 2005      | PSF | yes |
| 2.4.2 | 2.4.1 | 2005      | PSF | yes |
| 2.4.3 | 2.4.2 | 2006      | PSF | yes |
| 2.4.4 | 2.4.3 | 2006      | PSF | yes |
| 2.5   | 2.4   | 2006      | PSF | yes |
| 2.5.1 | 2.5   | 2007      | PSF | yes |
| 2.5.2 | 2.5.1 | 2008      | PSF | yes |
| 2.5.3 | 2.5.2 | 2008      | PSF | yes |
| 2.6   | 2.5   | 2008      | PSF | yes |
| 2.6.1 | 2.6   | 2008      | PSF | yes |
| 2.6.2 | 2.6.1 | 2009      | PSF | yes |
| 2.6.3 | 2.6.2 | 2009      | PSF | yes |
| 2.6.4 | 2.6.3 | 2009      | PSF | yes |
| 2.6.5 | 2.6.4 | 2010      | PSF | yes |
| 2.7   | 2.6   | 2010      | PSF | yes |

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{"version":3,"file":"kotlin.js","sources":["wrapper.js","js/arrayUtils.js","js/callableReferenceUtils.js","js/conversions.js","js/core.js","js/long.js","js/markerFunctions.js","js/misc.js","js/polyfills.js","js/rtti.js","runtime/arrayUtils.kt","runtime/Enum.kt","primitiveCompanionObjects.kt","common/src/generated/_Arrays.kt","common/src/generated/_Ranges.kt","unsigned/src/kotlin/UByte.kt","unsigned/src/kotlin/UInt.kt","unsigned/src/kotlin/UShort.kt","src/kotlin/collections/Collections.kt","src/kotlin/collections/Maps.kt","src/kotlin/collections/Sets.kt","src/kotlin/ranges/PrimitiveRanges.kt","src/kotlin/text/StringNumberConversions.kt","src/kotlin/time/Duration.kt","unsigned/src/kotlin/UnsignedUtils.kt","../core/builtins/src/kotlin/internal/InternalAnnotations.kt","src/kotlin/collections/Iterables.kt","src/kotlin/collections/Sequences.kt","src/kotlin/util/Preconditions.kt","js/src/generated/_ArraysJs.kt","src/kotlin/comparisons/Comparisons.kt","src/kotlin/util/Standard.kt","js/src/generated/_ComparisonsJs.kt","unsigned/src/kotlin/ULong.kt","common/src/generated/_Collections.kt","js/src/kotlin/collections.kt","src/kotlin/collections/Iterators.kt","common/src/generated/_Comparisons.kt","common/src/generated/_Maps.kt","common/src/generated/_OneToManyTitlecaseMappings.kt","js/src/kotlin/text/char.kt","js/src/kotlin/text/string.kt","src/kotlin/text/Char.kt","src/kotlin/CharCode.kt","common/src/generated/_Sequences.kt","common/src/generated/_Sets.kt","common/src/generated/_Strings.kt","src/kotlin/text/Strings.kt","unsigned/src/kotlin/UByteArray.kt","unsigned/src/kotlin/UIntArray.kt","unsigned/src/kotlin/ULongArray.kt","unsigned/src/kotlin/UShortArray.kt","common/src/generated/_UArrays.kt","common/src/generated/_UCollections.kt","common/src/generated/_UComparisons.kt","common/src/generated/_URanges.kt","common/src/generated/_USequences.kt","common/src/kotlin/ExceptionsH.kt","common/src/kotlin/JsAnnotationsH.kt","common/src/kotlin/ioH.kt","builtin-sources/Collections.kt","builtin-sources/Unit.kt","builtin-sources/annotation/Annotations.kt","src/kotlin/builtins.kt","src/kotlin/jsTypeOf.kt","src/kotlin/kotlin.kt","src/kotlin/charCode_js-v1.kt","src/kotlin/coroutines/CoroutineImpl.kt","src/kotlin/util/Result.kt","src/kotlin/coroutines/Continuation.kt","src/kotlin/coroutines/intrinsics/IntrinsicsJs.kt","src/kotlin/currentBeMisc.kt","src/kotlin/exceptions.kt","src/kotlin/jsOperators.kt","src/kotlin/math_js-v1.kt","src/kotlin/numbers_js-v1.kt","src/kotlin/reflection_js-v1.kt","src/kotlin/text/numberConversions_js-v1.kt","js/src/kotlin/js.arrays/fill.kt","js/src/kotlin/js.arrays/sort.kt","js/src/generated/_CharCategories.kt","js/src/generated/_CollectionsJs.kt","js/src/generated/_DigitChars.kt","js/src/generated/_LetterChars.kt","js/src/generated/_OtherLowercaseChars.kt","js/src/generated/_OtherUppercaseChars.kt","js/src/generated/_StringsJs.kt","js/src/generated/_TitlecaseMappings.kt","js/src/generated/_UArraysJs.kt","js/src/generated/_WhitespaceChars.kt","js/src/kotlin/Comparator.kt","js/src/kotlin/annotations.kt","js/src/kotlin/annotationsJVM.kt","js/src/kotlin/collections/AbstractMutableCollection.kt","js/src/kotlin/collections/AbstractMutableList.kt","js/src/kotlin/collections/AbstractMutableMap.kt","js/src/kotlin/collections/AbstractMutableSet.kt","js/src/kotlin/collections/ArrayList.kt","js/src/kotlin/collections/ArraySorting.kt","js/src/kotlin/collections/ArraysJs.kt","js/src/kotlin/collections/EqualityComparator.kt","js/src/kotlin/collections/HashMap.kt","js/src/kotlin/collections/HashSet.kt","js/src/kotlin/collections/InternalHashCodeMap.kt","js/src/kotlin/collections/InternalMap.kt","js/src/kotlin/collections/InternalStringMap.kt","js/src/kotlin/collections/LinkedHashMap.kt","js/src/kotlin/collections/LinkedHashSet.kt","js/src/kotlin/concurrent.kt","js/src/kotlin/console.kt","js/src/kotlin/coroutines/SafeContinuationJs.kt","js/src/kotlin/coroutines/cancellation/CancellationException.kt","js/src/kotlin/coroutines/js/internal/EmptyContinuation.kt","js/src/kotlin/date.kt","js/src/kotlin/dom/Builders.kt","js/src/kotlin/dom/Classes.kt","js/src/kotlin/dom/Dom.kt","js/src/kotlin/dom/EventListener.kt","js/src/kotlin/dom/ItemArrayLike.kt","js/src/kotlin/dom/Mutations.kt","js/src/kotlin/dynamic.kt","js/src/kotlin/enums/EnumEntriesSerialization
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in/internalAnnotations.kt","js/src/kotlin/json.kt","js/src/kotlin/math.kt","js/src/kotlin/numbers.kt","js/src/kotlin/prom  
ise.kt","js/src/kotlin/random/PlatformRandom.kt","js/src/kotlin/reflect/AssociatedObjects.kt","js/src/kotlin/reflect/Js  
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sCode.kt","js/src/kotlin/text/utf8Encoding.kt","js/src/kotlin/throwableExtensions.kt","js/src/kotlin/time/DurationJs.k  
t","js/src/kotlin/time/DurationUnit.kt","js/src/kotlin/time/MonoTimeSource.kt","js/src/kotlinx/dom/Builders.kt","js/s  
rc/kotlinx/dom/Classes.kt","src/kotlin/text/regex/RegexExtensions.kt","js/src/kotlinx/dom/Dom.kt","js/src/kotlinx/d  
om/Mutations.kt","js/src/org.w3c/deprecated.kt","js/src/org.w3c/org.khronos.webgl.kt","js/src/org.w3c/org.w3c.dom  
.clipboard.kt","js/src/org.w3c/org.w3c.dom.css.kt","js/src/org.w3c/org.w3c.dom.encryptedmedia.kt","js/src/org.w3c/  
org.w3c.dom.events.kt","js/src/org.w3c/org.w3c.dom.kt","js/src/org.w3c/org.w3c.fetch.kt","js/src/org.w3c/org.w3c.  
dom.mediacapture.kt","js/src/org.w3c/org.w3c.dom.mediasource.kt","js/src/org.w3c/org.w3c.dom.pointerevents.kt",  
"js/src/org.w3c/org.w3c.dom.svg.kt","js/src/org.w3c/org.w3c.files.kt","js/src/org.w3c/org.w3c.notifications.kt","js/sr  
c/org.w3c/org.w3c.workers.kt","js/src/org.w3c/org.w3c.xhr.kt","src/kotlin/annotations/ExperimentalStdlibApi.kt","s  
rc/kotlin/annotations/Inference.kt","src/kotlin/annotations/Multiplatform.kt","src/kotlin/annotations/OptIn.kt","src/k  
otlin/annotations/WasExperimental.kt","src/kotlin/collections/AbstractCollection.kt","src/kotlin/collections/Abstract  
Iterator.kt","src/kotlin/collections/AbstractList.kt","src/kotlin/collections/AbstractMap.kt","src/kotlin/collections/Ab  
stractSet.kt","src/kotlin/collections/ArrayDeque.kt","src/kotlin/collections/Arrays.kt","src/kotlin/collections/Indexed  
Value.kt","src/kotlin/collections/MapAccessors.kt","src/kotlin/collections/MapWithDefault.kt","src/kotlin/collection  
s/MutableCollections.kt","src/kotlin/collections/PrimitiveIterators.kt","src/kotlin/collections/ReversedViews.kt","src  
/kotlin/collections/SequenceBuilder.kt","src/kotlin/collections/SlidingWindow.kt","src/kotlin/collections/UArraySor  
ting.kt","src/kotlin/comparisons/compareTo.kt","src/kotlin/contracts/ContractBuilder.kt","src/kotlin/coroutines/Cont  
inuationInterceptor.kt","src/kotlin/coroutines/CoroutineContext.kt","src/kotlin/coroutines/CoroutineContextImpl.kt",  
"src/kotlin/coroutines/intrinsics/Intrinsics.kt","src/kotlin/enums/EnumEntries.kt","src/kotlin/experimental/Experime  
ntalObjCName.kt","src/kotlin/experimental/ExperimentalObjCRefinement.kt","src/kotlin/experimental/bitwiseOper  
ations.kt","src/kotlin/experimental/inferenceMarker.kt","src/kotlin/internal/Annotations.kt","src/kotlin/internal/progr  
essionUtil.kt","src/kotlin/properties/Delegates.kt","src/kotlin/properties/Interfaces.kt","src/kotlin/properties/Observa  
bleProperty.kt","src/kotlin/properties/PropertyReferenceDelegates.kt","src/kotlin/random/Random.kt","src/kotlin/ra  
ndom/URandom.kt","src/kotlin/random/XorWowRandom.kt","src/kotlin/ranges/ProgressionIterators.kt","src/kotlin/  
ranges/Progressions.kt","src/kotlin/ranges/Range.kt","src/kotlin/ranges/Ranges.kt","src/kotlin/reflect/KClasses.kt","s  
rc/kotlin/reflect/KTypeProjection.kt","src/kotlin/reflect/KVariance.kt","src/kotlin/reflect/typeOf.kt","src/kotlin/text/  
Appendable.kt","src/kotlin/text/Indent.kt","src/kotlin/text/Typography.kt","src/kotlin/text/regex/MatchResult.kt","sr  
c/kotlin/time/DurationUnit.kt","src/kotlin/time/ExperimentalTime.kt","src/kotlin/time/TimeSource.kt","src/kotlin/ti  
me/TimeSources.kt","src/kotlin/time/longSaturatedMath.kt","src/kotlin/time/measureTime.kt","src/kotlin/util/Deep  
Recursive.kt","src/kotlin/util/FloorDivMod.kt","src/kotlin/util/HashCode.kt","src/kotlin/util/KotlinVersion.kt","src/k  
otlin/util/Lateinit.kt","src/kotlin/util/Lazy.kt","src/kotlin/util/Numbers.kt","src/kotlin/util/Suspend.kt","src/kotlin/util  
/Tuples.kt","unsigned/src/kotlin/UIntRange.kt","unsigned/src/kotlin/ULongRange.kt","unsigned/src/kotlin/UMath.kt",  
"unsigned/src/kotlin/UNumbers.kt","unsigned/src/kotlin/UProgressionUtil.kt","unsigned/src/kotlin/UStrings.kt","u  
nsigned/src/kotlin/annotations/Unsigned.kt","common/src/kotlin/MathH.kt","js/src/kotlin/js/js.math.kt"],"sourcesCo  
ncontent":["(function  
 (root, factory) {\n
 if (typeof define === 'function' && define.amd) {\n
 define('kotlin', ['exports'], factory);\n
 }\n
 else if (typeof exports === 'object') {\n
 factory(module.exports);\n
 }\n
 else {\n
 root.kotlin = {};\n
 factory(root.kotlin);\n
 }\n
 })(this, function (Kotlin) {\n
 var \_ = Kotlin;\n
 insertContent();\n
 });\n
 /\*\n
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 is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
 ]



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*/\n\nKotlin.isArray = function (a) {\n  return (Array.isArray(a) || a instanceof Int8Array) && a.$type$
=== \"BooleanArray\";\n};\n\nKotlin.isArray = function (a) {\n  return a instanceof Int8Array && a.$type$
!=\"BooleanArray\";\n};\n\nKotlin.isShortArray = function (a) {\n  return a instanceof
Int16Array;\n};\n\nKotlin.isCharArray = function (a) {\n  return a instanceof Uint16Array && a.$type$ ===
\"CharArray\";\n};\n\nKotlin.isIntArray = function (a) {\n  return a instanceof
Int32Array;\n};\n\nKotlin.isFloatArray = function (a) {\n  return a instanceof
Float32Array;\n};\n\nKotlin.isDoubleArray = function (a) {\n  return a instanceof
Float64Array;\n};\n\nKotlin.isLongArray = function (a) {\n  return Array.isArray(a) && a.$type$ ===
\"LongArray\";\n};\n\nKotlin.isArray = function (a) {\n  return Array.isArray(a) &&
!a.$type$;\n};\n\nKotlin.isArrayish = function (a) {\n  return Array.isArray(a) ||
ArrayBuffer.isView(a);\n};\n\nKotlin.arrayToString = function (a) {\n  if (a === null) return \"null\";\n  var
toString = Kotlin.isCharArray(a) ? String.fromCharCode : Kotlin.toString;\n
  return \"[\" + Array.prototype.map.call(a, function(e) { return toString(e); }).join(\", \") +
\"]\";\n};\n\nKotlin.arrayDeepToString = function (arr) {\n  return
Kotlin.kotlin.collections.contentDeepToStringImpl(arr);\n};\n\nKotlin.arrayEquals = function (a, b) {\n  if (a ===
b) {\n    return true;\n  }\n  if (a === null || b === null || !Kotlin.isArrayish(b) || a.length !== b.length) {\n
return false;\n  }\n  for (var i = 0, n = a.length; i < n; i++) {\n    if (!Kotlin.equals(a[i], b[i])) {\n      return
false;\n    }\n  }\n  return true;\n};\n\nKotlin.arrayDeepEquals = function (a, b) {\n  return
Kotlin.kotlin.collections.contentDeepEqualsImpl(a, b);\n};\n\nKotlin.arrayHashCode = function (arr) {\n  if (arr
=== null) return 0;\n  var result = 1;\n  for (var i = 0, n = arr.length; i < n; i++) {\n    result = ((31 * result | 0) +
Kotlin.hashCode(arr[i])) | 0;\n  }\n  return result;\n};\n\nKotlin.arrayDeepHashCode
= function (arr) {\n  return
Kotlin.kotlin.collections.contentDeepHashCodeImpl(arr);\n};\n\nKotlin.primitiveArraySort = function (array) {\n
array.sort(Kotlin.doubleCompareTo);\n};\n\n\"/*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming
Language contributors. \n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n */\n\nKotlin.getCallableRef = function(name, f) {\n  f.callableName = name;\n  return
f;\n};\n\nKotlin.getPropertyCallableRef = function(name, paramCount, getter, setter) {\n  getter.get = getter;\n
getter.set = setter;\n  getter.callableName = name;\n  return getPropertyRefClass(getter, setter,
propertyRefClassMetadataCache[paramCount]);\n};\n\nfunction getPropertyRefClass(obj, setter, cache) {\n
obj.$metadata$ = getPropertyRefMetadata(typeof setter === \"function\" ? cache.mutable : cache.immutable);\n
obj.constructor = obj;\n  return obj;\n}\n\nvar propertyRefClassMetadataCache
= [\n  {\n    mutable: { value: null, implementedInterface: function () {\n      return
Kotlin.kotlin.reflect.KMutableProperty0 }\n    },\n    immutable: { value: null, implementedInterface: function
() {\n      return Kotlin.kotlin.reflect.KProperty0 }\n    }\n  },\n  {\n    mutable: { value: null,
implementedInterface: function () {\n      return Kotlin.kotlin.reflect.KMutableProperty1 }\n    },\n
immutable: { value: null, implementedInterface: function () {\n      return Kotlin.kotlin.reflect.KProperty1 }\n
}\n  }\n];\n\nfunction getPropertyRefMetadata(cache) {\n  if (cache.value === null) {\n    cache.value = {\n
interfaces: [cache.implementedInterface()],\n    baseClass: null,\n    functions: {},\n    properties:
{},\n    types: {},\n    staticMembers: {} }\n  }\n  return cache.value;\n}\n\n\"/*\n * Copyright
2010-2018 JetBrains
s.r.o. and Kotlin Programming Language contributors. \n * Use of this source code is governed by the Apache 2.0
license that can be found in the license/LICENSE.txt file.\n */\n\nKotlin.toShort = function (a) {\n  return (a &
0xFFFF) << 16 >> 16;\n};\n\nKotlin.toByte = function (a) {\n  return (a & 0xFF) << 24 >>
24;\n};\n\nKotlin.toChar = function (a) {\n  return a & 0xFFFF;\n};\n\nKotlin.numberToLong = function (a) {\n
return a instanceof Kotlin.Long ? a : Kotlin.Long.fromNumber(a);\n};\n\nKotlin.numberToInt = function (a) {\n
return a instanceof Kotlin.Long ? a.toInt() : Kotlin.doubleToInt(a);\n};\n\nKotlin.numberToShort = function (a) {\n
return Kotlin.toShort(Kotlin.numberToInt(a));\n};\n\nKotlin.numberToByte = function (a) {\n  return
Kotlin.toByte(Kotlin.numberToInt(a));\n};\n\nKotlin.numberToDouble = function (a) {\n  return

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+a;\n};\n\nKotlin.numberToChar = function (a) {\n  return
Kotlin.toChar(Kotlin.numberToInt(a));\n};\n\nKotlin.doubleToInt = function(a)
{\n  if (a > 2147483647) return 2147483647;\n  if (a < -2147483648) return -2147483648;\n  return a |
0;\n};\n\nKotlin.toBoxedChar = function (a) {\n  if (a == null) return a;\n  if (a instanceof Kotlin.BoxedChar)
return a;\n  return new Kotlin.BoxedChar(a);\n};\n\nKotlin.unboxChar = function(a) {\n  if (a == null) return a;\n
return Kotlin.toChar(a);\n};\n\n", "/*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language
contributors. \n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n */\n\nKotlin.equals = function (obj1, obj2) {\n  if (obj1 == null) {\n    return obj2 ==
null;\n  }\n  if (obj2 == null) {\n    return false;\n  }\n  if (obj1 !== obj2) {\n    return obj2 !== obj2;\n
}\n  if (typeof obj1 === "object" && typeof obj1.equals === "function") {\n    return obj1.equals(obj2);\n
}\n  if (typeof obj1 === "number" && typeof obj2 ===
"number") {\n    return obj1 === obj2 && (obj1 !== 0 || 1 / obj1 === 1 / obj2);\n  }\n  return obj1 ===
obj2;\n};\n\nKotlin.hashCode = function (obj) {\n  if (obj == null) {\n    return 0;\n  }\n  var objType = typeof
obj;\n  if ("object" === objType) {\n    return "function" === typeof obj.hashCode ? obj.hashCode() :
getObjectHashCode(obj);\n  }\n  if ("function" === objType) {\n    return getObjectHashCode(obj);\n  }\n
if ("number" === objType) {\n    return Kotlin.numberHashCode(obj);\n  }\n  if ("boolean" === objType)
{\n    return Number(obj);\n  }\n  var str = String(obj);\n  return
getStringHashCode(str);\n};\n\nKotlin.toString = function (o) {\n  if (o == null) {\n    return "null";\n  }\n
else if (Kotlin.isArrayish(o)) {\n    return "[...]";\n  }\n  else {\n    return o.toString();\n  }\n};\n\n/**
@const *\nvar POW_2_32 = 4294967296;\n// TODO: consider switching to Symbol type
once we are on ES6.\n** @const *\nvar OBJECT_HASH_CODE_PROPERTY_NAME =
"KotlinHashCodeValue$";\n\nfunction getObjectHashCode(obj) {\n  if
(!(OBJECT_HASH_CODE_PROPERTY_NAME in obj)) {\n    var hash = (Math.random() * POW_2_32) | 0; //
Make 32-bit signed integer.\n    Object.defineProperty(obj, OBJECT_HASH_CODE_PROPERTY_NAME, {
value: hash, enumerable: false });\n  }\n  return
obj[OBJECT_HASH_CODE_PROPERTY_NAME];\n}\n\nfunction getStringHashCode(str) {\n  var hash = 0;\n
for (var i = 0; i < str.length; i++) {\n    var code = str.charCodeAt(i);\n    hash = (hash * 31 + code) | 0; // Keep
it 32-bit.\n  }\n  return hash;\n}\n\nKotlin.identityHashCode = getObjectHashCode;\n", "/*\n * Copyright 2010-
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the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\n// Copyright 2009 The Closure
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compliance with the License.\n// You may obtain a copy of the License at\n\n//
http://www.apache.org/licenses/LICENSE-2.0\n\n// Unless required by applicable law or agreed to in writing,
software\n// distributed under the License is distributed on an "AS-IS" BASIS,\n// WITHOUT WARRANTIES OR
CONDITIONS OF ANY KIND, either express or implied.\n\n/**\n * Constructs a 64-bit two's-complement integer,
given its low and high 32-bit\n * values as *signed* integers. See the from* functions below for more\n *
convenient ways of constructing Longs.\n * \n * The internal representation of a long is the two given signed, 32-bit
values.\n * We use 32-bit pieces because these are the size of integers on which\n * Javascript performs bit-
operations. For operations like addition and\n * multiplication, we split each number into 16-bit pieces, which can
easily be\n * multiplied
within Javascript's floating-point representation without overflow\n * or change in sign.\n * \n * In the algorithms
below, we frequently reduce the negative case to the\n * positive case by negating the input(s) and then post-
processing the result.\n * Note that we must ALWAYS check specially whether those values are MIN_VALUE\n *
(-2^63) because -MIN_VALUE == MIN_VALUE (since 2^63 cannot be represented as\n * a positive number, it
overflows back into a negative). Not handling this\n * case would often result in infinite recursion.\n * \n * @param
{number} low The low (signed) 32 bits of the long.\n * @param {number} high The high (signed) 32 bits of the
long.\n * @constructor\n * @final\n */\n\nKotlin.Long = function(low, high) {\n  /**\n * @type {number}\n *

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@private\n *^n this.low_ = low | 0; // force into 32 signed bits.\n\n /**\n * @type {number}\n * @private\n *^n this.high_ = high | 0; // force into 32 signed bits.\n};\n\nKotlin.Long.$metadata$ = {\n kind:\n \"class\", \n simpleName: \"Long\", \n interfaces:[]\n};\n\n// NOTE: Common constant values ZERO, ONE,\nNEG_ONE, etc. are defined below the\n// from* methods on which they depend.\n\n/**\n * A cache of the Long\nrepresentations of small integer values.\n * @type {!Object}\n * @private\n *^nKotlin.Long.IntCache_ =\n{\n};\n\n/**\n * Returns a Long representing the given (32-bit) integer value.\n * @param {number} value The 32-\nbit integer in question.\n * @return {!Kotlin.Long} The corresponding Long value.\n *^nKotlin.Long.fromInt =\nfunction(value) {\n if (-128 <= value && value < 128) {\n var cachedObj = Kotlin.Long.IntCache_[value];\n if\n(cachedObj) {\n return cachedObj;\n }\n }\n\n var obj = new Kotlin.Long(value | 0, value < 0 ? -1 : 0);\n if (-\n128 <= value && value < 128) {\n Kotlin.Long.IntCache_[value] = obj;\n }\n return obj;\n};\n\n/**\n * Converts this number value to `Long`.\n * The fractional part, if any, is rounded down towards zero.\n * Returns\nzero if this `Double` value is `NaN`, `Long.MIN_VALUE` if it's less than `Long.MIN_VALUE`,\n * `Long.MAX_VALUE` if it's bigger than `Long.MAX_VALUE`.\n * @param {number} value The number in\nquestion.\n * @return {!Kotlin.Long} The corresponding Long value.\n *^nKotlin.Long.fromNumber =\nfunction(value) {\n if (isNaN(value)) {\n return Kotlin.Long.ZERO;\n } else if (value <= -\nKotlin.Long.TWO_PWR_63_DBL_) {\n return Kotlin.Long.MIN_VALUE;\n } else if (value + 1 >=\nKotlin.Long.TWO_PWR_63_DBL_) {\n return Kotlin.Long.MAX_VALUE;\n } else if (value < 0) {\n return\nKotlin.Long.fromNumber(-value).negate();\n } else {\n return new Kotlin.Long(\n (value %\nKotlin.Long.TWO_PWR_32_DBL_) | 0, \n (value / Kotlin.Long.TWO_PWR_32_DBL_) | 0);\n }\n};\n\n/**\n * Returns a Long representing the 64-bit integer that comes by concatenating\n * the given high and\nlow bits. Each is assumed to use 32 bits.\n * @param {number} lowBits The low 32-bits.\n * @param {number}\nhighBits The high 32-bits.\n * @return {!Kotlin.Long} The corresponding Long value.\n *^nKotlin.Long.fromBits\n= function(lowBits, highBits) {\n return new Kotlin.Long(lowBits, highBits);\n};\n\n/**\n * Returns a Long\nrepresentation of the given string, written using the given\n * radix.\n * @param {string} str The textual\nrepresentation of the Long.\n * @param {number=} opt_radix The radix in which the text is written.\n * @return\n{!Kotlin.Long} The corresponding Long value.\n *^nKotlin.Long.fromString = function(str, opt_radix) {\n if\n(str.length == 0) {\n throw Error('number format error: empty string');\n }\n\n var radix = opt_radix || 10;\n if\n(radix < 2 || 36 < radix) {\n throw Error('radix out of range: ' + radix);\n }\n\n if (str.charAt(0) == '-') {\n return\nKotlin.Long.fromString(str.substring(1), radix).negate();\n } else if (str.indexOf('-') >= 0) {\n throw Error('number\nformat error: interior \"-\" character: ' + str);\n }\n\n // Do several (8) digits\neach time through the loop, so as to\n // minimize the calls to the very expensive emulated div.\n var\nradixToPower = Kotlin.Long.fromNumber(Math.pow(radix, 8));\n\n var result = Kotlin.Long.ZERO;\n for (var i =\n0; i < str.length; i += 8) {\n var size = Math.min(8, str.length - i);\n var value = parseInt(str.substring(i, i + size),\nradix);\n if (size < 8) {\n var power = Kotlin.Long.fromNumber(Math.pow(radix, size));\n result =\nresult.multiply(power).add(Kotlin.Long.fromNumber(value));\n } else {\n result =\nresult.multiply(radixToPower);\n result = result.add(Kotlin.Long.fromNumber(value));\n }\n }\n return\nresult;\n};\n\n// NOTE: the compiler should inline these constant values below and then remove\n// these\nvariables, so there should be no runtime penalty for these.\n\n/**\n * Number used repeated below in calculations.\nThis must appear before the\n * first call to any from* function below.\n * @type {number}\n * @private\n *^nKotlin.Long.TWO_PWR_16_DBL_\n= 1 << 16;\n\n/**\n * @type {number}\n * @private\n *^nKotlin.Long.TWO_PWR_24_DBL_ = 1 <<\n24;\n\n/**\n * @type {number}\n * @private\n *^nKotlin.Long.TWO_PWR_32_DBL_ =\nKotlin.Long.TWO_PWR_16_DBL_ * Kotlin.Long.TWO_PWR_16_DBL_;\n\n/**\n * @type {number}\n * @private\n *^nKotlin.Long.TWO_PWR_31_DBL_ =\nKotlin.Long.TWO_PWR_32_DBL_ / 2;\n\n/**\n * @type {number}\n * @private\n *^nKotlin.Long.TWO_PWR_48_DBL_ =\nKotlin.Long.TWO_PWR_32_DBL_\n * Kotlin.Long.TWO_PWR_16_DBL_;\n\n/**\n * @type {number}\n * @private\n *^nKotlin.Long.TWO_PWR_64_DBL_ =\nKotlin.Long.TWO_PWR_32_DBL_\n * Kotlin.Long.TWO_PWR_32_DBL_;\n\n/**\n * @type {number}\n * @private\n
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*^ Kotlin.Long.TWO_PWR_63_DBL_ = Kotlin.Long.TWO_PWR_64_DBL_ / 2; @type
{!Kotlin.Long} *^ Kotlin.Long.ZERO = Kotlin.Long.fromInt(0); @type {!Kotlin.Long}
*^ Kotlin.Long.ONE = Kotlin.Long.fromInt(1); @type {!Kotlin.Long} *^ Kotlin.Long.NEG_ONE =
Kotlin.Long.fromInt(-1); @type {!Kotlin.Long}
*^ Kotlin.Long.MAX_VALUE = Kotlin.Long.fromBits(0xFFFFFFFF | 0, 0x7FFFFFFF | 0); @type
{!Kotlin.Long} *^ Kotlin.Long.MIN_VALUE = Kotlin.Long.fromBits(0, 0x80000000 | 0); @type
{!Kotlin.Long} * @private *^ Kotlin.Long.TWO_PWR_24_ = Kotlin.Long.fromInt(1 << 24); @return
{number} The value, assuming it is a 32-bit integer. *^ Kotlin.Long.prototype.toInt =
function() { return this.low_; }; @return {number} The closest floating-point representation to
this value. *^ Kotlin.Long.prototype.toNumber = function() { return this.high_ *
Kotlin.Long.TWO_PWR_32_DBL_ + this.getLowBitsUnsigned(); }; @return {number} The 32-bit
hashCode of this value. *^ Kotlin.Long.prototype.hashCode = function() { return this.high_ ^
this.low_; }; @param {number=} opt_radix The radix in which the text should be written. @return
{string} The textual representation of this value.
* @override *^ Kotlin.Long.prototype.toString = function(opt_radix) { var radix = opt_radix || 10;
if (radix < 2 || 36 < radix) { throw Error('radix out of range: ' + radix); } if (this.isZero())
{ return '0'; } if (this.isNegative()) { if (this.equalsLong(Kotlin.Long.MIN_VALUE)) { // We need
to change the Long value before it can be negated, so we remove // the bottom-most digit in
this base and then recurse to do the rest. var radixLong = Kotlin.Long.fromNumber(radix); var
div = this.div(radixLong); var rem = div.multiply(radixLong).subtract(this); return div.toString(
radix) + rem.toInt().toString(radix); } else { return '-' + this.negate().toString(radix); } }
// Do several (5) digits each time through the loop, so as to // minimize the calls to the very
expensive emulated div. var radixToPower = Kotlin.Long.fromNumber(Math.pow(radix, 5)); var
rem = this; var result = ''; while (true) { var remDiv = rem.div(radixToPower); var intVal =
rem.subtract(remDiv.multiply(radixToPower)).toInt(); var digits = intVal.toString(radix); rem =
remDiv; if (rem.isZero()) { return digits + result; } else { while (digits.length < 5) {
digits = '0' + digits; } result = digits + result; } } }; @return {number} The high 32-bits as
a signed value. *^ Kotlin.Long.prototype.getHighBits = function() { return this.high_; }; @return
{number} The low 32-bits as a signed value. *^ Kotlin.Long.prototype.getLowBits = function()
{ return this.low_; }; @return {number} The low 32-bits as an unsigned value.
*^ Kotlin.Long.prototype.getLowBitsUnsigned = function() { return (this.low_ >= 0) ?
Kotlin.Long.TWO_PWR_32_DBL_ + this.low_; }; @return {number} Returns the number of bits
needed to represent the absolute value
of this Long. *^ Kotlin.Long.prototype.getNumBitsAbs = function() { if (this.isNegative()) {
if (this.equalsLong(Kotlin.Long.MIN_VALUE)) { return 64; } else { return this.negate().getNumBitsAbs(); } }
else { var val = this.high_ != 0 ? this.high_ : this.low_; for (var bit = 31; bit > 0; bit--)
{ if ((val & (1 << bit)) != 0) { break; } } return this.high_ != 0 ? bit + 33 : bit + 1; } };
@return {boolean} Whether this value is zero. *^ Kotlin.Long.prototype.isZero = function()
{ return this.high_ == 0 && this.low_ == 0; }; @return {boolean} Whether this value is
negative. *^ Kotlin.Long.prototype.isNegative = function() { return this.high_ < 0; }; @return
{boolean} Whether this value is odd. *^ Kotlin.Long.prototype.isOdd = function() { return
(this.low_ & 1) == 1; }; @param {Kotlin.Long} other Long to compare against. @return
{boolean} Whether this Long equals the other. *^ Kotlin.Long.prototype.equalsLong = function(
other) { return (this.high_ == other.high_) && (this.low_ == other.low_); }; @param
{Kotlin.Long} other Long to compare against. @return {boolean} Whether this Long does not
equal the other.
*^ Kotlin.Long.prototype.notEqualsLong = function(other) { return (this.high_ != other.high_)
|| (this.low_ != other.low_); }; @param {Kotlin.Long} other Long to compare against. @return
{boolean} Whether this Long is less than the other. *^ Kotlin.Long.prototype.lessThan =
function(other) { return

```

```

this.compare(other) < 0;\n};\n\n/**\n * @param {Kotlin.Long} other Long to compare against.\n * @return
{boolean} Whether this Long is less than or equal to the other.\n */\nKotlin.Long.prototype.lessThanOrEqual =
function(other) {\n return this.compare(other) <= 0;\n};\n\n/**\n * @param {Kotlin.Long} other Long to
compare against.\n * @return {boolean} Whether this Long is
greater than the other.\n */\nKotlin.Long.prototype.greaterThan = function(other) {\n return this.compare(other) >
0;\n};\n\n/**\n * @param {Kotlin.Long} other Long to compare against.\n * @return {boolean} Whether this
Long is greater than or equal to the other.\n */\nKotlin.Long.prototype.greaterThanOrEqual = function(other) {\n
return this.compare(other) >= 0;\n};\n\n/**\n * Compares this Long with the given one.\n * @param
{Kotlin.Long} other Long to compare against.\n * @return {number} 0 if they are the same, 1 if the this is greater,
and -1\n * if the given one is greater.\n */\nKotlin.Long.prototype.compare = function(other) {\n if
(this.equalsLong(other)) {\n return 0;\n }\n\n var thisNeg = this.isNegative();\n var otherNeg =
other.isNegative();\n if (thisNeg && !otherNeg) {\n return -1;\n }\n if (!thisNeg && otherNeg) {\n return 1;\n
}\n\n // at this point, the signs are the same, so subtraction will not overflow\n if (this.subtract(other).isNegative())
{\n return -1;\n } else {\n return 1;\n }\n};\n\n/**\n * @return {!Kotlin.Long} The negation of this value.
*/\nKotlin.Long.prototype.negate = function() {\n if (this.equalsLong(Kotlin.Long.MIN_VALUE)) {\n return
Kotlin.Long.MIN_VALUE;\n } else {\n return this.not().add(Kotlin.Long.ONE);\n }\n};\n\n/**\n * Returns the
sum of this and the given Long.\n * @param {Kotlin.Long} other Long to add to this one.\n * @return
{!Kotlin.Long} The sum of this and the given Long.\n */\nKotlin.Long.prototype.add = function(other) {\n //
Divide each number into 4 chunks of 16 bits, and then sum the chunks.\n\n var a48 = this.high_ >>> 16;\n var a32
= this.high_ & 0xFFFF;\n var a16 = this.low_ >>> 16;\n var a00 = this.low_ & 0xFFFF;\n var b48 = other.high_
>>> 16;\n var b32 = other.high_ & 0xFFFF;\n var b16 = other.low_ >>> 16;\n var b00 = other.low_ &
0xFFFF;\n\n var c48 = 0, c32 = 0, c16 = 0, c00 = 0;\n c00 += a00 + b00;\n c16 += c00 >>> 16;\n c00 &=
0xFFFF;\n\n c16 += a16 + b16;\n c32 += c16 >>> 16;\n c16 &= 0xFFFF;\n c32 += a32 + b32;\n c48 += c32 >>> 16;\n c32
&= 0xFFFF;\n c48 += a48 + b48;\n c48 &= 0xFFFF;\n return Kotlin.Long.fromBits((c16 << 16) | c00, (c48 <<
16) | c32);\n};\n\n/**\n * Returns the difference of this and the given Long.\n * @param {Kotlin.Long} other
Long to subtract from this.\n * @return {!Kotlin.Long} The difference of this and the given Long.\n */\nKotlin.Long.prototype.subtract = function(other) {\n return this.add(other.negate());\n};\n\n/**\n * Returns
the product of this and the given long.\n * @param {Kotlin.Long} other Long to multiply with this.\n * @return
{!Kotlin.Long} The product of this and the other.\n */\nKotlin.Long.prototype.multiply = function(other) {\n if
(this.isZero()) {\n return Kotlin.Long.ZERO;\n } else if (other.isZero()) {\n return Kotlin.Long.ZERO;\n }\n\n if
(this.equalsLong(Kotlin.Long.MIN_VALUE)) {\n return other.isOdd() ? Kotlin.Long.MIN_VALUE :
Kotlin.Long.ZERO;\n }\n\n } else if (other.equalsLong(Kotlin.Long.MIN_VALUE)) {\n return this.isOdd() ? Kotlin.Long.MIN_VALUE :
Kotlin.Long.ZERO;\n }\n\n if (this.isNegative()) {\n if (other.isNegative()) {\n return
this.negate().multiply(other.negate());\n } else {\n return this.negate().multiply(other).negate();\n }\n } else if
(other.isNegative()) {\n return this.multiply(other.negate()).negate();\n }\n\n // If both longs are small, use float
multiplication\n if (this.lessThan(Kotlin.Long.TWO_PWR_24_) &&\n
other.lessThan(Kotlin.Long.TWO_PWR_24_)) {\n return Kotlin.Long.fromNumber(this.toNumber() *
other.toNumber());\n }\n\n // Divide each long into 4 chunks of 16 bits, and then add up 4x4 products.\n // We can
skip products that would overflow.\n\n var a48 = this.high_ >>> 16;\n var a32 = this.high_ & 0xFFFF;\n var a16 =
this.low_ >>> 16;\n var a00 = this.low_ & 0xFFFF;\n\n var b48 = other.high_ >>> 16;\n var b32 = other.high_ &
0xFFFF;\n var b16 = other.low_
>>> 16;\n var b00 = other.low_ & 0xFFFF;\n\n var c48 = 0, c32 = 0, c16 = 0, c00 = 0;\n c00 += a00 * b00;\n c16
+= c00 >>> 16;\n c00 &= 0xFFFF;\n c16 += a16 * b00;\n c32 += c16 >>> 16;\n c16 &= 0xFFFF;\n c16 += a00
* b16;\n c32 += c16 >>> 16;\n c16 &= 0xFFFF;\n c32 += a32 * b00;\n c48 += c32 >>> 16;\n c32 &= 0xFFFF;\n
c32 += a16 * b16;\n c48 += c32 >>> 16;\n c32 &= 0xFFFF;\n c32 += a00 * b32;\n c48 += c32 >>> 16;\n c32 &=
0xFFFF;\n c48 += a48 * b00 + a32 * b16 + a16 * b32 + a00 * b48;\n c48 &= 0xFFFF;\n return

```

```

Kotlin.Long.fromBits((c16 << 16) | c00, (c48 << 16) | c32);
}

/**
 * Returns this Long divided by the given
 * one.
 * @param {Kotlin.Long} other Long by which to divide.
 * @return {!Kotlin.Long} This Long divided by
 * the given one.
 */
Kotlin.Long.prototype.div = function(other) {
    if (other.isZero()) {
        throw Error('division
        by zero');
    } else if (this.isZero()) {
        return Kotlin.Long.ZERO;
    }
    if (this.equalsLong(Kotlin.Long.MIN_VALUE))
        if (other.equalsLong(Kotlin.Long.ONE) ||
            other.equalsLong(Kotlin.Long.NEG_ONE)) {
            return
            Kotlin.Long.MIN_VALUE; // recall that -MIN_VALUE == MIN_VALUE
        } else if (other.equalsLong(Kotlin.Long.MIN_VALUE)) {
            return Kotlin.Long.ONE;
        } else {
            // At this point,
            we have |other| >= 2, so |this/other| < |MIN_VALUE|.
            var halfThis = this.shiftRight(1);
            var approx =
            halfThis.div(other).shiftLeft(1);
            if (approx.equalsLong(Kotlin.Long.ZERO)) {
                return other.isNegative() ?
                Kotlin.Long.ONE : Kotlin.Long.NEG_ONE;
            } else {
                var rem = this.subtract(other.multiply(approx));
                var result = approx.add(rem.div(other));
                return result;
            }
        }
    if (other.equalsLong(Kotlin.Long.MIN_VALUE)) {
        return Kotlin.Long.ZERO;
    }
    if (this.isNegative()) {
        if (other.isNegative()) {
            return this.negate().div(other.negate());
        } else {
            return
            this.negate().div(other).negate();
        }
    } else if (other.isNegative()) {
        return this.div(other.negate()).negate();
    }

    // Repeat the following
    until the remainder is less than other: find a // floating-point that approximates remainder / other *from below*,
    add this // into the result, and subtract it from the remainder. It is critical that // the approximate value is less
    than or equal to the real value so that the // remainder never becomes negative.
    var res = Kotlin.Long.ZERO;
    var rem = this;
    while (rem.greaterThanOrEqual(other)) {
        // Approximate the result of division. This may be a
        little greater or // smaller than the actual value.
        var approx = Math.max(1, Math.floor(rem.toNumber() /
        other.toNumber()));
        // We will tweak the approximate result by changing it in the 48-th digit or // the
        smallest non-fractional digit, whichever is larger.
        var log2 = Math.ceil(Math.log(approx) / Math.LN2);
        var
        delta = (log2 <= 48) ? 1
        : Math.pow(2, log2 - 48);
        // Decrease the approximation until it is smaller than the remainder. Note // that
        if it is too large, the product overflows and is negative.
        var approxRes = Kotlin.Long.fromNumber(approx);
        var approxRem = approxRes.multiply(other);
        while (approxRem.isNegative() || approxRem.greaterThan(rem))
            {
                approx -= delta;
                approxRes = Kotlin.Long.fromNumber(approx);
                approxRem =
                approxRes.multiply(other);
            }
        // We know the answer can't be zero... and actually, zero would cause //
        infinite recursion since we would make no progress.
        if (approxRes.isZero()) {
            approxRes =
            Kotlin.Long.ONE;
        }
        res = res.add(approxRes);
        rem = rem.subtract(approxRem);
    }
    return
    res;
}

/**
 * Returns this Long modulo the given one.
 * @param {Kotlin.Long} other Long by which to
 * mod.
 * @return {!Kotlin.Long} This Long modulo the given one.
 */
Kotlin.Long.prototype.modulo =
function(other)
{
    return this.subtract(this.div(other).multiply(other));
}

/**
 * @return {!Kotlin.Long} The bitwise-NOT of
 * this value.
 */
Kotlin.Long.prototype.not = function() {
    return Kotlin.Long.fromBits(~this.low_,
    ~this.high_);
}

/**
 * Returns the bitwise-AND of this Long and the given one.
 * @param {Kotlin.Long}
 * other The Long with which to AND.
 * @return {!Kotlin.Long} The bitwise-AND of this and the other.
 */
Kotlin.Long.prototype.and = function(other) {
    return Kotlin.Long.fromBits(this.low_ & other.low_,
    this.high_ & other.high_);
}

/**
 * Returns the bitwise-OR of this Long and the given one.
 * @param {Kotlin.Long} other The Long with which to OR.
 * @return {!Kotlin.Long} The bitwise-OR of this and
 * the other.
 */
Kotlin.Long.prototype.or = function(other) {
    return Kotlin.Long.fromBits(this.low_ |
    other.low_,
    this.high_ | other.high_);
}

/**
 * Returns the bitwise-XOR of
 * this Long and the given one.
 * @param {Kotlin.Long} other The Long with which to XOR.
 * @return
 * {!Kotlin.Long} The bitwise-XOR of this and the other.
 */
Kotlin.Long.prototype.xor = function(other) {
    return
    Kotlin.Long.fromBits(this.low_ ^ other.low_,
    this.high_ ^ other.high_);
}

/**
 * Returns this Long with bits shifted to the left by the given amount.
 * @param {number} numBits The number of
 * bits by which to shift.
 * @return {!Kotlin.Long} This shifted to the left by the given amount.

```

```

*\nKotlin.Long.prototype.shiftLeft = function(numBits) {\n numBits &= 63;\n if (numBits == 0) {\n return
this;\n } else {\n var low = this.low_;\n if (numBits < 32) {\n var high = this.high_;\n return
Kotlin.Long.fromBits(\n low << numBits,\n (high << numBits) | (low >>> (32 - numBits));\n } else
{\n return Kotlin.Long.fromBits(0, low << (numBits - 32));\n }\n};\n\n/*\n * Returns this Long
with bits shifted to the right by the given amount.\n * @param {number} numBits The number of bits by which to
shift.\n * @return {!Kotlin.Long} This shifted to the right by the given amount.\n
*\n
*\nKotlin.Long.prototype.shiftRight = function(numBits) {\n numBits &= 63;\n if (numBits == 0) {\n return
this;\n } else {\n var high = this.high_;\n if (numBits < 32) {\n var low = this.low_;\n return
Kotlin.Long.fromBits(\n (low >>> numBits) | (high << (32 - numBits)),\n high >> numBits);\n } else
{\n return Kotlin.Long.fromBits(\n high >> (numBits - 32),\n high >= 0 ? 0 : -1);\n }\n
}\n};\n\n/*\n * Returns this Long with bits shifted to the right by the given amount, with\n * zeros placed into the
new leading bits.\n * @param {number} numBits The number of bits by which to shift.\n * @return {!Kotlin.Long}
This shifted to the right by the given amount, with\n * zeros placed into the new leading bits.\n
*\n
*\nKotlin.Long.prototype.shiftRightUnsigned
= function(numBits) {\n numBits &= 63;\n if (numBits == 0) {\n return this;\n } else {\n var high =
this.high_;\n if (numBits < 32) {\n var low = this.low_;\n return Kotlin.Long.fromBits(\n (low >>>
numBits) | (high << (32 - numBits)),\n high >>> numBits);\n } else if (numBits == 32) {\n return
Kotlin.Long.fromBits(high, 0);\n } else {\n return Kotlin.Long.fromBits(high >>> (numBits - 32), 0);\n }\n
}\n};\n\n// Support for Kotlin\nKotlin.Long.prototype.equals = function (other) {\n return other instanceof
Kotlin.Long && this.equalsLong(other);\n};\n\nKotlin.Long.prototype.compareTo_11rb$ =
Kotlin.Long.prototype.compare;\n\nKotlin.Long.prototype.inc = function() {\n return
this.add(Kotlin.Long.ONE);\n};\n\nKotlin.Long.prototype.dec = function() {\n return
this.add(Kotlin.Long.NEG_ONE);\n};\n\nKotlin.Long.prototype.valueOf = function() {\n return
this.toNumber();\n};\n\nKotlin.Long.prototype.unaryPlus
= function() {\n return this;\n};\n\nKotlin.Long.prototype.unaryMinus =
Kotlin.Long.prototype.negate;\n\nKotlin.Long.prototype.inv =
Kotlin.Long.prototype.not;\n\nKotlin.Long.prototype.rangeTo = function (other) {\n return new
Kotlin.kotlin.ranges.LongRange(this, other);\n};\n\n/*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin
Programming Language contributors. \n * Use of this source code is governed by the Apache 2.0 license that can be
found in the license/LICENSE.txt file.\n *\n\n/*\n * @param {string} id\n * @param {Object} declaration\n
*\nKotlin.defineModule = function (id, declaration) {\n};\n\nKotlin.defineInlineFunction = function(tag, fun) {\n
return fun;\n};\n\nKotlin.wrapFunction = function(fun) {\n var f = function() {\n f = fun();\n return
f.apply(this, arguments);\n }; \n return function() {\n return f.apply(this, arguments);\n
};\n};\n\nKotlin.isTypeOf = function(type) {\n return function (object) {\n
return typeof object === type;\n }\n};\n\nKotlin.isInstanceOf = function (klass) {\n return function (object)
{\n return Kotlin.isType(object, klass);\n }\n};\n\nKotlin.orNull = function (fn) {\n return function (object)
{\n return object == null || fn(object);\n }\n};\n\nKotlin.andPredicate = function (a, b) {\n return function
(object) {\n return a(object) && b(object);\n }\n};\n\nKotlin.kotlinModuleMetadata = function (abiVersion,
moduleName, data) {\n};\n\nKotlin.suspendCall = function(value) {\n return value;\n};\n\nKotlin.coroutineResult
= function(qualifier) {\n throwMarkerError();\n};\n\nKotlin.coroutineController = function(qualifier) {\n
throwMarkerError();\n};\n\nKotlin.coroutineReceiver = function(qualifier) {\n
throwMarkerError();\n};\n\nKotlin.setCoroutineResult = function(value, qualifier) {\n
throwMarkerError();\n};\n\nKotlin.getReifiedTypeParameterKType = function(typeParameter) {\n
throwMarkerError();\n};\n\nfunction
throwMarkerError() {\n throw new Error(\n "This marker function should never be called. \" +\n
\"Looks like compiler did not eliminate it properly. \" +\n "Please, report an issue if you caught this
exception.\");\n}\n\nKotlin.getFunctionById = function(id, defaultValue) {\n return function() {\n return
defaultValue;\n }\n};\n\n/*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language

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contributors. \n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n */\n\nKotlin.compareTo = function (a, b) {\n  var typeA = typeof a;\n  if (typeA ===
\"number\") {\n    if (typeof b === \"number\") {\n      return Kotlin.doubleCompareTo(a, b);\n    }\n  }\n  return Kotlin.primitiveCompareTo(a, b);\n }\n  if (typeA === \"string\" || typeA === \"boolean\") {\n    return
Kotlin.primitiveCompareTo(a, b);\n  }\n  return a.compareTo_11rb$(b);\n};\n\nKotlin.primitiveCompareTo
= function (a, b) {\n  return a < b ? -1 : a > b ? 1 : 0;\n};\n\nKotlin.doubleCompareTo = function (a, b) {\n  if (a <
b) return -1;\n  if (a > b) return 1;\n\n  if (a === b) {\n    if (a !== 0) return 0;\n\n    var ia = 1 / a;\n    return
ia === 1 / b ? 0 : (ia < 0 ? -1 : 1);\n  }\n\n  return a !== a ? (b !== b ? 0 : 1) : -1;\n};\n\nKotlin.charInc = function
(value) {\n  return Kotlin.toChar(value+1);\n};\n\nKotlin.charDec = function (value) {\n  return
Kotlin.toChar(value-1);\n};\n\nKotlin.imul = Math.imul || imul;\n\nKotlin.imulEmulated = imul;\n\nfunction imul(a,
b) {\n  return ((a & 0xffff0000) * (b & 0xffff) + (a & 0xffff) * (b | 0)) | 0;\n}\n\n(function() {\n  var buf = new
ArrayBuffer(8);\n  var bufFloat64 = new Float64Array(buf);\n  var bufFloat32 = new Float32Array(buf);\n  var
bufInt32 = new Int32Array(buf);\n  var lowIndex = 0;\n  var highIndex = 1;\n\n  bufFloat64[0] = -1; //
bff00000_00000000\n\n  if (bufInt32[lowIndex] !== 0) {\n    lowIndex = 1;\n    highIndex = 0;\n  }\n\n  Kotlin.doubleToBits =
function(value) {\n    return Kotlin.doubleToRawBits(isNaN(value) ? NaN : value);\n  };\n\n  Kotlin.doubleToRawBits = function(value) {\n    bufFloat64[0] = value;\n    return
Kotlin.Long.fromBits(bufInt32[lowIndex], bufInt32[highIndex]);\n  };\n\n  Kotlin.doubleFromBits =
function(value) {\n    bufInt32[lowIndex] = value.low_;\n    bufInt32[highIndex] = value.high_;\n    return
bufFloat64[0];\n  };\n\n  Kotlin.floatToBits = function(value) {\n    return Kotlin.floatToRawBits(isNaN(value)
? NaN : value);\n  };\n\n  Kotlin.floatToRawBits = function(value) {\n    bufFloat32[0] = value;\n    return
bufInt32[0];\n  };\n\n  Kotlin.floatFromBits = function(value) {\n    bufInt32[0] = value;\n    return
bufFloat32[0];\n  };\n\n  // returns zero value for number with positive sign bit and non-zero value for
number with negative sign bit.\n  Kotlin.doubleSignBit = function(value) {\n    bufFloat64[0] = value;\n
return bufInt32[highIndex] & 0x80000000;\n  };\n\n  Kotlin.numberHashCode = function(obj) {\n    if ((obj | 0)
=== obj) {\n      return obj | 0;\n    }\n    else {\n      bufFloat64[0] = obj;\n      return
(bufInt32[highIndex] * 31 | 0) + bufInt32[lowIndex] | 0;\n    }\n  };\n\n  Kotlin.ensureNotNull = function(x)
{\n    return x != null ? x : Kotlin.throwNPE();\n  };\n\n  \"/*\n  * Copyright 2010-2020 JetBrains s.r.o. and Kotlin
Programming Language contributors.\n  * Use of this source code is governed by the Apache 2.0 license that can be
found in the license/LICENSE.txt file.\n  */\n\n  if (typeof String.prototype.startsWith === \"undefined\") {\n
Object.defineProperty(String.prototype, \"startsWith\", {\n    value: function (searchString, position) {\n
position = position || 0;\n    return this.lastIndexOf(searchString,
position) === position;\n    }\n  });\n\n  if (typeof String.prototype.endsWith === \"undefined\") {\n
Object.defineProperty(String.prototype, \"endsWith\", {\n    value: function (searchString, position) {\n    var
subjectString = this.toString();\n    if (position === undefined || position > subjectString.length) {\n
position = subjectString.length;\n    }\n    position -= searchString.length;\n    var lastIndex =
subjectString.indexOf(searchString, position);\n    return lastIndex !== -1 && lastIndex === position;\n    }\n
  });\n\n  // ES6 Math polyfills\n  if (typeof Math.sign === \"undefined\") {\n    Math.sign = function(x) {\n    x =
+x; // convert to a number\n    if (x === 0 || isNaN(x)) {\n      return Number(x);\n    }\n    return x > 0 ? 1
: -1;\n  };\n\n  if (typeof Math.trunc === \"undefined\") {\n    Math.trunc = function(x) {\n    if (isNaN(x)) {\n
return NaN;\n    }\n    if (x > 0) {\n      return Math.floor(x);\n    }\n    return Math.ceil(x);\n  };\n\n  (function() {\n    var epsilon = 2.220446049250313E-16;\n    var taylor_2_bound = Math.sqrt(epsilon);\n    var taylor_n_bound = Math.sqrt(taylor_2_bound);\n    var upper_taylor_2_bound = 1/taylor_2_bound;\n    var
upper_taylor_n_bound = 1/taylor_n_bound;\n\n    if (typeof Math.sinh === \"undefined\") {\n      Math.sinh =
function(x) {\n        if (Math.abs(x) < taylor_n_bound) {\n          var result = x;\n          if (Math.abs(x) >
taylor_2_bound) {\n            result += (x * x * x) / 6;\n          }\n          return result;\n        } else {\n
var y = Math.exp(x);\n          var y1 = 1 / y;\n          if (!isFinite(y)) return Math.exp(x - Math.LN2);\n          if
(!isFinite(y1)) return -Math.exp(-x - Math.LN2);\n          return (y - y1) / 2;\n        }\n      }\n    }\n  })\n
}

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    });
    if (typeof Math.cosh === "undefined") {
        Math.cosh = function(x) {
            var y = Math.exp(x);
            var y1 = 1 / y;
            if (!isFinite(y) || !isFinite(y1)) return Math.exp(Math.abs(x) - Math.LN2);
            return (y + y1) / 2;
        };
    }
    if (typeof Math.tanh === "undefined") {
        Math.tanh = function(x) {
            if (Math.abs(x) < taylor_n_bound) {
                var result = x;
                if (Math.abs(x) > taylor_2_bound) {
                    result -= (x * x * x) / 3;
                }
                return result;
            } else {
                var a = Math.exp(+x), b = Math.exp(-x);
                return a === Infinity ? 1 : b === Infinity ? -1 : (a - b) / (a + b);
            }
        };
    }
    // Inverse hyperbolic function implementations derived from boost special math functions.
    // Copyright Eric Ford & Hubert Holin 2001.
    if (typeof Math.asinh === "undefined") {
        var asinh = function(x) {
            if (x >= +taylor_n_bound) {
                if (x > upper_taylor_n_bound) {
                    // approximation by laurent series in 1/x at 0+ order from -1 to 0
                    return Math.log(x) + Math.LN2;
                } else {
                    // approximation by laurent series in 1/x at 0+ order from -1 to 1
                    return Math.log(x * 2 + (1 / (x * 2)));
                }
            } else if (x <= -taylor_n_bound) {
                return -asinh(-x);
            } else {
                // approximation by taylor series in x at 0 up to order 2
                var result = x;
                if (Math.abs(x) >= taylor_2_bound) {
                    // approximation by taylor series in x at 0 up to order 4
                    var x3 = x * x * x;
                    result -= x3 / 6;
                }
                return result;
            }
        };
        Math.asinh = asinh;
    }
    if (typeof Math.acosh === "undefined") {
        Math.acosh = function(x) {
            if (x < 1) {
                return NaN;
            } else if (x - 1 >= taylor_n_bound) {
                if (x > upper_taylor_2_bound) {
                    // approximation by laurent series in 1/x at 0+ order from -1 to 0
                    return Math.log(x) + Math.LN2;
                } else {
                    return Math.log(x + Math.sqrt(x * x - 1));
                }
            } else {
                var y = Math.sqrt(x - 1);
                // approximation by taylor series in y at 0 up to order 2
                var result = y;
                if (y >= taylor_2_bound) {
                    // approximation by taylor series in y at 0 up to order 4
                    var y3 = y * y * y;
                    result -= y3 / 12;
                }
                return Math.sqrt(2) * result;
            }
        };
    }
    if (typeof Math.atanh === "undefined") {
        Math.atanh = function(x) {
            if (Math.abs(x) < taylor_n_bound) {
                var result = x;
                if (Math.abs(x) > taylor_2_bound) {
                    result += (x * x * x) / 3;
                }
                return result;
            }
            return Math.log((1 + x) / (1 - x)) / 2;
        };
    }
    if (typeof Math.log1p === "undefined") {
        Math.log1p = function(x) {
            if (Math.abs(x) < taylor_n_bound) {
                var x2 = x * x;
                var x3 = x2 * x;
                var x4 = x3 * x;
                // approximation by taylor series in x at 0 up to order 4
                return (-x4 / 4 + x3 / 3 - x2 / 2 + x);
            }
            return Math.log(x + 1);
        };
    }
    if (typeof Math.expm1 === "undefined") {
        Math.expm1 = function(x) {
            if (Math.abs(x) < taylor_n_bound) {
                var x2 = x * x;
                var x3 = x2 * x;
                var x4 = x3 * x;
                // approximation by taylor series in x at 0 up to order 4
                return (x4 / 24 + x3 / 6 + x2 / 2 + x);
            }
            return Math.exp(x) - 1;
        };
    }
    if (typeof Math.hypot === "undefined") {
        Math.hypot = function() {
            var y = 0;
            var length = arguments.length;
            for (var i = 0; i < length; i++) {
                if (arguments[i] === Infinity || arguments[i] === -Infinity) {
                    return Infinity;
                }
                y += arguments[i] * arguments[i];
            }
            return Math.sqrt(y);
        };
    }
    if (typeof Math.log10 === "undefined") {
        Math.log10 = function(x) {
            return Math.log(x) * Math.LOG10E;
        };
    }
    if (typeof Math.log2 === "undefined") {
        Math.log2 = function(x) {
            return Math.log(x) * Math.LOG2E;
        };
    }
    if (typeof Math.clz32 === "undefined") {
        Math.clz32 = (function(log, LN2) {
            return function(x) {
                var asUint = x >>> 0;
                if (asUint === 0) {
                    return 32;
                }
                return 31 - (log(asUint) / LN2 | 0) | 0; // the "| 0" acts like math.floor
            };
        })(Math.log, Math.LN2);
    }
    // For HtmlUnit and PhantomJs
    if (typeof ArrayBuffer.isView === "undefined") {
        ArrayBuffer.isView = function(a) {

```

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return a !== null && a.__proto__ !== null && a.__proto__.__proto__
=== Int8Array.prototype.__proto__;\n    });\n\nif (typeof Array.prototype.fill === "undefined") {\n // Polyfill
from https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Array/fill#Polyfill\n
Object.defineProperty(Array.prototype, 'fill', {\n    value: function (value) {\n\n        // Steps 1-2.\n        if
(this === null) {\n            throw new TypeError('this is null or not defined');\n        }\n        var O =
Object(this);\n        // Steps 3-5.\n        var len = O.length >>> 0;\n        // Steps 6-7.\n        var start =
arguments[1];\n        var relativeStart = start >> 0;\n        // Step 8.\n        var k = relativeStart < 0 ?\n            Math.max(len + relativeStart, 0) :\n            Math.min(relativeStart, len);\n        // Steps 9-10.\n        var end = arguments[2];\n        var relativeEnd = end === undefined ?\n            len : end >> 0;\n        // Step 11.\n        var finalValue = relativeEnd < 0 ?\n            Math.max(len + relativeEnd, 0) :\n            Math.min(relativeEnd, len);\n        // Step 12.\n        while (k < finalValue) {\n            O[k] = value;\n            k++;\n        }\n        // Step 13.\n        return
O;\n    }\n});\n\n(function() {\n    function normalizeOffset(offset, length) {\n        if (offset < 0) return
Math.max(0, offset + length);\n        return Math.min(offset, length);\n    }\n    function typedArraySlice(begin, end)
{\n        if (typeof end === "undefined")\n            end = this.length;\n        begin = normalizeOffset(begin
|| 0, this.length);\n        end = Math.max(begin, normalizeOffset(end, this.length));\n        return new
this.constructor(this.subarray(begin, end));\n    }\n\n    var arrays = [Int8Array, Int16Array, Uint16Array,
Int32Array,
Float32Array, Float64Array];\n    for (var i = 0; i < arrays.length; ++i) {\n        var TypedArray = arrays[i];\n        if
(typeof TypedArray.prototype.fill === "undefined") {\n            Object.defineProperty(TypedArray.prototype, 'fill',
{\n                value: Array.prototype.fill\n            });\n        }\n        if (typeof TypedArray.prototype.slice ===
"undefined") {\n            Object.defineProperty(TypedArray.prototype, 'slice', {\n                value:
typedArraySlice\n            });\n        }\n        // Patch apply to work with TypedArrays if needed.\n        try {\n
(function() {\n            }).apply(null, new Int32Array(0))\n        } catch (e) {\n            var apply = Function.prototype.apply;\n            Object.defineProperty(Function.prototype, 'apply', {\n                value: function(self, array) {\n                    return
apply.call(this, self, [].slice.call(array));\n                }\n            });\n        }\n        // Patch map to work with TypedArrays if
needed.\n        for (var i = 0; i < arrays.length; ++i) {\n            var TypedArray = arrays[i];\n            if (typeof
TypedArray.prototype.map === "undefined") {\n                Object.defineProperty(TypedArray.prototype, 'map', {\n                    value: function(callback, self) {\n                        return [].slice.call(this).map(callback, self);\n                    }\n                });\n            }\n            // Patch sort to work with TypedArrays if needed.\n            // TODO: consider to remove
following function and replace it with `Kotlin.doubleCompareTo` (see misc.js)\n            var totalOrderComparator =
function(a, b) {\n                if (a < b) return -1;\n                if (a > b) return 1;\n\n                if (a === b) {\n                    if (a !== 0) return
0;\n                    var ia = 1 / a;\n                    return ia === 1 / b ? 0 : (ia < 0 ? -1 : 1);\n                }\n                return a !== a ? (b !==
b ? 0 : 1) : -1\n            };\n            for (var i = 0; i < arrays.length; ++i) {\n                var TypedArray = arrays[i];\n                if (typeof
TypedArray.prototype.sort
=== "undefined") {\n                    Object.defineProperty(TypedArray.prototype, 'sort', {\n                        value:
function(compareFunction) {\n                            return Array.prototype.sort.call(this, compareFunction ||
totalOrderComparator);\n                        }\n                    });\n                }\n            }\n        }\n    })();\n}

/*\n * Copyright 2010-2018 JetBrains
s.r.o. and Kotlin Programming Language contributors. \n * Use of this source code is governed by the Apache 2.0
license that can be found in the license/LICENSE.txt file.\n */\n\nKotlin.Kind = {\n    CLASS: "class",\n    INTERFACE: "interface",\n    OBJECT: "object"\n};\n\nKotlin.callGetter = function (thisObject, klass,
propertyName) {\n    var propertyDescriptor = Object.getOwnPropertyDescriptor(klass, propertyName);\n    if
(propertyDescriptor !== null && propertyDescriptor.get !== null) {\n        return
propertyDescriptor.get.call(thisObject);\n    }\n\n    propertyDescriptor =
Object.getOwnPropertyDescriptor(thisObject,
propertyName);\n    if (propertyDescriptor !== null && "value" in propertyDescriptor) {\n        return
thisObject[propertyName];\n    }\n\n    return Kotlin.callGetter(thisObject, Object.getPrototypeOf(klass),
}
```

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propertyName);}\n\nKotlin.callSetter = function (thisObject, klass, propertyName, value) {\n  var
propertyDescriptor = Object.getOwnPropertyDescriptor(klass, propertyName);\n  if (propertyDescriptor != null
&& propertyDescriptor.set != null) {\n    propertyDescriptor.set.call(thisObject, value);\n    return;\n  }\n\n  propertyDescriptor = Object.getOwnPropertyDescriptor(thisObject, propertyName);\n  if (propertyDescriptor !=
null && \"value\" in propertyDescriptor) {\n    thisObject[propertyName] = value;\n    return\n  }\n\n  Kotlin.callSetter(thisObject, Object.getPrototypeOf(klass), propertyName, value);\n}\n\nfunction
isInheritanceFromInterface(ctor, iface) {\n  if (ctor === iface) return true;\n\n  var metadata = ctor.$metadata$;\n  if (metadata != null) {\n    var interfaces = metadata.interfaces;\n    for (var i = 0; i < interfaces.length; i++)
{\n      if (isInheritanceFromInterface(interfaces[i], iface)) {\n        return true;\n      }\n    }\n\n    var superPrototype = ctor.prototype != null ? Object.getPrototypeOf(ctor.prototype) : null;\n    var superConstructor
= superPrototype != null ? superPrototype.constructor : null;\n    return superConstructor != null &&
isInheritanceFromInterface(superConstructor, iface);\n}\n\n/**\n * @param {*} object\n * @param
{Function|Object} klass\n * @returns {Boolean}\n */\nKotlin.isType = function (object, klass) {\n  if (klass ===
Object) {\n    switch (typeof object) {\n      case \"string\":\n      case \"number\":\n      case
\"boolean\":\n      case \"function\":\n        return true;\n      default:\n        return object instanceof
Object;\n    }\n  }\n\n  if (object == null || klass == null || (typeof object !== 'object' && typeof object !== 'function')) {\n    return
false;\n  }\n\n  if (typeof klass === \"function\" && object instanceof klass) {\n    return true;\n  }\n\n  var
proto = Object.getPrototypeOf(klass);\n  var constructor = proto != null ? proto.constructor : null;\n  if
(constructor != null && \"$metadata$\" in constructor) {\n    var metadata = constructor.$metadata$;\n    if
(metadata.kind === Kotlin.Kind.OBJECT) {\n      return object === klass;\n    }\n  }\n\n  var classMetadata
= klass.$metadata$;\n\n  // In WebKit (JavaScriptCore) for some interfaces from DOM typeof returns \"object\",
nevertheless they can be used in RHS of instanceof\n  if (classMetadata == null) {\n    return object instanceof
klass;\n  }\n\n  if (classMetadata.kind === Kotlin.Kind.INTERFACE && object.constructor != null) {\n
return isInheritanceFromInterface(object.constructor, klass);\n  }\n\n  return false;\n}\n\nKotlin.isNumber = function (a) {\n  return typeof a == \"number\" || a instanceof
Kotlin.Long;\n}\n\nKotlin.isChar = function (value) {\n  return value instanceof
Kotlin.BoxedChar;\n}\n\nKotlin.isComparable = function (value) {\n  var type = typeof value;\n\n  return type
=== \"string\" ||\n    type === \"boolean\" ||\n    Kotlin.isNumber(value) ||\n    Kotlin.isType(value,
Kotlin.kotlin.Comparable);\n}\n\nKotlin.isCharSequence = function (value) {\n  return typeof value === \"string\"
|| Kotlin.isType(value, Kotlin.kotlin.CharSequence);\n};\n\n/*\n * Copyright 2010-2020 JetBrains s.r.o. and Kotlin
Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be
found in the license/LICENSE.txt file.\n */\n\n// a package is omitted to get declarations directly under the
module\n\n@PublishedApi\nexternal fun <T> Array(size: Int): Array<T>\n\n@JsName(\"newArray\")\nfun
<T> newArray(size: Int, initialValue: T) = fillArrayVal(Array<T>(size),
initialValue)\n\n@JsName(\"newArrayF\")\ninline fun <T> arrayWithFun(size: Int, init: (Int) -> T) =
fillArrayFun(Array<T>(size), init)\n\n@JsName(\"fillArray\")\ninline fun <T> fillArrayFun(array: Array<T>, init:
(Int) -> T): Array<T> {\n  for (i in 0..array.size - 1) {\n    array[i] = init(i)\n  }\n  return
array\n}\n\n@JsName(\"booleanArray\")\nfun booleanArray(size: Int, init: dynamic): Array<Boolean> {\n  val
result: dynamic = Array<Boolean>(size)\n  result.`$type$` = \"BooleanArray\"\n  return when (init) {\n    null,
true -> fillArrayVal(result, false)\n    false -> result\n    else -> fillArrayFun<Boolean>(result, init)\n  }\n}\n\n@JsName(\"booleanArrayF\")\ninline fun booleanArrayWithFun(size: Int, init: (Int) -> Boolean):
Array<Boolean> = fillArrayFun(booleanArray(size, false),
init)\n\n@JsName(\"charArray\")\n@Suppress(\"UNUSED_PARAMETER\")\nfun charArray(size: Int, init:
dynamic):
Array<Char> {\n  val result = js(\"new Uint16Array(size)\")\n  result.`$type$` = \"CharArray\"\n  return when
(init) {\n    null, true, false -> result // For consistency\n    else -> fillArrayFun<Char>(result, init)\n  }\n}\n\n@JsName(\"charArrayF\")\ninline fun charArrayWithFun(size: Int, init: (Int) -> Char): Array<Char> {\n

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val array = charArray(size, null)\n for (i in 0..array.size - 1) {\n     @Suppress("UNUSED_VARIABLE") //
used in js block\n     val value = init(i)\n     js("array[i] = value;")\n } \n return
array\n}\n\n@JsName("untypedCharArrayF")\ninline fun untypedCharArrayWithFun(size: Int, init: (Int) -> Char):
Array<Char> {\n val array = Array<Char>(size)\n for (i in 0..array.size - 1) {\n
@Suppress("UNUSED_VARIABLE") // used in js block\n     val value = init(i)\n     js("array[i] = value;")\n
}\n return array\n}\n\n@JsName("longArray")\nfun longArray(size: Int, init: dynamic): Array<Long> {\n
val result: dynamic = Array<Long>(size)\n result.`$type$` = "LongArray"\n return when (init) {\n     null,
true -> fillArrayVal(result, 0L)\n     false -> result\n     else -> fillArrayFun<Long>(result, init)\n
}\n}\n\n@JsName("longArrayF")\ninline fun longArrayWithFun(size: Int, init: (Int) -> Long): Array<Long> =
fillArrayFun(longArray(size, false), init)\n\nprivate fun <T> fillArrayVal(array: Array<T>, initialValue: T): Array<T>
{\n for (i in 0..array.size - 1) {\n     array[i] = initialValue\n } \n return array\n},"/*\n * Copyright 2010-2018
JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the
Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\npackage kotlin\n\npublic class
Enum<T : Enum<T>> : Comparable<Enum<T>> {\n     @JsName("name$") private var _name: String = ""\n\n
@JsName("ordinal$") private var _ordinal: Int = 0\n\n     val name: String\n     get() = _name\n\n
val ordinal: Int\n     get() = _ordinal\n\n     override fun compareTo(other: Enum<T>) =
ordinal.compareTo(other.ordinal)\n\n     override fun equals(other: Any?) = this === other\n\n     override fun
hashCode(): Int = js("Kotlin.identityHashCode")(this)\n\n     override fun toString() = name\n\n     companion
object\n},"/*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of
this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*/\n\npackage kotlin.js.internal\n\n@JsName("DoubleCompanionObject")\n\ninternal object
DoubleCompanionObject {\n     @JsName("MIN_VALUE")\n     const val MIN_VALUE: Double = 4.9E-324\n\n
@JsName("MAX_VALUE")\n     const val MAX_VALUE: Double = 1.7976931348623157E308\n\n
@JsName("POSITIVE_INFINITY")\n     @Suppress("DIVISION_BY_ZERO")\n     const val
POSITIVE_INFINITY: Double = 1.0 / 0.0\n\n     @JsName("NEGATIVE_INFINITY")\n
@Suppress("DIVISION_BY_ZERO")\n     const val NEGATIVE_INFINITY: Double = -1.0 / 0.0\n\n     @JsName("NaN")\n
@Suppress("DIVISION_BY_ZERO")\n     const val NaN: Double = -(0.0 / 0.0)\n\n
@JsName("SIZE_BYTES")\n     const val SIZE_BYTES = 8\n\n     @JsName("SIZE_BITS")\n     const val
SIZE_BITS = 64\n}\n\n@JsName("FloatCompanionObject")\n\ninternal object FloatCompanionObject {\n
@JsName("MIN_VALUE")\n     const val MIN_VALUE: Float = 1.4E-45F\n\n     @JsName("MAX_VALUE")\n
const val MAX_VALUE: Float = 3.4028235E38F\n\n     @JsName("POSITIVE_INFINITY")\n
@Suppress("DIVISION_BY_ZERO")\n     const val POSITIVE_INFINITY: Float = 1.0F / 0.0F\n\n
@JsName("NEGATIVE_INFINITY")\n     @Suppress("DIVISION_BY_ZERO")\n     const val
NEGATIVE_INFINITY: Float = -1.0F / 0.0F\n\n     @JsName("NaN")\n     @Suppress("DIVISION_BY_ZERO")\n
const val NaN: Float = -(0.0F / 0.0F)\n\n
@JsName("SIZE_BYTES")\n     const val SIZE_BYTES = 4\n\n     @JsName("SIZE_BITS")\n     const val
SIZE_BITS
= 32\n}\n\n@JsName("IntCompanionObject")\n\ninternal object IntCompanionObject {\n
@JsName("MIN_VALUE")\n     val MIN_VALUE: Int = -2147483647 - 1\n\n     @JsName("MAX_VALUE")\n
val MAX_VALUE: Int = 2147483647\n\n     @JsName("SIZE_BYTES")\n     const val SIZE_BYTES = 4\n\n
@JsName("SIZE_BITS")\n     const val SIZE_BITS = 32\n}\n\n@JsName("LongCompanionObject")\n\ninternal
object LongCompanionObject {\n     @JsName("MIN_VALUE")\n     val MIN_VALUE: Long =
js("Kotlin.Long.MIN_VALUE")\n\n     @JsName("MAX_VALUE")\n     val MAX_VALUE: Long =
js("Kotlin.Long.MAX_VALUE")\n\n     @JsName("SIZE_BYTES")\n     const val SIZE_BYTES = 8\n\n
@JsName("SIZE_BITS")\n     const val SIZE_BITS = 64\n}\n\n@JsName("ShortCompanionObject")\n\ninternal
object ShortCompanionObject {\n     @JsName("MIN_VALUE")\n     val MIN_VALUE: Short = -32768\n\n
@JsName("MAX_VALUE")\n     val MAX_VALUE: Short = 32767\n\n     @JsName("SIZE_BYTES")\n     const

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val SIZE_BYTES = 2\n\n @JsName("SIZE_BITS")\n
const val SIZE_BITS = 16\n}\n\n@JsName("ByteCompanionObject")\ninternal object ByteCompanionObject
{\n @JsName("MIN_VALUE")\n val MIN_VALUE: Byte = -128\n\n @JsName("MAX_VALUE")\n val
MAX_VALUE: Byte = 127\n\n @JsName("SIZE_BYTES")\n const val SIZE_BYTES = 1\n\n
@JsName("SIZE_BITS")\n const val SIZE_BITS = 8\n}\n\n@JsName("CharCompanionObject")\ninternal
object CharCompanionObject {\n @JsName("MIN_VALUE")\n public const val MIN_VALUE: Char =
"\u0000"\n\n @JsName("MAX_VALUE")\n public const val MAX_VALUE: Char = "\uFFFF"\n\n
@JsName("MIN_HIGH_SURROGATE")\n public const val MIN_HIGH_SURROGATE: Char = "\uD800"\n\n
@JsName("MAX_HIGH_SURROGATE")\n public const val MAX_HIGH_SURROGATE: Char =
"\uDBFF"\n\n @JsName("MIN_LOW_SURROGATE")\n public const val MIN_LOW_SURROGATE: Char =
"\uDC00"\n\n @JsName("MAX_LOW_SURROGATE")\n public const val MAX_LOW_SURROGATE: Char
= "\uDFFF"\n\n
@JsName("MIN_SURROGATE")\n public const val MIN_SURROGATE: Char =
MIN_HIGH_SURROGATE\n\n @JsName("MAX_SURROGATE")\n public const val MAX_SURROGATE:
Char = MAX_LOW_SURROGATE\n\n @JsName("SIZE_BYTES")\n const val SIZE_BYTES = 2\n\n
@JsName("SIZE_BITS")\n const val SIZE_BITS = 16\n}\n\ninternal object StringCompanionObject
{ }\n\ninternal object BooleanCompanionObject { }\n\n", /*\n * Copyright 2010-2022 JetBrains s.r.o. and Kotlin
Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be
found in the license/LICENSE.txt file.\n
*/\n\n@file:kotlin.jvm.JvmMultifileClass\n@file:kotlin.jvm.JvmName("ArraysKt")\n\npackage
kotlin.collections\n\n/\n// NOTE: THIS FILE IS AUTO-GENERATED by the GenerateStandardLib.kt\n// See:
https://github.com/JetBrains/kotlin/tree/master/libraries/stdlib\n\n/\n\nimport kotlin.random.*\nimport
kotlin.ranges.contains\nimport kotlin.ranges.reversed\n\n/**\n * Returns 1st *element*\n
from the array.\n * \n * If the size of this array is less than 1, throws an [IndexOutOfBoundsException] except in
Kotlin/JS\n * where the behavior is unspecified.\n */\n\n@kotlin.internal.InlineOnly\npublic inline operator fun <T>
Array<out T>.component1(): T {\n return get(0)\n}\n\n/**\n * Returns 1st *element*\n
from the array.\n * \n * If the size of this array is less than 1, throws an [IndexOutOfBoundsException] except in
Kotlin/JS\n * where the behavior is unspecified.\n */\n\n@kotlin.internal.InlineOnly\npublic inline operator fun
ByteArray.component1(): Byte {\n return get(0)\n}\n\n/**\n * Returns 1st *element*\n
from the array.\n * \n * If the size of this array is less than 1, throws an [IndexOutOfBoundsException] except in
Kotlin/JS\n * where the behavior is unspecified.\n */\n\n@kotlin.internal.InlineOnly\npublic inline operator fun
ShortArray.component1(): Short {\n return
get(0)\n}\n\n/**\n * Returns 1st *element*\n
from the array.\n * \n * If the size of this array is less than 1, throws an [IndexOutOfBoundsException] except in
Kotlin/JS\n * where the behavior is unspecified.\n */\n\n@kotlin.internal.InlineOnly\npublic inline operator fun
IntArray.component1(): Int {\n return
get(0)\n}\n\n/**\n * Returns 1st *element*\n
from the array.\n * \n * If the size of this array is less than 1, throws an [IndexOutOfBoundsException] except in
Kotlin/JS\n * where the behavior is unspecified.\n */\n\n@kotlin.internal.InlineOnly\npublic inline operator fun
LongArray.component1(): Long {\n return
get(0)\n}\n\n/**\n * Returns 1st *element*\n
from the array.\n * \n * If the size of this array is less than 1, throws an [IndexOutOfBoundsException] except in
Kotlin/JS\n * where the behavior is unspecified.\n */\n\n@kotlin.internal.InlineOnly\npublic inline operator fun
FloatArray.component1(): Float {\n return
get(0)\n}\n\n/**\n * Returns 1st *element*\n
from the array.\n * \n * If the size of this array is less than 1, throws an [IndexOutOfBoundsException] except in
Kotlin/JS\n
* where the behavior is unspecified.\n */\n\n@kotlin.internal.InlineOnly\npublic inline operator fun
DoubleArray.component1(): Double {\n return get(0)\n}\n\n/**\n * Returns 1st *element*\n
from the array.\n * \n * If the size of this array is less than 1, throws an [IndexOutOfBoundsException] except in
Kotlin/JS\n * where the behavior is unspecified.\n */\n\n@kotlin.internal.InlineOnly\npublic inline operator fun
BooleanArray.component1(): Boolean {\n return get(0)\n}\n\n/**\n * Returns 1st *element*\n
from the array.\n * \n * If the size of this array is less than 1, throws an [IndexOutOfBoundsException] except in
Kotlin/JS\n * where the behavior is unspecified.\n

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*^@kotlin.internal.InlineOnly\npublic inline operator fun CharArray.component1(): Char {\n    return
get(0)\n}\n\n**\n * Returns 2nd *element* from the array.\n * \n * If the size of this array is less than 2, throws an
[IndexOutOfBoundsExcep] except in Kotlin/JS\n * where the behavior is unspecified.\n
*^@kotlin.internal.InlineOnly\npublic
inline operator fun <T> Array<out T>.component2(): T {\n    return get(1)\n}\n\n**\n * Returns 2nd *element*
from the array.\n * \n * If the size of this array is less than 2, throws an [IndexOutOfBoundsExcep] except in
Kotlin/JS\n * where the behavior is unspecified.\n
*^@kotlin.internal.InlineOnly\npublic inline operator fun
ByteArray.component2(): Byte {\n    return get(1)\n}\n\n**\n * Returns 2nd *element* from the array.\n * \n * If
the size of this array is less than 2, throws an [IndexOutOfBoundsExcep] except in Kotlin/JS\n * where the
behavior is unspecified.\n
*^@kotlin.internal.InlineOnly\npublic inline operator fun ShortArray.component2():
Short {\n    return get(1)\n}\n\n**\n * Returns 2nd *element* from the array.\n * \n * If the size of this array is less
than 2, throws an [IndexOutOfBoundsExcep] except in Kotlin/JS\n * where the behavior is unspecified.\n
*^@kotlin.internal.InlineOnly\npublic inline operator fun IntArray.component2():
Int {\n    return get(1)\n}\n\n**\n * Returns 2nd *element* from the array.\n * \n * If the size of this array is less
than 2, throws an [IndexOutOfBoundsExcep] except in Kotlin/JS\n * where the behavior is unspecified.\n
*^@kotlin.internal.InlineOnly\npublic inline operator fun LongArray.component2(): Long {\n    return
get(1)\n}\n\n**\n * Returns 2nd *element* from the array.\n * \n * If the size of this array is less than 2, throws an
[IndexOutOfBoundsExcep] except in Kotlin/JS\n * where the behavior is unspecified.\n
*^@kotlin.internal.InlineOnly\npublic inline operator fun FloatArray.component2(): Float {\n    return
get(1)\n}\n\n**\n * Returns 2nd *element* from the array.\n * \n * If the size of this array is less than 2, throws an
[IndexOutOfBoundsExcep] except in Kotlin/JS\n * where the behavior is unspecified.\n
*^@kotlin.internal.InlineOnly\npublic inline operator fun DoubleArray.component2(): Double {\n    return
get(1)\n}\n\n**\n * Returns
2nd *element* from the array.\n * \n * If the size of this array is less than 2, throws an
[IndexOutOfBoundsExcep] except in Kotlin/JS\n * where the behavior is unspecified.\n
*^@kotlin.internal.InlineOnly\npublic inline operator fun BooleanArray.component2(): Boolean {\n    return
get(1)\n}\n\n**\n * Returns 2nd *element* from the array.\n * \n * If the size of this array is less than 2, throws an
[IndexOutOfBoundsExcep] except in Kotlin/JS\n * where the behavior is unspecified.\n
*^@kotlin.internal.InlineOnly\npublic inline operator fun CharArray.component2(): Char {\n    return
get(1)\n}\n\n**\n * Returns 3rd *element* from the array.\n * \n * If the size of this array is less than 3, throws an
[IndexOutOfBoundsExcep] except in Kotlin/JS\n * where the behavior is unspecified.\n
*^@kotlin.internal.InlineOnly\npublic inline operator fun <T> Array<out T>.component3(): T {\n    return
get(2)\n}\n\n**\n * Returns 3rd *element* from the array.\n * \n * If the size
of this array is less than 3, throws an [IndexOutOfBoundsExcep] except in Kotlin/JS\n * where the behavior is
unspecified.\n
*^@kotlin.internal.InlineOnly\npublic inline operator fun ByteArray.component3(): Byte {\n    return
get(2)\n}\n\n**\n * Returns 3rd *element* from the array.\n * \n * If the size of this array is less than 3,
throws an [IndexOutOfBoundsExcep] except in Kotlin/JS\n * where the behavior is unspecified.\n
*^@kotlin.internal.InlineOnly\npublic inline operator fun ShortArray.component3(): Short {\n    return
get(2)\n}\n\n**\n * Returns 3rd *element* from the array.\n * \n * If the size of this array is less than 3, throws an
[IndexOutOfBoundsExcep] except in Kotlin/JS\n * where the behavior is unspecified.\n
*^@kotlin.internal.InlineOnly\npublic inline operator fun IntArray.component3(): Int {\n    return
get(2)\n}\n\n**\n * Returns 3rd *element* from the array.\n * \n * If the size of this array is less than 3, throws an
[IndexOutOfBoundsExcep]
except in Kotlin/JS\n * where the behavior is unspecified.\n
*^@kotlin.internal.InlineOnly\npublic inline operator
fun LongArray.component3(): Long {\n    return get(2)\n}\n\n**\n * Returns 3rd *element* from the array.\n * \n *
If the size of this array is less than 3, throws an [IndexOutOfBoundsExcep] except in Kotlin/JS\n * where the
behavior is unspecified.\n
*^@kotlin.internal.InlineOnly\npublic inline operator fun FloatArray.component3():
Float {\n    return get(2)\n}\n\n**\n * Returns 3rd *element* from the array.\n * \n * If the size of this array is less

```

than 3, throws an [IndexOutOfBoundsException] except in Kotlin/JS where the behavior is unspecified.

```

*^@kotlin.internal.InlineOnly\npublic inline operator fun DoubleArray.component3(): Double {\n  return
get(2)\n}\n\n/**\n * Returns 3rd *element* from the array.\n * \n * If the size of this array is less than 3, throws an
[IndexOutOfBoundsException] except in Kotlin/JS where the behavior is unspecified.\n
*^@kotlin.internal.InlineOnly\npublic inline operator fun BooleanArray.component3(): Boolean {\n  return
get(2)\n}\n\n/**\n * Returns 3rd *element* from the array.\n * \n * If the size of this array is less than 3, throws an
[IndexOutOfBoundsException] except in Kotlin/JS where the behavior is unspecified.\n
*^@kotlin.internal.InlineOnly\npublic inline operator fun CharArray.component3(): Char {\n  return
get(2)\n}\n\n/**\n * Returns 4th *element* from the array.\n * \n * If the size of this array is less than 4, throws an
[IndexOutOfBoundsException] except in Kotlin/JS where the behavior is unspecified.\n
*^@kotlin.internal.InlineOnly\npublic inline operator fun <T> Array<out T>.component4(): T {\n  return
get(3)\n}\n\n/**\n * Returns 4th *element* from the array.\n * \n * If the size of this array is less than 4, throws an
[IndexOutOfBoundsException] except in Kotlin/JS where the behavior is unspecified.\n
*^@kotlin.internal.InlineOnly\npublic inline
operator fun ByteArray.component4(): Byte {\n  return get(3)\n}\n\n/**\n * Returns 4th *element* from the
array.\n * \n * If the size of this array is less than 4, throws an [IndexOutOfBoundsException] except in Kotlin/JS
where the behavior is unspecified.\n
*^@kotlin.internal.InlineOnly\npublic inline operator fun
ShortArray.component4(): Short {\n  return get(3)\n}\n\n/**\n * Returns 4th *element* from the array.\n * \n * If
the size of this array is less than 4, throws an [IndexOutOfBoundsException] except in Kotlin/JS where the
behavior is unspecified.\n
*^@kotlin.internal.InlineOnly\npublic inline operator fun IntArray.component4(): Int
{\n  return get(3)\n}\n\n/**\n * Returns 4th *element* from the array.\n * \n * If the size of this array is less than 4,
throws an [IndexOutOfBoundsException] except in Kotlin/JS where the behavior is unspecified.\n
*^@kotlin.internal.InlineOnly\npublic inline operator fun LongArray.component4(): Long {\n  return
get(3)\n}\n\n/**\n
* Returns 4th *element* from the array.\n * \n * If the size of this array is less than 4, throws an
[IndexOutOfBoundsException] except in Kotlin/JS where the behavior is unspecified.\n
*^@kotlin.internal.InlineOnly\npublic inline operator fun FloatArray.component4(): Float {\n  return
get(3)\n}\n\n/**\n * Returns 4th *element* from the array.\n * \n * If the size of this array is less than 4, throws an
[IndexOutOfBoundsException] except in Kotlin/JS where the behavior is unspecified.\n
*^@kotlin.internal.InlineOnly\npublic inline operator fun DoubleArray.component4(): Double {\n  return
get(3)\n}\n\n/**\n * Returns 4th *element* from the array.\n * \n * If the size of this array is less than 4, throws an
[IndexOutOfBoundsException] except in Kotlin/JS where the behavior is unspecified.\n
*^@kotlin.internal.InlineOnly\npublic inline operator fun BooleanArray.component4(): Boolean {\n  return
get(3)\n}\n\n/**\n * Returns 4th *element* from the array.\n
* \n * If the size of this array is less than 4, throws an [IndexOutOfBoundsException] except in Kotlin/JS where
the behavior is unspecified.\n
*^@kotlin.internal.InlineOnly\npublic inline operator fun CharArray.component4():
Char {\n  return get(3)\n}\n\n/**\n * Returns 5th *element* from the array.\n * \n * If the size of this array is less
than 5, throws an [IndexOutOfBoundsException] except in Kotlin/JS where the behavior is unspecified.\n
*^@kotlin.internal.InlineOnly\npublic inline operator fun <T> Array<out T>.component5(): T {\n  return
get(4)\n}\n\n/**\n * Returns 5th *element* from the array.\n * \n * If the size of this array is less than 5, throws an
[IndexOutOfBoundsException] except in Kotlin/JS where the behavior is unspecified.\n
*^@kotlin.internal.InlineOnly\npublic inline operator fun ByteArray.component5(): Byte {\n  return
get(4)\n}\n\n/**\n * Returns 5th *element* from the array.\n * \n * If the size of this array is less than 5, throws an
[IndexOutOfBoundsException] except in Kotlin/JS where the behavior is unspecified.\n
*^@kotlin.internal.InlineOnly\npublic inline operator fun ShortArray.component5(): Short {\n  return
get(4)\n}\n\n/**\n * Returns 5th *element* from the array.\n * \n * If the size of this array is less than 5, throws an
[IndexOutOfBoundsException] except in Kotlin/JS where the behavior is unspecified.\n
*^@kotlin.internal.InlineOnly\npublic inline operator fun IntArray.component5(): Int {\n  return

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get(4)\n\n/\*\*\n \* Returns 5th \*element\* from the array.\n \* \n \* If the size of this array is less than 5, throws an [IndexOutOfBoundsException] except in Kotlin/JS\n \* where the behavior is unspecified.\n

```

*\n@kotlin.internal.InlineOnly\npublic inline operator fun LongArray.component5(): Long {\n    return
get(4)\n}\n\n/**\n * Returns 5th *element* from the array.\n * \n * If the size of this array is less than 5, throws an
[IndexOutOfBoundsException] except in Kotlin/JS\n * where the behavior
is unspecified.\n
*\n@kotlin.internal.InlineOnly\npublic inline operator fun FloatArray.component5(): Float {\n    return
get(4)\n}\n\n/**\n * Returns 5th *element* from the array.\n * \n * If the size of this array is less than 5,
throws an [IndexOutOfBoundsException] except in Kotlin/JS\n * where the behavior is unspecified.\n
*\n@kotlin.internal.InlineOnly\npublic inline operator fun DoubleArray.component5(): Double {\n    return
get(4)\n}\n\n/**\n * Returns 5th *element* from the array.\n * \n * If the size of this array is less than 5, throws an
[IndexOutOfBoundsException] except in Kotlin/JS\n * where the behavior is unspecified.\n
*\n@kotlin.internal.InlineOnly\npublic inline operator fun BooleanArray.component5(): Boolean {\n    return
get(4)\n}\n\n/**\n * Returns 5th *element* from the array.\n * \n * If the size of this array is less than 5, throws an
[IndexOutOfBoundsException] except in Kotlin/JS\n * where the behavior is unspecified.\n
*\n@kotlin.internal.InlineOnly\npublic
inline operator fun CharArray.component5(): Char {\n    return get(4)\n}\n\n/**\n * Returns `true` if [element] is
found in the array.\n
*\npublic operator fun <@kotlin.internal.OnlyInputTypes T> Array<out T>.contains(element:
T): Boolean {\n    return indexOf(element) >= 0\n}\n\n/**\n * Returns `true` if [element] is found in the array.\n
*\npublic operator fun ByteArray.contains(element: Byte): Boolean {\n    return indexOf(element) >= 0\n}\n\n/**\n
* Returns `true` if [element] is found in the array.\n
*\npublic operator fun ShortArray.contains(element: Short):
Boolean {\n    return indexOf(element) >= 0\n}\n\n/**\n * Returns `true` if [element] is found in the array.\n
*\npublic operator fun IntArray.contains(element: Int): Boolean {\n    return indexOf(element) >= 0\n}\n\n/**\n
* Returns `true` if [element] is found in the array.\n
*\npublic operator fun LongArray.contains(element: Long):
Boolean {\n    return indexOf(element) >= 0\n}\n\n/**\n * Returns `true` if
[element] is found in the array.\n
*\n@Deprecated(\n    "The function has unclear behavior when searching for NaN or
zero values and will be removed soon. Use 'any { it == element }' instead to continue using this behavior, or
.asList().contains(element: T)' to get the same search behavior as in a list.\n", ReplaceWith(\n    "any { it == element
}")\n)\n@DeprecatedSinceKotlin(warningSince = "1.4", errorSince = "1.6", hiddenSince = "1.7")\npublic
operator fun FloatArray.contains(element: Float): Boolean {\n    return any { it == element }\n}\n\n/**\n * Returns
`true` if [element] is found in the array.\n
*\n@Deprecated(\n    "The function has unclear behavior when searching for
NaN or zero values and will be removed soon. Use 'any { it == element }' instead to continue using this behavior, or
.asList().contains(element: T)' to get the same search behavior as in a list.\n", ReplaceWith(\n    "any { it == element
}")\n)\n@DeprecatedSinceKotlin(warningSince = "1.4", errorSince = "1.6", hiddenSince
= "1.7")\npublic operator fun DoubleArray.contains(element: Double): Boolean {\n    return any { it == element
}\n}\n\n/**\n * Returns `true` if [element] is found in the array.\n
*\npublic operator fun
BooleanArray.contains(element: Boolean): Boolean {\n    return indexOf(element) >= 0\n}\n\n/**\n * Returns `true`
if [element] is found in the array.\n
*\npublic operator fun CharArray.contains(element: Char): Boolean {\n    return
indexOf(element) >= 0\n}\n\n/**\n * Returns an element at the given [index] or throws an
[IndexOutOfBoundsException] if the [index] is out of bounds of this array.\n * \n * @sample
samples.collections.Collections.Elements.elementAt\n
*\npublic expect fun <T> Array<out T>.elementAt(index:
Int): T\n\n/**\n * Returns an element at the given [index] or throws an [IndexOutOfBoundsException] if the [index]
is out of bounds of this array.\n * \n * @sample samples.collections.Collections.Elements.elementAt\n
*\npublic expect fun ByteArray.elementAt(index: Int):
Byte\n\n/**\n * Returns an element at the given [index] or throws an [IndexOutOfBoundsException] if the [index]
is out of bounds of this array.\n * \n * @sample samples.collections.Collections.Elements.elementAt\n
*\npublic expect fun ShortArray.elementAt(index: Int): Short\n\n/**\n * Returns an element at the given [index] or throws an
[IndexOutOfBoundsException] if the [index] is out of bounds of this array.\n * \n * @sample
samples.collections.Collections.Elements.elementAt\n
*\npublic expect fun IntArray.elementAt(index: Int):

```



`Int`  
`Int`  
`Int`  
`Int` \* Returns an element at the given [index] or throws an [IndexOutOfBoundsException] if the [index] is out of bounds of this array.  
@sample samples.collections.Collections.Elements.elementAt  
\*  
public expect fun LongArray.elementAt(index: Int): Long  
`Long`  
`Long` \* Returns an element at the given [index] or throws an [IndexOutOfBoundsException] if the [index] is out of bounds of this array.  
@sample samples.collections.Collections.Elements.elementAt  
\*  
public expect fun FloatArray.elementAt(index: Int): Float  
`Float`  
`Float` \* Returns an element at the given [index] or throws an [IndexOutOfBoundsException] if the [index] is out of bounds of this array.  
@sample samples.collections.Collections.Elements.elementAt  
\*  
public expect fun DoubleArray.elementAt(index: Int): Double  
`Double`  
`Double` \* Returns an element at the given [index] or throws an [IndexOutOfBoundsException] if the [index] is out of bounds of this array.  
@sample samples.collections.Collections.Elements.elementAt  
\*  
public expect fun BooleanArray.elementAt(index: Int): Boolean  
`Boolean`  
`Boolean` \* Returns an element at the given [index] or throws an [IndexOutOfBoundsException] if the [index] is out of bounds of this array.  
@sample samples.collections.Collections.Elements.elementAt  
\*  
public expect fun CharArray.elementAt(index: Int): Char  
`Char`  
`Char` \* Returns an element at the given [index] or the result of calling the [defaultValue] function if the [index] is out of bounds of this array.  
@sample samples.collections.Collections.Elements.elementAtOrElse  
\*  
@kotlin.internal.InlineOnly  
public inline fun `<T>` Array`<out T>`.elementAtOrElse(index: Int, defaultValue: (Int) -> T): T {  
return if (index >= 0 && index <= lastIndex) get(index) else defaultValue(index)  
}  
`Array`  
`Array` \* Returns an element at the given [index] or the result of calling the [defaultValue] function if the [index] is out of bounds of this array.  
@sample samples.collections.Collections.Elements.elementAtOrElse  
\*  
@kotlin.internal.InlineOnly  
public inline fun ByteArray.elementAtOrElse(index: Int, defaultValue: (Int) -> Byte): Byte {  
return if (index >= 0 && index <= lastIndex) get(index) else defaultValue(index)  
}  
`ByteArray`  
`ByteArray` \* Returns an element at the given [index] or the result of calling the [defaultValue] function if the [index] is out of bounds of this array.  
@sample samples.collections.Collections.Elements.elementAtOrElse  
\*  
@kotlin.internal.InlineOnly  
public inline fun ShortArray.elementAtOrElse(index: Int, defaultValue: (Int) -> Short): Short {  
return if (index >= 0 && index <= lastIndex) get(index) else defaultValue(index)  
}  
`ShortArray`  
`ShortArray` \* Returns an element at the given [index] or the result of calling the [defaultValue] function if the [index] is out of bounds of this array.  
@sample samples.collections.Collections.Elements.elementAtOrElse  
\*  
@kotlin.internal.InlineOnly  
public inline fun IntArray.elementAtOrElse(index: Int, defaultValue: (Int) -> Int): Int {  
return if (index >= 0 && index <= lastIndex) get(index) else defaultValue(index)  
}  
`IntArray`  
`IntArray` \* Returns an element at the given [index] or the result of calling the [defaultValue] function if the [index] is out of bounds of this array.  
@sample samples.collections.Collections.Elements.elementAtOrElse  
\*  
@kotlin.internal.InlineOnly  
public inline fun LongArray.elementAtOrElse(index: Int, defaultValue: (Int) -> Long): Long {  
return if (index >= 0 && index <= lastIndex) get(index) else  
defaultValue(index)  
}  
`LongArray`  
`LongArray` \* Returns an element at the given [index] or the result of calling the [defaultValue] function if the [index] is out of bounds of this array.  
@sample samples.collections.Collections.Elements.elementAtOrElse  
\*  
@kotlin.internal.InlineOnly  
public inline fun FloatArray.elementAtOrElse(index: Int, defaultValue: (Int) -> Float): Float {  
return if (index >= 0 && index <= lastIndex) get(index) else defaultValue(index)  
}  
`FloatArray`  
`FloatArray` \* Returns an element at the given [index] or the result of calling the [defaultValue] function if the [index] is out of bounds of this array.  
@sample samples.collections.Collections.Elements.elementAtOrElse  
\*  
@kotlin.internal.InlineOnly  
public inline fun DoubleArray.elementAtOrElse(index: Int, defaultValue: (Int) -> Double): Double {  
return if (index >= 0 && index <= lastIndex) get(index) else defaultValue(index)  
}  
`DoubleArray`  
`DoubleArray` \* Returns an element at the given [index] or the result of calling the [defaultValue] function if the [index] is out of bounds of this array.  
@sample samples.collections.Collections.Elements.elementAtOrElse  
\*  
@kotlin.internal.InlineOnly  
public inline fun BooleanArray.elementAtOrElse(index: Int, defaultValue: (Int) -> Boolean): Boolean {  
return if (index >= 0 && index <= lastIndex) get(index) else  
defaultValue(index)  
}  
`BooleanArray`  
`BooleanArray` \* Returns an element at the given [index] or the result of calling the [defaultValue]

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function if the [index] is out of bounds of this array.\n * \n * @sample
samples.collections.Collections.Elements.elementAtOrElse\n *^\n@kotlin.internal.InlineOnly\npublic inline fun
CharArray.elementAtOrElse(index: Int, defaultValue: (Int) -> Char): Char {\n  return if (index >= 0 && index <=
lastIndex) get(index) else defaultValue(index)\n}\n\n/**\n * Returns an element at the given [index] or `null` if the
[index] is out of bounds of this
array.\n * \n * @sample samples.collections.Collections.Elements.elementAtOrNull\n
*^\n@kotlin.internal.InlineOnly\npublic inline fun <T> Array<out T>.elementAtOrNull(index: Int): T? {\n  return
this.getOrNull(index)\n}\n\n/**\n * Returns an element at the given [index] or `null` if the [index] is out of bounds
of this array.\n * \n * @sample samples.collections.Collections.Elements.elementAtOrNull\n
*^\n@kotlin.internal.InlineOnly\npublic inline fun ByteArray.elementAtOrNull(index: Int): Byte? {\n  return
this.getOrNull(index)\n}\n\n/**\n * Returns an element at the given [index] or `null` if the [index] is out of bounds
of this array.\n * \n * @sample samples.collections.Collections.Elements.elementAtOrNull\n
*^\n@kotlin.internal.InlineOnly\npublic inline fun ShortArray.elementAtOrNull(index: Int): Short? {\n  return
this.getOrNull(index)\n}\n\n/**\n * Returns an element at the given [index] or `null` if the [index] is out of bounds
of this array.\n * \n * @sample samples.collections.Collections.Elements.elementAtOrNull\n
*^\n@kotlin.internal.InlineOnly\npublic inline fun IntArray.elementAtOrNull(index: Int): Int? {\n  return
this.getOrNull(index)\n}\n\n/**\n * Returns an element at the given [index] or `null` if the [index] is out of bounds
of this array.\n * \n * @sample samples.collections.Collections.Elements.elementAtOrNull\n
*^\n@kotlin.internal.InlineOnly\npublic inline fun LongArray.elementAtOrNull(index: Int): Long? {\n  return
this.getOrNull(index)\n}\n\n/**\n * Returns an element at the given [index] or `null` if the [index] is out of bounds
of this array.\n * \n * @sample samples.collections.Collections.Elements.elementAtOrNull\n
*^\n@kotlin.internal.InlineOnly\npublic inline fun FloatArray.elementAtOrNull(index: Int): Float? {\n  return
this.getOrNull(index)\n}\n\n/**\n * Returns an element at the given [index] or `null` if the [index] is out of bounds
of this array.\n * \n * @sample samples.collections.Collections.Elements.elementAtOrNull\n
*^\n@kotlin.internal.InlineOnly\npublic inline fun DoubleArray.elementAtOrNull(index: Int): Double? {\n  return
this.getOrNull(index)\n}\n\n/**\n * Returns an element at the given [index] or `null` if the [index] is out of bounds
of this array.\n * \n * @sample samples.collections.Collections.Elements.elementAtOrNull\n
*^\n@kotlin.internal.InlineOnly\npublic inline fun BooleanArray.elementAtOrNull(index: Int): Boolean? {\n
return this.getOrNull(index)\n}\n\n/**\n * Returns an element at the given [index] or `null` if the [index] is out of
bounds of this array.\n * \n * @sample samples.collections.Collections.Elements.elementAtOrNull\n
*^\n@kotlin.internal.InlineOnly\npublic inline fun CharArray.elementAtOrNull(index: Int): Char? {\n  return
this.getOrNull(index)\n}\n\n/**\n * Returns the first element matching the given [predicate], or `null` if no such
element was found.\n * \n * @sample samples.collections.Collections.Elements.find\n
*^\n@kotlin.internal.InlineOnly\npublic
inline fun <T> Array<out T>.find(predicate: (T) -> Boolean): T? {\n  return firstOrNull(predicate)\n}\n\n/**\n *
Returns the first element matching the given [predicate], or `null` if no such element was found.\n * \n * @sample
samples.collections.Collections.Elements.find\n *^\n@kotlin.internal.InlineOnly\npublic inline fun
ByteArray.find(predicate: (Byte) -> Boolean): Byte? {\n  return firstOrNull(predicate)\n}\n\n/**\n * Returns the
first element matching the given [predicate], or `null` if no such element was found.\n * \n * @sample
samples.collections.Collections.Elements.find\n *^\n@kotlin.internal.InlineOnly\npublic inline fun
ShortArray.find(predicate: (Short) -> Boolean): Short? {\n  return firstOrNull(predicate)\n}\n\n/**\n * Returns the
first element matching the given [predicate], or `null` if no such element was found.\n * \n * @sample
samples.collections.Collections.Elements.find\n *^\n@kotlin.internal.InlineOnly\npublic inline fun
IntArray.find(predicate: (Int) ->
Boolean): Int? {\n  return firstOrNull(predicate)\n}\n\n/**\n * Returns the first element matching the given
[predicate], or `null` if no such element was found.\n * \n * @sample
samples.collections.Collections.Elements.find\n *^\n@kotlin.internal.InlineOnly\npublic inline fun
LongArray.find(predicate: (Long) -> Boolean): Long? {\n  return firstOrNull(predicate)\n}\n\n/**\n * Returns the

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first element matching the given [predicate], or `null` if no such element was found.

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 * \n * @sample
 samples.collections.Collections.Elements.find
 * \n * @kotlin.internal.InlineOnly
 \n public inline fun
 FloatArray.find(predicate: (Float) -> Boolean): Float? {
 \n return firstOrNull(predicate)
 \n }
 \n / **
 \n * Returns the
 first element matching the given [predicate], or `null` if no such element was found.
 \n * \n * @sample
 samples.collections.Collections.Elements.find
 * \n * @kotlin.internal.InlineOnly
 \n public inline fun
 DoubleArray.find(predicate: (Double) -> Boolean): Double? {
 \n return firstOrNull(predicate)
 \n }
 \n / **
 \n * Returns the first element matching the given [predicate], or `null` if no such element was found.
 \n * \n * @sample
 samples.collections.Collections.Elements.find
 * \n * @kotlin.internal.InlineOnly
 \n public inline fun
 BooleanArray.find(predicate: (Boolean) -> Boolean): Boolean? {
 \n return firstOrNull(predicate)
 \n }
 \n / **
 \n * Returns the first element matching the given [predicate], or `null` if no such element was found.
 \n * \n * @sample
 samples.collections.Collections.Elements.find
 * \n * @kotlin.internal.InlineOnly
 \n public inline fun
 CharArray.find(predicate: (Char) -> Boolean): Char? {
 \n return firstOrNull(predicate)
 \n }
 \n / **
 \n * Returns the
 last element matching the given [predicate], or `null` if no such element was found.
 \n * \n * @sample
 samples.collections.Collections.Elements.find
 * \n * @kotlin.internal.InlineOnly
 \n public inline fun <T> Array<out
 T>.findLast(predicate: (T) -> Boolean): T? {
 \n return lastOrNull(predicate)
 \n }
 \n / **
 \n * Returns the
 last element matching the given [predicate], or `null` if no such element was found.
 \n * \n * @sample
 samples.collections.Collections.Elements.find
 * \n * @kotlin.internal.InlineOnly
 \n public inline fun
 ByteArray.findLast(predicate: (Byte) -> Boolean): Byte? {
 \n return lastOrNull(predicate)
 \n }
 \n / **
 \n * Returns
 the last element matching the given [predicate], or `null` if no such element was found.
 \n * \n * @sample
 samples.collections.Collections.Elements.find
 * \n * @kotlin.internal.InlineOnly
 \n public inline fun
 ShortArray.findLast(predicate: (Short) -> Boolean): Short? {
 \n return lastOrNull(predicate)
 \n }
 \n / **
 \n * Returns
 the last element matching the given [predicate], or `null` if no such element was found.
 \n * \n * @sample
 samples.collections.Collections.Elements.find
 * \n * @kotlin.internal.InlineOnly
 \n public inline fun
 IntArray.findLast(predicate: (Int) -> Boolean): Int? {
 \n return lastOrNull(predicate)
 \n }
 \n / **
 \n * Returns the last
 element matching the given [predicate],
 or `null` if no such element was found.
 \n * \n * @sample
 samples.collections.Collections.Elements.find
 * \n * @kotlin.internal.InlineOnly
 \n public inline fun LongArray.findLast(predicate: (Long) -> Boolean): Long? {
 \n return lastOrNull(predicate)
 \n }
 \n / **
 \n * Returns the last element matching the given [predicate], or `null` if no
 such element was found.
 \n * \n * @sample
 samples.collections.Collections.Elements.find
 * \n * @kotlin.internal.InlineOnly
 \n public inline fun FloatArray.findLast(predicate: (Float) -> Boolean): Float? {
 \n return lastOrNull(predicate)
 \n }
 \n / **
 \n * Returns the last element matching the given [predicate], or `null` if no
 such element was found.
 \n * \n * @sample
 samples.collections.Collections.Elements.find
 * \n * @kotlin.internal.InlineOnly
 \n public inline fun DoubleArray.findLast(predicate: (Double) -> Boolean): Double?
 {
 \n return lastOrNull(predicate)
 \n }
 \n / **
 \n * Returns the last element matching the given [predicate], or `null` if
 no such element was
 found.
 \n * \n * @sample
 samples.collections.Collections.Elements.find
 * \n * @kotlin.internal.InlineOnly
 \n public
 inline fun BooleanArray.findLast(predicate: (Boolean) -> Boolean): Boolean? {
 \n return
 lastOrNull(predicate)
 \n }
 \n / **
 \n * Returns the last element matching the given [predicate], or `null` if no such
 element was found.
 \n * \n * @sample
 samples.collections.Collections.Elements.find
 * \n * @kotlin.internal.InlineOnly
 \n public inline fun CharArray.findLast(predicate: (Char) -> Boolean): Char? {
 \n return lastOrNull(predicate)
 \n }
 \n / **
 \n * Returns the first element.
 \n * \n * @throws NoSuchElementException if
 the array is empty.
 \n * \n public fun <T> Array<out T>.first(): T {
 \n if (isEmpty())
 \n throw
 NoSuchElementException("Array is empty.\")
 \n return this[0]
 \n }
 \n / **
 \n * Returns the first element.
 \n * \n * @throws NoSuchElementException if the array is empty.
 \n * \n public fun ByteArray.first(): Byte {
 \n if
 (isEmpty())
 \n throw NoSuchElementException("Array
 is empty.\")
 \n return this[0]
 \n }
 \n / **
 \n * Returns the first element.
 \n * \n * @throws NoSuchElementException
 if the array is empty.
 \n * \n public fun ShortArray.first(): Short {
 \n if (isEmpty())
 \n throw
 NoSuchElementException("Array is empty.\")
 \n return this[0]
 \n }
 \n / **
 \n * Returns the first element.
 \n * \n *
 
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@throws NoSuchElementException if the array is empty.\n */\npublic fun IntArray.first(): Int {\n    if (isEmpty())\n        throw NoSuchElementException("Array is empty.")\n    return this[0]\n}\n\n/**\n * Returns the first element.\n *\n * @throws NoSuchElementException if the array is empty.\n */\npublic fun LongArray.first(): Long {\n    if (isEmpty())\n        throw NoSuchElementException("Array is empty.")\n    return this[0]\n}\n\n/**\n * Returns the first element.\n *\n * @throws NoSuchElementException if the array is empty.\n */\npublic fun FloatArray.first(): Float {\n    if (isEmpty())\n        throw NoSuchElementException("Array is empty.")\n    return this[0]\n}\n\n/**\n * Returns the first element.\n *\n * @throws NoSuchElementException if the array is empty.\n */\npublic fun DoubleArray.first(): Double {\n    if (isEmpty())\n        throw\n        NoSuchElementException("Array is empty.")\n    return this[0]\n}\n\n/**\n * Returns the first element.\n *\n * @throws NoSuchElementException if the array is empty.\n */\npublic fun BooleanArray.first(): Boolean {\n    if (isEmpty())\n        throw NoSuchElementException("Array is empty.")\n    return this[0]\n}\n\n/**\n * Returns the first element.\n *\n * @throws NoSuchElementException if the array is empty.\n */\npublic fun CharArray.first(): Char {\n    if (isEmpty())\n        throw NoSuchElementException("Array is empty.")\n    return this[0]\n}\n\n/**\n * Returns the first element matching the given [predicate].\n *\n * @throws [NoSuchElementException] if no such element is found.\n */\npublic inline fun <T> Array<out T>.first(predicate: (T) -> Boolean): T {\n    for (element in this) if (predicate(element)) return element\n    throw NoSuchElementException("Array contains no element matching the predicate.")\n}\n\n/**\n * Returns the first element matching the given [predicate].\n *\n * @throws [NoSuchElementException] if no such element is found.\n */\npublic inline fun ByteArray.first(predicate: (Byte) -> Boolean): Byte {\n    for (element in this) if (predicate(element)) return element\n    throw\n        NoSuchElementException("Array contains no element matching the predicate.")\n}\n\n/**\n * Returns the first element matching the given [predicate].\n *\n * @throws [NoSuchElementException] if no such element is found.\n */\npublic inline fun ShortArray.first(predicate: (Short) -> Boolean): Short {\n    for (element in this) if (predicate(element)) return element\n    throw NoSuchElementException("Array contains no element matching the predicate.")\n}\n\n/**\n * Returns the first element matching the given [predicate].\n *\n * @throws [NoSuchElementException] if no such element is found.\n */\npublic inline fun IntArray.first(predicate: (Int) -> Boolean): Int {\n    for (element in this) if (predicate(element)) return element\n    throw NoSuchElementException("Array contains no element matching the predicate.")\n}\n\n/**\n * Returns the first element matching the given [predicate].\n *\n * @throws [NoSuchElementException] if no such element is found.\n */\npublic inline fun LongArray.first(predicate: (Long) -> Boolean): Long {\n    for (element in this) if (predicate(element)) return element\n    throw\n        NoSuchElementException("Array contains no element matching the predicate.")\n}\n\n/**\n * Returns the first element matching the given [predicate].\n *\n * @throws [NoSuchElementException] if no such element is found.\n */\npublic inline fun FloatArray.first(predicate: (Float) -> Boolean): Float {\n    for (element in this) if (predicate(element)) return element\n    throw\n        NoSuchElementException("Array contains no element matching the predicate.")\n}\n\n/**\n * Returns the first element matching the given [predicate].\n *\n * @throws [NoSuchElementException] if no such element is found.\n */\npublic inline fun DoubleArray.first(predicate: (Double) -> Boolean): Double {\n    for (element in this) if (predicate(element)) return element\n    throw\n        NoSuchElementException("Array contains no element matching the predicate.")\n}\n\n/**\n * Returns the first element matching the given [predicate].\n *\n * @throws [NoSuchElementException] if no such element is found.\n */\npublic inline fun BooleanArray.first(predicate: (Boolean) -> Boolean): Boolean {\n    for (element in this) if (predicate(element)) return element\n    throw\n        NoSuchElementException("Array contains no element matching the predicate.")\n}\n\n/**\n * Returns the first element matching the given [predicate].\n *\n * @throws [NoSuchElementException] if no such element is found.\n */\npublic inline fun CharArray.first(predicate: (Char) -> Boolean): Char {\n    for (element in this) if (predicate(element)) return element\n    throw\n        NoSuchElementException("Array contains no element matching the predicate.")\n}\n\n/**\n * Returns the first non-null value produced by [transform] function being applied to elements of this array in iteration order,\n * or throws [NoSuchElementException] if no non-null value was

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produced.\n * \n * @sample samples.collections.Collections.Transformations.firstNotNullOf\n
*\n@SinceKotlin("1.5")\n@kotlin.internal.InlineOnly\npublic inline fun <T, R : Any> Array<out
T>.firstNotNullOf(transform: (T) -> R?): R {\n    return firstNotNullOfOrNull(transform) ?: throw
NoSuchElementException("No element of the array was transformed to a non-null value.")\n}\n\n/**\n * Returns
the first non-null value produced by [transform] function being applied to elements of this array in iteration order,\n
* or `null` if no non-null value was produced.\n * \n * @sample
samples.collections.Collections.Transformations.firstNotNullOf\n
*\n@SinceKotlin("1.5")\n@kotlin.internal.InlineOnly\npublic
inline fun <T, R : Any> Array<out T>.firstNotNullOfOrNull(transform: (T) -> R?): R? {\n    for (element in this)
{\n        val result = transform(element)\n        if (result != null) {\n            return result\n        }\n    }\n    return
null\n}\n\n/**\n * Returns the first element, or `null` if the array is empty.\n *\npublic fun <T> Array<out
T>.firstOrNull(): T? {\n    return if (isEmpty()) null else this[0]\n}\n\n/**\n * Returns the first element, or `null` if
the array is empty.\n *\npublic fun ByteArray.firstOrNull(): Byte? {\n    return if (isEmpty()) null else
this[0]\n}\n\n/**\n * Returns the first element, or `null` if the array is empty.\n *\npublic fun
ShortArray.firstOrNull(): Short? {\n    return if (isEmpty()) null else this[0]\n}\n\n/**\n * Returns the first element,
or `null` if the array is empty.\n *\npublic fun IntArray.firstOrNull(): Int? {\n    return if (isEmpty()) null else
this[0]\n}\n\n/**\n * Returns the
first element, or `null` if the array is empty.\n *\npublic fun LongArray.firstOrNull(): Long? {\n    return if
(isEmpty()) null else this[0]\n}\n\n/**\n * Returns the first element, or `null` if the array is empty.\n *\npublic fun
FloatArray.firstOrNull(): Float? {\n    return if (isEmpty()) null else this[0]\n}\n\n/**\n * Returns the first element,
or `null` if the array is empty.\n *\npublic fun DoubleArray.firstOrNull(): Double? {\n    return if (isEmpty()) null
else this[0]\n}\n\n/**\n * Returns the first element, or `null` if the array is empty.\n *\npublic fun
BooleanArray.firstOrNull(): Boolean? {\n    return if (isEmpty()) null else this[0]\n}\n\n/**\n * Returns the first
element, or `null` if the array is empty.\n *\npublic fun CharArray.firstOrNull(): Char? {\n    return if (isEmpty())
null else this[0]\n}\n\n/**\n * Returns the first element matching the given [predicate], or `null` if element was not
found.\n *\npublic inline fun <T> Array<out T>.firstOrNull(predicate:
(T) -> Boolean): T? {\n    for (element in this) if (predicate(element)) return element\n    return null\n}\n\n/**\n *
Returns the first element matching the given [predicate], or `null` if element was not found.\n *\npublic inline fun
ByteArray.firstOrNull(predicate: (Byte) -> Boolean): Byte? {\n    for (element in this) if (predicate(element)) return
element\n    return null\n}\n\n/**\n * Returns the first element matching the given [predicate], or `null` if element
was not found.\n *\npublic inline fun ShortArray.firstOrNull(predicate: (Short) -> Boolean): Short? {\n    for
(element in this) if (predicate(element)) return element\n    return null\n}\n\n/**\n * Returns the first element
matching the given [predicate], or `null` if element was not found.\n *\npublic inline fun
IntArray.firstOrNull(predicate: (Int) -> Boolean): Int? {\n    for (element in this) if (predicate(element)) return
element\n    return null\n}\n\n/**\n * Returns the first element matching the given [predicate],
or `null` if element was not found.\n *\npublic inline fun LongArray.firstOrNull(predicate: (Long) -> Boolean):
Long? {\n    for (element in this) if (predicate(element)) return element\n    return null\n}\n\n/**\n * Returns the first
element matching the given [predicate], or `null` if element was not found.\n *\npublic inline fun
FloatArray.firstOrNull(predicate: (Float) -> Boolean): Float? {\n    for (element in this) if (predicate(element))
return element\n    return null\n}\n\n/**\n * Returns the first element matching the given [predicate], or `null` if
element was not found.\n *\npublic inline fun DoubleArray.firstOrNull(predicate: (Double) -> Boolean): Double?
{\n    for (element in this) if (predicate(element)) return element\n    return null\n}\n\n/**\n * Returns the first
element matching the given [predicate], or `null` if element was not found.\n *\npublic inline fun
BooleanArray.firstOrNull(predicate: (Boolean) -> Boolean): Boolean? {\n    for (element in this)
if (predicate(element)) return element\n    return null\n}\n\n/**\n * Returns the first element matching the given
[predicate], or `null` if element was not found.\n *\npublic inline fun CharArray.firstOrNull(predicate: (Char) ->
Boolean): Char? {\n    for (element in this) if (predicate(element)) return element\n    return null\n}\n\n/**\n *
Returns an element at the given [index] or the result of calling the [defaultValue] function if the [index] is out of

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bounds of this array.\n *^@kotlin.internal.InlineOnly\npublic inline fun <T> Array<out T>.getOrElse(index: Int,
defaultValue: (Int) -> T): T {\n    return if (index >= 0 && index <= lastIndex) get(index) else
defaultValue(index)\n}\n\n/**\n * Returns an element at the given [index] or the result of calling the [defaultValue]
function if the [index] is out of bounds of this array.\n *^@kotlin.internal.InlineOnly\npublic inline fun
ByteArray.getOrElse(index: Int, defaultValue: (Int) -> Byte): Byte {\n    return if (index >=
0 && index <= lastIndex) get(index) else defaultValue(index)\n}\n\n/**\n * Returns an element at the given [index]
or the result of calling the [defaultValue] function if the [index] is out of bounds of this array.\n
*^@kotlin.internal.InlineOnly\npublic inline fun ShortArray.getOrElse(index: Int, defaultValue: (Int) -> Short):
Short {\n    return if (index >= 0 && index <= lastIndex) get(index) else defaultValue(index)\n}\n\n/**\n * Returns
an element at the given [index] or the result of calling the [defaultValue] function if the [index] is out of bounds of
this array.\n *^@kotlin.internal.InlineOnly\npublic inline fun IntArray.getOrElse(index: Int, defaultValue: (Int) ->
Int): Int {\n    return if (index >= 0 && index <= lastIndex) get(index) else defaultValue(index)\n}\n\n/**\n *
Returns an element at the given [index] or the result of calling the [defaultValue] function if the [index] is out of
bounds of this array.\n *^@kotlin.internal.InlineOnly\npublic inline fun LongArray.getOrElse(index:
Int, defaultValue: (Int) -> Long): Long {\n    return if (index >= 0 && index <= lastIndex) get(index) else
defaultValue(index)\n}\n\n/**\n * Returns an element at the given [index] or the result of calling the [defaultValue]
function if the [index] is out of bounds of this array.\n *^@kotlin.internal.InlineOnly\npublic inline fun
FloatArray.getOrElse(index: Int, defaultValue: (Int) -> Float): Float {\n    return if (index >= 0 && index <=
lastIndex) get(index) else defaultValue(index)\n}\n\n/**\n * Returns an element at the given [index] or the result of
calling the [defaultValue] function if the [index] is out of bounds of this array.\n
*^@kotlin.internal.InlineOnly\npublic inline fun DoubleArray.getOrElse(index: Int, defaultValue: (Int) ->
Double): Double {\n    return if (index >= 0 && index <= lastIndex) get(index) else defaultValue(index)\n}\n\n/**\n
* Returns an element at the given [index] or the result of calling the [defaultValue] function if the [index]
is out of bounds of this array.\n *^@kotlin.internal.InlineOnly\npublic inline fun BooleanArray.getOrElse(index:
Int, defaultValue: (Int) -> Boolean): Boolean {\n    return if (index >= 0 && index <= lastIndex) get(index) else
defaultValue(index)\n}\n\n/**\n * Returns an element at the given [index] or the result of calling the [defaultValue]
function if the [index] is out of bounds of this array.\n *^@kotlin.internal.InlineOnly\npublic inline fun
CharArray.getOrElse(index: Int, defaultValue: (Int) -> Char): Char {\n    return if (index >= 0 && index <=
lastIndex) get(index) else defaultValue(index)\n}\n\n/**\n * Returns an element at the given [index] or `null` if the
[index] is out of bounds of this array.\n * \n * @sample samples.collections.Collections.Elements.getOrNull\n
*^@public fun <T> Array<out T>.getOrNull(index: Int): T? {\n    return if (index >= 0 && index <= lastIndex)
get(index) else null\n}\n\n/**\n * Returns an element at the given [index] or `null` if the [index]
is out of bounds of this array.\n * \n * @sample samples.collections.Collections.Elements.getOrNull\n *^@public
fun ByteArray.getOrNull(index: Int): Byte? {\n    return if (index >= 0 && index <= lastIndex) get(index) else
null\n}\n\n/**\n * Returns an element at the given [index] or `null` if the [index] is out of bounds of this array.\n * \n
* @sample samples.collections.Collections.Elements.getOrNull\n *^@public fun ShortArray.getOrNull(index: Int):
Short? {\n    return if (index >= 0 && index <= lastIndex) get(index) else null\n}\n\n/**\n * Returns an element at
the given [index] or `null` if the [index] is out of bounds of this array.\n * \n * @sample
samples.collections.Collections.Elements.getOrNull\n *^@public fun IntArray.getOrNull(index: Int): Int? {\n
return if (index >= 0 && index <= lastIndex) get(index) else null\n}\n\n/**\n * Returns an element at the given
[index] or `null` if the [index] is out of bounds of this array.\n * \n * @sample
samples.collections.Collections.Elements.getOrNull\n
*^@public fun LongArray.getOrNull(index: Int): Long? {\n    return if (index >= 0 && index <= lastIndex)
get(index) else null\n}\n\n/**\n * Returns an element at the given [index] or `null` if the [index] is out of bounds of
this array.\n * \n * @sample samples.collections.Collections.Elements.getOrNull\n *^@public fun
FloatArray.getOrNull(index: Int): Float? {\n    return if (index >= 0 && index <= lastIndex) get(index) else
null\n}\n\n/**\n * Returns an element at the given [index] or `null` if the [index] is out of bounds of this array.\n * \n
* @sample samples.collections.Collections.Elements.getOrNull\n *^@public fun DoubleArray.getOrNull(index:

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Int): Double? {\n    return if (index >= 0 && index <= lastIndex) get(index) else null\n}\n\n/**\n * Returns an
element at the given [index] or `null` if the [index] is out of bounds of this array.\n * \n * @sample
samples.collections.Collections.Elements.getOrNull\n */\npublic fun BooleanArray.getOrNull(index:
Int): Boolean? {\n    return if (index >= 0 && index <= lastIndex) get(index) else null\n}\n\n/**\n * Returns an
element at the given [index] or `null` if the [index] is out of bounds of this array.\n * \n * @sample
samples.collections.Collections.Elements.getOrNull\n */\npublic fun CharArray.getOrNull(index: Int): Char? {\n
return if (index >= 0 && index <= lastIndex) get(index) else null\n}\n\n/**\n * Returns first index of [element], or -
1 if the array does not contain element.\n */\npublic fun <@kotlin.internal.OnlyInputTypes T> Array<out
T>.indexOf(element: T): Int {\n    if (element == null) {\n        for (index in indices) {\n            if (this[index] ==
null) {\n                return index\n            }\n        }\n    } else {\n        for (index in indices) {\n            if (element ==
this[index]) {\n                return index\n            }\n        }\n    }\n    return -1\n}\n\n/**\n * Returns first index of
[element], or -1 if the array does not contain element.\n */\npublic fun ByteArray.indexOf(element: Byte): Int {\n    for (index in indices) {\n        if (element ==
this[index]) {\n            return index\n        }\n    }\n    return -1\n}\n\n/**\n * Returns first index of [element], or -1 if
the array does not contain element.\n */\npublic fun ShortArray.indexOf(element: Short): Int {\n    for (index in
indices) {\n        if (element == this[index]) {\n            return index\n        }\n    }\n    return -1\n}\n\n/**\n * Returns
first index of [element], or -1 if the array does not contain element.\n */\npublic fun IntArray.indexOf(element: Int):
Int {\n    for (index in indices) {\n        if (element == this[index]) {\n            return index\n        }\n    }\n    return -
1\n}\n\n/**\n * Returns first index of [element], or -1 if the array does not contain element.\n */\npublic fun
LongArray.indexOf(element: Long): Int {\n    for (index in indices) {\n        if (element == this[index]) {\n            return
index\n        }\n    }\n    return -1\n}\n\n/**\n * Returns first index of [element], or -1 if the array does not contain element.\n
*/\n\n@Deprecated("The function has unclear behavior when searching for NaN or zero values and will be removed
soon. Use 'indexOfFirst { it == element }' instead to continue using this behavior, or '.asList().indexOf(element: T)'
to get the same search behavior as in a list.", ReplaceWith("indexOfFirst { it == element
}"))\n@DeprecatedSinceKotlin(warningSince = "1.4", errorSince = "1.6", hiddenSince = "1.7")\npublic fun
FloatArray.indexOf(element: Float): Int {\n    for (index in indices) {\n        if (element == this[index]) {\n            return
index\n        }\n    }\n    return -1\n}\n\n/**\n * Returns first index of [element], or -1 if the array does not
contain element.\n */\n\n@Deprecated("The function has unclear behavior when searching for NaN or zero values
and will be removed soon. Use 'indexOfFirst { it == element }' instead to continue using this
behavior, or '.asList().indexOf(element: T)' to get the same search behavior as in a list.",
ReplaceWith("indexOfFirst { it == element }"))\n@DeprecatedSinceKotlin(warningSince = "1.4", errorSince =
"1.6", hiddenSince = "1.7")\npublic fun DoubleArray.indexOf(element: Double): Int {\n    for (index in indices)
{\n        if (element == this[index]) {\n            return index\n        }\n    }\n    return -1\n}\n\n/**\n * Returns first
index of [element], or -1 if the array does not contain element.\n */\n\npublic fun BooleanArray.indexOf(element:
Boolean): Int {\n    for (index in indices) {\n        if (element == this[index]) {\n            return index\n        }\n    }\n
return -1\n}\n\n/**\n * Returns first index of [element], or -1 if the array does not contain element.\n */\n\npublic fun
CharArray.indexOf(element: Char): Int {\n    for (index in indices) {\n        if (element == this[index]) {\n            return
index\n        }\n    }\n    return -1\n}\n\n/**\n * Returns
index of the first element matching the given [predicate], or -1 if the array does not contain such element.\n
*/\n\npublic inline fun <T> Array<out T>.indexOfFirst(predicate: (T) -> Boolean): Int {\n    for (index in indices) {\n        if
(predicate(this[index])) {\n            return index\n        }\n    }\n    return -1\n}\n\n/**\n * Returns index of the
first element matching the given [predicate], or -1 if the array does not contain such element.\n */\n\npublic inline fun
ByteArray.indexOfFirst(predicate: (Byte) -> Boolean): Int {\n    for (index in indices) {\n        if
(predicate(this[index])) {\n            return index\n        }\n    }\n    return -1\n}\n\n/**\n * Returns index of the first
element matching the given [predicate], or -1 if the array does not contain such element.\n */\n\npublic inline fun
ShortArray.indexOfFirst(predicate: (Short) -> Boolean): Int {\n    for (index in indices) {\n        if
(predicate(this[index])) {\n            return index\n        }\n    }\n}

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    }
    return -1
}

// Returns index of the first element matching the given [predicate], or -1 if the array
// does not contain such element.
public inline fun IntArray.indexOfFirst(predicate: (Int) -> Boolean): Int {
    for (index in indices) {
        if (predicate(this[index])) {
            return index
        }
    }
    return -1
}

// Returns index of the first element matching the given [predicate], or -1 if the array does not contain
// such element.
public inline fun LongArray.indexOfFirst(predicate: (Long) -> Boolean): Int {
    for (index in indices) {
        if (predicate(this[index])) {
            return index
        }
    }
    return -1
}

// Returns index of the first element matching the given [predicate], or -1 if the array does not contain such element.
public inline fun FloatArray.indexOfFirst(predicate: (Float) -> Boolean): Int {
    for (index in indices) {
        if (predicate(this[index])) {
            return index
        }
    }
    return -1
}

// Returns index of the first element matching the given
// [predicate], or -1 if the array does not contain such element.
public inline fun
DoubleArray.indexOfFirst(predicate: (Double) -> Boolean): Int {
    for (index in indices) {
        if
(predicate(this[index])) {
            return index
        }
    }
    return -1
}

// Returns index of the first
// element matching the given [predicate], or -1 if the array does not contain such element.
public inline fun
BooleanArray.indexOfFirst(predicate: (Boolean) -> Boolean): Int {
    for (index in indices) {
        if
(predicate(this[index])) {
            return index
        }
    }
    return -1
}

// Returns index of the first
// element matching the given [predicate], or -1 if the array does not contain such element.
public inline fun
CharArray.indexOfFirst(predicate: (Char) -> Boolean): Int {
    for (index in indices) {
        if
(predicate(this[index])) {
            return index
        }
    }
    return -1
}

// Returns index of the last
// element matching the given [predicate], or -1 if the array does not contain such element.
public inline fun <T>
Array<out T>.indexOfLast(predicate: (T) -> Boolean): Int {
    for (index in indices.reversed()) {
        if
(predicate(this[index])) {
            return index
        }
    }
    return -1
}

// Returns index of the last
// element matching the given [predicate], or -1 if the array does not contain such element.
public inline fun
ByteArray.indexOfLast(predicate: (Byte) -> Boolean): Int {
    for (index in indices.reversed()) {
        if
(predicate(this[index])) {
            return index
        }
    }
    return -1
}

// Returns index of the last
// element matching the given [predicate], or -1 if the array does not contain such element.
public inline fun
ShortArray.indexOfLast(predicate: (Short) -> Boolean):
Int {
    for (index in indices.reversed()) {
        if (predicate(this[index])) {
            return index
        }
    }
    return -1
}

// Returns index of the last element matching the given [predicate], or -1 if the array does not
// contain such element.
public inline fun IntArray.indexOfLast(predicate: (Int) -> Boolean): Int {
    for (index
in indices.reversed()) {
        if (predicate(this[index])) {
            return index
        }
    }
    return -1
}

// Returns index of the last element matching the given [predicate], or -1 if the array does not contain
// such element.
public inline fun LongArray.indexOfLast(predicate: (Long) -> Boolean): Int {
    for (index in
indices.reversed()) {
        if (predicate(this[index])) {
            return index
        }
    }
    return -1
}

// Returns index of the last element matching the given [predicate], or -1 if the array does not contain such
// element.
public inline
fun FloatArray.indexOfLast(predicate: (Float) -> Boolean): Int {
    for (index in indices.reversed()) {
        if
(predicate(this[index])) {
            return index
        }
    }
    return -1
}

// Returns index of the last
// element matching the given [predicate], or -1 if the array does not contain such element.
public inline fun
DoubleArray.indexOfLast(predicate: (Double) -> Boolean): Int {
    for (index in indices.reversed()) {
        if
(predicate(this[index])) {
            return index
        }
    }
    return -1
}

// Returns index of the last
// element matching the given [predicate], or -1 if the array does not contain such element.
public inline fun
BooleanArray.indexOfLast(predicate: (Boolean) -> Boolean): Int {
    for (index in indices.reversed()) {
        if
(predicate(this[index])) {
            return index
        }
    }
    return -1
}

// Returns index of the last
// element matching the given [predicate], or
-1 if the array does not contain such element.
public inline fun CharArray.indexOfLast(predicate: (Char) ->
Boolean): Int {
    for (index in indices.reversed()) {
        if (predicate(this[index])) {
            return index
        }
    }
    return -1
}

// Returns the last element.
// @throws NoSuchElementException if the array

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is empty.\n * \n * @sample samples.collections.Collections.Elements.last\n *^\npublic fun <T> Array<out T>.last():
T {\n if (isEmpty())\n     throw NoSuchElementException("\nArray is empty.\n")\n return
this[lastIndex]\n}\n\n/**\n * Returns the last element.\n * \n * @throws NoSuchElementException if the array is
empty.\n * \n * @sample samples.collections.Collections.Elements.last\n *^\npublic fun ByteArray.last(): Byte {\n
if (isEmpty())\n     throw NoSuchElementException("\nArray is empty.\n")\n return this[lastIndex]\n}\n\n/**\n *
Returns the last element.\n * \n * @throws NoSuchElementException if the array is
empty.\n * \n * @sample samples.collections.Collections.Elements.last\n *^\npublic fun ShortArray.last(): Short {\n
if (isEmpty())\n     throw NoSuchElementException("\nArray is empty.\n")\n return this[lastIndex]\n}\n\n/**\n *
Returns the last element.\n * \n * @throws NoSuchElementException if the array is empty.\n * \n * @sample
samples.collections.Collections.Elements.last\n *^\npublic fun IntArray.last(): Int {\n if (isEmpty())\n     throw
NoSuchElementException("\nArray is empty.\n")\n return this[lastIndex]\n}\n\n/**\n * Returns the last element.\n *
\n * @throws NoSuchElementException if the array is empty.\n * \n * @sample
samples.collections.Collections.Elements.last\n *^\npublic fun LongArray.last(): Long {\n if (isEmpty())\n     throw
NoSuchElementException("\nArray is empty.\n")\n return this[lastIndex]\n}\n\n/**\n * Returns the last
element.\n * \n * @throws NoSuchElementException if the array is empty.\n * \n * @sample
samples.collections.Collections.Elements.last\n
*\npublic fun FloatArray.last(): Float {\n if (isEmpty())\n     throw NoSuchElementException("\nArray is
empty.\n")\n return this[lastIndex]\n}\n\n/**\n * Returns the last element.\n * \n * @throws
NoSuchElementException if the array is empty.\n * \n * @sample samples.collections.Collections.Elements.last\n
*\npublic fun DoubleArray.last(): Double {\n if (isEmpty())\n     throw NoSuchElementException("\nArray is
empty.\n")\n return this[lastIndex]\n}\n\n/**\n * Returns the last element.\n * \n * @throws
NoSuchElementException if the array is empty.\n * \n * @sample samples.collections.Collections.Elements.last\n
*\npublic fun BooleanArray.last(): Boolean {\n if (isEmpty())\n     throw NoSuchElementException("\nArray is
empty.\n")\n return this[lastIndex]\n}\n\n/**\n * Returns the last element.\n * \n * @throws
NoSuchElementException if the array is empty.\n * \n * @sample samples.collections.Collections.Elements.last\n
*\npublic fun CharArray.last():
Char {\n if (isEmpty())\n     throw NoSuchElementException("\nArray is empty.\n")\n return
this[lastIndex]\n}\n\n/**\n * Returns the last element matching the given [predicate].\n * \n * @throws
NoSuchElementException if no such element is found.\n * \n * @sample
samples.collections.Collections.Elements.last\n *^\npublic inline fun <T> Array<out T>.last(predicate: (T) ->
Boolean): T {\n for (index in this.indices.reversed()) {\n     val element = this[index]\n     if
(predicate(element)) return element\n } throw NoSuchElementException("\nArray contains no element
matching the predicate.\n")\n}\n\n/**\n * Returns the last element matching the given [predicate].\n * \n * @throws
NoSuchElementException if no such element is found.\n * \n * @sample
samples.collections.Collections.Elements.last\n *^\npublic inline fun ByteArray.last(predicate: (Byte) -> Boolean):
Byte {\n for (index in this.indices.reversed()) {\n     val element = this[index]\n     if
(predicate(element)) return element\n } throw NoSuchElementException("\nArray contains no element
matching the predicate.\n")\n}\n\n/**\n * Returns the last element matching the given [predicate].\n * \n * @throws
NoSuchElementException if no such element is found.\n * \n * @sample
samples.collections.Collections.Elements.last\n *^\npublic inline fun ShortArray.last(predicate: (Short) -> Boolean):
Short {\n for (index in this.indices.reversed()) {\n     val element = this[index]\n     if (predicate(element))
return element\n } throw NoSuchElementException("\nArray contains no element matching the
predicate.\n")\n}\n\n/**\n * Returns the last element matching the given [predicate].\n * \n * @throws
NoSuchElementException if no such element is found.\n * \n * @sample
samples.collections.Collections.Elements.last\n *^\npublic inline fun IntArray.last(predicate: (Int) -> Boolean): Int
{\n for (index in this.indices.reversed()) {\n     val element = this[index]\n     if
(predicate(element)) return element\n } throw NoSuchElementException("\nArray contains no element
matching the predicate.\n")\n}\n\n/**\n * Returns the last element matching the given [predicate].\n * \n * @throws

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NoSuchElementException if no such element is found.\n * \n * @sample
samples.collections.Collections.Elements.last\n *^\npublic inline fun LongArray.last(predicate: (Long) -> Boolean):
Long {\n for (index in this.indices.reversed()) {\n val element = this[index]\n if (predicate(element))
return element\n }\n throw NoSuchElementException("Array contains no element matching the
predicate.")\n}\n\n/**\n * Returns the last element matching the given [predicate].\n * \n * @throws
NoSuchElementException if no such element is found.\n * \n * @sample
samples.collections.Collections.Elements.last\n *^\npublic inline fun FloatArray.last(predicate: (Float) -> Boolean):
Float {\n for (index in this.indices.reversed()) {\n val element =
this[index]\n if (predicate(element)) return element\n }\n throw NoSuchElementException("Array contains
no element matching the predicate.")\n}\n\n/**\n * Returns the last element matching the given [predicate].\n * \n *
@throws NoSuchElementException if no such element is found.\n * \n * @sample
samples.collections.Collections.Elements.last\n *^\npublic inline fun DoubleArray.last(predicate: (Double) ->
Boolean): Double {\n for (index in this.indices.reversed()) {\n val element = this[index]\n if
(predicate(element)) return element\n }\n throw NoSuchElementException("Array contains no element
matching the predicate.")\n}\n\n/**\n * Returns the last element matching the given [predicate].\n * \n * @throws
NoSuchElementException if no such element is found.\n * \n * @sample
samples.collections.Collections.Elements.last\n *^\npublic inline fun BooleanArray.last(predicate: (Boolean) ->
Boolean): Boolean {\n for (index in this.indices.reversed())
{\n val element = this[index]\n if (predicate(element)) return element\n }\n throw
NoSuchElementException("Array contains no element matching the predicate.")\n}\n\n/**\n * Returns the last
element matching the given [predicate].\n * \n * @throws NoSuchElementException if no such element is found.\n
* \n * @sample samples.collections.Collections.Elements.last\n *^\npublic inline fun CharArray.last(predicate:
(Char) -> Boolean): Char {\n for (index in this.indices.reversed()) {\n val element = this[index]\n if
(predicate(element)) return element\n }\n throw NoSuchElementException("Array contains no element
matching the predicate.")\n}\n\n/**\n * Returns last index of [element], or -1 if the array does not contain
element.\n *^\npublic fun <@kotlin.internal.OnlyInputTypes T> Array<out T>.lastIndexOf(element: T): Int {\n if
(element == null) {\n for (index in indices.reversed()) {\n if (this[index] == null) {\n
return index\n }\n }\n } else {\n for (index in indices.reversed()) {\n if (element ==
this[index]) {\n return index\n }\n }\n }\n return -1\n}\n\n/**\n * Returns last index of
[element], or -1 if the array does not contain element.\n *^\npublic fun ByteArray.lastIndexOf(element: Byte): Int
{\n for (index in indices.reversed()) {\n if (element == this[index]) {\n return index\n }\n }\n
return -1\n}\n\n/**\n * Returns last index of [element], or -1 if the array does not contain element.\n *^\npublic fun
ShortArray.lastIndexOf(element: Short): Int {\n for (index in indices.reversed()) {\n if (element ==
this[index]) {\n return index\n }\n }\n return -1\n}\n\n/**\n * Returns last index of [element], or -1 if
the array does not contain element.\n *^\npublic fun IntArray.lastIndexOf(element: Int): Int {\n for (index in
indices.reversed())
{\n if (element == this[index]) {\n return index\n }\n }\n return -1\n}\n\n/**\n * Returns last
index of [element], or -1 if the array does not contain element.\n *^\npublic fun LongArray.lastIndexOf(element:
Long): Int {\n for (index in indices.reversed()) {\n if (element == this[index]) {\n return index\n
}\n }\n return -1\n}\n\n/**\n * Returns last index of [element], or -1 if the array does not contain element.\n
*\n * @Deprecated("The function has unclear behavior when searching for NaN or zero values and will be removed
soon. Use 'indexOfLast { it == element }' instead to continue using this behavior, or '.asList().lastIndexOf(element:
T)' to get the same search behavior as in a list.", ReplaceWith("indexOfLast { it == element
}"))\n *^\npublic fun FloatArray.lastIndexOf(element: Float): Int {\n for (index in indices.reversed())
{\n if (element == this[index]) {\n return index\n }\n }\n return -1\n}\n\n/**\n * Returns last
index of [element], or -1 if the array does not contain element.\n *^\n@Deprecated("The function has unclear
behavior when searching for NaN or zero values and will be removed soon. Use 'indexOfLast { it == element }'

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instead to continue using this behavior, or '.asList().lastIndexOf(element: T)' to get the same search behavior as in a
list.", ReplaceWith("indexOfLast { it == element }"))\n@DeprecatedSinceKotlin(warningSince = "1.4",
errorSince = "1.6", hiddenSince = "1.7")\npublic fun DoubleArray.lastIndexOf(element: Double): Int {\n for
(index in indices.reversed()) {\n if (element == this[index]) {\n return index\n }\n }\n return -
1\n}\n\n/**\n * Returns last index of [element], or -1 if the array does not contain element.\n */\npublic fun
BooleanArray.lastIndexOf(element: Boolean): Int {\n for (index in indices.reversed())
{\n if (element == this[index]) {\n return index\n }\n }\n return -1\n}\n\n/**\n * Returns last
index of [element], or -1 if the array does not contain element.\n */\npublic fun CharArray.lastIndexOf(element:
Char): Int {\n for (index in indices.reversed()) {\n if (element == this[index]) {\n return index\n }\n
}\n return -1\n}\n\n/**\n * Returns the last element, or `null` if the array is empty.\n */\n @sample
samples.collections.Collections.Elements.last\n */\npublic fun <T> Array<out T>.lastOrNull(): T? {\n return if
(isEmpty()) null else this[size - 1]\n}\n\n/**\n * Returns the last element, or `null` if the array is empty.\n */\n @sample
samples.collections.Collections.Elements.last\n */\npublic fun ByteArray.lastOrNull(): Byte? {\n return
if (isEmpty()) null else this[size - 1]\n}\n\n/**\n * Returns the last element, or `null` if the array is empty.\n */\n @sample
samples.collections.Collections.Elements.last\n */\npublic fun ShortArray.lastOrNull(): Short? {\n return if (isEmpty()) null else this[size - 1]\n}\n\n/**\n * Returns the last element, or `null` if the array is empty.\n */\n @sample
samples.collections.Collections.Elements.last\n */\npublic fun IntArray.lastOrNull(): Int? {\n return if (isEmpty())
null else this[size - 1]\n}\n\n/**\n * Returns the last element, or `null` if the array is empty.\n */\n @sample
samples.collections.Collections.Elements.last\n */\npublic fun LongArray.lastOrNull(): Long? {\n return if
(isEmpty()) null else this[size - 1]\n}\n\n/**\n * Returns the last element, or `null` if the array is empty.\n */\n @sample
samples.collections.Collections.Elements.last\n */\npublic fun FloatArray.lastOrNull(): Float? {\n return
if (isEmpty()) null else this[size - 1]\n}\n\n/**\n * Returns the last element, or `null` if the array is empty.\n */\n @sample
samples.collections.Collections.Elements.last\n */\npublic fun DoubleArray.lastOrNull():
Double? {\n return if (isEmpty()) null else this[size - 1]\n}\n\n/**\n * Returns the last element, or `null` if the
array is empty.\n */\n @sample samples.collections.Collections.Elements.last\n */\npublic fun
BooleanArray.lastOrNull(): Boolean? {\n return if (isEmpty()) null else this[size - 1]\n}\n\n/**\n * Returns the last
element, or `null` if the array is empty.\n */\n @sample samples.collections.Collections.Elements.last\n */\npublic
fun CharArray.lastOrNull(): Char? {\n return if (isEmpty()) null else this[size - 1]\n}\n\n/**\n * Returns the last
element matching the given [predicate], or `null` if no such element was found.\n */\n @sample
samples.collections.Collections.Elements.last\n */\npublic inline fun <T> Array<out T>.lastOrNull(predicate: (T) ->
Boolean): T? {\n for (index in this.indices.reversed()) {\n val element = this[index]\n if
(predicate(element)) return element\n }\n return null\n}\n\n/**\n * Returns the last
element matching the given [predicate], or `null` if no such element was found.\n */\n @sample
samples.collections.Collections.Elements.last\n */\npublic inline fun ByteArray.lastOrNull(predicate: (Byte) ->
Boolean): Byte? {\n for (index in this.indices.reversed()) {\n val element = this[index]\n if
(predicate(element)) return element\n }\n return null\n}\n\n/**\n * Returns the last element matching the given
[predicate], or `null` if no such element was found.\n */\n @sample
samples.collections.Collections.Elements.last\n */\npublic inline fun ShortArray.lastOrNull(predicate: (Short) ->
Boolean): Short? {\n for (index in this.indices.reversed()) {\n val element = this[index]\n if
(predicate(element)) return element\n }\n return null\n}\n\n/**\n * Returns the last element matching the given
[predicate], or `null` if no such element was found.\n */\n @sample
samples.collections.Collections.Elements.last\n */\npublic inline fun IntArray.lastOrNull(predicate:
(Int) -> Boolean): Int? {\n for (index in this.indices.reversed()) {\n val element = this[index]\n if
(predicate(element)) return element\n }\n return null\n}\n\n/**\n * Returns the last element matching the given
[predicate], or `null` if no such element was found.\n */\n @sample
samples.collections.Collections.Elements.last\n */\npublic inline fun LongArray.lastOrNull(predicate: (Long) ->
Boolean): Long? {\n for (index in this.indices.reversed()) {\n val element = this[index]\n if

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(predicate(element)) return element\n    }\n    return null\n}\n\n/**\n * Returns the last element matching the given
 [predicate], or `null` if no such element was found.\n * \n * @sample
 samples.collections.Collections.Elements.last\n */\npublic inline fun FloatArray.lastOrNull(predicate: (Float) ->
 Boolean): Float? {\n    for (index in this.indices.reversed()) {\n        val element = this[index]\n        if
 (predicate(element)) return element\n    }\n    return null\n}\n\n/**\n * Returns the last element matching the given
 [predicate], or `null` if no such
 element was found.\n * \n * @sample samples.collections.Collections.Elements.last\n */\npublic inline fun
 DoubleArray.lastOrNull(predicate: (Double) -> Boolean): Double? {\n    for (index in this.indices.reversed()) {\n
 val element = this[index]\n        if (predicate(element)) return element\n    }\n    return null\n}\n\n/**\n * Returns the
 last element matching the given [predicate], or `null` if no such element was found.\n * \n * @sample
 samples.collections.Collections.Elements.last\n */\npublic inline fun BooleanArray.lastOrNull(predicate: (Boolean)
 -> Boolean): Boolean? {\n    for (index in this.indices.reversed()) {\n        val element = this[index]\n        if
 (predicate(element)) return element\n    }\n    return null\n}\n\n/**\n * Returns the last element matching the given
 [predicate], or `null` if no such element was found.\n * \n * @sample
 samples.collections.Collections.Elements.last\n */\npublic inline fun CharArray.lastOrNull(predicate: (Char) -> Boolean): Char? {\n    for (index in
 this.indices.reversed()) {\n        val element = this[index]\n        if (predicate(element)) return element\n    }\n
    return null\n}\n\n/**\n * Returns a random element from this array.\n * \n * @throws NoSuchElementException if
 this array is empty.\n */\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\npublic inline fun <T> Array<out
 T>.random(): T {\n    return random(Random)\n}\n\n/**\n * Returns a random element from this array.\n * \n *
 @throws NoSuchElementException if this array is empty.\n */\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\npublic inline fun ByteArray.random(): Byte {\n    return
 random(Random)\n}\n\n/**\n * Returns a random element from this array.\n * \n * @throws
 NoSuchElementException if this array is empty.\n */\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\npublic
 inline fun ShortArray.random(): Short
 {\n    return random(Random)\n}\n\n/**\n * Returns a random element from this array.\n * \n * @throws
 NoSuchElementException if this array is empty.\n */\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\npublic
 inline fun IntArray.random(): Int {\n    return random(Random)\n}\n\n/**\n * Returns a random element from this
 array.\n * \n * @throws NoSuchElementException if this array is empty.\n */\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\npublic inline fun LongArray.random(): Long {\n    return
 random(Random)\n}\n\n/**\n * Returns a random element from this array.\n * \n * @throws
 NoSuchElementException if this array is empty.\n */\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\npublic
 inline fun FloatArray.random(): Float {\n    return random(Random)\n}\n\n/**\n * Returns a random element from
 this array.\n * \n * @throws NoSuchElementException if this array is empty.\n */\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\npublic inline fun DoubleArray.random():
 Double {\n    return random(Random)\n}\n\n/**\n * Returns a random element from this array.\n * \n * @throws
 NoSuchElementException if this array is empty.\n */\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\npublic
 inline fun BooleanArray.random(): Boolean {\n    return random(Random)\n}\n\n/**\n * Returns a random element
 from this array.\n * \n * @throws NoSuchElementException if this array is empty.\n */\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\npublic inline fun CharArray.random(): Char {\n    return
 random(Random)\n}\n\n/**\n * Returns a random element from this array using the specified source of
 randomness.\n * \n * @throws NoSuchElementException if this array is empty.\n */\n@SinceKotlin("1.3")\npublic
 fun <T> Array<out T>.random(random: Random): T {\n    if (isEmpty())\n        throw
 NoSuchElementException("Array is empty.")\n    return get(random.nextInt(size))\n}\n\n/**\n * Returns a random
 element from this array using the specified source of randomness.\n * \n * @throws NoSuchElementException if this array is empty.\n */\n@SinceKotlin("1.3")\npublic fun
 ByteArray.random(random: Random): Byte {\n    if (isEmpty())\n        throw NoSuchElementException("Array is
 empty.")\n    return get(random.nextInt(size))\n}\n\n/**\n * Returns a random element from this array using the

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specified source of randomness.\n * \n * @throws NoSuchElementException if this array is empty.\n
*\n@SinceKotlin("1.3")\npublic fun ShortArray.random(random: Random): Short {\n if (isEmpty())\n throw NoSuchElementException("Array is empty.")\n return get(random.nextInt(size))\n}\n\n/**\n * Returns a random element from this array using the specified source of randomness.\n * \n * @throws NoSuchElementException if this array is empty.\n *\n@SinceKotlin("1.3")\npublic fun IntArray.random(random: Random): Int {\n if (isEmpty())\n throw NoSuchElementException("Array is empty.")\n return get(random.nextInt(size))\n}\n\n/**\n * Returns a random element from this array using the specified source of randomness.\n * \n * @throws NoSuchElementException if this array is empty.\n *\n@SinceKotlin("1.3")\npublic fun LongArray.random(random: Random): Long {\n if (isEmpty())\n throw NoSuchElementException("Array is empty.")\n return get(random.nextInt(size))\n}\n\n/**\n * Returns a random element from this array using the specified source of randomness.\n * \n * @throws NoSuchElementException if this array is empty.\n *\n@SinceKotlin("1.3")\npublic fun FloatArray.random(random: Random): Float {\n if (isEmpty())\n throw NoSuchElementException("Array is empty.")\n return get(random.nextInt(size))\n}\n\n/**\n * Returns a random element from this array using the specified source of randomness.\n * \n * @throws NoSuchElementException if this array is empty.\n *\n@SinceKotlin("1.3")\npublic fun DoubleArray.random(random: Random): Double {\n if (isEmpty())\n throw NoSuchElementException("Array is empty.")\n return get(random.nextInt(size))\n}\n\n/**\n * Returns a random element from this array using the specified source of randomness.\n * \n * @throws NoSuchElementException if this array is empty.\n *\n@SinceKotlin("1.3")\npublic fun BooleanArray.random(random: Random): Boolean {\n if (isEmpty())\n throw NoSuchElementException("Array is empty.")\n return get(random.nextInt(size))\n}\n\n/**\n * Returns a random element from this array using the specified source of randomness.\n * \n * @throws NoSuchElementException if this array is empty.\n *\n@SinceKotlin("1.3")\npublic fun CharArray.random(random: Random): Char {\n if (isEmpty())\n throw NoSuchElementException("Array is empty.")\n return get(random.nextInt(size))\n}\n\n/**\n * Returns a random element from this array, or `null` if this array is empty.\n *\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun <T> Array<out T>.randomOrNull(): T? {\n return randomOrNull(Random)\n}\n\n/**\n * Returns a random element from this array, or `null` if this array is empty.\n *\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun ByteArray.randomOrNull(): Byte? {\n return randomOrNull(Random)\n}\n\n/**\n * Returns a random element from this array, or `null` if this array is empty.\n *\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun ShortArray.randomOrNull(): Short? {\n return randomOrNull(Random)\n}\n\n/**\n * Returns a random element from this array, or `null` if this array is empty.\n *\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun IntArray.randomOrNull(): Int? {\n return randomOrNull(Random)\n}\n\n/**\n * Returns a random element from this array, or `null` if this array is empty.\n *\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun LongArray.randomOrNull(): Long? {\n return randomOrNull(Random)\n}\n\n/**\n * Returns a random element from this array, or `null` if this array is empty.\n *\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun FloatArray.randomOrNull(): Float? {\n return randomOrNull(Random)\n}\n\n/**\n * Returns a random element from this array, or `null` if this array is empty.\n *\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun DoubleArray.randomOrNull(): Double? {\n return randomOrNull(Random)\n}\n\n/**\n * Returns a

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random element from this array, or `null` if this array is empty.

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*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun BooleanArray.randomOrNull(): Boolean? {\n    return randomOrNull(Random)\n}\n\n/**\n * Returns a random element from this array, or `null` if this array is empty.\n */
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun CharArray.randomOrNull(): Char? {\n    return randomOrNull(Random)\n}\n\n/**\n * Returns a random element from this array using the specified source of randomness, or `null` if this array is empty.\n */
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic fun <T> Array<out T>.randomOrNull(random: Random): T? {\n    if (isEmpty())\n        return null\n    return get(random.nextInt(size))\n}\n\n/**\n * Returns a random element from this array using the specified source of randomness, or `null` if this array is empty.\n */
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic fun ByteArray.randomOrNull(random: Random): Byte? {\n    if (isEmpty())\n        return null\n    return get(random.nextInt(size))\n}\n\n/**\n * Returns a random element from this array using the specified source of randomness, or `null` if this array is empty.\n */
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic fun ShortArray.randomOrNull(random: Random): Short? {\n    if (isEmpty())\n        return null\n    return get(random.nextInt(size))\n}\n\n/**\n * Returns a random element from this array using the specified source of randomness, or `null` if this array is empty.\n */
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic fun IntArray.randomOrNull(random: Random): Int? {\n    if (isEmpty())\n        return null\n    return get(random.nextInt(size))\n}\n\n/**\n * Returns a random element from this array using the specified source of randomness, or `null` if this array is empty.\n */
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic fun LongArray.randomOrNull(random: Random): Long? {\n    if (isEmpty())\n        return null\n    return get(random.nextInt(size))\n}\n\n/**\n * Returns a random element from this array using the specified source of randomness, or `null` if this array is empty.\n */
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic fun FloatArray.randomOrNull(random: Random): Float? {\n    if (isEmpty())\n        return null\n    return get(random.nextInt(size))\n}\n\n/**\n * Returns a random element from this array using the specified source of randomness, or `null` if this array is empty.\n */
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic fun DoubleArray.randomOrNull(random: Random): Double? {\n    if (isEmpty())\n        return null\n    return get(random.nextInt(size))\n}\n\n/**\n * Returns a random element from this array using the specified source of randomness, or `null` if this array is empty.\n */
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic fun BooleanArray.randomOrNull(random: Random): Boolean? {\n    if (isEmpty())\n        return null\n    return get(random.nextInt(size))\n}\n\n/**\n * Returns a random element from this array using the specified source of randomness, or `null` if this array is empty.\n */
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic fun CharArray.randomOrNull(random: Random): Char? {\n    if (isEmpty())\n        return null\n    return get(random.nextInt(size))\n}\n\n/**\n * Returns the single element, or throws an exception if the array is empty or has more than one element.\n */
*\npublic fun <T> Array<out T>.single(): T {\n    return when (size) {\n        0 -> throw NoSuchElementException("Array is empty.")\n        1 -> this[0]\n        else -> throw IllegalArgumentException("Array has more than one element.")\n    }\n}\n\n/**\n * Returns the single element, or throws an exception if the array is empty or has more than one element.\n */
*\npublic fun ByteArray.single(): Byte {\n

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return when (size) {
    0 -> throw NoSuchElementException("Array is empty.")
    1 -> this[0]
    else -> throw IllegalArgumentException("Array has more than one element.")
}
}
}

// Returns the single element, or throws an exception if the array is empty or has more than one element.
public fun ShortArray.single(): Short {
    return when (size) {
        0 -> throw NoSuchElementException("Array is empty.")
        1 -> this[0]
        else -> throw IllegalArgumentException("Array has more than one element.")
    }
}

// Returns the single element, or throws an exception if the array is empty or has more than one element.
public fun IntArray.single(): Int {
    return when (size) {
        0 -> throw NoSuchElementException("Array is empty.")
        1 -> this[0]
        else -> throw IllegalArgumentException("Array has more than one element.")
    }
}

// Returns the single element, or throws an exception if the array is empty or has more than one element.
public fun LongArray.single(): Long {
    return when (size) {
        0 -> throw NoSuchElementException("Array is empty.")
        1 -> this[0]
        else -> throw IllegalArgumentException("Array has more than one element.")
    }
}

// Returns the single element, or throws an exception if the array is empty or has more than one element.
public fun FloatArray.single(): Float {
    return when (size) {
        0 -> throw NoSuchElementException("Array is empty.")
        1 -> this[0]
        else -> throw IllegalArgumentException("Array has more than one element.")
    }
}

// Returns the single element, or throws an exception if the array is empty or has more than one element.
public fun DoubleArray.single(): Double {
    return when (size) {
        0 -> throw NoSuchElementException("Array is empty.")
        1 -> this[0]
        else -> throw IllegalArgumentException("Array has more than one element.")
    }
}

// Returns the single element, or throws an exception if the array is empty or has more than one element.
public fun BooleanArray.single(): Boolean {
    return when (size) {
        0 -> throw NoSuchElementException("Array is empty.")
        1 -> this[0]
        else -> throw IllegalArgumentException("Array has more than one element.")
    }
}

// Returns the single element, or throws an exception if the array is empty or has more than one element.
public fun CharArray.single(): Char {
    return when (size) {
        0 -> throw NoSuchElementException("Array is empty.")
        1 -> this[0]
        else -> throw IllegalArgumentException("Array has more than one element.")
    }
}

// Returns the single element matching the given [predicate], or throws exception if there is no or more than one matching element.
public inline fun <T> Array<out T>.single(predicate: (T) -> Boolean): T {
    var single: T? = null
    var found = false
    for (element in this) {
        if (predicate(element)) {
            if (found) throw IllegalArgumentException("Array contains more than one matching element.")
            single = element
            found = true
        }
    }
    if (!found) throw NoSuchElementException("Array contains no element matching the predicate.")
    @Suppress("UNCHECKED_CAST") return single as T
}

// Returns the single element matching the given [predicate], or throws exception if there is no or more than one matching element.
public inline fun ByteArray.single(predicate: (Byte) -> Boolean): Byte {
    var single: Byte? = null
    var found = false
    for (element in this) {
        if (predicate(element)) {
            if (found) throw IllegalArgumentException("Array contains more than one matching element.")
            single = element
            found = true
        }
    }
    if (!found) throw NoSuchElementException("Array contains no element matching the predicate.")
    @Suppress("UNCHECKED_CAST") return single as Byte
}

// Returns the single element matching the given [predicate], or throws exception if there is no or more than one matching element.
public inline fun ShortArray.single(predicate: (Short) -> Boolean): Short {
    var single: Short? = null
    var found = false
    for (element in this) {
        if (predicate(element)) {
            if (found) throw IllegalArgumentException("Array contains more than one matching element.")
            single = element
            found = true
        }
    }
    if (!found) throw NoSuchElementException("Array contains no element matching the predicate.")
    @Suppress("UNCHECKED_CAST") return single as Short
}

// Returns the single element matching the given [predicate], or throws exception if there is no or more than one matching element.
public inline fun IntArray.single(predicate: (Int) -> Boolean): Int {
    var single: Int? = null
    var found = false
    for (element in this) {
        if (predicate(element)) {
            if (found) throw IllegalArgumentException("Array contains more than one

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matching element.\")\n        single = element\n        found = true\n    }\n }\n if (!found) throw
NoSuchElementException(\"Array contains no element matching the predicate.\")\n
@Suppress(\"UNCHECKED_CAST\")\n return single as Int\n}\n}\n\n * Returns the single element matching
the given [predicate], or throws exception if there is no or more than one matching element.\n */\npublic inline fun
LongArray.single(predicate: (Long) -> Boolean): Long {\n    var single: Long? = null\n    var found = false\n    for
(element in this) {\n        if (predicate(element)) {\n            if (found) throw IllegalArgumentException(\"Array
contains more than one matching element.\")\n            single = element\n            found = true\n
}\n }\n }\n if (!found) throw NoSuchElementException(\"Array contains no element matching the
predicate.\")\n @Suppress(\"UNCHECKED_CAST\")\n return single as Long\n}\n}\n\n * Returns the single
element matching the given [predicate], or throws exception if there is no or more than one matching element.\n
*/\npublic inline fun FloatArray.single(predicate: (Float) -> Boolean): Float {\n    var single: Float? = null\n    var
found = false\n    for (element in this) {\n        if (predicate(element)) {\n            if (found) throw
IllegalArgumentException(\"Array contains more than one matching element.\")\n            single = element\n
found = true\n    }\n }\n }\n if (!found) throw NoSuchElementException(\"Array contains no element matching
the predicate.\")\n @Suppress(\"UNCHECKED_CAST\")\n return single as Float\n}\n}\n\n * Returns the
single element matching the given [predicate], or throws exception if there is no or more than one matching
element.\n */\npublic inline fun DoubleArray.single(predicate: (Double) -> Boolean): Double {\n    var single:
Double? = null\n    var found = false\n    for (element in this) {\n        if (predicate(element)) {\n            if (found)
throw IllegalArgumentException(\"Array contains more than one matching element.\")\n            single = element\n
found = true\n    }\n }\n }\n if (!found) throw NoSuchElementException(\"Array contains no element
matching the predicate.\")\n @Suppress(\"UNCHECKED_CAST\")\n return single as Double\n}\n}\n\n * Returns the
single element matching the given [predicate], or throws exception if there is no or more than one
matching element.\n */\npublic inline fun BooleanArray.single(predicate: (Boolean) -> Boolean): Boolean {\n    var
single: Boolean? = null\n    var found = false\n    for (element in this) {\n        if (predicate(element)) {\n            if
(found) throw IllegalArgumentException(\"Array contains more than one
matching element.\")\n            single = element\n            found = true\n    }\n }\n }\n if (!found) throw
NoSuchElementException(\"Array contains no element matching the predicate.\")\n @Suppress(\"UNCHECKED_CAST\")\n
return single as Boolean\n}\n}\n\n * Returns the single element
matching the given [predicate], or throws exception if there is no or more than one matching
element.\n */\npublic inline fun CharArray.single(predicate: (Char) -> Boolean): Char {\n    var single: Char? = null\n    var
found = false\n    for (element in this) {\n        if (predicate(element)) {\n            if (found) throw
IllegalArgumentException(\"Array contains more than one matching element.\")\n            single = element\n
found = true\n    }\n }\n }\n if (!found) throw NoSuchElementException(\"Array contains no element
matching the predicate.\")\n @Suppress(\"UNCHECKED_CAST\")\n return single as Char\n}\n}\n\n * Returns single
element, or `null` if the
array is empty or has more than one element.\n */\npublic fun <T> Array<out T>.singleOrNull(): T? {\n    return if
(size == 1) this[0] else null\n}\n}\n\n * Returns single element, or `null` if the array is empty or has more than one
element.\n */\npublic fun ByteArray.singleOrNull(): Byte? {\n    return if (size == 1) this[0] else null\n}\n}\n\n *
Returns single element, or `null` if the array is empty or has more than one element.\n */\npublic fun
ShortArray.singleOrNull(): Short? {\n    return if (size == 1) this[0] else null\n}\n}\n\n * Returns single element,
or `null` if the array is empty or has more than one element.\n */\npublic fun IntArray.singleOrNull(): Int? {\n
return if (size == 1) this[0] else null\n}\n}\n\n * Returns single element, or `null` if the array is empty or has more
than one element.\n */\npublic fun LongArray.singleOrNull(): Long? {\n    return if (size == 1) this[0] else
null\n}\n}\n\n * Returns single element, or `null` if the array is empty
or has more than one element.\n */\npublic fun FloatArray.singleOrNull(): Float? {\n    return if (size == 1) this[0]
else null\n}\n}\n\n * Returns single element, or `null` if the array is empty or has more than one element.\n
*/\npublic fun DoubleArray.singleOrNull(): Double? {\n    return if (size == 1) this[0] else null\n}\n}\n\n *
Returns single element, or `null` if the array is empty or has more than one element.\n */\npublic fun

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BooleanArray.singleOrNull(): Boolean? {\n  return if (size == 1) this[0] else null\n}\n\n/**\n * Returns single
element, or `null` if the array is empty or has more than one element.\n */\npublic fun CharArray.singleOrNull():
Char? {\n  return if (size == 1) this[0] else null\n}\n\n/**\n * Returns the single element matching the given
[predicate], or `null` if element was not found or more than one element was found.\n */\npublic inline fun <T>
Array<out T>.singleOrNull(predicate: (T) -> Boolean): T? {\n  var single: T? = null\n  var found
= false\n  for (element in this) {\n    if (predicate(element)) {\n      if (found) return null\n      single =
element\n      found = true\n    }\n  }\n  if (!found) return null\n  return single\n}\n\n/**\n * Returns the
single element matching the given [predicate], or `null` if element was not found or more than one element was
found.\n */\npublic inline fun ByteArray.singleOrNull(predicate: (Byte) -> Boolean): Byte? {\n  var single: Byte?
= null\n  var found = false\n  for (element in this) {\n    if (predicate(element)) {\n      if (found) return
null\n      single = element\n      found = true\n    }\n  }\n  if (!found) return null\n  return
single\n}\n\n/**\n * Returns the single element matching the given [predicate], or `null` if element was not found or
more than one element was found.\n */\npublic inline fun ShortArray.singleOrNull(predicate: (Short) -> Boolean):
Short? {\n  var single: Short? = null\n
  var found = false\n  for (element in this) {\n    if (predicate(element)) {\n      if (found) return null\n
single = element\n      found = true\n    }\n  }\n  if (!found) return null\n  return single\n}\n\n/**\n *
Returns the single element matching the given [predicate], or `null` if element was not found or more than one
element was found.\n */\npublic inline fun IntArray.singleOrNull(predicate: (Int) -> Boolean): Int? {\n  var single:
Int? = null\n  var found = false\n  for (element in this) {\n    if (predicate(element)) {\n      if (found) return
null\n      single = element\n      found = true\n    }\n  }\n  if (!found) return null\n  return
single\n}\n\n/**\n * Returns the single element matching the given [predicate], or `null` if element was not found or
more than one element was found.\n */\npublic inline fun LongArray.singleOrNull(predicate: (Long) -> Boolean):
Long? {\n  var single: Long? =
null\n  var found = false\n  for (element in this) {\n    if (predicate(element)) {\n      if (found) return null\n
single = element\n      found = true\n    }\n  }\n  if (!found) return null\n  return single\n}\n\n/**\n *
Returns the single element matching the given [predicate], or `null` if element was not found or more than one
element was found.\n */\npublic inline fun FloatArray.singleOrNull(predicate: (Float) -> Boolean): Float? {\n  var
single: Float? = null\n  var found = false\n  for (element in this) {\n    if (predicate(element)) {\n      if
(found) return null\n      single = element\n      found = true\n    }\n  }\n  if (!found) return null\n  return
single\n}\n\n/**\n * Returns the single element matching the given [predicate], or `null` if element was not found or
more than one element was found.\n */\npublic inline fun DoubleArray.singleOrNull(predicate: (Double) ->
Boolean): Double? {\n
  var single: Double? = null\n  var found = false\n  for (element in this) {\n    if (predicate(element)) {\n      if
(found) return null\n      single = element\n      found = true\n    }\n  }\n  if (!found) return null\n  return
single\n}\n\n/**\n * Returns the single element matching the given [predicate], or `null` if element was not found or
more than one element was found.\n */\npublic inline fun BooleanArray.singleOrNull(predicate: (Boolean) ->
Boolean): Boolean? {\n  var single: Boolean? = null\n  var found = false\n  for (element in this) {\n    if
(predicate(element)) {\n      if (found) return null\n      single = element\n      found = true\n    }\n  }\n
  if (!found) return null\n  return single\n}\n\n/**\n * Returns the single element matching the given [predicate], or
`null` if element was not found or more than one element was found.\n */\npublic inline fun
CharArray.singleOrNull(predicate: (Char) ->
Boolean): Char? {\n  var single: Char? = null\n  var found = false\n  for (element in this) {\n    if
(predicate(element)) {\n      if (found) return null\n      single = element\n      found = true\n    }\n  }\n
  if (!found) return null\n  return single\n}\n\n/**\n * Returns a list containing all elements except first [n]
elements.\n */\n * @throws IllegalArgumentException if [n] is negative.\n */\n * @sample
samples.collections.Collections.Transformations.drop\n */\npublic fun <T> Array<out T>.drop(n: Int): List<T> {\n
require(n >= 0) {\n  "Requested element count $n is less than zero." }\n  return takeLast((size -
n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing all elements except first [n] elements.\n */\n * @throws

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IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.drop\n *\npublic fun ByteArray.drop(n: Int): List<Byte> {\n
require(n >= 0) { \"Requested element count
    $n is less than zero.\" }\n    return takeLast((size - n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing all
elements except first [n] elements.\n * \n * @throws IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.drop\n *\npublic fun ShortArray.drop(n: Int): List<Short> {\n
require(n >= 0) { \"Requested element count $n is less than zero.\" }\n    return takeLast((size -
n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing all elements except first [n] elements.\n * \n * @throws
IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.drop\n *\npublic fun IntArray.drop(n: Int): List<Int> {\n
require(n >= 0) { \"Requested element count $n is less than zero.\" }\n    return takeLast((size -
n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing all elements except first [n] elements.\n * \n * @throws
IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.drop\n *\npublic fun LongArray.drop(n: Int):
List<Long> {\n    require(n >= 0) { \"Requested element count $n is less than zero.\" }\n    return takeLast((size -
n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing all elements except first [n] elements.\n * \n * @throws
IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.drop\n *\npublic fun FloatArray.drop(n: Int): List<Float> {\n
require(n >= 0) { \"Requested element count $n is less than zero.\" }\n    return takeLast((size -
n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing all elements except first [n] elements.\n * \n * @throws
IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.drop\n *\npublic fun DoubleArray.drop(n: Int): List<Double> {\n
require(n >= 0) { \"Requested element count $n is less than zero.\" }\n    return
    takeLast((size - n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing all elements except first [n] elements.\n\n
* \n * @throws IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.drop\n *\npublic fun BooleanArray.drop(n: Int): List<Boolean>
{\n    require(n >= 0) { \"Requested element count $n is less than zero.\" }\n    return takeLast((size -
n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing all elements except first [n] elements.\n * \n * @throws
IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.drop\n *\npublic fun CharArray.drop(n: Int): List<Char> {\n
require(n >= 0) { \"Requested element count $n is less than zero.\" }\n    return takeLast((size -
n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing all elements except last [n] elements.\n * \n * @throws
IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.drop\n
*\npublic fun <T> Array<out T>.dropLast(n: Int): List<T> {\n    require(n >= 0) { \"Requested element count $n is
less than zero.\" }\n    return take((size - n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing all elements
except last [n] elements.\n * \n * @throws IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.drop\n *\npublic fun ByteArray.dropLast(n: Int): List<Byte> {\n
require(n >= 0) { \"Requested element count $n is less than zero.\" }\n    return take((size -
n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing all elements except last [n] elements.\n * \n * @throws
IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.drop\n *\npublic fun ShortArray.dropLast(n: Int): List<Short> {\n
require(n >= 0) { \"Requested element count $n is less than zero.\" }\n    return take((size -
n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing all elements except last [n] elements.\n * \n * @throws
IllegalArgumentException if [n]
is negative.\n * \n * @sample samples.collections.Collections.Transformations.drop\n *\npublic fun
IntArray.dropLast(n: Int): List<Int> {\n    require(n >= 0) { \"Requested element count $n is less than zero.\" }\n
return take((size - n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing all elements except last [n]

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elements.\n * \n * @throws IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.drop\n *\npublic fun LongArray.dropLast(n: Int): List<Long> {\n
require(n >= 0) { \ "Requested element count $n is less than zero.\ " }\n  return take((size -
n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing all elements except last [n] elements.\n * \n * @throws
IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.drop\n *\npublic
fun FloatArray.dropLast(n: Int): List<Float> {\n  require(n >= 0) { \ "Requested element count $n is less than
zero.\ " }\n  return take((size - n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing all elements except last
[n] elements.\n * \n * @throws IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.drop\n *\npublic fun DoubleArray.dropLast(n: Int): List<Double>
{\n  require(n >= 0) { \ "Requested element count $n is less than zero.\ " }\n  return take((size -
n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing all elements except last [n] elements.\n * \n * @throws
IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.drop\n *\npublic fun BooleanArray.dropLast(n: Int):
List<Boolean> {\n  require(n >= 0) { \ "Requested element count $n is less than zero.\ " }\n  return take((size -
n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing
all elements except last [n] elements.\n * \n * @throws IllegalArgumentException if [n] is negative.\n * \n *
@sample samples.collections.Collections.Transformations.drop\n *\npublic fun CharArray.dropLast(n: Int):
List<Char> {\n  require(n >= 0) { \ "Requested element count $n is less than zero.\ " }\n  return take((size -
n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing all elements except last elements that satisfy the given
[predicate].\n * \n * @sample samples.collections.Collections.Transformations.drop\n *\npublic inline fun <T>
Array<out T>.dropLastWhile(predicate: (T) -> Boolean): List<T> {\n  for (index in lastIndex downTo 0) {\n    if
(!predicate(this[index])) {\n      return take(index + 1)\n    }\n  }\n  return emptyList()\n}\n\n/**\n * Returns
a list containing all elements except last elements that satisfy the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.drop\n *\npublic inline fun ByteArray.dropLastWhile(predicate:
(Byte) -> Boolean): List<Byte> {\n  for (index in lastIndex downTo 0) {\n    if (!predicate(this[index])) {\n
return take(index + 1)\n    }\n  }\n  return emptyList()\n}\n\n/**\n * Returns a list containing all elements
except last elements that satisfy the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.drop\n *\npublic inline fun ShortArray.dropLastWhile(predicate:
(Short) -> Boolean): List<Short> {\n  for (index in lastIndex downTo 0) {\n    if (!predicate(this[index])) {\n
return take(index + 1)\n    }\n  }\n  return emptyList()\n}\n\n/**\n * Returns a list containing all elements
except last elements that satisfy the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.drop\n *\npublic inline fun IntArray.dropLastWhile(predicate:
(Int) -> Boolean): List<Int> {\n  for (index in lastIndex downTo 0) {\n    if (!predicate(this[index])) {\n
return take(index + 1)\n    }\n  }\n  return emptyList()\n}\n\n/**\n * Returns a list containing all
elements except last elements that satisfy the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.drop\n *\npublic inline fun LongArray.dropLastWhile(predicate:
(Long) -> Boolean): List<Long> {\n  for (index in lastIndex downTo 0) {\n    if (!predicate(this[index])) {\n
return take(index + 1)\n    }\n  }\n  return emptyList()\n}\n\n/**\n * Returns a list containing all elements
except last elements that satisfy the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.drop\n *\npublic inline fun FloatArray.dropLastWhile(predicate:
(Float) -> Boolean): List<Float> {\n  for (index in lastIndex downTo 0) {\n    if (!predicate(this[index])) {\n
return take(index + 1)\n    }\n  }\n  return emptyList()\n}\n\n/**\n * Returns a list containing all elements
except
last elements that satisfy the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.drop\n *\npublic inline fun DoubleArray.dropLastWhile(predicate:
(Double) -> Boolean): List<Double> {\n  for (index in lastIndex downTo 0) {\n    if (!predicate(this[index])) {\n
return take(index + 1)\n    }\n  }\n  return emptyList()\n}\n\n/**\n * Returns a list containing all elements

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except last elements that satisfy the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.drop\n *\npublic inline fun
BooleanArray.dropLastWhile(predicate: (Boolean) -> Boolean): List<Boolean> {\n  for (index in lastIndex
downTo 0) {\n    if (!predicate(this[index])) {\n      return take(index + 1)\n    }\n  }\n  return
emptyList()\n}\n\n**\n * Returns a list containing all elements except last elements that satisfy the given
[predicate].\n * \n * @sample samples.collections.Collections.Transformations.drop\n
*\npublic inline fun CharArray.dropLastWhile(predicate: (Char) -> Boolean): List<Char> {\n  for (index in
lastIndex downTo 0) {\n    if (!predicate(this[index])) {\n      return take(index + 1)\n    }\n  }\n  return
emptyList()\n}\n\n**\n * Returns a list containing all elements except first elements that satisfy the given
[predicate].\n * \n * @sample samples.collections.Collections.Transformations.drop\n *\npublic inline fun <T>
Array<out T>.dropWhile(predicate: (T) -> Boolean): List<T> {\n  var yielding = false\n  val list =
ArrayList<T>()\n  for (item in this)\n    if (yielding)\n      list.add(item)\n    else if (!predicate(item)) {\n      list.add(item)\n      yielding = true\n    }\n  return list\n}\n\n**\n * Returns a list containing all elements
except first elements that satisfy the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.drop\n *\npublic inline fun ByteArray.dropWhile(predicate:
(Byte) -> Boolean): List<Byte> {\n  var yielding = false\n  val list = ArrayList<Byte>()\n  for (item in this)\n
if (yielding)\n  list.add(item)\n  else if (!predicate(item)) {\n    list.add(item)\n    yielding =
true\n  }\n  return list\n}\n\n**\n * Returns a list containing all elements except first elements that satisfy the
given [predicate].\n * \n * @sample samples.collections.Collections.Transformations.drop\n *\npublic inline fun
ShortArray.dropWhile(predicate: (Short) -> Boolean): List<Short> {\n  var yielding = false\n  val list =
ArrayList<Short>()\n  for (item in this)\n    if (yielding)\n      list.add(item)\n    else if (!predicate(item))
{\n      list.add(item)\n      yielding = true\n    }\n  return list\n}\n\n**\n * Returns a list containing all
elements except first elements that satisfy the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.drop\n
*\npublic inline fun IntArray.dropWhile(predicate: (Int) -> Boolean): List<Int> {\n  var yielding = false\n  val
list = ArrayList<Int>()\n  for (item in this)\n    if (yielding)\n      list.add(item)\n    else if (!predicate(item))
{\n      list.add(item)\n      yielding = true\n    }\n  return list\n}\n\n**\n * Returns a list containing all
elements except first elements that satisfy the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.drop\n
*\npublic inline fun LongArray.dropWhile(predicate:
(Long) -> Boolean): List<Long> {\n  var yielding = false\n  val list = ArrayList<Long>()\n  for (item in this)\n
if (yielding)\n  list.add(item)\n  else if (!predicate(item)) {\n    list.add(item)\n    yielding =
true\n  }\n  return list\n}\n\n**\n * Returns a list containing all elements except first elements that satisfy the
given [predicate].\n * \n *
\n * @sample samples.collections.Collections.Transformations.drop\n *\npublic inline fun
FloatArray.dropWhile(predicate: (Float) -> Boolean): List<Float> {\n  var yielding = false\n  val list =
ArrayList<Float>()\n  for (item in this)\n    if (yielding)\n      list.add(item)\n    else if (!predicate(item))
{\n      list.add(item)\n      yielding = true\n    }\n  return list\n}\n\n**\n * Returns a list containing all
elements except first elements that satisfy the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.drop\n
*\npublic inline fun DoubleArray.dropWhile(predicate:
(Double) -> Boolean): List<Double> {\n  var yielding = false\n  val list = ArrayList<Double>()\n  for (item in
this)\n    if (yielding)\n      list.add(item)\n    else if (!predicate(item)) {\n      list.add(item)\n      yielding = true\n    }\n  return list\n}\n\n**\n * Returns a list containing all elements
except first elements that satisfy the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.drop\n
*\npublic inline fun BooleanArray.dropWhile(predicate:
(Boolean) -> Boolean): List<Boolean> {\n  var yielding = false\n  val list = ArrayList<Boolean>()\n  for (item in
this)\n    if (yielding)\n      list.add(item)\n    else if (!predicate(item)) {\n      list.add(item)\n      yielding = true\n    }\n  return list\n}\n\n**\n * Returns a list containing all elements except first elements that
satisfy the given [predicate].\n * \n * @sample samples.collections.Collections.Transformations.drop\n *\npublic

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inline fun CharArray.dropWhile(predicate: (Char) -> Boolean): List<Char> {\n  var yielding = false\n  val list =
ArrayList<Char>()\n  for (item in this)\n    if (yielding)\n      list.add(item)\n    else if (!predicate(item)) {\n      list.add(item)\n      yielding = true\n    }\n  return list}\n\n/**\n * Returns a list containing only elements matching the given [predicate].\n * \n * @sample
samples.collections.Collections.Filtering.filter\n */\npublic inline fun <T> Array<out T>.filter(predicate: (T) ->
Boolean): List<T> {\n  return filterTo(ArrayList<T>(), predicate)\n}\n\n/**\n * Returns a list containing only
elements matching the given [predicate].\n * \n * @sample samples.collections.Collections.Filtering.filter\n */\npublic inline fun ByteArray.filter(predicate: (Byte) -> Boolean): List<Byte> {\n  return
filterTo(ArrayList<Byte>(), predicate)\n}\n\n/**\n * Returns a list containing only elements matching the given
[predicate].\n * \n * @sample samples.collections.Collections.Filtering.filter\n */\npublic inline fun
ShortArray.filter(predicate: (Short) -> Boolean): List<Short> {\n  return filterTo(ArrayList<Short>(),
predicate)\n}\n\n/**\n * Returns a list containing only elements matching the given [predicate].\n * \n * @sample
samples.collections.Collections.Filtering.filter\n */\npublic inline fun IntArray.filter(predicate: (Int) -> Boolean): List<Int> {\n  return filterTo(ArrayList<Int>(),
predicate)\n}\n\n/**\n * Returns a list containing only elements matching the given [predicate].\n * \n * @sample
samples.collections.Collections.Filtering.filter\n */\npublic inline fun LongArray.filter(predicate: (Long) ->
Boolean): List<Long> {\n  return filterTo(ArrayList<Long>(), predicate)\n}\n\n/**\n * Returns a list containing
only elements matching the given [predicate].\n * \n * @sample samples.collections.Collections.Filtering.filter\n */\npublic inline fun FloatArray.filter(predicate: (Float) -> Boolean): List<Float> {\n  return
filterTo(ArrayList<Float>(), predicate)\n}\n\n/**\n * Returns a list containing only elements matching the given
[predicate].\n * \n * @sample samples.collections.Collections.Filtering.filter\n */\npublic inline fun
DoubleArray.filter(predicate: (Double) -> Boolean): List<Double> {\n  return
filterTo(ArrayList<Double>(), predicate)\n}\n\n/**\n * Returns a list containing only elements matching the given
[predicate].\n * \n * @sample samples.collections.Collections.Filtering.filter\n */\npublic inline fun
BooleanArray.filter(predicate: (Boolean) -> Boolean): List<Boolean> {\n  return filterTo(ArrayList<Boolean>(),
predicate)\n}\n\n/**\n * Returns a list containing only elements matching the given [predicate].\n * \n * @sample
samples.collections.Collections.Filtering.filter\n */\npublic inline fun CharArray.filter(predicate: (Char) ->
Boolean): List<Char> {\n  return filterTo(ArrayList<Char>(), predicate)\n}\n\n/**\n * Returns a list containing
only elements matching the given [predicate].\n * @param [predicate] function that takes the index of an element
and the element itself\n * and returns the result of predicate evaluation on the element.\n * \n * @sample
samples.collections.Collections.Filtering.filterIndexed\n */\npublic inline fun <T> Array<out
T>.filterIndexed(predicate:
(index: Int, T) -> Boolean): List<T> {\n  return filterIndexedTo(ArrayList<T>(), predicate)\n}\n\n/**\n * Returns
a list containing only elements matching the given [predicate].\n * @param [predicate] function that takes the index
of an element and the element itself\n * and returns the result of predicate evaluation on the element.\n * \n *
@sample samples.collections.Collections.Filtering.filterIndexed\n */\npublic inline fun
ByteArray.filterIndexed(predicate: (index: Int, Byte) -> Boolean): List<Byte> {\n  return
filterIndexedTo(ArrayList<Byte>(), predicate)\n}\n\n/**\n * Returns a list containing only elements matching the
given [predicate].\n * @param [predicate] function that takes the index of an element and the element itself\n *
and returns the result of predicate evaluation on the element.\n * \n * @sample
samples.collections.Collections.Filtering.filterIndexed\n */\npublic inline fun ShortArray.filterIndexed(predicate:
(index: Int, Short) -> Boolean): List<Short>
{\n  return filterIndexedTo(ArrayList<Short>(), predicate)\n}\n\n/**\n * Returns a list containing only elements
matching the given [predicate].\n * @param [predicate] function that takes the index of an element and the element
itself\n * and returns the result of predicate evaluation on the element.\n * \n * @sample
samples.collections.Collections.Filtering.filterIndexed\n */\npublic inline fun IntArray.filterIndexed(predicate:
(index: Int, Int) -> Boolean): List<Int> {\n  return filterIndexedTo(ArrayList<Int>(), predicate)\n}\n\n/**\n *
Returns a list containing only elements matching the given [predicate].\n * @param [predicate] function that takes

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the index of an element and the element itself\n * and returns the result of predicate evaluation on the element.\n * \n
* @sample samples.collections.Collections.Filtering.filterIndexed\n */\npublic inline fun
LongArray.filterIndexed(predicate: (index: Int, Long) -> Boolean): List<Long> {\n    return
filterIndexedTo(ArrayList<Long>(),
predicate)\n}\n\n/**\n * Returns a list containing only elements matching the given [predicate].\n * @param
[predicate] function that takes the index of an element and the element itself\n * and returns the result of predicate
evaluation on the element.\n * \n * @sample samples.collections.Collections.Filtering.filterIndexed\n */\npublic
inline fun FloatArray.filterIndexed(predicate: (index: Int, Float) -> Boolean): List<Float> {\n    return
filterIndexedTo(ArrayList<Float>(), predicate)\n}\n\n/**\n * Returns a list containing only elements matching the
given [predicate].\n * @param [predicate] function that takes the index of an element and the element itself\n * and
returns the result of predicate evaluation on the element.\n * \n * @sample
samples.collections.Collections.Filtering.filterIndexed\n */\npublic inline fun DoubleArray.filterIndexed(predicate:
(index: Int, Double) -> Boolean): List<Double> {\n    return filterIndexedTo(ArrayList<Double>(),
predicate)\n}\n\n/**\n * Returns a list containing only elements matching the given [predicate].\n * @param [predicate] function that takes
the index of an element and the element itself\n * and returns the result of predicate evaluation on the element.\n * \n
* @sample samples.collections.Collections.Filtering.filterIndexed\n */\npublic inline fun
BooleanArray.filterIndexed(predicate: (index: Int, Boolean) -> Boolean): List<Boolean> {\n    return
filterIndexedTo(ArrayList<Boolean>(), predicate)\n}\n\n/**\n * Returns a list containing only elements matching
the given [predicate].\n * @param [predicate] function that takes the index of an element and the element itself\n *
and returns the result of predicate evaluation on the element.\n * \n * @sample
samples.collections.Collections.Filtering.filterIndexed\n */\npublic inline fun CharArray.filterIndexed(predicate:
(index: Int, Char) -> Boolean): List<Char> {\n    return filterIndexedTo(ArrayList<Char>(), predicate)\n}\n\n/**\n *
Appends all elements matching
the given [predicate] to the given [destination].\n * @param [predicate] function that takes the index of an element
and the element itself\n * and returns the result of predicate evaluation on the element.\n * \n * @sample
samples.collections.Collections.Filtering.filterIndexedTo\n */\npublic inline fun <T, C : MutableCollection<in T>>
Array<out T>.filterIndexedTo(destination: C, predicate: (index: Int, T) -> Boolean): C {\n    forEachIndexed {
index, element ->\n        if (predicate(index, element)) destination.add(element)\n    }\n    return
destination\n}\n\n/**\n * Appends all elements matching the given [predicate] to the given [destination].\n *
@param [predicate] function that takes the index of an element and the element itself\n * and returns the result of
predicate evaluation on the element.\n * \n * @sample samples.collections.Collections.Filtering.filterIndexedTo\n
*/\npublic inline fun <C : MutableCollection<in Byte>> ByteArray.filterIndexedTo(destination: C, predicate:
(index: Int, Byte) -> Boolean): C {\n    forEachIndexed { index, element ->\n        if (predicate(index, element))
destination.add(element)\n    }\n    return destination\n}\n\n/**\n * Appends all elements matching the given
[predicate] to the given [destination].\n * @param [predicate] function that takes the index of an element and the
element itself\n * and returns the result of predicate evaluation on the element.\n * \n * @sample
samples.collections.Collections.Filtering.filterIndexedTo\n */\npublic inline fun <C : MutableCollection<in Short>>
ShortArray.filterIndexedTo(destination: C, predicate: (index: Int, Short) -> Boolean): C {\n    forEachIndexed {
index, element ->\n        if (predicate(index, element)) destination.add(element)\n    }\n    return
destination\n}\n\n/**\n * Appends all elements matching the given [predicate] to the given [destination].\n *
@param [predicate] function that takes the index of an element and the element itself\n * and returns the result of
predicate
evaluation on the element.\n * \n * @sample samples.collections.Collections.Filtering.filterIndexedTo\n */\npublic
inline fun <C : MutableCollection<in Int>> IntArray.filterIndexedTo(destination: C, predicate: (index: Int, Int) ->
Boolean): C {\n    forEachIndexed { index, element ->\n        if (predicate(index, element))
destination.add(element)\n    }\n    return destination\n}\n\n/**\n * Appends all elements matching the given
[predicate] to the given [destination].\n * @param [predicate] function that takes the index of an element and the

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element itself\n \* and returns the result of predicate evaluation on the element.\n \* \n \* @sample  
samples.collections.Collections.Filtering.filterIndexedTo\n \*^\\npublic inline fun <C : MutableCollection<in Long>>  
LongArray.filterIndexedTo(destination: C, predicate: (index: Int, Long) -> Boolean): C {\n forEachIndexed {  
index, element ->\n if (predicate(index, element)) destination.add(element)\n }\n return  
destination\n}\n\n/\*\*\n  
\* Appends all elements matching the given [predicate] to the given [destination].\n \* @param [predicate] function  
that takes the index of an element and the element itself\n \* and returns the result of predicate evaluation on the  
element.\n \* \n \* @sample samples.collections.Collections.Filtering.filterIndexedTo\n \*^\\npublic inline fun <C :  
MutableCollection<in Float>> FloatArray.filterIndexedTo(destination: C, predicate: (index: Int, Float) -> Boolean):  
C {\n forEachIndexed { index, element ->\n if (predicate(index, element)) destination.add(element)\n }\n  
return destination\n}\n\n/\*\*\n \* Appends all elements matching the given [predicate] to the given [destination].\n \*  
@param [predicate] function that takes the index of an element and the element itself\n \* and returns the result of  
predicate evaluation on the element.\n \* \n \* @sample samples.collections.Collections.Filtering.filterIndexedTo\n  
\*^\\npublic inline fun <C : MutableCollection<in Double>> DoubleArray.filterIndexedTo(destination:  
C, predicate: (index: Int, Double) -> Boolean): C {\n forEachIndexed { index, element ->\n if  
(predicate(index, element)) destination.add(element)\n }\n return destination\n}\n\n/\*\*\n \* Appends all elements  
matching the given [predicate] to the given [destination].\n \* @param [predicate] function that takes the index of an  
element and the element itself\n \* and returns the result of predicate evaluation on the element.\n \* \n \* @sample  
samples.collections.Collections.Filtering.filterIndexedTo\n \*^\\npublic inline fun <C : MutableCollection<in  
Boolean>> BooleanArray.filterIndexedTo(destination: C, predicate: (index: Int, Boolean) -> Boolean): C {\n  
forEachIndexed { index, element ->\n if (predicate(index, element)) destination.add(element)\n }\n return  
destination\n}\n\n/\*\*\n \* Appends all elements matching the given [predicate] to the given [destination].\n \*  
@param [predicate] function that takes the index of an element and  
the element itself\n \* and returns the result of predicate evaluation on the element.\n \* \n \* @sample  
samples.collections.Collections.Filtering.filterIndexedTo\n \*^\\npublic inline fun <C : MutableCollection<in Char>>  
CharArray.filterIndexedTo(destination: C, predicate: (index: Int, Char) -> Boolean): C {\n forEachIndexed {  
index, element ->\n if (predicate(index, element)) destination.add(element)\n }\n return  
destination\n}\n\n/\*\*\n \* Returns a list containing all elements that are instances of specified type parameter R.\n \*  
\n \* @sample samples.collections.Collections.Filtering.filterIsInstance\n \*^\\npublic inline fun <reified R>  
Array<\*>.filterIsInstance(): List<@kotlin.internal.NoInfer R> {\n return  
filterIsInstanceTo(ArrayList<R>())\n}\n\n/\*\*\n \* Appends all elements that are instances of specified type  
parameter R to the given [destination].\n \* \n \* @sample  
samples.collections.Collections.Filtering.filterIsInstanceTo\n \*^\\npublic inline fun <reified R, C  
: MutableCollection<in R>> Array<\*>.filterIsInstanceTo(destination: C): C {\n for (element in this) if (element is  
R) destination.add(element)\n return destination\n}\n\n/\*\*\n \* Returns a list containing all elements not matching  
the given [predicate].\n \* \n \* @sample samples.collections.Collections.Filtering.filter\n \*^\\npublic inline fun <T>  
Array<out T>.filterNot(predicate: (T) -> Boolean): List<T> {\n return filterNotTo(ArrayList<T>(),  
predicate)\n}\n\n/\*\*\n \* Returns a list containing all elements not matching the given [predicate].\n \* \n \* @sample  
samples.collections.Collections.Filtering.filter\n \*^\\npublic inline fun ByteArray.filterNot(predicate: (Byte) ->  
Boolean): List<Byte> {\n return filterNotTo(ArrayList<Byte>(), predicate)\n}\n\n/\*\*\n \* Returns a list containing  
all elements not matching the given [predicate].\n \* \n \* @sample samples.collections.Collections.Filtering.filter\n  
\*^\\npublic inline fun ShortArray.filterNot(predicate: (Short) -> Boolean): List<Short>  
{\n return filterNotTo(ArrayList<Short>(), predicate)\n}\n\n/\*\*\n \* Returns a list containing all elements not  
matching the given [predicate].\n \* \n \* @sample samples.collections.Collections.Filtering.filter\n \*^\\npublic inline  
fun IntArray.filterNot(predicate: (Int) -> Boolean): List<Int> {\n return filterNotTo(ArrayList<Int>(),  
predicate)\n}\n\n/\*\*\n \* Returns a list containing all elements not matching the given [predicate].\n \* \n \* @sample  
samples.collections.Collections.Filtering.filter\n \*^\\npublic inline fun LongArray.filterNot(predicate: (Long) ->  
Boolean): List<Long> {\n return filterNotTo(ArrayList<Long>(), predicate)\n}\n\n/\*\*\n \* Returns a list

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containing all elements not matching the given [predicate].\n * \n * @sample
samples.collections.Collections.Filtering.filter\n * \n\npublic inline fun FloatArray.filterNot(predicate: (Float) ->
Boolean): List<Float> {\n    return filterNotTo(ArrayList<Float>(), predicate)\n}\n\n/**\n * Returns a list
containing all elements
not matching the given [predicate].\n * \n * @sample samples.collections.Collections.Filtering.filter\n * \n\npublic
inline fun DoubleArray.filterNot(predicate: (Double) -> Boolean): List<Double> {\n    return
filterNotTo(ArrayList<Double>(), predicate)\n}\n\n/**\n * Returns a list containing all elements not matching the
given [predicate].\n * \n * @sample samples.collections.Collections.Filtering.filter\n * \n\npublic inline fun
BooleanArray.filterNot(predicate: (Boolean) -> Boolean): List<Boolean> {\n    return
filterNotTo(ArrayList<Boolean>(), predicate)\n}\n\n/**\n * Returns a list containing all elements not matching the
given [predicate].\n * \n * @sample samples.collections.Collections.Filtering.filter\n * \n\npublic inline fun
CharArray.filterNot(predicate: (Char) -> Boolean): List<Char> {\n    return filterNotTo(ArrayList<Char>(),
predicate)\n}\n\n/**\n * Returns a list containing all elements that are not `null`.\n * \n * @sample
samples.collections.Collections.Filtering.filterNotNull\n
*\n\npublic fun <T : Any> Array<out T?>.filterNotNull(): List<T> {\n    return
filterNotNullTo(ArrayList<T>())\n}\n\n/**\n * Appends all elements that are not `null` to the given [destination].\n
*\n * @sample samples.collections.Collections.Filtering.filterNotNullTo\n
*\n\npublic fun <C :
MutableCollection<in T>, T : Any> Array<out T?>.filterNotNullTo(destination: C): C {\n    for (element in this) if
(element != null) destination.add(element)\n    return destination\n}\n\n/**\n * Appends all elements not matching
the given [predicate] to the given [destination].\n * \n * @sample samples.collections.Collections.Filtering.filterTo\n
*\n\npublic inline fun <T, C : MutableCollection<in T>> Array<out T>.filterNotTo(destination: C, predicate: (T) ->
Boolean): C {\n    for (element in this) if (!predicate(element)) destination.add(element)\n    return
destination\n}\n\n/**\n * Appends all elements not matching the given [predicate] to the given [destination].\n * \n
*\n * @sample samples.collections.Collections.Filtering.filterTo\n
*\n\npublic inline fun <C : MutableCollection<in Byte>> ByteArray.filterNotTo(destination: C, predicate: (Byte) ->
Boolean): C {\n    for (element in this) if (!predicate(element)) destination.add(element)\n    return
destination\n}\n\n/**\n * Appends all elements not matching the given [predicate] to the given [destination].\n * \n
*\n * @sample samples.collections.Collections.Filtering.filterTo\n
*\n\npublic inline fun <C : MutableCollection<in
Short>> ShortArray.filterNotTo(destination: C, predicate: (Short) -> Boolean): C {\n    for (element in this) if
(!predicate(element)) destination.add(element)\n    return destination\n}\n\n/**\n * Appends all elements not
matching the given [predicate] to the given [destination].\n * \n * @sample
samples.collections.Collections.Filtering.filterTo\n
*\n\npublic inline fun <C : MutableCollection<in Int>>
IntArray.filterNotTo(destination: C, predicate: (Int) -> Boolean): C {\n    for (element in this)
if (!predicate(element)) destination.add(element)\n    return destination\n}\n\n/**\n * Appends all elements not
matching the given [predicate] to the given [destination].\n * \n * @sample
samples.collections.Collections.Filtering.filterTo\n
*\n\npublic inline fun <C : MutableCollection<in Long>>
LongArray.filterNotTo(destination: C, predicate: (Long) -> Boolean): C {\n    for (element in this) if
(!predicate(element)) destination.add(element)\n    return destination\n}\n\n/**\n * Appends all elements not
matching the given [predicate] to the given [destination].\n * \n * @sample
samples.collections.Collections.Filtering.filterTo\n
*\n\npublic inline fun <C : MutableCollection<in Float>>
FloatArray.filterNotTo(destination: C, predicate: (Float) -> Boolean): C {\n    for (element in this) if
(!predicate(element)) destination.add(element)\n    return destination\n}\n\n/**\n * Appends all elements not
matching the given [predicate] to the given [destination].\n * \n * @sample
samples.collections.Collections.Filtering.filterTo\n
*\n\npublic inline fun <C : MutableCollection<in Double>> DoubleArray.filterNotTo(destination: C, predicate:
(Double) -> Boolean): C {\n    for (element in this) if (!predicate(element)) destination.add(element)\n    return
destination\n}\n\n/**\n * Appends all elements not matching the given [predicate] to the given [destination].\n * \n
*\n * @sample samples.collections.Collections.Filtering.filterTo\n
*\n\npublic inline fun <C : MutableCollection<in

```



```

Boolean>> BooleanArray.filterNotTo(destination: C, predicate: (Boolean) -> Boolean): C {\n  for (element in this)
if (!predicate(element)) destination.add(element)\n  return destination\n}\n\n/**\n * Appends all elements not
matching the given [predicate] to the given [destination].\n * \n * @sample
samples.collections.Collections.Filtering.filterTo\n *\npublic inline fun <C : MutableCollection<in Char>>
CharArray.filterNotTo(destination: C, predicate: (Char) -> Boolean): C {\n  for (element in this)
if (!predicate(element)) destination.add(element)\n  return destination\n}\n\n/**\n * Appends all elements
matching the given [predicate] to the given [destination].\n * \n * @sample
samples.collections.Collections.Filtering.filterTo\n *\npublic inline fun <T, C : MutableCollection<in T>>
Array<out T>.filterTo(destination: C, predicate: (T) -> Boolean): C {\n  for (element in this) if
(predicate(element)) destination.add(element)\n  return destination\n}\n\n/**\n * Appends all elements matching
the given [predicate] to the given [destination].\n * \n * @sample samples.collections.Collections.Filtering.filterTo\n
*\npublic inline fun <C : MutableCollection<in Byte>> ByteArray.filterTo(destination: C, predicate: (Byte) ->
Boolean): C {\n  for (element in this) if (predicate(element)) destination.add(element)\n  return
destination\n}\n\n/**\n * Appends all elements matching the given [predicate] to the given [destination].\n * \n *
@sample samples.collections.Collections.Filtering.filterTo\n
*\npublic inline fun <C : MutableCollection<in Short>> ShortArray.filterTo(destination: C, predicate: (Short) ->
Boolean): C {\n  for (element in this) if (predicate(element)) destination.add(element)\n  return
destination\n}\n\n/**\n * Appends all elements matching the given [predicate] to the given [destination].\n * \n *
@sample samples.collections.Collections.Filtering.filterTo\n
*\npublic inline fun <C : MutableCollection<in Int>>
IntArray.filterTo(destination: C, predicate: (Int) -> Boolean): C {\n  for (element in this) if (predicate(element))
destination.add(element)\n  return destination\n}\n\n/**\n * Appends all elements matching the given [predicate] to
the given [destination].\n * \n * @sample samples.collections.Collections.Filtering.filterTo\n
*\npublic inline fun
<C : MutableCollection<in Long>> LongArray.filterTo(destination: C, predicate: (Long) -> Boolean): C {\n  for
(element in this) if (predicate(element)) destination.add(element)\n
return destination\n}\n\n/**\n * Appends all elements matching the given [predicate] to the given [destination].\n
*\n * @sample samples.collections.Collections.Filtering.filterTo\n
*\npublic inline fun <C : MutableCollection<in Float>> FloatArray.filterTo(destination: C, predicate: (Float) -> Boolean): C {\n
for (element in this) if
(predicate(element)) destination.add(element)\n  return destination\n}\n\n/**\n * Appends all elements matching
the given [predicate] to the given [destination].\n * \n * @sample samples.collections.Collections.Filtering.filterTo\n
*\npublic inline fun <C : MutableCollection<in Double>> DoubleArray.filterTo(destination: C, predicate: (Double)
-> Boolean): C {\n  for (element in this) if (predicate(element)) destination.add(element)\n  return
destination\n}\n\n/**\n * Appends all elements matching the given [predicate] to the given [destination].\n * \n *
@sample samples.collections.Collections.Filtering.filterTo\n
*\npublic inline fun <C :
MutableCollection<in Boolean>> BooleanArray.filterTo(destination: C, predicate: (Boolean) -> Boolean): C {\n
for (element in this) if (predicate(element)) destination.add(element)\n  return destination\n}\n\n/**\n * Appends
all elements matching the given [predicate] to the given [destination].\n * \n * @sample
samples.collections.Collections.Filtering.filterTo\n
*\npublic inline fun <C : MutableCollection<in Char>>
CharArray.filterTo(destination: C, predicate: (Char) -> Boolean): C {\n  for (element in this) if
(predicate(element)) destination.add(element)\n  return destination\n}\n\n/**\n * Returns a list containing elements
at indices in the specified [indices] range.\n * \npublic fun <T> Array<out T>.slice(indices: IntRange): List<T> {\n
if (indices.isEmpty()) return listOf()\n  return copyOfRange(indices.start, indices.endInclusive +
1).asList()\n}\n\n/**\n * Returns a list containing elements at indices in the specified [indices] range.\n * \npublic
fun ByteArray.slice(indices:
IntRange): List<Byte> {\n  if (indices.isEmpty()) return listOf()\n  return copyOfRange(indices.start,
indices.endInclusive + 1).asList()\n}\n\n/**\n * Returns a list containing elements at indices in the specified
[indices] range.\n * \npublic fun ShortArray.slice(indices: IntRange): List<Short> {\n  if (indices.isEmpty()) return
listOf()\n  return copyOfRange(indices.start, indices.endInclusive + 1).asList()\n}\n\n/**\n * Returns a list
containing elements at indices in the specified [indices] range.\n * \npublic fun IntArray.slice(indices: IntRange):

```

```

List<Int> {
    if (indices.isEmpty()) return listOf()
    return copyOfRange(indices.start, indices.endInclusive + 1).asList()
}

LongArray.slice(indices: IntRange): List<Long> {
    if (indices.isEmpty()) return listOf()
    return copyOfRange(indices.start, indices.endInclusive + 1).asList()
}

FloatArray.slice(indices: IntRange): List<Float> {
    if (indices.isEmpty()) return listOf()
    return copyOfRange(indices.start, indices.endInclusive + 1).asList()
}

DoubleArray.slice(indices: IntRange): List<Double> {
    if (indices.isEmpty()) return listOf()
    return copyOfRange(indices.start, indices.endInclusive + 1).asList()
}

BooleanArray.slice(indices: IntRange): List<Boolean> {
    if (indices.isEmpty()) return listOf()
    return copyOfRange(indices.start, indices.endInclusive + 1).asList()
}

CharArray.slice(indices: IntRange): List<Char> {
    if (indices.isEmpty()) return listOf()
    return copyOfRange(indices.start, indices.endInclusive + 1).asList()
}

Array<T>.slice(indices: Iterable<Int>): List<T> {
    val size = indices.collectionSizeOrDefault(10)
    if (size == 0) return emptyList()
    val list = ArrayList<T>(size)
    for (index in indices) {
        list.add(get(index))
    }
    return list
}

ByteArray.slice(indices: Iterable<Int>): List<Byte> {
    val size = indices.collectionSizeOrDefault(10)
    if (size == 0) return emptyList()
    val list = ArrayList<Byte>(size)
    for (index in indices) {
        list.add(get(index))
    }
    return list
}

ShortArray.slice(indices: Iterable<Int>): List<Short> {
    val size = indices.collectionSizeOrDefault(10)
    if (size == 0) return emptyList()
    val list = ArrayList<Short>(size)
    for (index in indices) {
        list.add(get(index))
    }
    return list
}

IntArray.slice(indices: Iterable<Int>): List<Int> {
    val size = indices.collectionSizeOrDefault(10)
    if (size == 0) return emptyList()
    val list = ArrayList<Int>(size)
    for (index in indices) {
        list.add(get(index))
    }
    return list
}

LongArray.slice(indices: Iterable<Int>): List<Long> {
    val size = indices.collectionSizeOrDefault(10)
    if (size == 0) return emptyList()
    val list = ArrayList<Long>(size)
    for (index in indices) {
        list.add(get(index))
    }
    return list
}

FloatArray.slice(indices: Iterable<Int>): List<Float> {
    val size = indices.collectionSizeOrDefault(10)
    if (size == 0) return emptyList()
    val list = ArrayList<Float>(size)
    for (index in indices) {
        list.add(get(index))
    }
    return list
}

DoubleArray.slice(indices: Iterable<Int>): List<Double> {
    val size = indices.collectionSizeOrDefault(10)
    if (size == 0) return emptyList()
    val list = ArrayList<Double>(size)
    for (index in indices) {
        list.add(get(index))
    }
    return list
}

BooleanArray.slice(indices: Iterable<Int>): List<Boolean> {
    val size = indices.collectionSizeOrDefault(10)
    if (size == 0) return emptyList()
    val list = ArrayList<Boolean>(size)
    for (index in indices) {
        list.add(get(index))
    }
    return list
}

CharArray.slice(indices: Iterable<Int>): List<Char> {
    val size = indices.collectionSizeOrDefault(10)
    if (size == 0) return emptyList()
    val list = ArrayList<Char>(size)
    for (index in indices) {
        list.add(get(index))
    }
    return list
}

Array<T>.sliceArray(indices: Collection<Int>): Array<T> {
    val result = arrayOfNulls<T>(indices.size)
    var targetIndex = 0
    for (sourceIndex in indices) {
        result[targetIndex++] = this[sourceIndex]
    }
    return result
}

ByteArray.sliceArray(indices: Collection<Int>): ByteArray {
    val result = ByteArray(indices.size)
    var

```

```

targetIndex = 0\n  for (sourceIndex in indices) {\n    result[targetIndex++]
= this[sourceIndex]\n  }\n  return result\n}\n\n/**\n * Returns an array containing elements of this array at
specified [indices].\n */\npublic fun ShortArray.sliceArray(indices: Collection<Int>): ShortArray {\n  val result =
ShortArray(indices.size)\n  var targetIndex = 0\n  for (sourceIndex in indices) {\n    result[targetIndex++] =
this[sourceIndex]\n  }\n  return result\n}\n\n/**\n * Returns an array containing elements of this array at specified
[indices].\n */\npublic fun IntArray.sliceArray(indices: Collection<Int>): IntArray {\n  val result =
IntArray(indices.size)\n  var targetIndex = 0\n  for (sourceIndex in indices) {\n    result[targetIndex++] =
this[sourceIndex]\n  }\n  return result\n}\n\n/**\n * Returns an array containing elements of this array at specified
[indices].\n */\npublic fun LongArray.sliceArray(indices: Collection<Int>): LongArray {\n  val result =
LongArray(indices.size)\n  var targetIndex = 0\n  for (sourceIndex in indices)
{\n    result[targetIndex++] = this[sourceIndex]\n  }\n  return result\n}\n\n/**\n * Returns an array containing
elements of this array at specified [indices].\n */\npublic fun FloatArray.sliceArray(indices: Collection<Int>):
FloatArray {\n  val result = FloatArray(indices.size)\n  var targetIndex = 0\n  for (sourceIndex in indices) {\n
result[targetIndex++] = this[sourceIndex]\n  }\n  return result\n}\n\n/**\n * Returns an array containing elements
of this array at specified [indices].\n */\npublic fun DoubleArray.sliceArray(indices: Collection<Int>): DoubleArray
{\n  val result = DoubleArray(indices.size)\n  var targetIndex = 0\n  for (sourceIndex in indices) {\n
result[targetIndex++] = this[sourceIndex]\n  }\n  return result\n}\n\n/**\n * Returns an array containing elements
of this array at specified [indices].\n */\npublic fun BooleanArray.sliceArray(indices: Collection<Int>):
BooleanArray {\n  val result = BooleanArray(indices.size)\n
  var targetIndex = 0\n  for (sourceIndex in indices) {\n    result[targetIndex++] = this[sourceIndex]\n  }\n
return result\n}\n\n/**\n * Returns an array containing elements of this array at specified [indices].\n */\npublic fun
CharArray.sliceArray(indices: Collection<Int>): CharArray {\n  val result = CharArray(indices.size)\n  var
targetIndex = 0\n  for (sourceIndex in indices) {\n    result[targetIndex++] = this[sourceIndex]\n  }\n  return
result\n}\n\n/**\n * Returns an array containing elements at indices in the specified [indices] range.\n */\npublic fun
<T> Array<T>.sliceArray(indices: IntRange): Array<T> {\n  if (indices.isEmpty()) return copyOfRange(0, 0)\n
return copyOfRange(indices.start, indices.endInclusive + 1)\n}\n\n/**\n * Returns an array containing elements at
indices in the specified [indices] range.\n */\npublic fun ByteArray.sliceArray(indices: IntRange): ByteArray {\n  if
(indices.isEmpty()) return ByteArray(0)\n  return
copyOfRange(indices.start, indices.endInclusive + 1)\n}\n\n/**\n * Returns an array containing elements at indices
in the specified [indices] range.\n */\npublic fun ShortArray.sliceArray(indices: IntRange): ShortArray {\n  if
(indices.isEmpty()) return ShortArray(0)\n  return copyOfRange(indices.start, indices.endInclusive +
1)\n}\n\n/**\n * Returns an array containing elements at indices in the specified [indices] range.\n */\npublic fun
IntArray.sliceArray(indices: IntRange): IntArray {\n  if (indices.isEmpty()) return IntArray(0)\n  return
copyOfRange(indices.start, indices.endInclusive + 1)\n}\n\n/**\n * Returns an array containing elements at indices
in the specified [indices] range.\n */\npublic fun LongArray.sliceArray(indices: IntRange): LongArray {\n  if
(indices.isEmpty()) return LongArray(0)\n  return copyOfRange(indices.start, indices.endInclusive +
1)\n}\n\n/**\n * Returns an array containing elements at indices in the specified [indices] range.\n */\npublic
fun FloatArray.sliceArray(indices: IntRange): FloatArray {\n  if (indices.isEmpty()) return FloatArray(0)\n
return copyOfRange(indices.start, indices.endInclusive + 1)\n}\n\n/**\n * Returns an array containing elements at
indices in the specified [indices] range.\n */\npublic fun DoubleArray.sliceArray(indices: IntRange): DoubleArray
{\n  if (indices.isEmpty()) return DoubleArray(0)\n  return copyOfRange(indices.start, indices.endInclusive +
1)\n}\n\n/**\n * Returns an array containing elements at indices in the specified [indices] range.\n */\npublic fun
BooleanArray.sliceArray(indices: IntRange): BooleanArray {\n  if (indices.isEmpty()) return BooleanArray(0)\n
return copyOfRange(indices.start, indices.endInclusive + 1)\n}\n\n/**\n * Returns an array containing elements at
indices in the specified [indices] range.\n */\npublic fun CharArray.sliceArray(indices: IntRange): CharArray {\n
if (indices.isEmpty()) return CharArray(0)\n  return copyOfRange(indices.start, indices.endInclusive
+ 1)\n}\n\n/**\n * Returns a list containing first [n] elements.\n */\n * @throws IllegalArgumentException if [n] is
negative.\n */\n * @sample samples.collections.Collections.Transformations.take\n */\npublic fun <T> Array<out

```

```

T>.take(n: Int): List<T> {
  require(n >= 0) {
    "Requested element count $n is less than zero."
  }
  if (n == 0)
    return emptyList()
  if (n >= size) return toList()
  if (n == 1) return listOf(this[0])
  var count = 0
  val list = ArrayList<T>(n)
  for (item in this) {
    list.add(item)
    if (++count == n)
      break
  }
  return list
}

// Returns a list containing first [n] elements.
// @throws IllegalArgumentException if [n] is negative.
// @sample samples.collections.Collections.Transformations.take

ByteArray.take(n: Int): List<Byte> {
  require(n >= 0) {
    "Requested element count $n is less than zero."
  }
  if (n == 0) return emptyList()
  if (n >= size) return toList()
  if (n == 1) return listOf(this[0])
  var count = 0
  val list = ArrayList<Byte>(n)
  for (item in this) {
    list.add(item)
    if (++count == n)
      break
  }
  return list
}

// Returns a list containing first [n] elements.
// @throws IllegalArgumentException if [n] is negative.
// @sample samples.collections.Collections.Transformations.take

// public fun ShortArray.take(n: Int): List<Short> {
//   require(n >= 0) {
//     "Requested element count $n is less than zero."
//   }
//   if (n == 0) return emptyList()
//   if (n >= size) return toList()
//   if (n == 1) return listOf(this[0])
//   var count = 0
//   val list = ArrayList<Short>(n)
//   for (item in this) {
//     list.add(item)
//     if (++count == n)
//       break
//   }
//   return list
// }

// Returns a list containing first [n] elements.
// @throws IllegalArgumentException if [n] is negative.
// @sample samples.collections.Collections.Transformations.take

// public fun IntArray.take(n: Int): List<Int> {
//   require(n >= 0) {
//     "Requested element count $n is less than zero."
//   }
//   if (n == 0) return emptyList()
//   if (n >= size) return toList()
//   if (n == 1) return listOf(this[0])
//   var count = 0
//   val list = ArrayList<Int>(n)
//   for (item in this) {
//     list.add(item)
//     if (++count == n)
//       break
//   }
//   return list
// }

// Returns a list containing first [n] elements.
// @throws IllegalArgumentException if [n] is negative.
// @sample samples.collections.Collections.Transformations.take

// public fun LongArray.take(n: Int): List<Long> {
//   require(n >= 0) {
//     "Requested element count $n is less than zero."
//   }
//   if (n == 0) return emptyList()
//   if (n >= size) return toList()
//   if (n == 1) return listOf(this[0])
//   var count = 0
//   val list = ArrayList<Long>(n)
//   for (item in this) {
//     list.add(item)
//     if (++count == n)
//       break
//   }
//   return list
// }

// Returns a list containing first [n] elements.
// @throws IllegalArgumentException if [n] is negative.
// @sample samples.collections.Collections.Transformations.take

// public fun FloatArray.take(n: Int): List<Float> {
//   require(n >= 0) {
//     "Requested element count $n is less than zero."
//   }
//   if (n == 0) return emptyList()
//   if (n >= size) return toList()
//   if (n == 1) return listOf(this[0])
//   var count = 0
//   val list = ArrayList<Float>(n)
//   for (item in this) {
//     list.add(item)
//     if (++count == n)
//       break
//   }
//   return list
// }

// Returns a list containing first [n] elements.
// @throws IllegalArgumentException if [n] is negative.
// @sample samples.collections.Collections.Transformations.take

// public fun DoubleArray.take(n: Int): List<Double> {
//   require(n >= 0) {
//     "Requested element count $n is less than zero."
//   }
//   if (n == 0) return emptyList()
//   if (n >= size) return toList()
//   if (n == 1) return listOf(this[0])
//   var count = 0
//   val list = ArrayList<Double>(n)
//   for (item in this) {
//     list.add(item)
//     if (++count == n)
//       break
//   }
//   return list
// }

// Returns a list containing first [n] elements.
// @throws IllegalArgumentException if [n] is negative.
// @sample samples.collections.Collections.Transformations.take

// public fun BooleanArray.take(n: Int): List<Boolean> {
//   require(n >= 0) {
//     "Requested element count $n is less than zero."
//   }
//   if (n == 0) return emptyList()
//   if (n >= size) return toList()
//   if (n == 1) return listOf(this[0])
//   var count = 0
//   val list = ArrayList<Boolean>(n)
//   for (item in this) {
//     list.add(item)
//     if (++count == n)
//       break
//   }
//   return list
// }

// Returns a list containing first [n] elements.
// @throws IllegalArgumentException if [n] is negative.
// @sample samples.collections.Collections.Transformations.take

// public fun CharArray.take(n: Int): List<Char> {
//   require(n >= 0) {
//     "Requested element count $n is less than zero."
//   }
//   if (n == 0) return emptyList()
//   if (n >= size) return toList()
//   if (n == 1) return listOf(this[0])
//   var count = 0
//   val list = ArrayList<Char>(n)
//   for (item in this) {
//     list.add(item)
//     if (++count == n)
//       break
//   }
//   return list
// }

// Returns a list containing last [n] elements.
// @throws

```

```

IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.take\n *^\npublic fun <T> Array<out T>.takeLast(n: Int): List<T>
{\n  require(n >= 0) { \"Requested element count $n is less than zero.\" }\n  if (n == 0) return emptyList()\n  val
size = size\n  if (n >= size) return toList()\n  if (n == 1) return listOf(this[size - 1])\n  val list =
ArrayList<T>(n)\n  for (index in size - n until size)\n    list.add(this[index])\n  return list\n}\n\n/**\n * Returns a list containing
last [n] elements.\n * \n * @throws IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.take\n *^\npublic fun ByteArray.takeLast(n: Int): List<Byte> {\n
require(n >= 0) { \"Requested element count $n is less than zero.\" }\n  if (n == 0) return emptyList()\n  val size =
size\n  if (n >= size) return toList()\n  if (n == 1) return listOf(this[size - 1])\n  val list = ArrayList<Byte>(n)\n
for (index in size - n until size)\n    list.add(this[index])\n  return list\n}\n\n/**\n * Returns a list containing last
[n] elements.\n * \n * @throws IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.take\n *^\npublic fun ShortArray.takeLast(n: Int): List<Short> {\n
require(n >= 0) { \"Requested element count $n is less than zero.\"
}\n  if (n == 0) return emptyList()\n  val size = size\n  if (n >= size) return toList()\n  if (n == 1) return
listOf(this[size - 1])\n  val list = ArrayList<Short>(n)\n  for (index in size - n until size)\n    list.add(this[index])\n  return list\n}\n\n/**\n * Returns a list containing last [n] elements.\n * \n * @throws
IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.take\n *^\npublic fun IntArray.takeLast(n: Int): List<Int> {\n
require(n >= 0) { \"Requested element count $n is less than zero.\" }\n  if (n == 0) return emptyList()\n  val size =
size\n  if (n >= size) return toList()\n  if (n == 1) return listOf(this[size - 1])\n  val list = ArrayList<Int>(n)\n
for (index in size - n until size)\n    list.add(this[index])\n  return list\n}\n\n/**\n * Returns a list containing last
[n] elements.\n * \n * @throws IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.take\n
*^\npublic fun LongArray.takeLast(n: Int): List<Long> {\n  require(n >= 0) { \"Requested element count $n is less
than zero.\" }\n  if (n == 0) return emptyList()\n  val size = size\n  if (n >= size) return toList()\n  if (n == 1)
return listOf(this[size - 1])\n  val list = ArrayList<Long>(n)\n  for (index in size - n until size)\n    list.add(this[index])\n  return list\n}\n\n/**\n * Returns a list containing last [n] elements.\n * \n * @throws
IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.take\n *^\npublic fun FloatArray.takeLast(n: Int): List<Float> {\n
require(n >= 0) { \"Requested element count $n is less than zero.\" }\n  if (n == 0) return emptyList()\n  val size =
size\n  if (n >= size) return toList()\n  if (n == 1) return listOf(this[size - 1])\n  val list = ArrayList<Float>(n)\n
for (index in size - n until size)\n    list.add(this[index])\n  return list\n}\n\n/**\n * Returns a list containing last [n] elements.\n * \n * @throws
IllegalArgumentException if [n] is negative.\n * \n * @sample samples.collections.Collections.Transformations.take\n *^\npublic fun
DoubleArray.takeLast(n: Int): List<Double> {\n  require(n >= 0) { \"Requested element count $n is less than
zero.\" }\n  if (n == 0) return emptyList()\n  val size = size\n  if (n >= size) return toList()\n  if (n == 1) return
listOf(this[size - 1])\n  val list = ArrayList<Double>(n)\n  for (index in size - n until size)\n    list.add(this[index])\n  return list\n}\n\n/**\n * Returns a list containing last [n] elements.\n * \n * @throws
IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.take\n *^\npublic fun BooleanArray.takeLast(n: Int):
List<Boolean> {\n  require(n >= 0) { \"Requested element count $n is less than zero.\" }\n  if (n == 0) return
emptyList()\n  val
size = size\n  if (n >= size) return toList()\n  if (n == 1) return listOf(this[size - 1])\n  val list =
ArrayList<Boolean>(n)\n  for (index in size - n until size)\n    list.add(this[index])\n  return list\n}\n\n/**\n * Returns a list containing last [n] elements.\n * \n * @throws
IllegalArgumentException if [n] is negative.\n * \n * @sample samples.collections.Collections.Transformations.take\n *^\npublic fun CharArray.takeLast(n: Int):
List<Char> {\n  require(n >= 0) { \"Requested element count $n is less than zero.\" }\n  if (n == 0) return

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emptyList()\n  val size = size\n  if (n >= size) return toList()\n  if (n == 1) return listOf(this[size - 1])\n  val list
= ArrayList<Char>(n)\n  for (index in size - n until size)\n    list.add(this[index])\n  return list\n}\n\n/**\n * Returns a list containing last elements satisfying the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.take\n *\npublic inline fun <T> Array<out
T>.takeLastWhile(predicate: (T) -> Boolean): List<T> {\n  for (index in lastIndex downTo 0) {\n    if
(!predicate(this[index])) {\n      return drop(index + 1)\n    }\n  }\n  return toList()\n}\n\n/**\n * Returns a
list containing last elements satisfying the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.take\n *\npublic inline fun ByteArray.takeLastWhile(predicate:
(Byte) -> Boolean): List<Byte> {\n  for (index in lastIndex downTo 0) {\n    if (!predicate(this[index])) {\n
return drop(index + 1)\n    }\n  }\n  return toList()\n}\n\n/**\n * Returns a list containing last elements
satisfying the given [predicate].\n * \n * @sample samples.collections.Collections.Transformations.take\n *\npublic
inline fun ShortArray.takeLastWhile(predicate: (Short) -> Boolean): List<Short> {\n  for (index in lastIndex
downTo 0) {\n    if (!predicate(this[index])) {\n      return drop(index + 1)\n    }\n  }\n  return toList()\n}\n\n/**\n * Returns a list containing last elements satisfying the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.take\n *\npublic inline fun
IntArray.takeLastWhile(predicate: (Int) -> Boolean): List<Int> {\n  for (index in lastIndex downTo 0) {\n    if
(!predicate(this[index])) {\n      return drop(index + 1)\n    }\n  }\n  return toList()\n}\n\n/**\n * Returns a
list containing last elements satisfying the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.take\n *\npublic inline fun LongArray.takeLastWhile(predicate:
(Long) -> Boolean): List<Long> {\n  for (index in lastIndex downTo 0) {\n    if (!predicate(this[index])) {\n
return drop(index + 1)\n    }\n  }\n  return toList()\n}\n\n/**\n * Returns a list containing last elements
satisfying the given [predicate].\n * \n * @sample samples.collections.Collections.Transformations.take\n *\npublic
inline fun FloatArray.takeLastWhile(predicate: (Float) -> Boolean): List<Float> {\n  for (index in
lastIndex downTo 0) {\n    if (!predicate(this[index])) {\n      return drop(index + 1)\n    }\n  }\n  return
toList()\n}\n\n/**\n * Returns a list containing last elements satisfying the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.take\n *\npublic inline fun DoubleArray.takeLastWhile(predicate:
(Double) -> Boolean): List<Double> {\n  for (index in lastIndex downTo 0) {\n    if (!predicate(this[index])) {\n
return drop(index + 1)\n    }\n  }\n  return toList()\n}\n\n/**\n * Returns a list containing last elements
satisfying the given [predicate].\n * \n * @sample samples.collections.Collections.Transformations.take\n *\npublic
inline fun BooleanArray.takeLastWhile(predicate: (Boolean) -> Boolean): List<Boolean> {\n  for (index in
lastIndex downTo 0) {\n    if (!predicate(this[index])) {\n      return drop(index + 1)\n    }\n  }\n  return
toList()\n}\n\n/**\n * Returns a list containing last elements satisfying the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.take\n *\npublic inline fun CharArray.takeLastWhile(predicate: (Char) -> Boolean): List<Char> {\n  for (index in lastIndex
downTo 0) {\n    if (!predicate(this[index])) {\n      return drop(index + 1)\n    }\n  }\n  return
toList()\n}\n\n/**\n * Returns a list containing first elements satisfying the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.take\n *\npublic inline fun <T> Array<out
T>.takeWhile(predicate: (T) -> Boolean): List<T> {\n  val list = ArrayList<T>()\n  for (item in this) {\n    if
(!predicate(item))\n      break\n    list.add(item)\n  }\n  return list\n}\n\n/**\n * Returns a list containing first
elements satisfying the given [predicate].\n * \n * @sample samples.collections.Collections.Transformations.take\n *\npublic
inline fun ByteArray.takeWhile(predicate: (Byte) -> Boolean): List<Byte> {\n  val list =
ArrayList<Byte>()\n  for (item in this) {\n    if (!predicate(item))\n      break\n    list.add(item)\n  }\n  return list\n}\n\n/**\n * Returns a list containing first elements satisfying the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.take\n *\npublic inline fun ShortArray.takeWhile(predicate:
(Short) -> Boolean): List<Short> {\n  val list = ArrayList<Short>()\n  for (item in this) {\n    if
(!predicate(item))\n      break\n    list.add(item)\n  }\n  return list\n}\n\n/**\n * Returns a list containing first
elements satisfying the given [predicate].\n * \n * @sample samples.collections.Collections.Transformations.take\n *\npublic
inline fun IntArray.takeWhile(predicate: (Int) -> Boolean): List<Int> {\n  val list = ArrayList<Int>()\n

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for (item in this)
  {\n  if (!predicate(item))\n    break\n    list.add(item)\n  }\n  return list\n}\n\n/**\n * Returns a list
containing first elements satisfying the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.take\n *\npublic inline fun LongArray.takeWhile(predicate:
(Long) -> Boolean): List<Long> {\n  val list = ArrayList<Long>()\n  for (item in this) {\n    if
(!predicate(item))\n      break\n      list.add(item)\n    }\n    return list\n}\n\n/**\n * Returns a list containing first
elements satisfying the given [predicate].\n * \n * @sample samples.collections.Collections.Transformations.take\n
*\npublic inline fun FloatArray.takeWhile(predicate: (Float) -> Boolean): List<Float> {\n  val list =
ArrayList<Float>()\n  for (item in this) {\n    if (!predicate(item))\n      break\n      list.add(item)\n    }\n
return list\n}\n\n/**\n * Returns a list containing first elements satisfying the given [predicate].\n
*\n * @sample samples.collections.Collections.Transformations.take\n *\npublic inline fun
DoubleArray.takeWhile(predicate: (Double) -> Boolean): List<Double> {\n  val list = ArrayList<Double>()\n
for (item in this) {\n    if (!predicate(item))\n      break\n      list.add(item)\n    }\n    return list\n}\n\n/**\n
* Returns a list containing first elements satisfying the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.take\n *\npublic inline fun BooleanArray.takeWhile(predicate:
(Boolean) -> Boolean): List<Boolean> {\n  val list = ArrayList<Boolean>()\n  for (item in this) {\n    if
(!predicate(item))\n      break\n      list.add(item)\n    }\n    return list\n}\n\n/**\n * Returns a list containing first
elements satisfying the given [predicate].\n * \n * @sample samples.collections.Collections.Transformations.take\n
*\npublic inline fun CharArray.takeWhile(predicate: (Char) -> Boolean): List<Char> {\n  val
list = ArrayList<Char>()\n  for (item in this) {\n    if (!predicate(item))\n      break\n      list.add(item)\n
}\n  return list\n}\n\n/**\n * Reverses elements in the array in-place.\n *\npublic fun <T> Array<T>.reverse():
Unit {\n  val midPoint = (size / 2) - 1\n  if (midPoint < 0) return\n  var reverseIndex = lastIndex\n  for (index in
0..midPoint) {\n    val tmp = this[index]\n    this[index] = this[reverseIndex]\n    this[reverseIndex] = tmp\n
reverseIndex--\n  }\n}\n\n/**\n * Reverses elements in the array in-place.\n *\npublic fun ByteArray.reverse():
Unit {\n  val midPoint = (size / 2) - 1\n  if (midPoint < 0) return\n  var reverseIndex = lastIndex\n  for (index in
0..midPoint) {\n    val tmp = this[index]\n    this[index] = this[reverseIndex]\n    this[reverseIndex] = tmp\n
reverseIndex--\n  }\n}\n\n/**\n * Reverses elements in the array in-place.\n *\npublic fun ShortArray.reverse():
Unit {\n  val midPoint = (size / 2) - 1\n  if (midPoint < 0) return\n  var reverseIndex = lastIndex\n  for (index in
0..midPoint) {\n    val tmp = this[index]\n    this[index] = this[reverseIndex]\n    this[reverseIndex] = tmp\n
reverseIndex--\n  }\n}\n\n/**\n * Reverses elements in the array in-place.\n *\npublic fun IntArray.reverse():
Unit {\n  val midPoint = (size / 2) - 1\n  if (midPoint < 0) return\n  var reverseIndex = lastIndex\n  for (index in
0..midPoint) {\n    val tmp = this[index]\n    this[index] = this[reverseIndex]\n    this[reverseIndex] = tmp\n
reverseIndex--\n  }\n}\n\n/**\n * Reverses elements in the array in-place.\n *\npublic fun LongArray.reverse():
Unit {\n  val midPoint = (size / 2) - 1\n  if (midPoint < 0) return\n  var reverseIndex = lastIndex\n  for (index in
0..midPoint) {\n    val tmp = this[index]\n    this[index] = this[reverseIndex]\n    this[reverseIndex] = tmp\n
reverseIndex--\n  }\n}\n\n/**\n * Reverses elements in the array in-place.\n *\npublic fun FloatArray.reverse(): Unit {\n  val
midPoint = (size / 2) - 1\n  if (midPoint < 0) return\n  var reverseIndex = lastIndex\n  for (index in 0..midPoint)
{\n    val tmp = this[index]\n    this[index] = this[reverseIndex]\n    this[reverseIndex] = tmp\n
reverseIndex--\n  }\n}\n\n/**\n * Reverses elements in the array in-place.\n *\npublic fun DoubleArray.reverse():
Unit {\n  val midPoint = (size / 2) - 1\n  if (midPoint < 0) return\n  var reverseIndex = lastIndex\n  for (index in
0..midPoint) {\n    val tmp = this[index]\n    this[index] = this[reverseIndex]\n    this[reverseIndex] = tmp\n
reverseIndex--\n  }\n}\n\n/**\n * Reverses elements in the array in-place.\n *\npublic fun BooleanArray.reverse(): Unit {\n  val midPoint = (size / 2) - 1\n  if (midPoint < 0) return\n  var reverseIndex =
lastIndex\n  for (index in 0..midPoint) {\n    val
tmp = this[index]\n    this[index] = this[reverseIndex]\n    this[reverseIndex] = tmp\n    reverseIndex--\n  }\n}\n\n/**\n * Reverses elements in the array in-place.\n *\npublic fun CharArray.reverse(): Unit {\n  val

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midPoint = (size / 2) - 1\n    if (midPoint < 0) return\n    var reverseIndex = lastIndex\n    for (index in 0..midPoint)
{\n        val tmp = this[index]\n        this[index] = this[reverseIndex]\n        this[reverseIndex] = tmp\n    }\n}\n\n/**\n * Reverses elements of the array in the specified range in-place.\n * \n * @param
fromIndex the start of the range (inclusive) to reverse.\n * @param toIndex the end of the range (exclusive) to
reverse.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than
the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n
*/\n\n@SinceKotlin("1.4")\npublic fun <T> Array<T>.reverse(fromIndex: Int, toIndex:
Int): Unit {\n    AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n    val midPoint = (fromIndex +
toIndex) / 2\n    if (fromIndex == midPoint) return\n    var reverseIndex = toIndex - 1\n    for (index in fromIndex
until midPoint) {\n        val tmp = this[index]\n        this[index] = this[reverseIndex]\n        this[reverseIndex] =
tmp\n        reverseIndex--\n    }\n}\n\n/**\n * Reverses elements of the array in the specified range in-place.\n * \n *
@param fromIndex the start of the range (inclusive) to reverse.\n * @param toIndex the end of the range (exclusive)
to reverse.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater
than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n
*/\n\n@SinceKotlin("1.4")\npublic fun ByteArray.reverse(fromIndex: Int, toIndex: Int): Unit {\n
    AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n    val midPoint = (fromIndex +
toIndex) / 2\n    if (fromIndex == midPoint) return\n    var reverseIndex = toIndex - 1\n    for (index in fromIndex
until midPoint) {\n        val tmp = this[index]\n        this[index] = this[reverseIndex]\n        this[reverseIndex] =
tmp\n        reverseIndex--\n    }\n}\n\n/**\n * Reverses elements of the array in the specified range in-place.\n * \n *
@param fromIndex the start of the range (inclusive) to reverse.\n * @param toIndex the end of the range (exclusive)
to reverse.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater
than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n
*/\n\n@SinceKotlin("1.4")\npublic fun ShortArray.reverse(fromIndex: Int, toIndex: Int): Unit {\n
    AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n    val midPoint = (fromIndex + toIndex) / 2\n    if
(fromIndex == midPoint) return\n    var reverseIndex = toIndex - 1\n    for (index in fromIndex
until midPoint) {\n        val tmp = this[index]\n        this[index] = this[reverseIndex]\n        this[reverseIndex] =
tmp\n        reverseIndex--\n    }\n}\n\n/**\n * Reverses elements of the array in the specified range in-place.\n * \n *
@param fromIndex the start of the range (inclusive) to reverse.\n * @param toIndex the end of the range (exclusive)
to reverse.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater
than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n
*/\n\n@SinceKotlin("1.4")\npublic fun IntArray.reverse(fromIndex: Int, toIndex: Int): Unit {\n
    AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n    val midPoint = (fromIndex + toIndex) / 2\n    if
(fromIndex == midPoint) return\n    var reverseIndex = toIndex - 1\n    for (index in fromIndex until midPoint) {\n
        val tmp = this[index]\n        this[index] = this[reverseIndex]\n        this[reverseIndex]
= tmp\n        reverseIndex--\n    }\n}\n\n/**\n * Reverses elements of the array in the specified range
in-place.\n * \n * @param fromIndex the start of the range (inclusive) to reverse.\n * @param toIndex the end of the
range (exclusive) to reverse.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex]
is greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater than
[toIndex].\n */\n\n@SinceKotlin("1.4")\npublic fun LongArray.reverse(fromIndex: Int, toIndex: Int): Unit {\n
    AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n    val midPoint = (fromIndex + toIndex) / 2\n    if
(fromIndex == midPoint) return\n    var reverseIndex = toIndex - 1\n    for (index in fromIndex until midPoint) {\n
        val tmp = this[index]\n        this[index] = this[reverseIndex]\n        this[reverseIndex] = tmp\n       
reverseIndex--\n    }\n}\n\n/**\n * Reverses elements of the array in the specified range
in-place.\n * \n * @param fromIndex the start of the range (inclusive) to reverse.\n * @param toIndex the end of the
range (exclusive) to reverse.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or
[toIndex] is greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater than
[toIndex].\n */\n\n@SinceKotlin("1.4")\npublic fun FloatArray.reverse(fromIndex: Int, toIndex: Int): Unit {\n
    AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n    val midPoint = (fromIndex + toIndex) / 2\n    if

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(fromIndex == midPoint) return\n    var reverseIndex = toIndex - 1\n    for (index in fromIndex until midPoint) {\n
        val tmp = this[index]\n        this[index] = this[reverseIndex]\n        this[reverseIndex] = tmp\n        reverseIndex--\n
    }\n}\n\n/**\n * Reverses elements of the array in the specified range in-place.\n * \n * @param fromIndex the start
of the range (inclusive) to reverse.\n * @param toIndex the end
of the range (exclusive) to reverse.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero
or [toIndex] is greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater
than [toIndex].\n */\n@SinceKotlin("1.4")\npublic fun DoubleArray.reverse(fromIndex: Int, toIndex: Int): Unit {\n
    AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n    val midPoint = (fromIndex + toIndex) / 2\n    if
(fromIndex == midPoint) return\n    var reverseIndex = toIndex - 1\n    for (index in fromIndex until midPoint) {\n
        val tmp = this[index]\n        this[index] = this[reverseIndex]\n        this[reverseIndex] = tmp\n        reverseIndex--\n
    }\n}\n\n/**\n * Reverses elements of the array in the specified range in-place.\n * \n * @param fromIndex the start
of the range (inclusive) to reverse.\n * @param toIndex the end of the range (exclusive) to reverse.\n * \n * @throws
IndexOutOfBoundsException if [fromIndex] is less than zero
or [toIndex] is greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater
than [toIndex].\n */\n@SinceKotlin("1.4")\npublic fun BooleanArray.reverse(fromIndex: Int, toIndex: Int): Unit
{\n    AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n    val midPoint = (fromIndex + toIndex) / 2\n    if
(fromIndex == midPoint) return\n    var reverseIndex = toIndex - 1\n    for (index in fromIndex until midPoint) {\n
        val tmp = this[index]\n        this[index] = this[reverseIndex]\n        this[reverseIndex] = tmp\n        reverseIndex--\n
    }\n}\n\n/**\n * Reverses elements of the array in the specified range in-place.\n * \n * @param fromIndex the start
of the range (inclusive) to reverse.\n * @param toIndex the end of the range (exclusive) to reverse.\n * \n * @throws
IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n *
@throws IllegalArgumentException if [fromIndex] is
greater than [toIndex].\n */\n@SinceKotlin("1.4")\npublic fun CharArray.reverse(fromIndex: Int, toIndex: Int):
Unit {\n    AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n    val midPoint = (fromIndex + toIndex) /
2\n    if (fromIndex == midPoint) return\n    var reverseIndex = toIndex - 1\n    for (index in fromIndex until
midPoint) {\n        val tmp = this[index]\n        this[index] = this[reverseIndex]\n        this[reverseIndex] = tmp\n
reverseIndex--\n    }\n}\n\n/**\n * Returns a list with elements in reversed order.\n */\npublic fun <T> Array<out
T>.reversed(): List<T> {\n    if (isEmpty()) return emptyList()\n    val list = toMutableList()\n    list.reverse()\n
return list\n}\n\n/**\n * Returns a list with elements in reversed order.\n */\npublic fun ByteArray.reversed():
List<Byte> {\n    if (isEmpty()) return emptyList()\n    val list = toMutableList()\n    list.reverse()\n    return
list\n}\n\n/**\n * Returns a list with elements in reversed order.\n */\npublic fun ShortArray.reversed(): List<Short>
{\n    if (isEmpty()) return emptyList()\n    val list =
toMutableList()\n    list.reverse()\n    return list\n}\n\n/**\n * Returns a list with elements in reversed order.\n */\n
public fun IntArray.reversed(): List<Int> {\n    if (isEmpty()) return emptyList()\n    val list = toMutableList()\n
list.reverse()\n    return list\n}\n\n/**\n * Returns a list with elements in reversed order.\n */\npublic fun
LongArray.reversed(): List<Long> {\n    if (isEmpty()) return emptyList()\n    val list = toMutableList()\n    list
.reverse()\n    return list\n}\n\n/**\n * Returns a list with elements in reversed order.\n */\npublic fun
FloatArray.reversed(): List<Float> {\n    if (isEmpty()) return emptyList()\n    val list = toMutableList()\n    list
.reverse()\n    return list\n}\n\n/**\n * Returns a list with elements in reversed order.\n */\npublic fun
DoubleArray.reversed(): List<Double> {\n    if (isEmpty()) return emptyList()\n    val list =
toMutableList()\n    list.reverse()\n    return list\n}\n\n/**\n * Returns a list with elements in reversed order.\n */\n
public fun BooleanArray.reversed(): List<Boolean> {\n    if (isEmpty()) return emptyList()\n    val list =
toMutableList()\n    list.reverse()\n    return list\n}\n\n/**\n * Returns a list with elements in reversed order.\n */\n
public fun CharArray.reversed(): List<Char> {\n    if (isEmpty()) return emptyList()\n    val list =
toMutableList()\n    list.reverse()\n    return list\n}\n\n/**\n * Returns an array with elements of this array in
reversed order.\n */\npublic fun <T> Array<T>.reversedArray(): Array<T> {\n    if (isEmpty()) return this\n    val
result = arrayOfNulls(this, size)\n    val lastIndex = lastIndexOf\n    for (i in 0..lastIndex)\n        result[lastIndex - i] =
this[i]\n    return result\n}\n\n/**\n * Returns an array with elements of this array in reversed order.\n */\npublic fun

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ByteArray.reversedArray(): ByteArray {
    if (isEmpty()) return this
    val result = ByteArray(size)
    val lastIndex = lastIndex
    for (i in 0..lastIndex)
        result[lastIndex - i] = this[i]
    return result
}

Returns an array with elements of this array in reversed order.

public fun ShortArray.reversedArray(): ShortArray {
    if (isEmpty()) return this
    val result = ShortArray(size)
    val lastIndex = lastIndex
    for (i in 0..lastIndex)
        result[lastIndex - i] = this[i]
    return result
}

Returns an array with elements of this array in reversed order.

public fun IntArray.reversedArray(): IntArray {
    if (isEmpty()) return this
    val result = IntArray(size)
    val lastIndex = lastIndex
    for (i in 0..lastIndex)
        result[lastIndex - i] = this[i]
    return result
}

Returns an array with elements of this array in reversed order.

public fun LongArray.reversedArray(): LongArray {
    if (isEmpty()) return this
    val result = LongArray(size)
    val lastIndex = lastIndex
    for (i in 0..lastIndex)
        result[lastIndex - i] = this[i]
    return result
}

Returns an array with elements of this array in reversed order.

public fun FloatArray.reversedArray(): FloatArray {
    if (isEmpty()) return this
    val result = FloatArray(size)
    val lastIndex = lastIndex
    for (i in 0..lastIndex)
        result[lastIndex - i] = this[i]
    return result
}

Returns an array with elements of this array in reversed order.

public fun DoubleArray.reversedArray(): DoubleArray {
    if (isEmpty()) return this
    val result = DoubleArray(size)
    val lastIndex = lastIndex
    for (i in 0..lastIndex)
        result[lastIndex - i] = this[i]
    return result
}

Returns an array with elements of this array in reversed order.

public fun BooleanArray.reversedArray(): BooleanArray {
    if (isEmpty()) return this
    val result = BooleanArray(size)
    val lastIndex = lastIndex
    for (i in 0..lastIndex)
        result[lastIndex - i] = this[i]
    return result
}

Returns an array with elements of this array in reversed order.

public fun CharArray.reversedArray(): CharArray {
    if (isEmpty()) return this
    val result = CharArray(size)
    val lastIndex = lastIndex
    for (i in 0..lastIndex)
        result[lastIndex - i] = this[i]
    return result
}

Randomly shuffles elements in this array in-place.

@SinceKotlin("1.4")
public fun <T> Array<T>.shuffle(): Unit {
    shuffle(Random)
}

Randomly shuffles elements in this array in-place.

@SinceKotlin("1.4")
public fun ByteArray.shuffle(): Unit {
    shuffle(Random)
}

Randomly shuffles elements in this array in-place.

@SinceKotlin("1.4")
public fun ShortArray.shuffle(): Unit {
    shuffle(Random)
}

Randomly shuffles elements in this array in-place.

@SinceKotlin("1.4")
public fun IntArray.shuffle(): Unit {
    shuffle(Random)
}

Randomly shuffles elements in this array in-place.

@SinceKotlin("1.4")
public fun LongArray.shuffle(): Unit {
    shuffle(Random)
}

Randomly shuffles elements in this array in-place.

@SinceKotlin("1.4")
public fun FloatArray.shuffle(): Unit {
    shuffle(Random)
}

Randomly shuffles elements in this array in-place.

@SinceKotlin("1.4")
public fun DoubleArray.shuffle(): Unit {
    shuffle(Random)
}

Randomly shuffles elements in this array in-place.

@SinceKotlin("1.4")
public fun BooleanArray.shuffle(): Unit {
    shuffle(Random)
}

Randomly shuffles elements in this array in-place.

@SinceKotlin("1.4")
public fun CharArray.shuffle(): Unit {
    shuffle(Random)
}

Randomly shuffles elements in this array in-place using the specified [random] instance as the source of randomness.

See: https://en.wikipedia.org/wiki/Fisher%20%93Yates\_shuffle#The\_modern\_algorithm

@SinceKotlin("1.4")
public fun <T> Array<T>.shuffle(random: Random): Unit {
    for (i in lastIndex downTo 1) {
        val j = random.nextInt(i + 1)
        val copy = this[i]
        this[i] = this[j]
        this[j] = copy
    }
}

Randomly shuffles elements in this array in-place using the specified [random] instance as the source of randomness.

See: https://en.wikipedia.org/wiki/Fisher%20%93Yates\_shuffle#The\_modern\_algorithm

@SinceKotlin("1.4")
public fun ByteArray.shuffle(random: Random): Unit {
    for (i in lastIndex downTo 1) {
        val j = random.nextInt(i + 1)
        val copy = this[i]
        this[i] = this[j]
        this[j] = copy
    }
}

Randomly shuffles elements in this array in-place using the specified [random] instance as the source of randomness.

See: https://en.wikipedia.org/wiki/Fisher%20%93Yates\_shuffle#The\_modern\_algorithm

```

```

*\n@SinceKotlin("1.4")\npublic
fun ShortArray.shuffle(random: Random): Unit {\n  for (i in lastIndex downTo 1) {\n    val j = random.nextInt(i
+ 1)\n    val copy = this[i]\n    this[i] = this[j]\n    this[j] = copy\n  }\n}\n\n/**\n * Randomly shuffles
elements in this array in-place using the specified [random] instance as the source of randomness.\n * \n * See:
https://en.wikipedia.org/wiki/Fisher%20%80%93Yates\_shuffle#The\_modern\_algorithm\n
*\n@SinceKotlin("1.4")\npublic fun IntArray.shuffle(random: Random): Unit {\n  for (i in lastIndex downTo 1)
{\n    val j = random.nextInt(i + 1)\n    val copy = this[i]\n    this[i] = this[j]\n    this[j] = copy\n
}\n}\n\n/**\n * Randomly shuffles elements in this array in-place using the specified [random] instance as the
source of randomness.\n * \n * See:
https://en.wikipedia.org/wiki/Fisher%20%80%93Yates\_shuffle#The\_modern\_algorithm\n
*\n@SinceKotlin("1.4")\npublic fun LongArray.shuffle(random: Random): Unit {\n  for
(i in lastIndex downTo 1) {\n    val j = random.nextInt(i + 1)\n    val copy = this[i]\n    this[i] = this[j]\n
this[j] = copy\n  }\n}\n\n/**\n * Randomly shuffles elements in this array in-place using the specified [random]
instance as the source of randomness.\n * \n * See:
https://en.wikipedia.org/wiki/Fisher%20%80%93Yates\_shuffle#The\_modern\_algorithm\n
*\n@SinceKotlin("1.4")\npublic fun FloatArray.shuffle(random: Random): Unit {\n  for (i in lastIndex downTo
1) {\n    val j = random.nextInt(i + 1)\n    val copy = this[i]\n    this[i] = this[j]\n    this[j] = copy\n
}\n}\n\n/**\n * Randomly shuffles elements in this array in-place using the specified [random] instance as the
source of randomness.\n * \n * See:
https://en.wikipedia.org/wiki/Fisher%20%80%93Yates\_shuffle#The\_modern\_algorithm\n
*\n@SinceKotlin("1.4")\npublic fun DoubleArray.shuffle(random: Random): Unit {\n  for (i in lastIndex
downTo 1) {\n    val j = random.nextInt(i
+ 1)\n    val copy = this[i]\n    this[i] = this[j]\n    this[j] = copy\n  }\n}\n\n/**\n * Randomly shuffles
elements in this array in-place using the specified [random] instance as the source of randomness.\n * \n * See:
https://en.wikipedia.org/wiki/Fisher%20%80%93Yates\_shuffle#The\_modern\_algorithm\n
*\n@SinceKotlin("1.4")\npublic fun BooleanArray.shuffle(random: Random): Unit {\n  for (i in lastIndex
downTo 1) {\n    val j = random.nextInt(i + 1)\n    val copy = this[i]\n    this[i] = this[j]\n    this[j] = copy\n
}\n}\n\n/**\n * Randomly shuffles elements in this array in-place using the specified [random] instance as the
source of randomness.\n * \n * See:
https://en.wikipedia.org/wiki/Fisher%20%80%93Yates\_shuffle#The\_modern\_algorithm\n
*\n@SinceKotlin("1.4")\npublic fun CharArray.shuffle(random: Random): Unit {\n  for (i in lastIndex downTo
1) {\n    val j = random.nextInt(i + 1)\n    val copy = this[i]\n    this[i] = this[j]\n
    this[j] = copy\n  }\n}\n\n/**\n * Sorts elements in the array in-place according to natural sort order of the
value returned by specified [selector] function.\n * \n * The sort is _stable_. It means that equal elements preserve
their order relative to each other after sorting.\n *\npublic inline fun <T, R : Comparable<R>> Array<out
T>.sortBy(crossinline selector: (T) -> R?): Unit {\n  if (size > 1) sortWith(compareBy(selector))\n}\n\n/**\n *
Sorts elements in the array in-place descending according to natural sort order of the value returned by specified
[selector] function.\n * \n * The sort is _stable_. It means that equal elements preserve their order relative to each
other after sorting.\n *\npublic inline fun <T, R : Comparable<R>> Array<out T>.sortByDescending(crossinline
selector: (T) -> R?): Unit {\n  if (size > 1) sortWith(compareByDescending(selector))\n}\n\n/**\n * Sorts elements
in the array in-place descending according to their natural sort order.\n
* \n * The sort is _stable_. It means that equal elements preserve their order relative to each other after sorting.\n
*\npublic fun <T : Comparable<T>> Array<out T>.sortDescending(): Unit {\n
sortWith(reverseOrder())\n}\n\n/**\n * Sorts elements in the array in-place descending according to their natural
sort order.\n *\npublic fun ByteArray.sortDescending(): Unit {\n  if (size > 1) {\n    sort()\n    reverse()\n
}\n}\n\n/**\n * Sorts elements in the array in-place descending according to their natural sort order.\n *\npublic fun
ShortArray.sortDescending(): Unit {\n  if (size > 1) {\n    sort()\n    reverse()\n  }\n}\n\n/**\n * Sorts
elements in the array in-place descending according to their natural sort order.\n *\npublic fun

```

```

IntArray.sortDescending(): Unit {\n  if (size > 1) {\n    sort()\n    reverse()\n  }\n}\n\n/**\n * Sorts elements
in the array in-place descending according to their natural sort order.\n */\npublic fun LongArray.sortDescending():
Unit {\n  if (size > 1) {\n    sort()\n    reverse()\n  }\n}\n\n/**\n * Sorts elements in the array in-place
descending according to their natural sort order.\n */\npublic fun FloatArray.sortDescending(): Unit {\n  if (size >
1) {\n    sort()\n    reverse()\n  }\n}\n\n/**\n * Sorts elements in the array in-place descending according to
their natural sort order.\n */\npublic fun DoubleArray.sortDescending(): Unit {\n  if (size > 1) {\n    sort()\n
reverse()\n  }\n}\n\n/**\n * Sorts elements in the array in-place descending according to their natural sort order.\n
*/\npublic fun CharArray.sortDescending(): Unit {\n  if (size > 1) {\n    sort()\n    reverse()\n  }\n}\n\n/**\n *
Returns a list of all elements sorted according to their natural sort order.\n */\n * The sort is _stable_. It means that
equal elements preserve their order relative to each other after sorting.\n */\npublic fun <T : Comparable<T>>
Array<out T>.sorted():
List<T> {\n  return sortedArray().asList()\n}\n\n/**\n * Returns a list of all elements sorted according to their
natural sort order.\n */\npublic fun ByteArray.sorted(): List<Byte> {\n  return toTypedArray().apply { sort()
}.asList()\n}\n\n/**\n * Returns a list of all elements sorted according to their natural sort order.\n */\npublic fun
ShortArray.sorted(): List<Short> {\n  return toTypedArray().apply { sort() }.asList()\n}\n\n/**\n * Returns a list of
all elements sorted according to their natural sort order.\n */\npublic fun IntArray.sorted(): List<Int> {\n  return
toTypedArray().apply { sort() }.asList()\n}\n\n/**\n * Returns a list of all elements sorted according to their natural
sort order.\n */\npublic fun LongArray.sorted(): List<Long> {\n  return toTypedArray().apply { sort()
}.asList()\n}\n\n/**\n * Returns a list of all elements sorted according to their natural sort order.\n */\npublic fun
FloatArray.sorted(): List<Float> {\n  return toTypedArray().apply
{ sort() }.asList()\n}\n\n/**\n * Returns a list of all elements sorted according to their natural sort order.\n
*/\npublic fun DoubleArray.sorted(): List<Double> {\n  return toTypedArray().apply { sort() }.asList()\n}\n\n/**\n
* Returns a list of all elements sorted according to their natural sort order.\n */\npublic fun CharArray.sorted():
List<Char> {\n  return toTypedArray().apply { sort() }.asList()\n}\n\n/**\n * Returns an array with all elements of
this array sorted according to their natural sort order.\n */\n * The sort is _stable_. It means that equal elements
preserve their order relative to each other after sorting.\n */\npublic fun <T : Comparable<T>>
Array<T>.sortedArray(): Array<T> {\n  if (isEmpty()) return this\n  return this.copyOf().apply { sort()
}\n}\n\n/**\n * Returns an array with all elements of this array sorted according to their natural sort order.\n
*/\npublic fun ByteArray.sortedArray(): ByteArray {\n  if (isEmpty()) return this\n  return this.copyOf().apply
{ sort() }\n}\n\n/**\n * Returns an array with all elements of this array sorted according to their natural sort order.\n
*/\npublic fun ShortArray.sortedArray(): ShortArray {\n  if (isEmpty()) return this\n  return this.copyOf().apply {
sort() }\n}\n\n/**\n * Returns an array with all elements of this array sorted according to their natural sort order.\n
*/\npublic fun IntArray.sortedArray(): IntArray {\n  if (isEmpty()) return this\n  return this.copyOf().apply { sort()
}\n}\n\n/**\n * Returns an array with all elements of this array sorted according to their natural sort order.\n
*/\npublic fun LongArray.sortedArray(): LongArray {\n  if (isEmpty()) return this\n  return this.copyOf().apply {
sort() }\n}\n\n/**\n * Returns an array with all elements of this array sorted according to their natural sort order.\n
*/\npublic fun FloatArray.sortedArray(): FloatArray {\n  if (isEmpty()) return this\n  return this.copyOf().apply {
sort() }\n}\n\n/**\n * Returns
an array with all elements of this array sorted according to their natural sort order.\n */\npublic fun
DoubleArray.sortedArray(): DoubleArray {\n  if (isEmpty()) return this\n  return this.copyOf().apply { sort()
}\n}\n\n/**\n * Returns an array with all elements of this array sorted according to their natural sort order.\n
*/\npublic fun CharArray.sortedArray(): CharArray {\n  if (isEmpty()) return this\n  return this.copyOf().apply {
sort() }\n}\n\n/**\n * Returns an array with all elements of this array sorted descending according to their natural
sort order.\n */\n * The sort is _stable_. It means that equal elements preserve their order relative to each other after
sorting.\n */\npublic fun <T : Comparable<T>> Array<T>.sortedArrayDescending(): Array<T> {\n  if (isEmpty())
return this\n  return this.copyOf().apply { sortWith(reverseOrder()) }\n}\n\n/**\n * Returns an array with all
elements of this array sorted descending according to their natural sort order.\n

```

```

*/\npublic fun ByteArray.sortedArrayDescending(): ByteArray {\n  if (isEmpty()) return this\n  return
this.copyOf().apply { sortDescending() }\n}\n\n/**\n * Returns an array with all elements of this array sorted
descending according to their natural sort order.\n */\npublic fun ShortArray.sortedArrayDescending(): ShortArray
{\n  if (isEmpty()) return this\n  return this.copyOf().apply { sortDescending() }\n}\n\n/**\n * Returns an array
with all elements of this array sorted descending according to their natural sort order.\n */\npublic fun
IntArray.sortedArrayDescending(): IntArray {\n  if (isEmpty()) return this\n  return this.copyOf().apply {
sortDescending() }\n}\n\n/**\n * Returns an array with all elements of this array sorted descending according to
their natural sort order.\n */\npublic fun LongArray.sortedArrayDescending(): LongArray {\n  if (isEmpty()) return
this\n  return this.copyOf().apply { sortDescending() }\n}\n\n/**\n * Returns an array with all elements
of this array sorted descending according to their natural sort order.\n */\npublic fun
FloatArray.sortedArrayDescending(): FloatArray {\n  if (isEmpty()) return this\n  return this.copyOf().apply {
sortDescending() }\n}\n\n/**\n * Returns an array with all elements of this array sorted descending according to
their natural sort order.\n */\npublic fun DoubleArray.sortedArrayDescending(): DoubleArray {\n  if (isEmpty())
return this\n  return this.copyOf().apply { sortDescending() }\n}\n\n/**\n * Returns an array with all elements of
this array sorted descending according to their natural sort order.\n */\npublic fun
CharArray.sortedArrayDescending(): CharArray {\n  if (isEmpty()) return this\n  return this.copyOf().apply {
sortDescending() }\n}\n\n/**\n * Returns an array with all elements of this array sorted according the specified
[comparator].\n * \n * The sort is _stable_. It means that equal elements preserve their order relative to each other
after sorting.\n */\npublic
fun <T> Array<out T>.sortedArrayWith(comparator: Comparator<in T>): Array<out T> {\n  if (isEmpty()) return
this\n  return this.copyOf().apply { sortWith(comparator) }\n}\n\n/**\n * Returns a list of all elements sorted
according to natural sort order of the value returned by specified [selector] function.\n * \n * The sort is _stable_. It
means that equal elements preserve their order relative to each other after sorting.\n * \n * @sample
samples.collections.Collections.Sorting.sortedBy\n */\npublic inline fun <T, R : Comparable<R>> Array<out
T>.sortedBy(crossinline selector: (T) -> R?): List<T> {\n  return sortedWith(compareBy(selector))\n}\n\n/**\n *
Returns a list of all elements sorted according to natural sort order of the value returned by specified [selector]
function.\n * \n * @sample samples.collections.Collections.Sorting.sortedBy\n */\npublic inline fun <R :
Comparable<R>> ByteArray.sortedBy(crossinline selector: (Byte) -> R?): List<Byte> {\n  return
sortedWith(compareBy(selector))\n}\n\n/**\n * Returns a list of all elements sorted according to natural sort order of
the value returned by specified [selector] function.\n * \n * @sample samples.collections.Collections.Sorting.sortedBy\n */\npublic inline fun <R :
Comparable<R>> ShortArray.sortedBy(crossinline selector: (Short) -> R?): List<Short> {\n  return
sortedWith(compareBy(selector))\n}\n\n/**\n * Returns a list of all elements sorted according to natural sort order
of the value returned by specified [selector] function.\n * \n * @sample
samples.collections.Collections.Sorting.sortedBy\n */\npublic inline fun <R : Comparable<R>>
IntArray.sortedBy(crossinline selector: (Int) -> R?): List<Int> {\n  return
sortedWith(compareBy(selector))\n}\n\n/**\n * Returns a list of all elements sorted according to natural sort order
of the value returned by specified [selector] function.\n * \n * @sample
samples.collections.Collections.Sorting.sortedBy\n */\npublic inline fun <R : Comparable<R>>
LongArray.sortedBy(crossinline selector: (Long) -> R?): List<Long> {\n  return
sortedWith(compareBy(selector))\n}\n\n/**\n * Returns a list of all elements sorted according to natural sort order
of the value returned by specified [selector] function.\n * \n * @sample
samples.collections.Collections.Sorting.sortedBy\n */\npublic inline fun <R : Comparable<R>>
FloatArray.sortedBy(crossinline selector: (Float) -> R?): List<Float> {\n  return
sortedWith(compareBy(selector))\n}\n\n/**\n * Returns a list of all elements sorted according to natural sort order
of the value returned by specified [selector] function.\n * \n * @sample
samples.collections.Collections.Sorting.sortedBy\n */\npublic inline fun <R : Comparable<R>>
DoubleArray.sortedBy(crossinline selector: (Double) -> R?): List<Double> {\n  return

```

sortedWith(compareBy(selector))\n}\n\n/\*\*\n \* Returns a list of all elements sorted according to natural sort order of the value returned by specified [selector] function.\n \* \n \* @sample samples.collections.Collections.Sorting.sortedBy\n \*/\npublic inline fun <R : Comparable<R>> BooleanArray.sortedBy(crossinline selector: (Boolean) -> R?): List<Boolean> {\n return sortedWith(compareBy(selector))\n}\n\n/\*\*\n \* Returns a list of all elements sorted according to natural sort order of the value returned by specified [selector] function.\n \* \n \* @sample samples.collections.Collections.Sorting.sortedBy\n \*/\npublic inline fun <R : Comparable<R>> CharArray.sortedBy(crossinline selector: (Char) -> R?): List<Char> {\n return sortedWith(compareBy(selector))\n}\n\n/\*\*\n \* Returns a list of all elements sorted descending according to natural sort order of the value returned by specified [selector] function.\n \* \n \* The sort is `_stable_`. It means that equal elements preserve their order relative to each other after sorting.\n \*/\npublic inline fun <T, R : Comparable<R>> Array<out T>.sortedByDescending(crossinline selector: (T) -> R?): List<T> {\n return sortedWith(compareByDescending(selector))\n}\n\n/\*\*\n \* Returns a list of all elements sorted descending according to natural sort order of the value returned by specified [selector] function.\n \*/\npublic inline fun <R : Comparable<R>> ByteArray.sortedByDescending(crossinline selector: (Byte) -> R?): List<Byte> {\n return sortedWith(compareByDescending(selector))\n}\n\n/\*\*\n \* Returns a list of all elements sorted descending according to natural sort order of the value returned by specified [selector] function.\n \*/\npublic inline fun <R : Comparable<R>> ShortArray.sortedByDescending(crossinline selector: (Short) -> R?): List<Short> {\n return sortedWith(compareByDescending(selector))\n}\n\n/\*\*\n \* Returns a list of all elements sorted descending according to natural sort order of the value returned by specified [selector] function.\n \*/\npublic inline fun <R : Comparable<R>> IntArray.sortedByDescending(crossinline selector: (Int) -> R?): List<Int> {\n return sortedWith(compareByDescending(selector))\n}\n\n/\*\*\n \* Returns a list of all elements sorted descending according to natural sort order of the value returned by specified [selector] function.\n \*/\npublic inline fun <R : Comparable<R>> LongArray.sortedByDescending(crossinline selector: (Long) -> R?): List<Long> {\n return sortedWith(compareByDescending(selector))\n}\n\n/\*\*\n \* Returns a list of all elements sorted descending according to natural sort order of the value returned by specified [selector] function.\n \*/\npublic inline fun <R : Comparable<R>> FloatArray.sortedByDescending(crossinline selector: (Float) -> R?): List<Float> {\n return sortedWith(compareByDescending(selector))\n}\n\n/\*\*\n \* Returns a list of all elements sorted descending according to natural sort order of the value returned by specified [selector] function.\n \*/\npublic inline fun <R : Comparable<R>> DoubleArray.sortedByDescending(crossinline selector: (Double) -> R?): List<Double> {\n return sortedWith(compareByDescending(selector))\n}\n\n/\*\*\n \* Returns a list of all elements sorted descending according to natural sort order of the value returned by specified [selector] function.\n \*/\npublic inline fun <R : Comparable<R>> BooleanArray.sortedByDescending(crossinline selector: (Boolean) -> R?): List<Boolean> {\n return sortedWith(compareByDescending(selector))\n}\n\n/\*\*\n \* Returns a list of all elements sorted descending according to natural sort order of the value returned by specified [selector] function.\n \*/\npublic inline fun <R : Comparable<R>> CharArray.sortedByDescending(crossinline selector: (Char) -> R?): List<Char> {\n return sortedWith(compareByDescending(selector))\n}\n\n/\*\*\n \* Returns a list of all elements sorted descending according to their natural sort order.\n \* \n \* The sort is `_stable_`. It means that equal elements preserve their order relative to each other after sorting.\n \*/\npublic fun <T : Comparable<T>> Array<out T>.sortedDescending(): List<T> {\n return sortedWith(reverseOrder())\n}\n\n/\*\*\n \* Returns a list of all elements sorted descending according to their natural sort order.\n \*/\npublic fun ByteArray.sortedDescending(): List<Byte> {\n return copyOf().apply { sort() }.reversed()\n}\n\n/\*\*\n \* Returns a list of all elements sorted descending according to their natural sort order.\n \*/\npublic fun ShortArray.sortedDescending(): List<Short> {\n return copyOf().apply { sort() }.reversed()\n}\n\n/\*\*\n \* Returns a list of all elements sorted descending according to their natural sort order.\n \*/\npublic fun IntArray.sortedDescending(): List<Int> {\n return copyOf().apply { sort() }.reversed()\n}\n\n/\*\*\n \* Returns a list of all elements sorted descending according to their natural sort order.\n \*/\npublic fun LongArray.sortedDescending(): List<Long> {\n return copyOf().apply { sort() }.reversed()\n}\n\n/\*\*\n \* Returns

a list of all elements sorted descending according to their natural sort order.

`FloatArray.sortedDescending()`:

`List<Float> { \n return copyOf().apply { sort() }.reversed() }`

`DoubleArray.sortedDescending(): List<Double> { \n return copyOf().apply { sort() }.reversed() }`

`CharArray.sortedDescending(): List<Char> { \n return copyOf().apply { sort() }.reversed() }`

`<T> Array<out T>.sortedWith(comparator: Comparator<in T>): List<T> { \n return sortedArrayWith(comparator).asList() }`

`ByteArray.sortedWith(comparator: Comparator<in Byte>):`

`List<Byte> { \n return toTypedArray().apply { sortWith(comparator) }.asList() }`

`ShortArray.sortedWith(comparator: Comparator<in Short>): List<Short> { \n return toTypedArray().apply { sortWith(comparator) }.asList() }`

`IntArray.sortedWith(comparator: Comparator<in Int>): List<Int> { \n return toTypedArray().apply { sortWith(comparator) }.asList() }`

`LongArray.sortedWith(comparator: Comparator<in Long>): List<Long> { \n return toTypedArray().apply { sortWith(comparator) }.asList() }`

`FloatArray.sortedWith(comparator: Comparator<in Float>): List<Float> { \n return toTypedArray().apply { sortWith(comparator) }.asList() }`

`DoubleArray.sortedWith(comparator: Comparator<in Double>): List<Double> { \n return toTypedArray().apply { sortWith(comparator) }.asList() }`

`BooleanArray.sortedWith(comparator: Comparator<in Boolean>): List<Boolean> { \n return toTypedArray().apply { sortWith(comparator) }.asList() }`

`CharArray.sortedWith(comparator: Comparator<in Char>): List<Char> { \n return toTypedArray().apply { sortWith(comparator) }.asList() }`

`<T> Array<out T>.asList(): List<T>`

`contentDeepEquals(other: Array<out T>): Boolean`

`contentDeepEquals(other: Array<out T>): Boolean`

`contentDeepEquals(other: Array<out T>): Boolean`

`contentDeepEquals(other: Array<out T>): Boolean`

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`contentDeepEquals(other: Array<out T>): Boolean`

`contentDeepEquals(other: Array<out T>): Boolean`

`contentDeepEquals(other: Array<out T>): Boolean`

are nested arrays, they are also compared deeply.\n \* If any of arrays contains itself on any nesting level the behavior is undefined.\n \* \n

\* The elements of other types are compared for equality with the [equals][Any.equals] function.\n \* For floating point numbers it means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`.\n

```
*\n@SinceKotlin("1.4")\npublic expect infix fun <T> Array<out T>?.contentDeepEquals(other: Array<out T>?):
```

```
Boolean\n\n/**\n * Returns a hash code based on the contents of this array as if it is [List].\n * Nested arrays are treated as lists too.\n * \n * If any of arrays contains itself on any nesting level the behavior is undefined.\n
```

```
*\n@SinceKotlin("1.1")\n@kotlin.internal.LowPriorityInOverloadResolution\npublic expect fun <T> Array<out T>.contentDeepHashCode(): Int\n\n/**\n * Returns a hash code based on the contents of this array as if it is [List].\n
```

```
* Nested arrays are treated as lists too.\n * \n * If any of arrays contains itself on any nesting level the behavior is undefined.\n *\n@SinceKotlin("1.4")\npublic expect fun <T> Array<out T>?.contentDeepHashCode():
```

```
Int\n\n/**\n
```

```
* Returns a string representation of the contents of this array as if it is a [List].\n * Nested arrays are treated as lists too.\n * \n * If any of arrays contains itself on any nesting level that reference\n * is rendered as `[...]` to prevent recursion.\n * \n * @sample samples.collections.Arrays.ContentOperations.contentDeepToString\n
```

```
*\n@SinceKotlin("1.1")\n@kotlin.internal.LowPriorityInOverloadResolution\npublic expect fun <T> Array<out T>.contentDeepToString(): String\n\n/**\n * Returns a string representation of the contents of this array as if it is a [List].\n
```

```
* Nested arrays are treated as lists too.\n * \n * If any of arrays contains itself on any nesting level that reference\n * is rendered as `[...]` to prevent recursion.\n * \n * @sample
```

```
samples.collections.Arrays.ContentOperations.contentDeepToString\n *\n@SinceKotlin("1.4")\npublic expect fun <T> Array<out T>?.contentDeepToString(): String\n\n/**\n * Returns `true` if the two specified arrays are *structurally*
```

```
equal to one another,\n * i.e. contain the same number of the same elements in the same order.\n * \n * The elements are compared for equality with the [equals][Any.equals] function.\n * For floating point numbers it means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`.\n *\n@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation warning.")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic expect infix fun <T> Array<out T>.contentEquals(other: Array<out T>): Boolean\n\n/**\n * Returns `true` if the two specified arrays are *structurally* equal to one another,\n * i.e. contain the same number of the same elements in the same order.\n * \n * The elements are compared for equality with the [equals][Any.equals] function.\n * For floating point numbers it means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`.\n
```

```
*\n@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation warning.")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic expect infix fun ByteArray.contentEquals(other: ByteArray): Boolean\n\n/**\n * Returns `true` if the two specified arrays are *structurally* equal to one another,\n * i.e. contain the same number of the same elements in the same order.\n * \n * The elements are compared for equality with the [equals][Any.equals] function.\n * For floating point numbers it means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`.\n
```

```
*\n@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation
```

```
warning.")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic expect infix fun
```

```
ShortArray.contentEquals(other: ShortArray): Boolean\n\n/**\n * Returns `true` if the two specified arrays are
```

```
*structurally* equal to one another,\n * i.e. contain the same number of the same elements in the same order.\n * \n
```

```
* The elements are compared for equality with the [equals][Any.equals] function.\n * For floating point numbers it means that
```

```
`NaN` is equal to itself and `-0.0` is not equal to `0.0`.\n *\n@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation warning.")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic expect
```

```
infix fun IntArray.contentEquals(other: IntArray): Boolean\n\n/**\n * Returns `true` if the two specified arrays are *structurally* equal to one another,\n * i.e. contain the same number of the same elements in the same order.\n * \n
```

```
* The elements are compared for equality with the [equals][Any.equals] function.\n * For floating point numbers it means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`.\n *\n@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation warning.")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic
```



expect infix fun LongArray.contentEquals(other: LongArray): Boolean\n\n\*\*\n \* Returns `true` if the two specified arrays are \*structurally\* equal to one another,\n \* i.e. contain the same number of the same elements in the same order.\n \* \n \* The elements are compared for equality with the [equals][Any.equals] function.\n \* For floating point numbers it means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`.\n \*\n @Deprecated("Use Kotlin compiler 1.4 to avoid deprecation warning.")\n @SinceKotlin("1.1")\n @DeprecatedSinceKotlin(hiddenSince = "1.4")\n public expect infix fun FloatArray.contentEquals(other: FloatArray): Boolean\n\n\*\*\n \* Returns `true` if the two specified arrays are \*structurally\* equal to one another,\n \* i.e. contain the same number of the same elements in the same order.\n \* \n \* The elements are compared for equality with the [equals][Any.equals] function.\n \* For floating point numbers it means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`.\n \*\n @Deprecated("Use Kotlin compiler 1.4 to avoid deprecation warning.")\n @SinceKotlin("1.1")\n @DeprecatedSinceKotlin(hiddenSince = "1.4")\n public expect infix fun DoubleArray.contentEquals(other: DoubleArray): Boolean\n\n\*\*\n \* Returns `true` if the two specified arrays are \*structurally\* equal to one another,\n \* i.e. contain the same number of the same elements in the same order.\n \* \n \* The elements are compared for equality with the [equals][Any.equals] function.\n \* For floating point numbers it means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`.\n \*\n @Deprecated("Use Kotlin compiler 1.4 to avoid deprecation warning.")\n @SinceKotlin("1.1")\n @DeprecatedSinceKotlin(hiddenSince = "1.4")\n public expect infix fun BooleanArray.contentEquals(other: BooleanArray): Boolean\n\n\*\*\n \* Returns `true` if the two specified arrays are \*structurally\* equal to one another,\n \* i.e. contain the same number of the same elements in the same order.\n \* \n \* The elements are compared for equality with the [equals][Any.equals] function.\n \* For floating point numbers it means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`.\n \*\n @Deprecated("Use Kotlin compiler 1.4 to avoid deprecation warning.")\n @SinceKotlin("1.1")\n @DeprecatedSinceKotlin(hiddenSince = "1.4")\n public expect infix fun CharArray.contentEquals(other: CharArray): Boolean\n\n\*\*\n \* Returns `true` if the two specified arrays are \*structurally\* equal to one another,\n \* i.e. contain the same number of the same elements in the same order.\n \* \n \* The elements are compared for equality with the [equals][Any.equals] function.\n \* For floating point numbers it means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`.\n \*\n @SinceKotlin("1.4")\n public expect infix fun <T> Array<out T>?.contentEquals(other: Array<out T>?): Boolean\n\n\*\*\n \* Returns `true` if the two specified arrays are \*structurally\* equal to one another,\n \* i.e. contain the same number of the same elements in the same order.\n \* \n \* The elements are compared for equality with the [equals][Any.equals] function.\n \* For floating point numbers it means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`.\n \*\n @SinceKotlin("1.4")\n public expect infix fun ByteArray?.contentEquals(other: ByteArray?): Boolean\n\n\*\*\n \* Returns `true` if the two specified arrays are \*structurally\* equal to one another,\n \* i.e. contain the same number of the same elements in the same order.\n \* \n \* The elements are compared for equality with the [equals][Any.equals] function.\n \* For floating point numbers it means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`.\n \*\n @SinceKotlin("1.4")\n public expect infix fun ShortArray?.contentEquals(other: ShortArray?): Boolean\n\n\*\*\n \* Returns `true` if the two specified arrays are \*structurally\* equal to one another,\n \* i.e. contain the same number of the same elements in the same order.\n \* \n \* The elements are compared for equality with the [equals][Any.equals] function.\n \* For floating point numbers it means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`.\n \*\n @SinceKotlin("1.4")\n public expect infix fun IntArray?.contentEquals(other: IntArray?): Boolean\n\n\*\*\n \* Returns `true` if the two specified arrays are \*structurally\* equal to one another,\n \* i.e. contain the same number of the same elements in the same order.\n \* \n \* The elements are compared for equality with the [equals][Any.equals] function.\n \* For floating point numbers it means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`.\n \*\n @SinceKotlin("1.4")\n public expect infix fun LongArray?.contentEquals(other: LongArray?): Boolean\n\n\*\*\n \* Returns `true` if the two specified arrays are \*structurally\* equal to one another,\n \* i.e. contain the same number of the same elements in the same order.\n \* \n \* The elements are compared for equality with the [equals][Any.equals] function.\n \* For floating point numbers it means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`.\n

```

*  

@SinceKotlin("1.4")\npublic expect infix fun FloatArray?.contentEquals(other: FloatArray?):  

Boolean\n\n/**\n * Returns `true` if the two specified arrays are *structurally* equal to one another,\n * i.e. contain  

the same number of the same elements in the same order.\n * \n * The elements are compared for equality with the  

[equals][Any.equals] function.\n * For floating point numbers it means that `NaN` is equal to itself and `-0.0` is not  

equal to `0.0`.\n *  

@SinceKotlin("1.4")\npublic expect infix fun DoubleArray?.contentEquals(other:  

DoubleArray?): Boolean\n\n/**\n * Returns `true` if the two specified arrays are *structurally* equal to one  

another,\n * i.e. contain the same number of the same elements in the same order.\n * \n * The elements are  

compared for equality with the [equals][Any.equals] function.\n * For floating point numbers it means that `NaN` is  

equal to itself and `-0.0` is not equal to `0.0`.\n *  

@SinceKotlin("1.4")\npublic expect infix fun  

BooleanArray?.contentEquals(other: BooleanArray?): Boolean\n\n/**\n * Returns `true` if the two specified  

arrays are *structurally* equal to one another,\n * i.e. contain the same number of the same elements in the same  

order.\n * \n * The elements are compared for equality with the [equals][Any.equals] function.\n * For floating point  

numbers it means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`.\n *  

@SinceKotlin("1.4")\npublic  

expect infix fun CharArray?.contentEquals(other: CharArray?): Boolean\n\n/**\n * Returns a hash code based on  

the contents of this array as if it is [List].\n *  

@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation  

warning.")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic expect fun <T>  

Array<out T>.contentHashCode(): Int\n\n/**\n * Returns a hash code based on the contents of this array as if it is  

[List].\n *  

@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation  

warning.")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic expect fun  

ByteArray.contentHashCode():  

Int\n\n/**\n * Returns a hash code based on the contents of this array as if it is [List].\n *  

@Deprecated("Use  

Kotlin compiler 1.4 to avoid deprecation  

warning.")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic expect fun  

ShortArray.contentHashCode(): Int\n\n/**\n * Returns a hash code based on the contents of this array as if it is  

[List].\n *  

@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation  

warning.")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic expect fun  

IntArray.contentHashCode(): Int\n\n/**\n * Returns a hash code based on the contents of this array as if it is  

[List].\n *  

@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation  

warning.")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic expect fun  

LongArray.contentHashCode(): Int\n\n/**\n * Returns a hash code based on the contents of this array as if it is  

[List].\n *  

@Deprecated("Use Kotlin compiler 1.4 to avoid  

deprecation warning.")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic expect  

fun FloatArray.contentHashCode(): Int\n\n/**\n * Returns a hash code based on the contents of this array as if it is  

[List].\n *  

@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation  

warning.")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic expect fun  

DoubleArray.contentHashCode(): Int\n\n/**\n * Returns a hash code based on the contents of this array as if it is  

[List].\n *  

@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation  

warning.")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic expect fun  

BooleanArray.contentHashCode(): Int\n\n/**\n * Returns a hash code based on the contents of this array as if it is  

[List].\n *  

@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation  

warning.")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic expect fun  

CharArray.contentHashCode():  

Int\n\n/**\n * Returns a hash code based on the contents of this array as if it is [List].\n *  

@SinceKotlin("1.4")\npublic expect fun <T> Array<out T>?.contentHashCode(): Int\n\n/**\n * Returns a hash  

code based on the contents of this array as if it is [List].\n *  

@SinceKotlin("1.4")\npublic expect fun  

ByteArray?.contentHashCode(): Int\n\n/**\n * Returns a hash code based on the contents of this array as if it is  

[List].\n *  

@SinceKotlin("1.4")\npublic expect fun ShortArray?.contentHashCode(): Int\n\n/**\n * Returns a  

hash code based on the contents of this array as if it is [List].\n *  

@SinceKotlin("1.4")\npublic expect fun

```

`IntArray?.contentHashCode(): Int`  
 Returns a hash code based on the contents of this array as if it is `[List]`.

`[List].\n * \n @SinceKotlin("1.4")\n public expect fun LongArray?.contentHashCode(): Int`  
 Returns a hash code based on the contents of this array as if it is `[List]`.

`[List].\n * \n @SinceKotlin("1.4")\n public expect fun FloatArray?.contentHashCode(): Int`  
 Returns a hash code based on the contents of this array as if it is `[List]`.

`[List].\n * \n @SinceKotlin("1.4")\n public expect fun DoubleArray?.contentHashCode(): Int`  
 Returns a hash code based on the contents of this array as if it is `[List]`.

`[List].\n * \n @SinceKotlin("1.4")\n public expect fun BooleanArray?.contentHashCode(): Int`  
 Returns a hash code based on the contents of this array as if it is `[List]`.

`[List].\n * \n @SinceKotlin("1.4")\n public expect fun CharArray?.contentHashCode(): Int`  
 Returns a string representation of the contents of the specified array as if it is `[List]`.

`[List].\n * \n * @sample samples.collections.Arrays.ContentOperations.contentToString`  
 Use Kotlin compiler 1.4 to avoid deprecation warning.

`[List].\n * \n @SinceKotlin("1.1")\n @DeprecatedSinceKotlin(hiddenSince = "1.4")\n public expect fun <T> Array<out T>.contentToString(): String`  
 Returns a string representation of the contents of the specified array as if it is `[List]`.

`[List].\n * \n * @sample samples.collections.Arrays.ContentOperations.contentToString`  
 Use Kotlin compiler 1.4 to avoid deprecation warning.

`[List].\n * \n @SinceKotlin("1.1")\n @DeprecatedSinceKotlin(hiddenSince = "1.4")\n public expect fun ByteArray.contentToString(): String`  
 Returns a string representation of the contents of the specified array as if it is `[List]`.

`[List].\n * \n * @sample samples.collections.Arrays.ContentOperations.contentToString`  
 Use Kotlin compiler 1.4 to avoid deprecation warning.

`[List].\n * \n @SinceKotlin("1.1")\n @DeprecatedSinceKotlin(hiddenSince = "1.4")\n public expect fun ShortArray.contentToString(): String`  
 Returns a string representation of the contents of the specified array as if it is `[List]`.

`[List].\n * \n * @sample samples.collections.Arrays.ContentOperations.contentToString`  
 Use Kotlin compiler 1.4 to avoid deprecation warning.

`[List].\n * \n @SinceKotlin("1.1")\n @DeprecatedSinceKotlin(hiddenSince = "1.4")\n public expect fun IntArray.contentToString(): String`  
 Returns a string representation of the contents of the specified array as if it is `[List]`.

`[List].\n * \n * @sample samples.collections.Arrays.ContentOperations.contentToString`  
 Use Kotlin compiler 1.4 to avoid deprecation warning.

`[List].\n * \n @SinceKotlin("1.1")\n @DeprecatedSinceKotlin(hiddenSince = "1.4")\n public expect fun LongArray.contentToString(): String`  
 Returns a string representation of the contents of the specified array as if it is `[List]`.

`[List].\n * \n * @sample samples.collections.Arrays.ContentOperations.contentToString`  
 Use Kotlin compiler 1.4 to avoid deprecation warning.

`[List].\n * \n @SinceKotlin("1.1")\n @DeprecatedSinceKotlin(hiddenSince = "1.4")\n public expect fun FloatArray.contentToString(): String`  
 Returns a string representation of the contents of the specified array as if it is `[List]`.

`[List].\n * \n * @sample samples.collections.Arrays.ContentOperations.contentToString`  
 Use Kotlin compiler 1.4 to avoid deprecation warning.

`[List].\n * \n @SinceKotlin("1.1")\n @DeprecatedSinceKotlin(hiddenSince = "1.4")\n public expect fun DoubleArray.contentToString(): String`  
 Returns a string representation of the contents of the specified array as if it is `[List]`.

`[List].\n * \n * @sample samples.collections.Arrays.ContentOperations.contentToString`  
 Use Kotlin compiler 1.4 to avoid deprecation warning.

`[List].\n * \n @SinceKotlin("1.1")\n @DeprecatedSinceKotlin(hiddenSince = "1.4")\n public expect fun BooleanArray.contentToString(): String`  
 Returns a string representation of the contents of the specified array as if it is `[List]`.

`[List].\n * \n * @sample samples.collections.Arrays.ContentOperations.contentToString`  
 Use Kotlin compiler 1.4 to avoid deprecation warning.

`[List].\n * \n @SinceKotlin("1.1")\n @DeprecatedSinceKotlin(hiddenSince = "1.4")\n public expect fun CharArray.contentToString(): String`  
 Returns a string representation of the contents of the specified array as if it is `[List]`.

`[List].\n * \n * @sample samples.collections.Arrays.ContentOperations.contentToString`  
 Use Kotlin compiler 1.4 to avoid deprecation warning.

`[List].\n * \n @SinceKotlin("1.4")\n public expect fun <T>`

`Array<out T>?.contentToString(): String`\n\n\*\*\n \* Returns a string representation of the contents of the specified array as if it is [List].\n \* \n \* @sample samples.collections.Arrays.ContentOperations.contentToString\n

`*\n@SinceKotlin("1.4")\npublic expect fun ByteArray?.contentToString(): String`\n\n\*\*\n \* Returns a string representation of the contents of the specified array as if it is [List].\n \* \n \* @sample samples.collections.Arrays.ContentOperations.contentToString\n

`*\n@SinceKotlin("1.4")\npublic expect fun ShortArray?.contentToString(): String`\n\n\*\*\n \* Returns a string representation of the contents of the specified array as if it is [List].\n \* \n \* @sample samples.collections.Arrays.ContentOperations.contentToString\n

`*\n@SinceKotlin("1.4")\npublic expect fun IntArray?.contentToString(): String`\n\n\*\*\n \* Returns a string representation of the contents of the specified array as if it is [List].\n \* \n \* @sample samples.collections.Arrays.ContentOperations.contentToString\n

`*\n@SinceKotlin("1.4")\npublic expect fun LongArray?.contentToString(): String`\n\n\*\*\n \* Returns a string representation of the contents of the specified array as if it is [List].\n \* \n \* @sample samples.collections.Arrays.ContentOperations.contentToString\n

`*\n@SinceKotlin("1.4")\npublic expect fun FloatArray?.contentToString(): String`\n\n\*\*\n \* Returns a string representation of the contents of the specified array as if it is [List].\n \* \n \* @sample samples.collections.Arrays.ContentOperations.contentToString\n

`*\n@SinceKotlin("1.4")\npublic expect fun DoubleArray?.contentToString(): String`\n\n\*\*\n \* Returns a string representation of the contents of the specified array as if it is [List].\n \* \n \* @sample samples.collections.Arrays.ContentOperations.contentToString\n

`*\n@SinceKotlin("1.4")\npublic expect fun BooleanArray?.contentToString(): String`\n\n\*\*\n \* Returns a string representation of the contents of the specified array as if it is [List].\n \* \n \* @sample samples.collections.Arrays.ContentOperations.contentToString\n

`*\n@SinceKotlin("1.4")\npublic expect fun CharArray?.contentToString(): String`\n\n\*\*\n \* Copies this array or its subrange into the [destination] array and returns that array.\n \* \n \* It's allowed to pass the same array in the [destination] and even specify the subrange so that it overlaps with the destination range.\n \* \n \* @param destination the array to copy to.\n \* @param destinationOffset the position in the [destination] array to copy to, 0 by default.\n \* @param startIndex the beginning (inclusive) of the subrange to copy, 0 by default.\n \* @param endIndex the end (exclusive) of the subrange to copy, size of this array by default.\n \* \n \* @throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of range of this array indices or when `startIndex > endIndex`.\n \* @throws IndexOutOfBoundsException when the subrange doesn't fit into the [destination] array starting at the specified [destinationOffset],\n \* or when that index is out of the [destination] array indices range.\n \* \n \* @return the [destination] array.\n

`*\n@SinceKotlin("1.3")\npublic expect fun <T> Array<out T>.copyInto(destination: Array<T>, destinationOffset: Int = 0, startIndex: Int = 0, endIndex: Int = size): Array<T>`\n\n\*\*\n \* Copies this array or its subrange into the [destination] array and returns that array.\n \* \n \* It's allowed to pass the same array in the [destination] and even specify the subrange so that it overlaps with the destination range.\n \* \n \* @param destination the array to copy to.\n \* @param destinationOffset the position in the [destination] array to copy to, 0 by default.\n \* @param startIndex the beginning (inclusive) of the subrange to copy, 0 by default.\n \* @param endIndex the end (exclusive) of the subrange to copy, size of this array by default.\n \* \n \* @throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of range of this array indices or when `startIndex > endIndex`.\n \* @throws IndexOutOfBoundsException when the subrange doesn't fit into the [destination] array starting at the specified [destinationOffset],\n \* or when that index is out of the [destination] array indices range.\n \* \n \* @return the [destination] array.\n

`*\n@SinceKotlin("1.3")\npublic expect fun ByteArray.copyInto(destination: ByteArray, destinationOffset: Int = 0, startIndex: Int = 0, endIndex: Int = size): ByteArray`\n\n\*\*\n \* Copies this array or its subrange into the [destination] array and returns that array.\n \* \n \* It's allowed to pass the same array in the [destination] and even specify the subrange so that it overlaps with the destination range.\n \* \n \* @param destination

the array to copy to.  
\* @param destinationOffset the position in the [destination] array to copy to, 0 by default.  
\* @param startIndex the beginning (inclusive) of the subrange to copy, 0 by default.  
\* @param endIndex the end (exclusive) of the subrange to copy, size of this array by default.  
\* @throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of range of this array indices or when `startIndex > endIndex`.  
\* @throws IndexOutOfBoundsException when the subrange doesn't fit into the [destination] array starting at the specified [destinationOffset], or when that index is out of the [destination] array indices range.  
\* @return the [destination] array.  
`@SinceKotlin("1.3")\npublic expect fun ShortArray.copyInto(destination: ShortArray, destinationOffset: Int = 0, startIndex: Int = 0, endIndex: Int = size): ShortArray`  
Copies this array or its subrange into the [destination] array and returns that array.  
It's allowed to pass the same array in the [destination] and even specify the subrange so that it overlaps with the destination range.  
\* @param destination the array to copy to.  
\* @param destinationOffset the position in the [destination] array to copy to, 0 by default.  
\* @param startIndex the beginning (inclusive) of the subrange to copy, 0 by default.  
\* @param endIndex the end (exclusive) of the subrange to copy, size of this array by default.  
\* @throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of range of this array indices or when `startIndex > endIndex`.  
\* @throws IndexOutOfBoundsException when the subrange doesn't fit into the [destination] array starting at the specified [destinationOffset], or when that index is out of the [destination] array indices range.  
\* @return the [destination] array.  
`@SinceKotlin("1.3")\npublic expect fun IntArray.copyInto(destination: IntArray, destinationOffset: Int = 0, startIndex: Int = 0, endIndex: Int = size): IntArray`  
Copies this array or its subrange into the [destination] array and returns that array.  
It's allowed to pass the same array in the [destination] and even specify the subrange so that it overlaps with the destination range.  
\* @param destination the array to copy to.  
\* @param destinationOffset the position in the [destination] array to copy to, 0 by default.  
\* @param startIndex the beginning (inclusive) of the subrange to copy, 0 by default.  
\* @param endIndex the end (exclusive) of the subrange to copy, size of this array by default.  
\* @throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of range of this array indices or when `startIndex > endIndex`.  
\* @throws IndexOutOfBoundsException when the subrange doesn't fit into the [destination] array starting at the specified [destinationOffset], or when that index is out of the [destination] array indices range.  
\* @return the [destination] array.  
`@SinceKotlin("1.3")\npublic expect fun LongArray.copyInto(destination: LongArray, destinationOffset: Int = 0, startIndex: Int = 0, endIndex: Int = size): LongArray`  
Copies this array or its subrange into the [destination] array and returns that array.  
It's allowed to pass the same array in the [destination] and even specify the subrange so that it overlaps with the destination range.  
\* @param destination the array to copy to.  
\* @param destinationOffset the position in the [destination] array to copy to, 0 by default.  
\* @param startIndex the beginning (inclusive) of the subrange to copy, 0 by default.  
\* @param endIndex the end (exclusive) of the subrange to copy, size of this array by default.  
\* @throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of range of this array indices or when `startIndex > endIndex`.  
\* @throws IndexOutOfBoundsException when the subrange doesn't fit into the [destination] array starting at the specified [destinationOffset], or when that index is out of the [destination] array indices range.  
\* @return the [destination] array.  
`@SinceKotlin("1.3")\npublic expect fun FloatArray.copyInto(destination: FloatArray, destinationOffset: Int = 0, startIndex: Int = 0, endIndex: Int = size): FloatArray`  
Copies this array or its subrange into the [destination] array and returns that array.  
It's allowed to pass the same array in the [destination] and even specify the subrange so that it overlaps with the destination range.  
\* @param destination the array to copy to.  
\* @param destinationOffset the position in the [destination] array to copy to, 0 by default.  
\* @param startIndex the beginning (inclusive) of the subrange to copy, 0 by default.  
\* @param endIndex the end (exclusive) of the subrange to copy, size of this array by default.  
\* @throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of range of this array indices or when `startIndex > endIndex`.  
\* @throws

IndexOutOfBoundsException when the subrange doesn't fit into the [destination] array starting at the specified [destinationOffset],\n \* or when that index is out of the [destination] array indices range.\n \* \n \* @return the [destination] array.\n \* ^\n @SinceKotlin("1.3")\n public expect fun DoubleArray.copyInto(destination: DoubleArray, destinationOffset: Int = 0, startIndex: Int = 0, endIndex: Int = size): DoubleArray\n \*\n \*\*\n \* Copies this array or its subrange into the [destination] array and returns that array.\n \* \n \* It's allowed to pass the same array in the [destination] and even specify the subrange so that it overlaps with the destination range.\n \* \n \* @param destination the array to copy to.\n \* @param destinationOffset the position in the [destination] array to copy to, 0 by default.\n \* @param startIndex the beginning (inclusive) of the subrange to copy, 0 by default.\n \* @param endIndex the end (exclusive) of the subrange to copy, size of this array by default.\n \* \n \* @throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of range of this array indices or when `startIndex > endIndex`.\n \* @throws IndexOutOfBoundsException when the subrange doesn't fit into the [destination] array starting at the specified [destinationOffset],\n \* or when that index is out of the [destination] array indices range.\n \* \n \* @return the [destination] array.\n \* ^\n @SinceKotlin("1.3")\n public expect fun BooleanArray.copyInto(destination: BooleanArray, destinationOffset: Int = 0, startIndex: Int = 0, endIndex: Int = size): BooleanArray\n \*\n \*\*\n \* Copies this array or its subrange into the [destination] array and returns that array.\n \* \n \* It's allowed to pass the same array in the [destination] and even specify the subrange so that it overlaps with the destination range.\n \* \n \* @param destination the array to copy to.\n \* @param destinationOffset the position in the [destination] array to copy to, 0 by default.\n \* @param startIndex the beginning (inclusive) of the subrange to copy, 0 by default.\n \* @param endIndex the end (exclusive) of the subrange to copy, size of this array by default.\n \* \n \* @throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of range of this array indices or when `startIndex > endIndex`.\n \* @throws IndexOutOfBoundsException when the subrange doesn't fit into the [destination] array starting at the specified [destinationOffset],\n \* or when that index is out of the [destination] array indices range.\n \* \n \* @return the [destination] array.\n \* ^\n @SinceKotlin("1.3")\n public expect fun CharArray.copyInto(destination: CharArray, destinationOffset: Int = 0, startIndex: Int = 0, endIndex: Int = size): CharArray\n \*\n \*\*\n \* Returns new array which is a copy of the original array.\n \* \n \* @sample samples.collections.Arrays.CopyOfOperations.copyOf\n \* ^\n @Suppress("NO\_ACTUAL\_FOR\_EXPECT")\n public expect fun <T> Array<T>.copyOf(): Array<T>\n \*\n \*\*\n \* Returns new array which is a copy of the original array.\n \* \n \* @sample samples.collections.Arrays.CopyOfOperations.copyOf\n \* ^\n public expect fun ByteArray.copyOf(): ByteArray\n \*\n \*\*\n \* Returns new array which is a copy of the original array.\n \* \n \* @sample samples.collections.Arrays.CopyOfOperations.copyOf\n \* ^\n public expect fun ShortArray.copyOf(): ShortArray\n \*\n \*\*\n \* Returns new array which is a copy of the original array.\n \* \n \* @sample samples.collections.Arrays.CopyOfOperations.copyOf\n \* ^\n public expect fun IntArray.copyOf(): IntArray\n \*\n \*\*\n \* Returns new array which is a copy of the original array.\n \* \n \* @sample samples.collections.Arrays.CopyOfOperations.copyOf\n \* ^\n public expect fun LongArray.copyOf(): LongArray\n \*\n \*\*\n \* Returns new array which is a copy of the original array.\n \* \n \* @sample samples.collections.Arrays.CopyOfOperations.copyOf\n \* ^\n public expect fun FloatArray.copyOf(): FloatArray\n \*\n \*\*\n \* Returns new array which is a copy of the original array.\n \* \n \* @sample samples.collections.Arrays.CopyOfOperations.copyOf\n \* ^\n public expect fun DoubleArray.copyOf(): DoubleArray\n \*\n \*\*\n \* Returns new array which is a copy of the original array.\n \* \n \* @sample samples.collections.Arrays.CopyOfOperations.copyOf\n \* ^\n public expect fun BooleanArray.copyOf(): BooleanArray\n \*\n \*\*\n \* Returns new array which is a copy of the original array.\n \* \n \* @sample samples.collections.Arrays.CopyOfOperations.copyOf\n \* ^\n public expect fun CharArray.copyOf(): CharArray\n \*\n \*\*\n \* Returns new array which is a copy of the original array, resized to the given [newSize].\n \* \n \* The copy is either truncated or padded at the end with zero values if necessary.\n \* \n \* - If [newSize] is less than the

size of the original array, the

copy array is truncated to the [newSize].\n \* - If [newSize] is greater than the size of the original array, the extra elements in the copy array are filled with zero values.\n \* \n \* @sample

samples.collections.Arrays.CopyOfOperations.resizedPrimitiveCopyOf\n \*\npublic expect fun

ByteArray.copyOf(newSize: Int): ByteArray\n\n/\*\*\n \* Returns new array which is a copy of the original array, resized to the given [newSize].\n \* The copy is either truncated or padded at the end with zero values if necessary.\n

\* \n \* - If [newSize] is less than the size of the original array, the copy array is truncated to the [newSize].\n \* - If [newSize] is greater than the size of the original array, the extra elements in the copy array are filled with zero values.\n \* \n \* @sample samples.collections.Arrays.CopyOfOperations.resizedPrimitiveCopyOf\n \*\npublic

expect fun ShortArray.copyOf(newSize: Int): ShortArray\n\n/\*\*\n \* Returns new array which is a copy of the original array, resized to the given

[newSize].\n \* The copy is either truncated or padded at the end with zero values if necessary.\n \* \n \* - If

[newSize] is less than the size of the original array, the copy array is truncated to the [newSize].\n \* - If [newSize] is greater than the size of the original array, the extra elements in the copy array are filled with zero values.\n \* \n \*

@sample samples.collections.Arrays.CopyOfOperations.resizedPrimitiveCopyOf\n \*\npublic expect fun

IntArray.copyOf(newSize: Int): IntArray\n\n/\*\*\n \* Returns new array which is a copy of the original array, resized to the given [newSize].\n \* The copy is either truncated or padded at the end with zero values if necessary.\n \* \n \* -

If [newSize] is less than the size of the original array, the copy array is truncated to the [newSize].\n \* - If [newSize] is greater than the size of the original array, the extra elements in the copy array are filled with zero values.\n \* \n \*

@sample samples.collections.Arrays.CopyOfOperations.resizedPrimitiveCopyOf\n

\*\npublic expect fun LongArray.copyOf(newSize: Int): LongArray\n\n/\*\*\n \* Returns new array which is a copy of the original array, resized to the given [newSize].\n \* The copy is either truncated or padded at the end with zero values if necessary.\n \* \n \* - If [newSize] is less than the size of the original array, the copy array is truncated to the

[newSize].\n \* - If [newSize] is greater than the size of the original array, the extra elements in the copy array are filled with zero values.\n \* \n \* @sample samples.collections.Arrays.CopyOfOperations.resizedPrimitiveCopyOf\n

\*\npublic expect fun FloatArray.copyOf(newSize: Int): FloatArray\n\n/\*\*\n \* Returns new array which is a copy of the original array, resized to the given [newSize].\n \* The copy is either truncated or padded at the end with zero values if necessary.\n \* \n \* - If [newSize] is less than the size of the original array, the copy array is truncated to the

[newSize].\n \* - If [newSize] is greater than the

size of the original array, the extra elements in the copy array are filled with zero values.\n \* \n \* @sample

samples.collections.Arrays.CopyOfOperations.resizedPrimitiveCopyOf\n \*\npublic expect fun

DoubleArray.copyOf(newSize: Int): DoubleArray\n\n/\*\*\n \* Returns new array which is a copy of the original array, resized to the given [newSize].\n \* The copy is either truncated or padded at the end with `false` values if necessary.\n \* \n \* - If [newSize] is less than the size of the original array, the copy array is truncated to the

[newSize].\n \* - If [newSize] is greater than the size of the original array, the extra elements in the copy array are filled with `false` values.\n \* \n \* @sample

samples.collections.Arrays.CopyOfOperations.resizedPrimitiveCopyOf\n

\*\npublic expect fun

BooleanArray.copyOf(newSize: Int): BooleanArray\n\n/\*\*\n \* Returns new array which is a copy of the original array, resized to the given [newSize].\n \* The copy is either truncated or padded at the end with

null char (`\u0000`) values if necessary.\n \* \n \* - If [newSize] is less than the size of the original array, the copy array is truncated to the [newSize].\n \* - If [newSize] is greater than the size of the original array, the extra elements

in the copy array are filled with null char (`\u0000`) values.\n \* \n \* @sample

samples.collections.Arrays.CopyOfOperations.resizedPrimitiveCopyOf\n \*\npublic expect fun

CharArray.copyOf(newSize: Int): CharArray\n\n/\*\*\n \* Returns new array which is a copy of the original array, resized to the given [newSize].\n \* The copy is either truncated or padded at the end with `null` values if necessary.\n \* \n \* - If [newSize] is less than the size of the original array, the copy array is truncated to the

[newSize].\n \* - If [newSize] is greater than the size of the original array, the extra elements in the copy array are filled with `null` values.\n \* \n \* @sample samples.collections.Arrays.CopyOfOperations.resizingCopyOf\n

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*\n@Suppress("NO_ACTUAL_FOR_EXPECT")\npublic
    expect fun <T> Array<T>.copyOf(newSize: Int): Array<T?>\n\n/**\n * Returns a new array which is a copy of the
    specified range of the original array.\n * \n * @param fromIndex the start of the range (inclusive) to copy.\n *
    @param toIndex the end of the range (exclusive) to copy.\n * \n * @throws IndexOutOfBoundsException if
    [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n * @throws
    IllegalArgumentException if [fromIndex] is greater than [toIndex].\n
*\n@Suppress("NO_ACTUAL_FOR_EXPECT")\npublic expect fun <T> Array<T>.copyOfRange(fromIndex:
    Int, toIndex: Int): Array<T>\n\n/**\n * Returns a new array which is a copy of the specified range of the original
    array.\n * \n * @param fromIndex the start of the range (inclusive) to copy.\n * @param toIndex the end of the
    range (exclusive) to copy.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or
    [toIndex] is greater than the size of this array.\n * @throws
    IllegalArgumentException if [fromIndex] is greater than [toIndex].\n */\npublic expect fun
    ByteArray.copyOfRange(fromIndex: Int, toIndex: Int): ByteArray\n\n/**\n * Returns a new array which is a copy of
    the specified range of the original array.\n * \n * @param fromIndex the start of the range (inclusive) to copy.\n *
    @param toIndex the end of the range (exclusive) to copy.\n * \n * @throws IndexOutOfBoundsException if
    [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n * @throws
    IllegalArgumentException if [fromIndex] is greater than [toIndex].\n */\npublic expect fun
    ShortArray.copyOfRange(fromIndex: Int, toIndex: Int): ShortArray\n\n/**\n * Returns a new array which is a copy
    of the specified range of the original array.\n * \n * @param fromIndex the start of the range (inclusive) to copy.\n *
    @param toIndex the end of the range (exclusive) to copy.\n * \n * @throws IndexOutOfBoundsException if
    [fromIndex] is less than zero or [toIndex] is greater
    than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n
*/\npublic expect fun IntArray.copyOfRange(fromIndex: Int, toIndex: Int): IntArray\n\n/**\n * Returns a new array
    which is a copy of the specified range of the original array.\n * \n * @param fromIndex the start of the range
    (inclusive) to copy.\n * @param toIndex the end of the range (exclusive) to copy.\n * \n * @throws
    IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n *
    @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n */\npublic expect fun
    LongArray.copyOfRange(fromIndex: Int, toIndex: Int): LongArray\n\n/**\n * Returns a new array which is a copy
    of the specified range of the original array.\n * \n * @param fromIndex the start of the range (inclusive) to copy.\n *
    @param toIndex the end of the range (exclusive) to copy.\n * \n * @throws IndexOutOfBoundsException if
    [fromIndex] is less
    than zero or [toIndex] is greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is
    greater than [toIndex].\n */\npublic expect fun FloatArray.copyOfRange(fromIndex: Int, toIndex: Int):
    FloatArray\n\n/**\n * Returns a new array which is a copy of the specified range of the original array.\n * \n *
    @param fromIndex the start of the range (inclusive) to copy.\n * @param toIndex the end of the range (exclusive) to
    copy.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the
    size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n */\npublic
    expect fun DoubleArray.copyOfRange(fromIndex: Int, toIndex: Int): DoubleArray\n\n/**\n * Returns a new array
    which is a copy of the specified range of the original array.\n * \n * @param fromIndex the start of the range
    (inclusive) to copy.\n * @param toIndex the end of the range (exclusive) to copy.\n * \n * @throws
    IndexOutOfBoundsException
    if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n * @throws
    IllegalArgumentException if [fromIndex] is greater than [toIndex].\n */\npublic expect fun
    BooleanArray.copyOfRange(fromIndex: Int, toIndex: Int): BooleanArray\n\n/**\n * Returns a new array which is a
    copy of the specified range of the original array.\n * \n * @param fromIndex the start of the range (inclusive) to
    copy.\n * @param toIndex the end of the range (exclusive) to copy.\n * \n * @throws IndexOutOfBoundsException
    if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n * @throws
    IllegalArgumentException if [fromIndex] is greater than [toIndex].\n */\npublic expect fun

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CharArray.copyOfRange(fromIndex: Int, toIndex: Int): CharArray\n\n\*\*\n \* Fills this array or its subrange with the specified [element] value.\n \* \n \* @param fromIndex the start of the range (inclusive) to fill, 0 by default.\n \* @param toIndex the end of the range (exclusive) to fill, size of this array by default.\n \* \n \* @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n \* @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n \*\n@SinceKotlin("1.3")\npublic expect fun <T> Array<T>.fill(element: T, fromIndex: Int = 0, toIndex: Int = size): Unit\n\n\*\*\n \* Fills this array or its subrange with the specified [element] value.\n \* \n \* @param fromIndex the start of the range (inclusive) to fill, 0 by default.\n \* @param toIndex the end of the range (exclusive) to fill, size of this array by default.\n \* \n \* @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n \* @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n \*\n@SinceKotlin("1.3")\npublic expect fun ByteArray.fill(element: Byte, fromIndex: Int = 0, toIndex: Int = size): Unit\n\n\*\*\n \* Fills this array or its subrange with the specified [element] value.\n \* \n \* @param fromIndex the start of the range (inclusive) to fill, 0 by default.\n \* @param toIndex the end of the range (exclusive) to fill, size of this array by default.\n \* \n \* @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n \* @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n \*\n@SinceKotlin("1.3")\npublic expect fun ShortArray.fill(element: Short, fromIndex: Int = 0, toIndex: Int = size): Unit\n\n\*\*\n \* Fills this array or its subrange with the specified [element] value.\n \* \n \* @param fromIndex the start of the range (inclusive) to fill, 0 by default.\n \* @param toIndex the end of the range (exclusive) to fill, size of this array by default.\n \* \n \* @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n \* @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n \*\n@SinceKotlin("1.3")\npublic expect fun IntArray.fill(element: Int, fromIndex: Int = 0, toIndex: Int = size): Unit\n\n\*\*\n \* Fills this array or its subrange with the specified [element] value.\n \* \n \* @param fromIndex the start of the range (inclusive) to fill, 0 by default.\n \* @param toIndex the end of the range (exclusive) to fill, size of this array by default.\n \* \n \* @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n \* @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n \*\n@SinceKotlin("1.3")\npublic expect fun LongArray.fill(element: Long, fromIndex: Int = 0, toIndex: Int = size): Unit\n\n\*\*\n \* Fills this array or its subrange with the specified [element] value.\n \* \n \* @param fromIndex the start of the range (inclusive) to fill, 0 by default.\n \* @param toIndex the end of the range (exclusive) to fill, size of this array by default.\n \* \n \* @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n \* @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n \*\n@SinceKotlin("1.3")\npublic expect fun FloatArray.fill(element: Float, fromIndex: Int = 0, toIndex: Int = size): Unit\n\n\*\*\n \* Fills this array or its subrange with the specified [element] value.\n \* \n \* @param fromIndex the start of the range (inclusive) to fill, 0 by default.\n \* @param toIndex the end of the range (exclusive) to fill, size of this array by default.\n \* \n \* @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n \* @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n \*\n@SinceKotlin("1.3")\npublic expect fun DoubleArray.fill(element: Double, fromIndex: Int = 0, toIndex: Int = size): Unit\n\n\*\*\n \* Fills this array or its subrange with the specified [element] value.\n \* \n \* @param fromIndex the start of the range (inclusive) to fill, 0 by default.\n \* @param toIndex the end of the range (exclusive) to fill, size of this array by default.\n \* \n \* @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n \* @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n \*\n@SinceKotlin("1.3")\npublic expect fun BooleanArray.fill(element: Boolean, fromIndex: Int = 0, toIndex: Int = size): Unit\n\n\*\*\n \* Fills this array or its subrange with the specified [element] value.\n \* \n \* @param fromIndex the start of the range (inclusive) to fill, 0 by default.\n \* @param toIndex the end of the range (exclusive) to fill, size of this array by default.\n \* \n \* @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n \* @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n \*\n@SinceKotlin("1.3")\npublic

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expect fun CharArray.fill(element: Char, fromIndex: Int = 0, toIndex: Int = size): Unit\n\n/**\n * Returns the range
of valid indices for the array.\n */\npublic val <T> Array<out T>.indices: IntRange\n    get() = IntRange(0,
lastIndex)\n\n/**\n * Returns the range of valid indices for the array.\n */\npublic val ByteArray.indices: IntRange\n
    get() = IntRange(0, lastIndex)\n\n/**\n * Returns the range of valid indices for the array.\n */\npublic val
ShortArray.indices: IntRange\n    get() = IntRange(0, lastIndex)\n\n/**\n * Returns the range of valid indices for the
array.\n */\npublic val IntArray.indices: IntRange\n    get() = IntRange(0, lastIndex)\n\n/**\n * Returns the range of
valid indices for the array.\n */\npublic val LongArray.indices: IntRange\n    get() = IntRange(0, lastIndex)\n\n/**\n
* Returns the range of valid indices for the array.\n */\npublic val FloatArray.indices: IntRange\n    get() =
IntRange(0, lastIndex)\n\n/**\n * Returns the range of valid
indices for the array.\n */\npublic val DoubleArray.indices: IntRange\n    get() = IntRange(0, lastIndex)\n\n/**\n
* Returns the range of valid indices for the array.\n */\npublic val BooleanArray.indices: IntRange\n    get() =
IntRange(0, lastIndex)\n\n/**\n * Returns the range of valid indices for the array.\n */\npublic val
CharArray.indices: IntRange\n    get() = IntRange(0, lastIndex)\n\n/**\n * Returns `true` if the array is empty.\n
*/\n@kotlin.internal.InlineOnly\npublic inline fun <T> Array<out T>.isEmpty(): Boolean {\n    return size ==
0\n}\n\n/**\n * Returns `true` if the array is empty.\n */\n@kotlin.internal.InlineOnly\npublic inline fun
ByteArray.isEmpty(): Boolean {\n    return size == 0\n}\n\n/**\n * Returns `true` if the array is empty.\n
*/\n@kotlin.internal.InlineOnly\npublic inline fun ShortArray.isEmpty(): Boolean {\n    return size == 0\n}\n\n/**\n
* Returns `true` if the array is empty.\n */\n@kotlin.internal.InlineOnly\npublic inline fun IntArray.isEmpty():
Boolean {\n    return size == 0\n}\n\n/**\n * Returns `true` if the array is empty.\n
*/\n@kotlin.internal.InlineOnly\npublic inline fun LongArray.isEmpty(): Boolean {\n    return size == 0\n}\n\n/**\n
* Returns `true` if the array is empty.\n */\n@kotlin.internal.InlineOnly\npublic inline fun FloatArray.isEmpty():
Boolean {\n    return size == 0\n}\n\n/**\n * Returns `true` if the array is empty.\n
*/\n@kotlin.internal.InlineOnly\npublic inline fun DoubleArray.isEmpty(): Boolean {\n    return size ==
0\n}\n\n/**\n * Returns `true` if the array is empty.\n
*/\n@kotlin.internal.InlineOnly\npublic inline fun BooleanArray.isEmpty(): Boolean {\n    return size == 0\n}\n\n/**\n
* Returns `true` if the array is empty.\n */\n@kotlin.internal.InlineOnly\npublic inline fun CharArray.isEmpty(): Boolean {\n    return size == 0\n}\n\n/**\n
* Returns `true` if the array is not empty.\n */\n@kotlin.internal.InlineOnly\npublic inline fun <T> Array<out
T>.isNotEmpty(): Boolean {\n    return !isEmpty()\n}\n\n/**\n * Returns `true` if the array is not empty.\n
*/\n@kotlin.internal.InlineOnly\npublic inline fun ByteArray.isNotEmpty(): Boolean {\n    return !isEmpty()\n}\n\n/**\n
* Returns `true` if the array is not empty.\n */\n@kotlin.internal.InlineOnly\npublic inline fun ShortArray.isNotEmpty(): Boolean {\n    return
!isEmpty()\n}\n\n/**\n * Returns `true` if the array is not empty.\n */\n@kotlin.internal.InlineOnly\npublic inline
fun IntArray.isNotEmpty(): Boolean {\n    return !isEmpty()\n}\n\n/**\n * Returns `true` if the array is not empty.\n
*/\n@kotlin.internal.InlineOnly\npublic inline fun LongArray.isNotEmpty(): Boolean {\n    return !isEmpty()\n}\n\n/**\n
* Returns `true` if the array is not empty.\n */\n@kotlin.internal.InlineOnly\npublic inline fun FloatArray.isNotEmpty(): Boolean {\n    return !isEmpty()\n}\n\n/**\n
* Returns `true` if the array is not empty.\n */\n@kotlin.internal.InlineOnly\npublic inline fun DoubleArray.isNotEmpty(): Boolean {\n    return !isEmpty()\n}\n\n/**\n
* Returns `true` if the array is not empty.\n */\n@kotlin.internal.InlineOnly\npublic inline fun BooleanArray.isNotEmpty(): Boolean {\n    return !isEmpty()\n}\n\n/**\n
* Returns the last valid index for the array.\n */\npublic val <T> Array<out T>.lastIndex:
Int\n    get() = size - 1\n\n/**\n * Returns the last valid index for the array.\n */\npublic val ByteArray.lastIndex:
Int\n    get() = size - 1\n\n/**\n * Returns the last valid index for the array.\n */\npublic val ShortArray.lastIndex:
Int\n    get() = size - 1\n\n/**\n * Returns the last valid index for the array.\n */\npublic val IntArray.lastIndex: Int\n
    get() = size - 1\n\n/**\n * Returns the last valid index for the array.\n */\npublic val LongArray.lastIndex: Int\n
    get() = size - 1\n\n/**\n * Returns the last valid index for the array.\n */\npublic

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val FloatArray.lastIndex: Int\n get() = size - 1\n\n/\*\*\n \* Returns the last valid index for the array.\n \*/\npublic  
 val DoubleArray.lastIndex: Int\n get() = size - 1\n\n/\*\*\n \* Returns the last valid index for the array.\n \*/\npublic  
 val BooleanArray.lastIndex: Int\n get() = size - 1\n\n/\*\*\n \* Returns the last valid index for the array.\n \*/\npublic  
 val CharArray.lastIndex: Int\n get() = size - 1\n\n/\*\*\n \* Returns an array containing all elements of the original  
 array and then the given [element].\n \*/\n@Suppress("NO\_ACTUAL\_FOR\_EXPECT")\npublic expect operator  
 fun <T> Array<T>.plus(element: T): Array<T>\n\n/\*\*\n \* Returns an array containing all elements of the original  
 array and then the given [element].\n \*/\npublic expect operator fun ByteArray.plus(element: Byte):  
 ByteArray\n\n/\*\*\n \* Returns an array containing all elements of the original array and then the given [element].\n \*/\n  
 /\*\*\n public expect operator fun ShortArray.plus(element: Short): ShortArray\n\n/\*\*\n  
 \* Returns an array containing all elements of the original array and then the given [element].\n \*/\n public expect  
 operator fun IntArray.plus(element: Int): IntArray\n\n/\*\*\n \* Returns an array containing all elements of the original  
 array and then the given [element].\n \*/\n public expect operator fun LongArray.plus(element: Long):  
 LongArray\n\n/\*\*\n \* Returns an array containing all elements of the original array and then the given [element].\n \*/\n  
 /\*\*\n public expect operator fun FloatArray.plus(element: Float): FloatArray\n\n/\*\*\n \* Returns an array containing  
 all elements of the original array and then the given [element].\n \*/\n public expect operator fun  
 DoubleArray.plus(element: Double): DoubleArray\n\n/\*\*\n \* Returns an array containing all elements of the  
 original array and then the given [element].\n \*/\n public expect operator fun BooleanArray.plus(element: Boolean):  
 BooleanArray\n\n/\*\*\n \* Returns an array containing all elements of the original array and then the given  
 [element].\n \*/\n  
 /\*\*\n public expect operator fun CharArray.plus(element: Char): CharArray\n\n/\*\*\n \* Returns an array containing  
 all elements of the original array and then all elements of the given [elements] collection.\n \*/\n  
 /\*\*\n @Suppress("NO\_ACTUAL\_FOR\_EXPECT")\n public expect operator fun <T> Array<T>.plus(elements:  
 Collection<T>): Array<T>\n\n/\*\*\n \* Returns an array containing all elements of the original array and then all  
 elements of the given [elements] collection.\n \*/\n public expect operator fun ByteArray.plus(elements:  
 Collection<Byte>): ByteArray\n\n/\*\*\n \* Returns an array containing all elements of the original array and then all  
 elements of the given [elements] collection.\n \*/\n public expect operator fun ShortArray.plus(elements:  
 Collection<Short>): ShortArray\n\n/\*\*\n \* Returns an array containing all elements of the original array and then all  
 elements of the given [elements] collection.\n \*/\n public expect operator fun IntArray.plus(elements:  
 Collection<Int>): IntArray\n\n/\*\*\n  
 \* Returns an array containing all elements of the original array and then all elements of the given [elements]  
 collection.\n \*/\n public expect operator fun LongArray.plus(elements: Collection<Long>): LongArray\n\n/\*\*\n \*  
 Returns an array containing all elements of the original array and then all elements of the given [elements]  
 collection.\n \*/\n public expect operator fun FloatArray.plus(elements: Collection<Float>): FloatArray\n\n/\*\*\n \*  
 Returns an array containing all elements of the original array and then all elements of the given [elements]  
 collection.\n \*/\n public expect operator fun DoubleArray.plus(elements: Collection<Double>):  
 DoubleArray\n\n/\*\*\n \* Returns an array containing all elements of the original array and then all elements of the  
 given [elements] collection.\n \*/\n public expect operator fun BooleanArray.plus(elements: Collection<Boolean>):  
 BooleanArray\n\n/\*\*\n \* Returns an array containing all elements of the original array and then all elements of the  
 given [elements]  
 collection.\n \*/\n public expect operator fun CharArray.plus(elements: Collection<Char>): CharArray\n\n/\*\*\n \*  
 Returns an array containing all elements of the original array and then all elements of the given [elements] array.\n \*/\n  
 /\*\*\n @Suppress("NO\_ACTUAL\_FOR\_EXPECT")\n public expect operator fun <T> Array<T>.plus(elements:  
 Array<out T>): Array<T>\n\n/\*\*\n \* Returns an array containing all elements of the original array and then all  
 elements of the given [elements] array.\n \*/\n public expect operator fun ByteArray.plus(elements: ByteArray):  
 ByteArray\n\n/\*\*\n \* Returns an array containing all elements of the original array and then all elements of the  
 given [elements] array.\n \*/\n public expect operator fun ShortArray.plus(elements: ShortArray):  
 ShortArray\n\n/\*\*\n \* Returns an array containing all elements of the original array and then all elements of the  
 given [elements] array.\n \*/\n public expect operator fun IntArray.plus(elements: IntArray): IntArray\n\n/\*\*\n \*

Returns an array

containing all elements of the original array and then all elements of the given [elements] array.  
`public expect operator fun LongArray.plus(elements: LongArray): LongArray`  
Returns an array containing all elements of the original array and then all elements of the given [elements] array.

`public expect operator fun FloatArray.plus(elements: FloatArray): FloatArray`  
Returns an array containing all elements of the original array and then all elements of the given [elements] array.

`public expect operator fun DoubleArray.plus(elements: DoubleArray): DoubleArray`  
Returns an array containing all elements of the original array and then all elements of the given [elements] array.

`public expect operator fun BooleanArray.plus(elements: BooleanArray): BooleanArray`  
Returns an array containing all elements of the original array and then all elements of the given [elements] array.

`CharArray.plus(elements:`

`CharArray): CharArray`  
Returns an array containing all elements of the original array and then the given [element].  
`@Suppress("NO_ACTUAL_FOR_EXPECT") public expect fun <T>`

`Array<T>.plusElement(element: T): Array<T>`  
Sorts the array in-place.  
`@sample`

`samples.collections.Arrays.Sorting.sortArray`  
`public expect fun IntArray.sort(): Unit`  
Sorts the array in-place.  
`@sample samples.collections.Arrays.Sorting.sortArray`  
`public expect fun LongArray.sort():`

`Unit`  
Sorts the array in-place.  
`@sample samples.collections.Arrays.Sorting.sortArray`  
`public expect fun ByteArray.sort(): Unit`  
Sorts the array in-place.  
`@sample`

`samples.collections.Arrays.Sorting.sortArray`  
`public expect fun ShortArray.sort(): Unit`  
Sorts the array in-place.  
`@sample samples.collections.Arrays.Sorting.sortArray`  
`public expect fun`

`DoubleArray.sort(): Unit`  
Sorts the array in-place.  
`@sample`

`samples.collections.Arrays.Sorting.sortArray`  
`public expect fun FloatArray.sort():`

`Unit`  
Sorts the array in-place.  
`@sample samples.collections.Arrays.Sorting.sortArray`  
`public expect fun CharArray.sort(): Unit`  
Sorts the array in-place according to the natural order of its elements.  
`@sample`

The sort is `_stable_`. It means that equal elements preserve their order relative to each other after sorting.  
`@sample samples.collections.Arrays.Sorting.sortArrayOfComparable`  
`public expect fun <T :`

`Comparable<T>> Array<out T>.sort(): Unit`  
Sorts a range in the array in-place.  
The sort is `_stable_`. It means that equal elements preserve their order relative to each other after sorting.  
`@param`

`fromIndex` the start of the range (inclusive) to sort, 0 by default.  
`@param toIndex` the end of the range

(exclusive) to sort, size of this array by default.  
`@throws IndexOutOfBoundsException` if

[`fromIndex`] is less than zero or [`toIndex`] is greater than the size of this array.  
`@throws`

`IllegalArgumentException` if [`fromIndex`] is greater than [`toIndex`].  
`@sample`

`samples.collections.Arrays.Sorting.sortRangeOfArrayOfComparable`  
`@SinceKotlin("1.4") public expect`

`fun <T : Comparable<T>> Array<out T>.sort(fromIndex: Int = 0, toIndex: Int = size): Unit`  
Sorts a range in the array in-place.  
`@param fromIndex` the start of the range (inclusive) to sort, 0 by default.  
`@param`

`toIndex` the end of the range (exclusive) to sort, size of this array by default.  
`@throws`

`IndexOutOfBoundsException` if [`fromIndex`] is less than zero or [`toIndex`] is greater than the size of this array.  
`@throws`

`IllegalArgumentException` if [`fromIndex`] is greater than [`toIndex`].  
`@sample`

`samples.collections.Arrays.Sorting.sortRangeOfArray`  
`@SinceKotlin("1.4") public expect fun`

`ByteArray.sort(fromIndex: Int = 0, toIndex: Int = size): Unit`  
Sorts

a range in the array in-place.  
`@param fromIndex` the start of the range (inclusive) to sort, 0 by default.  
`@param`

`toIndex` the end of the range (exclusive) to sort, size of this array by default.  
`@throws`

`IndexOutOfBoundsException` if [`fromIndex`] is less than zero or [`toIndex`] is greater than the size of this array.  
`@throws`

`IllegalArgumentException` if [`fromIndex`] is greater than [`toIndex`].  
`@sample`

`samples.collections.Arrays.Sorting.sortRangeOfArray`  
`@SinceKotlin("1.4") public expect fun`

`ShortArray.sort(fromIndex: Int = 0, toIndex: Int = size): Unit`  
Sorts a range in the array in-place.  
`@param`

`fromIndex` the start of the range (inclusive) to sort, 0 by default.  
`@param toIndex` the end of the range

(exclusive) to sort, size of this array by default.  
`@throws IndexOutOfBoundsException` if [`fromIndex`] is

less than zero or [toIndex] is greater than the size of this array.\n \* @throws IllegalArgumentException if [fromIndex]

[fromIndex]

is greater than [toIndex].\n \* \n \* @sample samples.collections.Arrays.Sorting.sortRangeOfArray\n

```
*\n@SinceKotlin("1.4")\npublic expect fun IntArray.sort(fromIndex: Int = 0, toIndex: Int = size): Unit\n\n/**\n * Sorts a range in the array in-place.\n * \n * @param fromIndex the start of the range (inclusive) to sort, 0 by default.\n * @param toIndex the end of the range (exclusive) to sort, size of this array by default.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n * \n * @sample samples.collections.Arrays.Sorting.sortRangeOfArray\n *\n@SinceKotlin("1.4")\npublic expect fun LongArray.sort(fromIndex: Int = 0, toIndex: Int = size): Unit\n\n/**\n * Sorts a range in the array in-place.\n * \n * @param fromIndex the start of the range (inclusive) to sort, 0 by default.\n * @param toIndex the end of the range (exclusive) to sort, size of this array by default.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n * \n * @sample samples.collections.Arrays.Sorting.sortRangeOfArray\n *\n@SinceKotlin("1.4")\npublic expect fun FloatArray.sort(fromIndex: Int = 0, toIndex: Int = size): Unit\n\n/**\n * Sorts a range in the array in-place.\n * \n * @param fromIndex the start of the range (inclusive) to sort, 0 by default.\n * @param toIndex the end of the range (exclusive) to sort, size of this array by default.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n * \n * @sample samples.collections.Arrays.Sorting.sortRangeOfArray\n *\n@SinceKotlin("1.4")\npublic expect fun DoubleArray.sort(fromIndex: Int = 0, toIndex: Int = size): Unit\n\n/**\n * Sorts a range in the array in-place.\n * \n * @param fromIndex the start of the range (inclusive) to sort, 0 by default.\n * @param toIndex the end of the range (exclusive) to sort, size of this array by default.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n * \n * @sample samples.collections.Arrays.Sorting.sortRangeOfArray\n *\n@SinceKotlin("1.4")\npublic expect fun CharArray.sort(fromIndex: Int = 0, toIndex: Int = size): Unit\n\n/**\n * Sorts elements of the array in the specified range in-place.\n * The elements are sorted descending according to their natural sort order.\n * \n * The sort is _stable_. It means that equal elements preserve their order relative to each other after sorting.\n * \n * @param fromIndex the start of the range (inclusive) to sort.\n * @param toIndex the end of the range (exclusive) to sort.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n * \n *\n@SinceKotlin("1.4")\npublic fun <T>.sortDescending(fromIndex: Int, toIndex: Int): Unit {\n    sortWith(reverseOrder(), fromIndex, toIndex)\n}\n\n/**\n * Sorts elements of the array in the specified range in-place.\n * The elements are sorted descending according to their natural sort order.\n * \n * @param fromIndex the start of the range (inclusive) to sort.\n * @param toIndex the end of the range (exclusive) to sort.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n * \n *\n@SinceKotlin("1.4")\npublic fun ByteArray.sortDescending(fromIndex: Int, toIndex: Int): Unit {\n    sort(fromIndex, toIndex)\n    reverse(fromIndex, toIndex)\n}\n\n/**\n * Sorts elements of the array in the specified
```

range in-place. The elements are sorted descending according to their natural sort order. @param fromIndex the start of the range (inclusive) to sort. @param toIndex the end of the range (exclusive) to sort. @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array. @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].

```

@SinceKotlin("1.4")
public fun IntArray.sortDescending(fromIndex: Int, toIndex: Int): Unit {
    sort(fromIndex, toIndex)
    reverse(fromIndex, toIndex)
}

```

Sorts elements of the array in the specified range in-place. The elements are sorted descending according to their natural sort order. @param fromIndex the start of the range (inclusive) to sort. @param toIndex the end of the range (exclusive) to sort. @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array. @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].

```

@SinceKotlin("1.4")
public fun LongArray.sortDescending(fromIndex: Int, toIndex: Int): Unit {
    sort(fromIndex, toIndex)
    reverse(fromIndex, toIndex)
}

```

Sorts elements of the array in the specified range in-place. The elements are sorted descending according to their natural sort order. @param fromIndex the start of the range (inclusive) to sort. @param toIndex the end of the range (exclusive) to sort. @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array. @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].

```

@SinceKotlin("1.4")
public fun FloatArray.sortDescending(fromIndex: Int, toIndex: Int): Unit {
    sort(fromIndex, toIndex)
    reverse(fromIndex, toIndex)
}

```

Sorts elements of the array in the specified range in-place. The elements are sorted descending according to their natural sort order. @param fromIndex the start of the range (inclusive) to sort. @param toIndex the end of the range (exclusive) to sort. @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array. @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].

```

@SinceKotlin("1.4")
public fun DoubleArray.sortDescending(fromIndex: Int, toIndex: Int): Unit {
    sort(fromIndex, toIndex)
    reverse(fromIndex, toIndex)
}

```

Sorts elements of the array in the specified range in-place. The elements are sorted descending according to their natural sort order. @param fromIndex the start of the range (inclusive) to sort. @param toIndex the end of the range (exclusive) to sort. @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array. @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].

```

@SinceKotlin("1.4")
public fun CharArray.sortDescending(fromIndex: Int, toIndex: Int): Unit {
    sort(fromIndex, toIndex)
    reverse(fromIndex, toIndex)
}

```

Sorts the array in-place according to the order specified by the given [comparator]. The sort is `_stable_`. It means that equal elements preserve their order relative to each other after sorting.

```

public expect fun <T> Array<out T>.sortWith(comparator: Comparator<in T>): Unit

```

Sorts a range in the array in-place with the given [comparator]. The sort is `_stable_`. It means that equal elements preserve their order relative to each other after sorting. @param fromIndex the start of the range (inclusive) to sort, 0 by default. @param toIndex the end of the range (exclusive) to sort, size of this array by default. @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array. @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].

```

public expect fun <T> Array<out T>.sortWith(comparator: Comparator<in T>, fromIndex: Int = 0, toIndex: Int = size): Unit

```

Returns an array of Boolean containing all of the elements of this generic array.

```

public fun Array<out Boolean>.toBooleanArray(): BooleanArray {
    return BooleanArray(size) { index -> this[index] }
}

```

Returns an array of Byte containing all of the elements of this generic array.

```

public fun Array<out Byte>.toByteArray(): ByteArray {
    return ByteArray(size) { index -> this[index] }
}

```

Returns an array of Char containing all of the elements of this generic array.

```

public fun Array<out Char>.toCharArray(): CharArray {
    return CharArray(size) { index -> this[index] }
}

```

Returns an array of Double containing all of the elements of this generic array.

```

public fun Array<out Double>.toDoubleArray(): DoubleArray {
    return DoubleArray(size) { index -> this[index] }
}

```

Returns an array of Float containing all of the elements of this generic array.

```

public fun Array<out Float>.toFloatArray(): FloatArray {
    return FloatArray(size) { index -> this[index] }
}

```

```

fun Array<out Float>.toFloatArray(): FloatArray {
    return FloatArray(size) { index -> this[index] }
}

* Returns an array of Int containing all of the elements of this generic array.

public fun Array<out Int>.toIntArray(): IntArray {
    return IntArray(size) { index -> this[index] }
}

* Returns an array of Long containing all of the elements of this generic array.

public fun Array<out Long>.toLongArray(): LongArray {
    return LongArray(size) { index -> this[index] }
}

* Returns an array of Short containing all of the elements of this generic array.

public fun Array<out Short>.toShortArray(): ShortArray {
    return ShortArray(size) { index -> this[index] }
}

* Returns a *typed* object array containing all of the elements of this primitive array.

public expect fun ByteArray.toTypedArray(): Array<Byte>

* Returns a *typed* object array containing all of the elements of this primitive array.

public expect fun ShortArray.toTypedArray(): Array<Short>

* Returns a *typed* object array containing all of the elements of this primitive array.

public expect fun IntArray.toTypedArray(): Array<Int>

* Returns a *typed* object array containing all of the elements of this primitive array.

public expect fun LongArray.toTypedArray(): Array<Long>

* Returns a *typed* object array containing all of the elements of this primitive array.

public expect fun FloatArray.toTypedArray(): Array<Float>

* Returns a *typed* object array containing all of the elements of this primitive array.

public expect fun DoubleArray.toTypedArray(): Array<Double>

* Returns a *typed* object array containing all of the elements of this primitive array.

public expect fun BooleanArray.toTypedArray(): Array<Boolean>

* Returns a *typed* object array containing all of the elements of this primitive array.

public expect fun CharArray.toTypedArray(): Array<Char>

* Returns a [Map] containing key-value pairs provided by [transform] function
* applied to elements of the given array.
* If any of two pairs would have the same key the last one gets added to the map.
* The returned map preserves the entry iteration order of the original array.
@sample
samples.collections.Arrays.Transformations.associateArrayOfPrimitives

public inline fun <T, K, V> Array<out T>.associate(transform: (T) -> Pair<K, V>): Map<K, V> {
    val capacity = mapCapacity(size).coerceAtLeast(16)
    return associateTo(LinkedHashMap<K, V>(capacity), transform)
}

* Returns a [Map] containing key-value pairs provided by [transform] function
* applied to elements of the given array.
* If any of two pairs would have the same key the last one gets added to the map.
* The returned map preserves the entry iteration order of the original array.
@sample
samples.collections.Arrays.Transformations.associateArrayOfPrimitives

public inline fun <K, V> ByteArray.associate(transform: (Byte) -> Pair<K, V>): Map<K, V> {
    val capacity = mapCapacity(size).coerceAtLeast(16)
    return associateTo(LinkedHashMap<K, V>(capacity), transform)
}

* Returns a [Map] containing key-value pairs provided by [transform] function
* applied to elements of the given array.
* If any of two pairs would have the same key the last one gets added to the map.
* The returned map preserves the entry iteration order of the original array.
@sample
samples.collections.Arrays.Transformations.associateArrayOfPrimitives

public inline fun <K, V> ShortArray.associate(transform: (Short) -> Pair<K, V>): Map<K, V> {
    val capacity = mapCapacity(size).coerceAtLeast(16)
    return associateTo(LinkedHashMap<K, V>(capacity), transform)
}

* Returns a [Map] containing key-value pairs provided by [transform] function
* applied to elements of the given array.
* If any of two pairs would have the same key the last one gets added to the map.
* The returned map preserves the entry iteration order of the original array.
@sample
samples.collections.Arrays.Transformations.associateArrayOfPrimitives

public inline fun <K, V> IntArray.associate(transform: (Int) -> Pair<K, V>): Map<K, V> {
    val capacity = mapCapacity(size).coerceAtLeast(16)
    return associateTo(LinkedHashMap<K, V>(capacity), transform)
}

* Returns a [Map] containing key-value pairs provided by [transform] function
* applied to elements of the given array.
* If any of two pairs would have the same key the last one gets added to the map.
* The returned map preserves the entry iteration order of the original array.
@sample
samples.collections.Arrays.Transformations.associateArrayOfPrimitives

public inline fun <K, V>

```

```

LongArray.associate(transform: (Long) -> Pair<K, V>): Map<K, V> {\n  val capacity =
mapCapacity(size).coerceAtLeast(16)\n
  return associateTo(LinkedHashMap<K, V>(capacity), transform)\n}\n\n/**\n * Returns a [Map] containing key-
value pairs provided by [transform] function\n * applied to elements of the given array.\n * \n * If any of two pairs
would have the same key the last one gets added to the map.\n * \n * The returned map preserves the entry iteration
order of the original array.\n * \n * @sample
samples.collections.Arrays.Transformations.associateArrayOfPrimitives\n */\npublic inline fun <K, V>
FloatArray.associate(transform: (Float) -> Pair<K, V>): Map<K, V> {\n  val capacity =
mapCapacity(size).coerceAtLeast(16)\n  return associateTo(LinkedHashMap<K, V>(capacity),
transform)\n}\n\n/**\n * Returns a [Map] containing key-value pairs provided by [transform] function\n * applied to
elements of the given array.\n * \n * If any of two pairs would have the same key the last one gets added to the
map.\n * \n * The returned map preserves the entry iteration order of the original
array.\n * \n * @sample
samples.collections.Arrays.Transformations.associateArrayOfPrimitives\n */\npublic inline
fun <K, V> DoubleArray.associate(transform: (Double) -> Pair<K, V>): Map<K, V> {\n  val capacity =
mapCapacity(size).coerceAtLeast(16)\n  return associateTo(LinkedHashMap<K, V>(capacity),
transform)\n}\n\n/**\n * Returns a [Map] containing key-value pairs provided by [transform] function\n * applied to
elements of the given array.\n * \n * If any of two pairs would have the same key the last one gets added to the
map.\n * \n * The returned map preserves the entry iteration order of the original
array.\n * \n * @sample
samples.collections.Arrays.Transformations.associateArrayOfPrimitives\n */\npublic inline fun <K, V>
BooleanArray.associate(transform: (Boolean) -> Pair<K, V>): Map<K, V> {\n  val capacity =
mapCapacity(size).coerceAtLeast(16)\n  return associateTo(LinkedHashMap<K, V>(capacity),
transform)\n}\n\n/**\n * Returns a [Map] containing key-value pairs
provided by [transform] function\n * applied to elements of the given array.\n * \n * If any of two pairs would have
the same key the last one gets added to the map.\n * \n * The returned map preserves the entry iteration order of the
original array.\n * \n * @sample
samples.collections.Arrays.Transformations.associateArrayOfPrimitives\n */\npublic inline fun <K, V> CharArray.associate(transform: (Char) -> Pair<K, V>): Map<K, V> {\n  val capacity
= mapCapacity(size).coerceAtLeast(16)\n  return associateTo(LinkedHashMap<K, V>(capacity),
transform)\n}\n\n/**\n * Returns a [Map] containing the elements from the given array indexed by the key\n *
returned from [keySelector] function applied to each element.\n * \n * If any two elements would have the same key
returned by [keySelector] the last one gets added to the map.\n * \n * The returned map preserves the entry iteration
order of the original array.\n * \n * @sample
samples.collections.Arrays.Transformations.associateArrayOfPrimitivesBy\n */\npublic inline fun <T, K> Array<out T>.associateBy(keySelector: (T) -> K): Map<K, T> {\n  val capacity =
mapCapacity(size).coerceAtLeast(16)\n  return associateByTo(LinkedHashMap<K, T>(capacity),
keySelector)\n}\n\n/**\n * Returns a [Map] containing the elements from the given array indexed by the key\n *
returned from [keySelector] function applied to each element.\n * \n * If any two elements would have the same key
returned by [keySelector] the last one gets added to the map.\n * \n * The returned map preserves the entry iteration
order of the original array.\n * \n * @sample
samples.collections.Arrays.Transformations.associateArrayOfPrimitivesBy\n */\npublic inline fun <K>
ByteArray.associateBy(keySelector: (Byte) -> K): Map<K, Byte> {\n  val capacity =
mapCapacity(size).coerceAtLeast(16)\n  return associateByTo(LinkedHashMap<K, Byte>(capacity),
keySelector)\n}\n\n/**\n * Returns a [Map] containing the elements from the given array indexed by the key\n *
returned
from [keySelector] function applied to each element.\n * \n * If any two elements would have the same key returned
by [keySelector] the last one gets added to the map.\n * \n * The returned map preserves the entry iteration order of
the original array.\n * \n * @sample
samples.collections.Arrays.Transformations.associateArrayOfPrimitivesBy\n */\npublic inline fun <K> ShortArray.associateBy(keySelector: (Short) -> K): Map<K, Short> {\n  val capacity =
mapCapacity(size).coerceAtLeast(16)\n  return associateByTo(LinkedHashMap<K, Short>(capacity),

```



```

keySelector)\n}\n\n/**\n * Returns a [Map] containing the elements from the given array indexed by the key\n *
returned from [keySelector] function applied to each element.\n * \n * If any two elements would have the same key
returned by [keySelector] the last one gets added to the map.\n * \n * The returned map preserves the entry iteration
order of the original array.\n * \n * @sample
samples.collections.Arrays.Transformations.associateArrayOfPrimitivesBy\n
*/\npublic inline fun <K> IntArray.associateBy(keySelector: (Int) -> K): Map<K, Int> {\n    val capacity =
mapCapacity(size).coerceAtLeast(16)\n    return associateByTo(LinkedHashMap<K, Int>(capacity),
keySelector)\n}\n\n/**\n * Returns a [Map] containing the elements from the given array indexed by the key\n *
returned from [keySelector] function applied to each element.\n * \n * If any two elements would have the same key
returned by [keySelector] the last one gets added to the map.\n * \n * The returned map preserves the entry iteration
order of the original array.\n * \n * @sample
samples.collections.Arrays.Transformations.associateArrayOfPrimitivesBy\n
*/\npublic inline fun <K>
LongArray.associateBy(keySelector: (Long) -> K): Map<K, Long> {\n    val capacity =
mapCapacity(size).coerceAtLeast(16)\n    return associateByTo(LinkedHashMap<K, Long>(capacity),
keySelector)\n}\n\n/**\n * Returns a [Map] containing the elements from the given array indexed by the key\n *
returned from [keySelector] function applied to each element.\n * \n * If any two elements would have the same
key returned by [keySelector] the last one gets added to the map.\n * \n * The returned map preserves the entry
iteration order of the original array.\n * \n * @sample
samples.collections.Arrays.Transformations.associateArrayOfPrimitivesBy\n
*/\npublic inline fun <K>
FloatArray.associateBy(keySelector: (Float) -> K): Map<K, Float> {\n    val capacity =
mapCapacity(size).coerceAtLeast(16)\n    return associateByTo(LinkedHashMap<K, Float>(capacity),
keySelector)\n}\n\n/**\n * Returns a [Map] containing the elements from the given array indexed by the key\n *
returned from [keySelector] function applied to each element.\n * \n * If any two elements would have the same key
returned by [keySelector] the last one gets added to the map.\n * \n * The returned map preserves the entry iteration
order of the original array.\n * \n * @sample
samples.collections.Arrays.Transformations.associateArrayOfPrimitivesBy\n
*/\npublic inline fun <K>
DoubleArray.associateBy(keySelector: (Double) -> K): Map<K, Double> {\n    val
capacity = mapCapacity(size).coerceAtLeast(16)\n    return associateByTo(LinkedHashMap<K, Double>(capacity),
keySelector)\n}\n\n/**\n * Returns a [Map] containing the elements from the given array indexed by the key\n *
returned from [keySelector] function applied to each element.\n * \n * If any two elements would have the same key
returned by [keySelector] the last one gets added to the map.\n * \n * The returned map preserves the entry iteration
order of the original array.\n * \n * @sample
samples.collections.Arrays.Transformations.associateArrayOfPrimitivesBy\n
*/\npublic inline fun <K>
BooleanArray.associateBy(keySelector: (Boolean) -> K): Map<K, Boolean> {\n    val capacity =
mapCapacity(size).coerceAtLeast(16)\n    return associateByTo(LinkedHashMap<K, Boolean>(capacity),
keySelector)\n}\n\n/**\n * Returns a [Map] containing the elements from the
given array indexed by the key\n * returned from [keySelector] function applied to each element.\n * \n * If any two
elements would have the same key returned by [keySelector] the last one gets added to the map.\n * \n * The
returned map preserves the entry iteration order of the original array.\n * \n * @sample
samples.collections.Arrays.Transformations.associateArrayOfPrimitivesBy\n
*/\npublic inline fun <K>
CharArray.associateBy(keySelector: (Char) -> K): Map<K, Char> {\n    val capacity =
mapCapacity(size).coerceAtLeast(16)\n    return associateByTo(LinkedHashMap<K, Char>(capacity),
keySelector)\n}\n\n/**\n * Returns a [Map] containing the values provided by [valueTransform] and indexed by
[keySelector] functions applied to elements of the given array.\n * \n * If any two elements would have the same key
returned by [keySelector] the last one gets added to the map.\n * \n * The returned map preserves the entry iteration
order of the original array.\n * \n * @sample
samples.collections.Arrays.Transformations.associateArrayOfPrimitivesByWithValueTransform\n

```

```

*  

public inline fun <T, K, V> Array<out T>.associateBy(keySelector: (T) -> K, valueTransform: (T) -> V):  

Map<K, V> {  

    val capacity = mapCapacity(size).coerceAtLeast(16)  

    return  

    associateByTo(LinkedHashMap<K, V>(capacity), keySelector, valueTransform)  

}

```

\* Returns a [Map] containing the values provided by [valueTransform] and indexed by [keySelector] functions applied to elements of the given array. If any two elements would have the same key returned by [keySelector] the last one gets added to the map. The returned map preserves the entry iteration order of the original array.

```

@sample samples.collections.Arrays.Transformations.associateArrayOfPrimitivesByWithValueTransform

```

```

*  

public inline fun <K, V> ByteArray.associateBy(keySelector: (Byte) -> K, valueTransform: (Byte) -> V):  

Map<K, V> {  

    val capacity = mapCapacity(size).coerceAtLeast(16)  

    return  

    associateByTo(LinkedHashMap<K,  

    V>(capacity), keySelector, valueTransform)  

}

```

\* Returns a [Map] containing the values provided by [valueTransform] and indexed by [keySelector] functions applied to elements of the given array. If any two elements would have the same key returned by [keySelector] the last one gets added to the map. The returned map preserves the entry iteration order of the original array.

```

@sample samples.collections.Arrays.Transformations.associateArrayOfPrimitivesByWithValueTransform

```

```

*  

public inline fun <K, V> ShortArray.associateBy(keySelector: (Short) -> K, valueTransform: (Short) -> V): Map<K, V> {  

    val capacity = mapCapacity(size).coerceAtLeast(16)  

    return associateByTo(LinkedHashMap<K, V>(capacity),  

    keySelector, valueTransform)  

}

```

\* Returns a [Map] containing the values provided by [valueTransform] and indexed by [keySelector] functions applied to elements of the given array. If any two elements would have the same key returned by [keySelector] the last one gets added to the map. The returned map preserves the entry iteration order of the original array.

```

@sample samples.collections.Arrays.Transformations.associateArrayOfPrimitivesByWithValueTransform

```

```

*  

public inline fun <K, V> IntArray.associateBy(keySelector: (Int) -> K, valueTransform: (Int) -> V): Map<K, V> {  

    val capacity = mapCapacity(size).coerceAtLeast(16)  

    return associateByTo(LinkedHashMap<K, V>(capacity),  

    keySelector, valueTransform)  

}

```

\* Returns a [Map] containing the values provided by [valueTransform] and indexed by [keySelector] functions applied to elements of the given array. If any two elements would have the same key returned by [keySelector] the last one gets added to the map. The returned map preserves the entry iteration order of the original array.

```

@sample samples.collections.Arrays.Transformations.associateArrayOfPrimitivesByWithValueTransform

```

```

*  

public inline fun <K, V> LongArray.associateBy(keySelector: (Long) -> K, valueTransform: (Long) -> V): Map<K, V> {  

    val capacity = mapCapacity(size).coerceAtLeast(16)  

    return associateByTo(LinkedHashMap<K,  

    V>(capacity), keySelector, valueTransform)  

}

```

\* Returns a [Map] containing the values provided by [valueTransform] and indexed by [keySelector] functions applied to elements of the given array. If any two elements would have the same key returned by [keySelector] the last one gets added to the map. The returned map preserves the entry iteration order of the original array.

```

@sample samples.collections.Arrays.Transformations.associateArrayOfPrimitivesByWithValueTransform

```

```

*  

public inline fun <K, V> FloatArray.associateBy(keySelector: (Float) -> K, valueTransform: (Float) -> V): Map<K, V> {  

    val capacity = mapCapacity(size).coerceAtLeast(16)  

    return associateByTo(LinkedHashMap<K, V>(capacity),  

    keySelector, valueTransform)  

}

```

\* Returns a [Map] containing the values provided by [valueTransform] and indexed by [keySelector] functions applied to elements of the given array. If any two elements would have the same key returned by [keySelector] the last one gets added to the map. The returned map preserves the entry iteration order of the original array.

```

@sample samples.collections.Arrays.Transformations.associateArrayOfPrimitivesByWithValueTransform

```

```

*  

public inline fun <K, V> DoubleArray.associateBy(keySelector: (Double) -> K, valueTransform: (Double) -> V): Map<K, V> {  

    val capacity = mapCapacity(size).coerceAtLeast(16)  

    return associateByTo(LinkedHashMap<K,  

    V>(capacity), keySelector, valueTransform)  

}

```

\* Returns a [Map] containing the values provided by

[valueTransform] and indexed by [keySelector] functions applied to elements of the given array.

\* If any two elements would have the same key returned by [keySelector] the last one gets added to the map.

\* The returned map preserves the entry iteration order of the original array.

@sample

```

samples.collections.Arrays.Transformations.associateArrayOfPrimitivesByWithValueTransform
*/
public inline
fun <K, V> BooleanArray.associateBy(keySelector: (Boolean) -> K, valueTransform: (Boolean) -> V): Map<K, V>
{
    val capacity = mapCapacity(size).coerceAtLeast(16)
    return associateByTo(LinkedHashMap<K,
V>(capacity), keySelector, valueTransform)
}

```

\* Returns a [Map] containing the values provided by [valueTransform] and indexed by [keySelector] functions applied to elements of the given array.

\* If any two elements would have the same key returned by [keySelector] the last one gets added to the map.

\* The returned map preserves the entry iteration order of the original array.

@sample

```

samples.collections.Arrays.Transformations.associateArrayOfPrimitivesByWithValueTransform
*/
public inline
fun <K, V> CharArray.associateBy(keySelector:
(Char) -> K, valueTransform: (Char) -> V): Map<K, V>
{
    val capacity =
mapCapacity(size).coerceAtLeast(16)
    return associateByTo(LinkedHashMap<K, V>(capacity), keySelector,
valueTransform)
}

```

\* Populates and returns the [destination] mutable map with key-value pairs, where key is provided by the [keySelector] function applied to each element of the given array and value is the element itself.

\* If any two elements would have the same key returned by [keySelector] the last one gets added to the map.

@sample

```

samples.collections.Arrays.Transformations.associateArrayOfPrimitivesByTo
*/
public inline
fun <T, K, M : MutableMap<in K, in T>> Array<out T>.associateByTo(destination: M, keySelector: (T) ->
K): M
{
    for (element in this)
    {
        destination.put(keySelector(element), element)
    }
    return
destination
}

```

\* Populates and returns the [destination] mutable map with key-value pairs, where key is provided by the [keySelector] function applied to each element of the given array and value is the element itself.

\* If any two elements would have the same key returned by [keySelector] the last one gets added to the map.

@sample

```

samples.collections.Arrays.Transformations.associateArrayOfPrimitivesByTo
*/
public inline
fun <K, M : MutableMap<in K, in Byte>> ByteArray.associateByTo(destination: M, keySelector: (Byte) -> K): M
{
    for (element in this)
    {
        destination.put(keySelector(element), element)
    }
    return destination
}

```

\* Populates and returns the [destination] mutable map with key-value pairs, where key is provided by the [keySelector] function applied to each element of the given array and value is the element itself.

\* If any two elements would have the same key returned by [keySelector] the last one gets added to the map.

@sample

```

samples.collections.Arrays.Transformations.associateArrayOfPrimitivesByTo
*/
public inline
fun <K, M : MutableMap<in K, in Short>> ShortArray.associateByTo(destination: M, keySelector: (Short) -> K):
M
{
    for (element in this)
    {
        destination.put(keySelector(element), element)
    }
    return
destination
}

```

\* Populates and returns the [destination] mutable map with key-value pairs, where key is provided by the [keySelector] function applied to each element of the given array and value is the element itself.

\* If any two elements would have the same key returned by [keySelector] the last one gets added to the map.

@sample

```

samples.collections.Arrays.Transformations.associateArrayOfPrimitivesByTo
*/
public inline
fun <K, M : MutableMap<in K, in Int>> IntArray.associateByTo(destination: M, keySelector: (Int) -> K): M
{
    for (element in this)
    {
        destination.put(keySelector(element), element)
    }
    return
destination
}

```

\* Populates and returns the [destination] mutable map with key-value pairs, where key is provided by the [keySelector] function applied to each element of the given array and value is the element itself.

\* If any two elements would have the same key returned by [keySelector] the last one gets added to the map.

@sample

```

samples.collections.Arrays.Transformations.associateArrayOfPrimitivesByTo
*/
public inline
fun <K, M : MutableMap<in K, in Long>> LongArray.associateByTo(destination: M, keySelector:
(Long) -> K): M
{
    for (element in this)
    {
        destination.put(keySelector(element), element)
    }
    return
destination
}

```

\* Populates and returns the [destination] mutable map with key-value pairs, where key is provided by the [keySelector] function applied to each element of the given array and value is the element itself.

\* If any two elements would have the same key returned by [keySelector] the last one gets added to the

```

map.\n * \n * @sample samples.collections.Arrays.Transformations.associateArrayOfPrimitivesByTo\n
*/\npublic inline fun <K, M : MutableMap<in K, in Float>> FloatArray.associateByTo(destination: M, keySelector:
(Float) -> K): M {\n for (element in this) {\n destination.put(keySelector(element), element)\n }\n return
destination\n}\n\n/**\n * Populates and returns the [destination] mutable map with key-value pairs,\n * where key is
provided by the [keySelector] function applied to each element of the given array\n * and value is the element
itself.\n * \n * If any two elements would have the same key returned by [keySelector] the last one gets added to the
map.\n * \n * @sample samples.collections.Arrays.Transformations.associateArrayOfPrimitivesByTo\n*/\npublic
inline fun <K, M : MutableMap<in K, in Double>> DoubleArray.associateByTo(destination: M, keySelector:
(Double) -> K): M {\n for (element in this) {\n destination.put(keySelector(element), element)\n }\n return
destination\n}\n\n/**\n * Populates and returns the [destination] mutable
map with key-value pairs,\n * where key is provided by the [keySelector] function applied to each element of the
given array\n * and value is the element itself.\n * \n * If any two elements would have the same key returned by
[keySelector] the last one gets added to the map.\n * \n * @sample
samples.collections.Arrays.Transformations.associateArrayOfPrimitivesByTo\n*/\npublic inline fun <K, M :
MutableMap<in K, in Boolean>> BooleanArray.associateByTo(destination: M, keySelector: (Boolean) -> K): M {\n
for (element in this) {\n destination.put(keySelector(element), element)\n }\n return destination\n}\n\n/**\n
* Populates and returns the [destination] mutable map with key-value pairs,\n * where key is provided by the
[keySelector] function applied to each element of the given array\n * and value is the element itself.\n * \n * If any
two elements would have the same key returned by [keySelector] the last one gets added to the map.\n * \n *
@sample samples.collections.Arrays.Transformations.associateArrayOfPrimitivesByTo\n*/\npublic inline fun <K, M :
MutableMap<in K, in Char>> CharArray.associateByTo(destination: M, keySelector:
(Char) -> K): M {\n for (element in this) {\n destination.put(keySelector(element), element)\n }\n return
destination\n}\n\n/**\n * Populates and returns the [destination] mutable map with key-value pairs,\n * where key is
provided by the [keySelector] function and\n * and value is provided by the [valueTransform] function applied to
elements of the given array.\n * \n * If any two elements would have the same key returned by [keySelector] the last
one gets added to the map.\n * \n * @sample
samples.collections.Arrays.Transformations.associateArrayOfPrimitivesByToWithValueTransform\n*/\npublic
inline fun <T, K, V, M : MutableMap<in K, in V>> Array<out T>.associateByTo(destination: M, keySelector: (T) -
> K, valueTransform: (T) -> V): M {\n for (element in this) {\n destination.put(keySelector(element),
valueTransform(element))\n }\n return destination\n}\n\n/**\n * Populates and returns the [destination] mutable
map with key-value pairs,\n * where key is provided by the [keySelector] function and\n * and value is provided by
the [valueTransform] function applied to elements of the given array.\n * \n * If any two elements would have the
same key returned by [keySelector] the last one gets added to the map.\n * \n * @sample
samples.collections.Arrays.Transformations.associateArrayOfPrimitivesByToWithValueTransform\n*/\npublic
inline fun <K, V, M : MutableMap<in K, in V>> ByteArray.associateByTo(destination: M, keySelector: (Byte) ->
K, valueTransform: (Byte) -> V): M {\n for (element in this) {\n destination.put(keySelector(element),
valueTransform(element))\n }\n return destination\n}\n\n/**\n * Populates and returns the [destination] mutable
map with key-value pairs,\n * where key is provided by the [keySelector] function and\n * and value is provided by
the [valueTransform] function applied to elements of the given array.\n * \n * If any two elements would have the
same key returned by [keySelector] the last one gets added to the map.\n * \n * @sample
samples.collections.Arrays.Transformations.associateArrayOfPrimitivesByToWithValueTransform\n*/\npublic
inline fun <K, V, M : MutableMap<in K, in V>> ShortArray.associateByTo(destination: M, keySelector: (Short) ->
K, valueTransform: (Short) -> V): M {\n for (element in this) {\n destination.put(keySelector(element),
valueTransform(element))\n }\n return destination\n}\n\n/**\n * Populates and returns the [destination] mutable
map with key-value pairs,\n * where key is provided by the [keySelector] function and\n * and value is provided by
the [valueTransform] function applied to elements of the given array.\n * \n * If any two elements would have the
same key returned by [keySelector] the last one gets added to the map.\n * \n * @sample
samples.collections.Arrays.Transformations.associateArrayOfPrimitivesByToWithValueTransform\n

```

```

*/\npublic inline fun <K, V, M : MutableMap<in K, in V>> IntArray.associateByTo(destination: M, keySelector:
(Int) -> K, valueTransform: (Int) -> V): M {\n  for (element in this) {\n    destination.put(keySelector(element),
valueTransform(element))\n  }\n  return destination\n}\n\n/**\n * Populates and returns the [destination] mutable
map with key-value pairs,\n * where key is provided by the [keySelector] function and\n * and value is provided by
the [valueTransform] function applied to elements of the given array.\n * \n * If any two elements would have the
same key returned by [keySelector] the last one gets added to the map.\n * \n * @sample
samples.collections.Arrays.Transformations.associateArrayOfPrimitivesByToWithValueTransform\n */\npublic
inline fun <K, V, M : MutableMap<in K, in V>> LongArray.associateByTo(destination: M, keySelector: (Long) ->
K, valueTransform: (Long) -> V): M {\n  for (element in this)
{\n    destination.put(keySelector(element), valueTransform(element))\n  }\n  return destination\n}\n\n/**\n *
Populates and returns the [destination] mutable map with key-value pairs,\n * where key is provided by the
[keySelector] function and\n * and value is provided by the [valueTransform] function applied to elements of the
given array.\n * \n * If any two elements would have the same key returned by [keySelector] the last one gets added
to the map.\n * \n * @sample
samples.collections.Arrays.Transformations.associateArrayOfPrimitivesByToWithValueTransform\n */\npublic
inline fun <K, V, M : MutableMap<in K, in V>> FloatArray.associateByTo(destination: M, keySelector: (Float) ->
K, valueTransform: (Float) -> V): M {\n  for (element in this) {\n    destination.put(keySelector(element),
valueTransform(element))\n  }\n  return destination\n}\n\n/**\n * Populates and returns the [destination] mutable
map with key-value pairs,\n * where key is provided by the [keySelector]
function and\n * and value is provided by the [valueTransform] function applied to elements of the given array.\n *
\n * If any two elements would have the same key returned by [keySelector] the last one gets added to the map.\n *
\n * @sample samples.collections.Arrays.Transformations.associateArrayOfPrimitivesByToWithValueTransform\n */\n
public inline fun <K, V, M : MutableMap<in K, in V>> DoubleArray.associateByTo(destination: M,
keySelector: (Double) -> K, valueTransform: (Double) -> V): M {\n  for (element in this) {\n
destination.put(keySelector(element), valueTransform(element))\n  }\n  return destination\n}\n\n/**\n * Populates
and returns the [destination] mutable map with key-value pairs,\n * where key is provided by the [keySelector]
function and\n * and value is provided by the [valueTransform] function applied to elements of the given array.\n *
\n * If any two elements would have the same key returned by [keySelector] the last one gets added to the
map.\n * \n * @sample
samples.collections.Arrays.Transformations.associateArrayOfPrimitivesByToWithValueTransform\n */\npublic
inline fun <K, V, M : MutableMap<in K, in V>> BooleanArray.associateByTo(destination: M, keySelector:
(Boolean) -> K, valueTransform: (Boolean) -> V): M {\n  for (element in this) {\n
destination.put(keySelector(element), valueTransform(element))\n  }\n  return destination\n}\n\n/**\n * Populates
and returns the [destination] mutable map with key-value pairs,\n * where key is provided by the [keySelector]
function and\n * and value is provided by the [valueTransform] function applied to elements of the given array.\n *
\n * If any two elements would have the same key returned by [keySelector] the last one gets added to the map.\n *
\n * @sample samples.collections.Arrays.Transformations.associateArrayOfPrimitivesByToWithValueTransform\n */\n
public inline fun <K, V, M : MutableMap<in K, in V>> CharArray.associateByTo(destination: M, keySelector:
(Char)
-> K, valueTransform: (Char) -> V): M {\n  for (element in this) {\n    destination.put(keySelector(element),
valueTransform(element))\n  }\n  return destination\n}\n\n/**\n * Populates and returns the [destination] mutable
map with key-value pairs\n * provided by [transform] function applied to each element of the given array.\n * \n *
If any of two pairs would have the same key the last one gets added to the map.\n * \n * @sample
samples.collections.Arrays.Transformations.associateArrayOfPrimitivesTo\n */\npublic inline fun <T, K, V, M :
MutableMap<in K, in V>> Array<out T>.associateTo(destination: M, transform: (T) -> Pair<K, V>): M {\n  for
(element in this) {\n    destination += transform(element)\n  }\n  return destination\n}\n\n/**\n * Populates and
returns the [destination] mutable map with key-value pairs\n * provided by [transform] function applied to each
element of the given array.\n * \n * If any of two pairs would have the same key the last one gets

```

```

added to the map.\n * \n * @sample samples.collections.Arrays.Transformations.associateArrayOfPrimitivesTo\n
*\npublic inline fun <K, V, M : MutableMap<in K, in V>> ByteArray.associateTo(destination: M, transform:
(Byte) -> Pair<K, V>): M {\n for (element in this) {\n destination += transform(element)\n }\n return
destination\n}\n\n/**\n * Populates and returns the [destination] mutable map with key-value pairs\n *
provided by [transform] function applied to each element of the given array.\n * \n * If any of two pairs would have the same key
the last one gets added to the map.\n * \n * @sample
samples.collections.Arrays.Transformations.associateArrayOfPrimitivesTo\n
*\npublic inline fun <K, V, M :
MutableMap<in K, in V>> ShortArray.associateTo(destination: M, transform: (Short) -> Pair<K, V>): M {\n for
(element in this) {\n destination += transform(element)\n }\n return destination\n}\n\n/**\n * Populates and
returns the [destination] mutable map with
key-value pairs\n * provided by [transform] function applied to each element of the given array.\n * \n * If any of
two pairs would have the same key the last one gets added to the map.\n * \n * @sample
samples.collections.Arrays.Transformations.associateArrayOfPrimitivesTo\n
*\npublic inline fun <K, V, M :
MutableMap<in K, in V>> IntArray.associateTo(destination: M, transform: (Int) -> Pair<K, V>): M {\n for
(element in this) {\n destination += transform(element)\n }\n return destination\n}\n\n/**\n * Populates and
returns the [destination] mutable map with key-value pairs\n * provided by [transform] function applied to each
element of the given array.\n * \n * If any of two pairs would have the same key the last one gets added to the
map.\n * \n * @sample samples.collections.Arrays.Transformations.associateArrayOfPrimitivesTo\n
*\npublic
inline fun <K, V, M : MutableMap<in K, in V>> LongArray.associateTo(destination: M, transform: (Long) ->
Pair<K, V>): M {\n
for (element in this) {\n destination += transform(element)\n }\n return destination\n}\n\n/**\n * Populates
and returns the [destination] mutable map with key-value pairs\n * provided by [transform] function applied to each
element of the given array.\n * \n * If any of two pairs would have the same key the last one gets added to the
map.\n * \n * @sample samples.collections.Arrays.Transformations.associateArrayOfPrimitivesTo\n
*\npublic
inline fun <K, V, M : MutableMap<in K, in V>> FloatArray.associateTo(destination: M, transform: (Float) ->
Pair<K, V>): M {\n for (element in this) {\n destination += transform(element)\n }\n return
destination\n}\n\n/**\n * Populates and returns the [destination] mutable map with key-value pairs\n * provided by
[transform] function applied to each element of the given array.\n * \n * If any of two pairs would have the same key
the last one gets added to the map.\n * \n * @sample
samples.collections.Arrays.Transformations.associateArrayOfPrimitivesTo\n
*\npublic inline fun <K, V, M :
MutableMap<in K, in V>> DoubleArray.associateTo(destination: M, transform:
(Double) -> Pair<K, V>): M {\n for (element in this) {\n destination += transform(element)\n }\n return
destination\n}\n\n/**\n * Populates and returns the [destination] mutable map with key-value pairs\n * provided by
[transform] function applied to each element of the given array.\n * \n * If any of two pairs would have the same key
the last one gets added to the map.\n * \n * @sample
samples.collections.Arrays.Transformations.associateArrayOfPrimitivesTo\n
*\npublic inline fun <K, V, M :
MutableMap<in K, in V>> BooleanArray.associateTo(destination: M, transform: (Boolean) -> Pair<K, V>): M {\n
for (element in this) {\n destination += transform(element)\n }\n return destination\n}\n\n/**\n * Populates
and returns the [destination] mutable map with key-value pairs\n * provided by [transform] function applied to each
element of the given array.\n * \n * If any of two pairs would have the same key the last one gets added to the
map.\n * \n * @sample samples.collections.Arrays.Transformations.associateArrayOfPrimitivesTo\n
*\npublic
inline fun <K, V, M : MutableMap<in K, in V>> CharArray.associateTo(destination: M, transform: (Char) ->
Pair<K, V>): M {\n for (element in this) {\n destination += transform(element)\n }\n return
destination\n}\n\n/**\n * Returns a [Map] where keys are elements from the given array and values are\n * produced
by the [valueSelector] function applied to each element.\n * \n * If any two elements are equal, the last one gets
added to the map.\n * \n * The returned map preserves the entry iteration order of the original array.\n * \n *
@sample samples.collections.Collections.Transformations.associateWith\n
*\n@SinceKotlin("1.4")\npublic inline
fun <K, V> Array<out K>.associateWith(valueSelector: (K) -> V): Map<K, V> {\n val result =

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LinkedHashMap<K,  
 V>(mapCapacity(size).coerceAtLeast(16))\n return associateWithTo(result, valueSelector)\n}\n\n/\*\*\n \* Returns  
 a [Map] where keys are elements from the given array and values are\n \* produced by the [valueSelector] function  
 applied to each element.\n \* \n \* If any two elements are equal, the last one gets added to the map.\n \* \n \* The  
 returned map preserves the entry iteration order of the original array.\n \* \n \* @sample  
 samples.collections.Collections.Transformations.associateWith\n\n
 \*/\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun <V>  
 ByteArray.associateWith(valueSelector: (Byte) -> V): Map<Byte, V> {\n val result = LinkedHashMap<Byte,  
 V>(mapCapacity(size).coerceAtLeast(16))\n return associateWithTo(result, valueSelector)\n}\n\n/\*\*\n \* Returns a  
 [Map] where keys are elements from the given array and values are\n \* produced by the [valueSelector] function  
 applied to each element.\n \* \n \* If any two elements are equal, the last one gets added to the  
 map.\n \* \n \* The returned map preserves the entry iteration order of the original array.\n \* \n \* @sample  
 samples.collections.Collections.Transformations.associateWith\n\n
 \*/\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun <V>  
 ShortArray.associateWith(valueSelector: (Short) -> V): Map<Short, V> {\n val result = LinkedHashMap<Short,  
 V>(mapCapacity(size).coerceAtLeast(16))\n return associateWithTo(result, valueSelector)\n}\n\n/\*\*\n \* Returns a  
 [Map] where keys are elements from the given array and values are\n \* produced by the [valueSelector] function  
 applied to each element.\n \* \n \* If any two elements are equal, the last one gets added to the map.\n \* \n \* The  
 returned map preserves the entry iteration order of the original array.\n \* \n \* @sample  
 samples.collections.Collections.Transformations.associateWith\n\n
 \*/\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun <V>  
 IntArray.associateWith(valueSelector: (Int) -> V): Map<Int, V> {\n  
 val result = LinkedHashMap<Int, V>(mapCapacity(size).coerceAtLeast(16))\n return associateWithTo(result,  
 valueSelector)\n}\n\n/\*\*\n \* Returns a [Map] where keys are elements from the given array and values are\n \*  
 produced by the [valueSelector] function applied to each element.\n \* \n \* If any two elements are equal, the last one  
 gets added to the map.\n \* \n \* The returned map preserves the entry iteration order of the original array.\n \* \n \*  
 @sample samples.collections.Collections.Transformations.associateWith\n\n
 \*/\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun <V>  
 LongArray.associateWith(valueSelector: (Long) -> V): Map<Long, V> {\n val result = LinkedHashMap<Long,  
 V>(mapCapacity(size).coerceAtLeast(16))\n return associateWithTo(result, valueSelector)\n}\n\n/\*\*\n \* Returns a  
 [Map] where keys are elements from the given array and values are\n \* produced by the [valueSelector] function  
 applied to each element.\n \* \n \* If any two elements are equal,  
 the last one gets added to the map.\n \* \n \* The returned map preserves the entry iteration order of the original  
 array.\n \* \n \* @sample samples.collections.Collections.Transformations.associateWith\n\n
 \*/\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun <V>  
 FloatArray.associateWith(valueSelector: (Float) -> V): Map<Float, V> {\n val result = LinkedHashMap<Float,  
 V>(mapCapacity(size).coerceAtLeast(16))\n return associateWithTo(result, valueSelector)\n}\n\n/\*\*\n \* Returns a  
 [Map] where keys are elements from the given array and values are\n \* produced by the [valueSelector] function  
 applied to each element.\n \* \n \* If any two elements are equal, the last one gets added to the map.\n \* \n \* The  
 returned map preserves the entry iteration order of the original array.\n \* \n \* @sample  
 samples.collections.Collections.Transformations.associateWith\n\n
 \*/\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun <V>  
 DoubleArray.associateWith(valueSelector:  
 (Double) -> V): Map<Double, V> {\n val result = LinkedHashMap<Double,  
 V>(mapCapacity(size).coerceAtLeast(16))\n return associateWithTo(result, valueSelector)\n}\n\n/\*\*\n \* Returns a  
 [Map] where keys are elements from the given array and values are\n \* produced by the [valueSelector] function  
 applied to each element.\n \* \n \* If any two elements are equal, the last one gets added to the map.\n \* \n \* The  
 returned map preserves the entry iteration order of the original array.\n \* \n \* @sample

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samples.collections.Collections.Transformations.associateWith\n
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun <V>
BooleanArray.associateWith(valueSelector: (Boolean) -> V): Map<Boolean, V> {\n  val result =
LinkedHashMap<Boolean, V>(mapCapacity(size).coerceAtLeast(16))\n  return associateWithTo(result,
valueSelector)\n}\n\n/**\n * Returns a [Map] where keys are elements from the given array and values are\n *
produced by the [valueSelector] function applied to
each element.\n * \n * If any two elements are equal, the last one gets added to the map.\n * \n * The returned map
preserves the entry iteration order of the original array.\n * \n * @sample
samples.collections.Collections.Transformations.associateWith\n
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun <V>
CharArray.associateWith(valueSelector: (Char) -> V): Map<Char, V> {\n  val result = LinkedHashMap<Char,
V>(mapCapacity(size).coerceAtMost(128)).coerceAtLeast(16))\n  return associateWithTo(result,
valueSelector)\n}\n\n/**\n * Populates and returns the [destination] mutable map with key-value pairs for each
element of the given array,\n * where key is the element itself and value is provided by the [valueSelector] function
applied to that key.\n * \n * If any two elements are equal, the last one overwrites the former value in the map.\n * \n *
@sample samples.collections.Collections.Transformations.associateWithTo\n
*\n@SinceKotlin("1.4")\npublic
inline
fun <K, V, M : MutableMap<in K, in V>> Array<out K>.associateWithTo(destination: M, valueSelector: (K) ->
V): M {\n  for (element in this) {\n    destination.put(element, valueSelector(element))\n  }\n  return
destination\n}\n\n/**\n * Populates and returns the [destination] mutable map with key-value pairs for each element
of the given array,\n * where key is the element itself and value is provided by the [valueSelector] function applied
to that key.\n * \n * If any two elements are equal, the last one overwrites the former value in the map.\n * \n *
@sample samples.collections.Collections.Transformations.associateWithTo\n
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun <V, M : MutableMap<in Byte, in V>>
ByteArray.associateWithTo(destination: M, valueSelector: (Byte) -> V): M {\n  for (element in this) {\n
destination.put(element, valueSelector(element))\n  }\n  return destination\n}\n\n/**\n * Populates and returns the
[destination]
mutable map with key-value pairs for each element of the given array,\n * where key is the element itself and value
is provided by the [valueSelector] function applied to that key.\n * \n * If any two elements are equal, the last one
overwrites the former value in the map.\n * \n * @sample
samples.collections.Collections.Transformations.associateWithTo\n
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun <V, M : MutableMap<in Short, in V>>
ShortArray.associateWithTo(destination: M, valueSelector: (Short) -> V): M {\n  for (element in this) {\n
destination.put(element, valueSelector(element))\n  }\n  return destination\n}\n\n/**\n * Populates and returns the
[destination] mutable map with key-value pairs for each element of the given array,\n * where key is the element
itself and value is provided by the [valueSelector] function applied to that key.\n * \n * If any two elements are
equal, the last one overwrites the former value in the map.\n * \n *
@sample samples.collections.Collections.Transformations.associateWithTo\n
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun <V, M : MutableMap<in Int, in V>>
IntArray.associateWithTo(destination: M, valueSelector: (Int) -> V): M {\n  for (element in this) {\n
destination.put(element, valueSelector(element))\n  }\n  return destination\n}\n\n/**\n * Populates and returns the
[destination] mutable map with key-value pairs for each element of the given array,\n * where key is the element
itself and value is provided by the [valueSelector] function applied to that key.\n * \n * If any two elements are
equal, the last one overwrites the former value in the map.\n * \n *
@sample
samples.collections.Collections.Transformations.associateWithTo\n
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun <V, M : MutableMap<in Long, in V>>
LongArray.associateWithTo(destination: M, valueSelector: (Long) -> V): M {\n  for (element in this) {\n

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    destination.put(element, valueSelector(element))\n } return destination\n}\n\n/**\n * Populates and
returns the [destination] mutable map with key-value pairs for each element of the given array,\n * where key is the
element itself and value is provided by the [valueSelector] function applied to that key.\n * \n * If any two elements
are equal, the last one overwrites the former value in the map.\n * \n * @sample
samples.collections.Collections.Transformations.associateWithTo\n
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun <V, M : MutableMap<in Float, in V>>
FloatArray.associateWithTo(destination: M, valueSelector: (Float) -> V): M {\n  for (element in this) {\n
destination.put(element, valueSelector(element))\n  }\n  return destination\n}\n\n/**\n * Populates and returns the
[destination] mutable map with key-value pairs for each element of the given array,\n * where key is the element
itself and value is provided by the [valueSelector]
function applied to that key.\n * \n * If any two elements are equal, the last one overwrites the former value in the
map.\n * \n * @sample samples.collections.Collections.Transformations.associateWithTo\n
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun <V, M : MutableMap<in Double, in V>>
DoubleArray.associateWithTo(destination: M, valueSelector: (Double) -> V): M {\n  for (element in this) {\n
destination.put(element, valueSelector(element))\n  }\n  return destination\n}\n\n/**\n * Populates and returns the
[destination] mutable map with key-value pairs for each element of the given array,\n * where key is the element
itself and value is provided by the [valueSelector] function applied to that key.\n * \n * If any two elements are
equal, the last one overwrites the former value in the map.\n * \n * @sample
samples.collections.Collections.Transformations.associateWithTo\n
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline
fun <V, M : MutableMap<in Boolean, in V>> BooleanArray.associateWithTo(destination: M, valueSelector:
(Boolean) -> V): M {\n  for (element in this) {\n    destination.put(element, valueSelector(element))\n  }\n
return destination\n}\n\n/**\n * Populates and returns the [destination] mutable map with key-value pairs for each
element of the given array,\n * where key is the element itself and value is provided by the [valueSelector] function
applied to that key.\n * \n * If any two elements are equal, the last one overwrites the former value in the map.\n * \n
* @sample samples.collections.Collections.Transformations.associateWithTo\n
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun <V, M : MutableMap<in Char, in V>>
CharArray.associateWithTo(destination: M, valueSelector: (Char) -> V): M {\n  for (element in this) {\n
destination.put(element, valueSelector(element))\n  }\n  return destination\n}\n\n/**\n * Appends all elements to
the given
[destination] collection.\n *\npublic fun <T, C : MutableCollection<in T>> Array<out T>.toCollection(destination:
C): C {\n  for (item in this) {\n    destination.add(item)\n  }\n  return destination\n}\n\n/**\n * Appends all
elements to the given [destination] collection.\n *\npublic fun <C : MutableCollection<in Byte>>
ByteArray.toCollection(destination: C): C {\n  for (item in this) {\n    destination.add(item)\n  }\n  return
destination\n}\n\n/**\n * Appends all elements to the given [destination] collection.\n *\npublic fun <C :
MutableCollection<in Short>> ShortArray.toCollection(destination: C): C {\n  for (item in this) {\n
destination.add(item)\n  }\n  return destination\n}\n\n/**\n * Appends all elements to the given [destination]
collection.\n *\npublic fun <C : MutableCollection<in Int>> IntArray.toCollection(destination: C): C {\n  for
(item in this) {\n    destination.add(item)\n  }\n  return destination\n}\n\n/**\n * Appends
all elements to the given [destination] collection.\n *\npublic fun <C : MutableCollection<in Long>>
LongArray.toCollection(destination: C): C {\n  for (item in this) {\n    destination.add(item)\n  }\n  return
destination\n}\n\n/**\n * Appends all elements to the given [destination] collection.\n *\npublic fun <C :
MutableCollection<in Float>> FloatArray.toCollection(destination: C): C {\n  for (item in this) {\n
destination.add(item)\n  }\n  return destination\n}\n\n/**\n * Appends all elements to the given [destination]
collection.\n *\npublic fun <C : MutableCollection<in Double>> DoubleArray.toCollection(destination: C): C {\n
for (item in this) {\n    destination.add(item)\n  }\n  return destination\n}\n\n/**\n * Appends all elements to the
given [destination] collection.\n *\npublic fun <C : MutableCollection<in Boolean>>
BooleanArray.toCollection(destination: C): C {\n  for (item in this) {\n    destination.add(item)\n  }\n
return destination\n}\n

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return destination\n}\n\n/**\n * Appends all elements to the given [destination] collection.\n */\npublic fun <C : MutableCollection<in Char>> CharArray.toCollection(destination: C): C {\n    for (item in this) {\n        destination.add(item)\n    }\n    return destination\n}\n\n/**\n * Returns a new [HashSet] of all elements.\n */\npublic fun <T> Array<out T>.toHashSet(): HashSet<T> {\n    return toCollection(HashSet<T>(mapCapacity(size)))\n}\n\n/**\n * Returns a new [HashSet] of all elements.\n */\npublic fun ByteArray.toHashSet(): HashSet<Byte> {\n    return toCollection(HashSet<Byte>(mapCapacity(size)))\n}\n\n/**\n * Returns a new [HashSet] of all elements.\n */\npublic fun ShortArray.toHashSet(): HashSet<Short> {\n    return toCollection(HashSet<Short>(mapCapacity(size)))\n}\n\n/**\n * Returns a new [HashSet] of all elements.\n */\npublic fun IntArray.toHashSet(): HashSet<Int> {\n    return toCollection(HashSet<Int>(mapCapacity(size)))\n}\n\n/**\n * Returns a new [HashSet] of all elements.\n */\npublic fun LongArray.toHashSet(): HashSet<Long> {\n    return toCollection(HashSet<Long>(mapCapacity(size)))\n}\n\n/**\n * Returns a new [HashSet] of all elements.\n */\npublic fun FloatArray.toHashSet(): HashSet<Float> {\n    return toCollection(HashSet<Float>(mapCapacity(size)))\n}\n\n/**\n * Returns a new [HashSet] of all elements.\n */\npublic fun DoubleArray.toHashSet(): HashSet<Double> {\n    return toCollection(HashSet<Double>(mapCapacity(size)))\n}\n\n/**\n * Returns a new [HashSet] of all elements.\n */\npublic fun BooleanArray.toHashSet(): HashSet<Boolean> {\n    return toCollection(HashSet<Boolean>(mapCapacity(size)))\n}\n\n/**\n * Returns a new [HashSet] of all elements.\n */\npublic fun CharArray.toHashSet(): HashSet<Char> {\n    return toCollection(HashSet<Char>(mapCapacity(size.coerceAtMost(128))))\n}\n\n/**\n * Returns a [List] containing all elements.\n */\npublic fun <T> Array<out T>.toList(): List<T> {\n    return when (size) {\n        0 -> emptyList()\n        1 -> listOf(this[0])\n        else -> this.toMutableList()\n    }\n}\n\n/**\n * Returns a [List] containing all elements.\n */\npublic fun ByteArray.toList(): List<Byte> {\n    return when (size) {\n        0 -> emptyList()\n        1 -> listOf(this[0])\n        else -> this.toMutableList()\n    }\n}\n\n/**\n * Returns a [List] containing all elements.\n */\npublic fun ShortArray.toList(): List<Short> {\n    return when (size) {\n        0 -> emptyList()\n        1 -> listOf(this[0])\n        else -> this.toMutableList()\n    }\n}\n\n/**\n * Returns a [List] containing all elements.\n */\npublic fun IntArray.toList(): List<Int> {\n    return when (size) {\n        0 -> emptyList()\n        1 -> listOf(this[0])\n        else -> this.toMutableList()\n    }\n}\n\n/**\n * Returns a [List] containing all elements.\n */\npublic fun LongArray.toList(): List<Long> {\n    return when (size) {\n        0 -> emptyList()\n        1 -> listOf(this[0])\n        else -> this.toMutableList()\n    }\n}\n\n/**\n * Returns a [List] containing all elements.\n */\npublic fun FloatArray.toList(): List<Float> {\n    return when (size) {\n        0 -> emptyList()\n        1 -> listOf(this[0])\n        else -> this.toMutableList()\n    }\n}\n\n/**\n * Returns a [List] containing all elements.\n */\npublic fun DoubleArray.toList(): List<Double> {\n    return when (size) {\n        0 -> emptyList()\n        1 -> listOf(this[0])\n        else -> this.toMutableList()\n    }\n}\n\n/**\n * Returns a [List] containing all elements.\n */\npublic fun BooleanArray.toList(): List<Boolean> {\n    return when (size) {\n        0 -> emptyList()\n        1 -> listOf(this[0])\n        else -> this.toMutableList()\n    }\n}\n\n/**\n * Returns a [List] containing all elements.\n */\npublic fun CharArray.toList(): List<Char> {\n    return when (size) {\n        0 -> emptyList()\n        1 -> listOf(this[0])\n        else -> this.toMutableList()\n    }\n}\n\n/**\n * Returns a new [MutableList] filled with all elements of this array.\n */\npublic fun <T> Array<out T>.toMutableList(): MutableList<T> {\n    return ArrayList(this.asCollection())\n}\n\n/**\n * Returns a new [MutableList] filled with all elements of this array.\n */\npublic fun ByteArray.toMutableList(): MutableList<Byte> {\n    val list = ArrayList<Byte>(size)\n    for (item in this) list.add(item)\n    return list\n}\n\n/**\n * Returns a new [MutableList] filled with all elements of this array.\n */\npublic fun ShortArray.toMutableList(): MutableList<Short> {\n    val list = ArrayList<Short>(size)\n    for (item in this) list.add(item)\n    return list\n}\n\n/**\n * Returns a new [MutableList] filled with all elements of this array.\n */\npublic fun IntArray.toMutableList(): MutableList<Int> {\n    val list = ArrayList<Int>(size)\n    for (item in this) list.add(item)\n    return list\n}\n\n/**\n * Returns a new [MutableList] filled with all elements of this array.\n */\npublic fun LongArray.toMutableList(): MutableList<Long> {\n    val list = ArrayList<Long>(size)\n    for (item in this) list.add(item)\n    return list\n}\n\n/**\n * Returns a new [MutableList] filled with all elements of this array.\n */\npublic fun FloatArray.toMutableList(): MutableList<Float> {\n    val list = ArrayList<Float>(size)\n    for (item in this) list.add(item)\n    return list\n}\n\n/**\n * Returns a new [MutableList] filled with all elements of this array.\n */\npublic fun DoubleArray.toMutableList(): MutableList<Double> {\n    val list = ArrayList<Double>(size)\n    for (item in this) list.add(item)\n    return list\n}\n\n/**\n * Returns a new [MutableList] filled with all elements of this array.\n */\npublic fun BooleanArray.toMutableList(): MutableList<Boolean> {\n    val list = ArrayList<Boolean>(size)\n    for (item in this) list.add(item)\n    return list\n}\n\n/**\n * Returns a new [MutableList] filled with all elements of this array.\n */\npublic fun CharArray.toMutableList(): MutableList<Char> {\n    val list = ArrayList<Char>(size)\n    for (item in this) list.add(item)\n    return list\n}
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array.\n */\npublic fun LongArray.toMutableList(): MutableList<Long>
{\n val list = ArrayList<Long>(size)\n for (item in this) list.add(item)\n return list}\n\n/**\n * Returns a
new [MutableList] filled with all elements of this array.\n */\npublic fun FloatArray.toMutableList():
MutableList<Float> {\n val list = ArrayList<Float>(size)\n for (item in this) list.add(item)\n return
list}\n\n/**\n * Returns a new [MutableList] filled with all elements of this array.\n */\npublic fun
DoubleArray.toMutableList(): MutableList<Double> {\n val list = ArrayList<Double>(size)\n for (item in this)
list.add(item)\n return list}\n\n/**\n * Returns a new [MutableList] filled with all elements of this array.\n
*/\npublic fun BooleanArray.toMutableList(): MutableList<Boolean> {\n val list = ArrayList<Boolean>(size)\n
for (item in this) list.add(item)\n return list}\n\n/**\n * Returns a new [MutableList] filled with all elements of
this array.\n */\npublic fun CharArray.toMutableList(): MutableList<Char> {\n val
list = ArrayList<Char>(size)\n for (item in this) list.add(item)\n return list}\n\n/**\n * Returns a [Set] of all
elements.\n * \n * The returned set preserves the element iteration order of the original array.\n */\npublic fun <T>
Array<out T>.toSet(): Set<T> {\n return when (size) {\n 0 -> emptySet()\n 1 -> setOf(this[0])\n else -
-> toCollection(LinkedHashSet<T>(mapCapacity(size)))\n }\n}\n\n/**\n * Returns a [Set] of all elements.\n * \n *
The returned set preserves the element iteration order of the original array.\n */\npublic fun ByteArray.toSet():
Set<Byte> {\n return when (size) {\n 0 -> emptySet()\n 1 -> setOf(this[0])\n else ->
toCollection(LinkedHashSet<Byte>(mapCapacity(size)))\n }\n}\n\n/**\n * Returns a [Set] of all elements.\n * \n *
The returned set preserves the element iteration order of the original array.\n */\npublic fun ShortArray.toSet():
Set<Short> {\n return when (size) {\n 0 -> emptySet()\n 1 -> setOf(this[0])\n else -> toCollection(LinkedHashSet<Short>(mapCapacity(size)))\n }\n}\n\n/**\n * Returns a [Set] of all elements.\n * \n * The returned set preserves the element iteration order of the original array.\n
*/\npublic fun IntArray.toSet(): Set<Int> {\n return when (size) {\n 0 -> emptySet()\n 1 ->
setOf(this[0])\n else -> toCollection(LinkedHashSet<Int>(mapCapacity(size)))\n }\n}\n\n/**\n * Returns a
[Set] of all elements.\n * \n * The returned set preserves the element iteration order of the original array.\n */\npublic
fun LongArray.toSet(): Set<Long> {\n return when (size) {\n 0 -> emptySet()\n 1 -> setOf(this[0])\n
else -> toCollection(LinkedHashSet<Long>(mapCapacity(size)))\n }\n}\n\n/**\n * Returns a [Set] of all
elements.\n * \n * The returned set preserves the element iteration order of the original array.\n */\npublic fun
FloatArray.toSet(): Set<Float> {\n return when (size) {\n 0 -> emptySet()\n 1 -> setOf(this[0])\n else -> toCollection(LinkedHashSet<Float>(mapCapacity(size)))\n }\n}\n\n/**\n * Returns a [Set] of all elements.\n * \n * The returned set preserves the element iteration order of the
original array.\n */\npublic fun DoubleArray.toSet(): Set<Double> {\n return when (size) {\n 0 ->
emptySet()\n 1 -> setOf(this[0])\n else -> toCollection(LinkedHashSet<Double>(mapCapacity(size)))\n }\n}\n\n/**\n * Returns a [Set] of all elements.\n * \n * The returned set preserves the element iteration order of the
original array.\n */\npublic fun BooleanArray.toSet(): Set<Boolean> {\n return when (size) {\n 0 ->
emptySet()\n 1 -> setOf(this[0])\n else -> toCollection(LinkedHashSet<Boolean>(mapCapacity(size)))\n }\n}\n\n/**\n * Returns a [Set] of all elements.\n * \n * The returned set preserves the element iteration order of the
original array.\n */\npublic fun CharArray.toSet(): Set<Char> {\n
return when (size) {\n 0 -> emptySet()\n 1 -> setOf(this[0])\n else ->
toCollection(LinkedHashSet<Char>(mapCapacity(size.coerceAtMost(128))))\n }\n}\n\n/**\n * Returns a single
list of all elements yielded from results of [transform] function being invoked on each element of original array.\n
*/\n * @sample samples.collections.Collections.Transformations.flatMap\n */\npublic inline fun <T, R> Array<out
T>.flatMap(transform: (T) -> Iterable<R>): List<R> {\n return flatMapTo(ArrayList<R>(), transform)\n}\n\n/**\n
* Returns a single list of all elements yielded from results of [transform] function being invoked on each element of
original array.\n * \n * @sample samples.collections.Collections.Transformations.flatMap\n */\npublic inline fun
<R> ByteArray.flatMap(transform: (Byte) -> Iterable<R>): List<R> {\n return flatMapTo(ArrayList<R>(),
transform)\n}\n\n/**\n * Returns a single list of all elements yielded from results of [transform] function being
invoked

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on each element of original array.\n * \n * @sample samples.collections.Collections.Transformations.flatMap\n
*\npublic inline fun <R> ShortArray.flatMap(transform: (Short) -> Iterable<R>): List<R> {\n  return
flatMapTo(ArrayList<R>(), transform)\n}\n\n/**\n * Returns a single list of all elements yielded from results of
[transform] function being invoked on each element of original array.\n * \n * @sample
samples.collections.Collections.Transformations.flatMap\n *\npublic inline fun <R> IntArray.flatMap(transform:
(Int) -> Iterable<R>): List<R> {\n  return flatMapTo(ArrayList<R>(), transform)\n}\n\n/**\n * Returns a single
list of all elements yielded from results of [transform] function being invoked on each element of original array.\n *
\n * @sample samples.collections.Collections.Transformations.flatMap\n *\npublic inline fun <R>
LongArray.flatMap(transform: (Long) -> Iterable<R>): List<R> {\n  return flatMapTo(ArrayList<R>(),
transform)\n}\n\n/**\n * Returns a single
list of all elements yielded from results of [transform] function being invoked on each element of original array.\n *
\n * @sample samples.collections.Collections.Transformations.flatMap\n *\npublic inline fun <R>
FloatArray.flatMap(transform: (Float) -> Iterable<R>): List<R> {\n  return flatMapTo(ArrayList<R>(),
transform)\n}\n\n/**\n * Returns a single list of all elements yielded from results of [transform] function being
invoked on each element of original array.\n * \n * @sample
samples.collections.Collections.Transformations.flatMap\n *\npublic inline fun <R>
DoubleArray.flatMap(transform: (Double) -> Iterable<R>): List<R> {\n  return flatMapTo(ArrayList<R>(),
transform)\n}\n\n/**\n * Returns a single list of all elements yielded from results of [transform] function being
invoked on each element of original array.\n * \n * @sample
samples.collections.Collections.Transformations.flatMap\n *\npublic inline fun <R>
BooleanArray.flatMap(transform: (Boolean) -> Iterable<R>):
List<R> {\n  return flatMapTo(ArrayList<R>(), transform)\n}\n\n/**\n * Returns a single list of all elements
yielded from results of [transform] function being invoked on each element of original array.\n * \n * @sample
samples.collections.Collections.Transformations.flatMap\n *\npublic inline fun <R> CharArray.flatMap(transform:
(Char) -> Iterable<R>): List<R> {\n  return flatMapTo(ArrayList<R>(), transform)\n}\n\n/**\n * Returns a single
list of all elements yielded from results of [transform] function being invoked on each element of original array.\n *
\n * @sample samples.collections.Collections.Transformations.flatMap\n
*\n*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("flatMapSequence")\npublic inline fun <T, R> Array<out
T>.flatMap(transform: (T) -> Sequence<R>): List<R> {\n  return flatMapTo(ArrayList<R>(),
transform)\n}\n\n/**\n * Returns a single list of all elements
yielded from results of [transform] function being invoked on each element\n * and its index in the original array.\n
\n * \n * @sample samples.collections.Collections.Transformations.flatMapIndexed\n
*\n*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("flatMapIndexedIterable")\n@kotlin.internal.InlineOnly\npublic
inline fun <T, R> Array<out T>.flatMapIndexed(transform: (index: Int, T) -> Iterable<R>): List<R> {\n  return
flatMapIndexedTo(ArrayList<R>(), transform)\n}\n\n/**\n * Returns a single list of all elements yielded from
results of [transform] function being invoked on each element\n * and its index in the original array.\n * \n *
\n * @sample samples.collections.Collections.Transformations.flatMapIndexed\n
*\n*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("flatMapIndexedIterable")\n@kotlin.internal.InlineOnly\npublic
inline fun <R> ByteArray.flatMapIndexed(transform: (index: Int, Byte) -> Iterable<R>): List<R> {\n  return
flatMapIndexedTo(ArrayList<R>(), transform)\n}\n\n/**\n * Returns a single list of all elements yielded from
results of [transform] function being invoked on each element\n * and its index in the original array.\n * \n *
\n * @sample samples.collections.Collections.Transformations.flatMapIndexed\n
*\n*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("flatMapIndexedIterable")\n@kotlin.internal.InlineOnly\npublic
inline fun <R> ShortArray.flatMapIndexed(transform: (index: Int, Short) -> Iterable<R>): List<R> {\n  return

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flatMapIndexedTo(ArrayList<R>(), transform)\n}\n\n/**\n * Returns a single list of all elements yielded from
results of [transform] function being invoked on each element\n * and its index in the original array.\n * \n *
@sample samples.collections.Collections.Transformations.flatMapIndexed\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("flatMapIndexedIterable")\n@kotlin.internal.InlineOnly\npublic
inline fun <R> IntArray.flatMapIndexed(transform: (index: Int, Int) -> Iterable<R>): List<R> {\n return
flatMapIndexedTo(ArrayList<R>(), transform)\n}\n\n/**\n * Returns a single list of all elements yielded from
results of [transform] function being invoked on each element\n * and its index in the original array.\n * \n *
@sample samples.collections.Collections.Transformations.flatMapIndexed\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("flatMapIndexedIterable")\n@kotlin.internal.InlineOnly\npublic
inline fun <R> LongArray.flatMapIndexed(transform: (index: Int, Long) -> Iterable<R>): List<R> {\n return
flatMapIndexedTo(ArrayList<R>(),
transform)\n}\n\n/**\n * Returns a single list of all elements yielded from results of [transform] function being
invoked on each element\n * and its index in the original array.\n * \n * @sample
samples.collections.Collections.Transformations.flatMapIndexed\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("flatMapIndexedIterable")\n@kotlin.internal.InlineOnly\npublic
inline fun <R> FloatArray.flatMapIndexed(transform: (index: Int, Float) -> Iterable<R>): List<R> {\n return
flatMapIndexedTo(ArrayList<R>(), transform)\n}\n\n/**\n * Returns a single list of all elements yielded from
results of [transform] function being invoked on each element\n * and its index in the original array.\n * \n *
@sample samples.collections.Collections.Transformations.flatMapIndexed\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("flatMapIndexedIterable")\n@kotlin.internal.InlineOnly\npublic
inline fun <R> DoubleArray.flatMapIndexed(transform: (index: Int, Double) -> Iterable<R>): List<R> {\n return
flatMapIndexedTo(ArrayList<R>(), transform)\n}\n\n/**\n * Returns a single list of all elements yielded from
results of [transform] function being invoked on each element\n * and its index in the original array.\n * \n *
@sample samples.collections.Collections.Transformations.flatMapIndexed\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("flatMapIndexedIterable")\n@kotlin.internal.InlineOnly\npublic
inline fun <R> BooleanArray.flatMapIndexed(transform: (index: Int, Boolean) -> Iterable<R>): List<R> {\n
return flatMapIndexedTo(ArrayList<R>(), transform)\n}\n\n/**\n * Returns a single list of all elements yielded
from results of [transform] function being invoked
on each element\n * and its index in the original array.\n * \n * @sample
samples.collections.Collections.Transformations.flatMapIndexed\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("flatMapIndexedIterable")\n@kotlin.internal.InlineOnly\npublic
inline fun <R> CharArray.flatMapIndexed(transform: (index: Int, Char) -> Iterable<R>): List<R> {\n return
flatMapIndexedTo(ArrayList<R>(), transform)\n}\n\n/**\n * Returns a single list of all elements yielded from
results of [transform] function being invoked on each element\n * and its index in the original array.\n * \n *
@sample samples.collections.Collections.Transformations.flatMapIndexed\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("flatMapIndexedSequence")\n@kotlin.internal.InlineOnly\npubli
c inline fun <T, R> Array<out T>.flatMapIndexed(transform:
(index: Int, T) -> Sequence<R>): List<R> {\n return flatMapIndexedTo(ArrayList<R>(), transform)\n}\n\n/**\n *
Appends all elements yielded from results of [transform] function being invoked on each element\n * and its index
in the original array, to the given [destination].\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution

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ByLambdaReturnType\n@kotlin.jvm.JvmName("\flatMapIndexedIterableTo")\n@kotlin.internal.InlineOnly\npubli
c inline fun <T, R, C : MutableCollection<in R>> Array<out T>.flatMapIndexedTo(destination: C, transform:
(index: Int, T) -> Iterable<R>): C {\n  var index = 0\n  for (element in this) {\n    val list = transform(index++,
element)\n    destination.addAll(list)\n  }\n  return destination\n}\n\n/**\n * Appends all elements yielded from
results of [transform] function being invoked on each element\n * and its index in the original array, to the given
[destination].\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("\flatMapIndexedIterableTo")\n@kotlin.internal.InlineOnly\npubli
c inline fun <R, C : MutableCollection<in R>> ByteArray.flatMapIndexedTo(destination: C, transform: (index: Int,
Byte) -> Iterable<R>): C {\n  var index = 0\n  for (element in this) {\n    val list = transform(index++,
element)\n    destination.addAll(list)\n  }\n  return destination\n}\n\n/**\n * Appends all elements yielded from
results of [transform] function being invoked on each element\n * and its index in the original array, to the given
[destination].\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("\flatMapIndexedIterableTo")\n@kotlin.internal.InlineOnly\npubli
c inline fun <R, C : MutableCollection<in R>> ShortArray.flatMapIndexedTo(destination:
C, transform: (index: Int, Short) -> Iterable<R>): C {\n  var index = 0\n  for (element in this) {\n    val list =
transform(index++, element)\n    destination.addAll(list)\n  }\n  return destination\n}\n\n/**\n * Appends all
elements yielded from results of [transform] function being invoked on each element\n * and its index in the original
array, to the given [destination].\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("\flatMapIndexedIterableTo")\n@kotlin.internal.InlineOnly\npubli
c inline fun <R, C : MutableCollection<in R>> IntArray.flatMapIndexedTo(destination: C, transform: (index: Int,
Int) -> Iterable<R>): C {\n  var index = 0\n  for (element in this) {\n    val list = transform(index++, element)\n
destination.addAll(list)\n  }\n  return destination\n}\n\n/**\n * Appends all elements yielded from results of
[transform] function being invoked
on each element\n * and its index in the original array, to the given [destination].\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("\flatMapIndexedIterableTo")\n@kotlin.internal.InlineOnly\npubli
c inline fun <R, C : MutableCollection<in R>> LongArray.flatMapIndexedTo(destination: C, transform: (index: Int,
Long) -> Iterable<R>): C {\n  var index = 0\n  for (element in this) {\n    val list = transform(index++,
element)\n    destination.addAll(list)\n  }\n  return destination\n}\n\n/**\n * Appends all elements yielded from
results of [transform] function being invoked on each element\n * and its index in the original array, to the given
[destination].\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("\flatMapIndexedIterableTo")\n@kotlin.internal.InlineOnly\npubli
c
inline fun <R, C : MutableCollection<in R>> FloatArray.flatMapIndexedTo(destination: C, transform: (index: Int,
Float) -> Iterable<R>): C {\n  var index = 0\n  for (element in this) {\n    val list = transform(index++,
element)\n    destination.addAll(list)\n  }\n  return destination\n}\n\n/**\n * Appends all elements yielded from
results of [transform] function being invoked on each element\n * and its index in the original array, to the given
[destination].\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("\flatMapIndexedIterableTo")\n@kotlin.internal.InlineOnly\npubli
c inline fun <R, C : MutableCollection<in R>> DoubleArray.flatMapIndexedTo(destination: C, transform: (index:
Int, Double) -> Iterable<R>): C {\n  var index = 0\n  for (element in this) {\n    val list = transform(index++,
element)\n    destination.addAll(list)\n  }\n  return destination\n}\n\n/**\n

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* Appends all elements yielded from results of [transform] function being invoked on each element\n * and its
index in the original array, to the given [destination].\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("flatMapIndexedIterableTo")\n@kotlin.internal.InlineOnly\npubli
c inline fun <R, C : MutableCollection<in R>> BooleanArray.flatMapIndexedTo(destination: C, transform: (index:
Int, Boolean) -> Iterable<R>): C {\n    var index = 0\n    for (element in this) {\n        val list = transform(index++,
element)\n        destination.addAll(list)\n    }\n    return destination\n}\n\n/**\n * Appends all elements yielded from
results of [transform] function being invoked on each element\n * and its index in the original array, to the given
[destination].\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("flatMapIndexedIterableTo")\n@kotlin.internal.InlineOnly\npubli
c
inline fun <R, C : MutableCollection<in R>> CharArray.flatMapIndexedTo(destination: C, transform: (index: Int,
Char) -> Iterable<R>): C {\n    var index = 0\n    for (element in this) {\n        val list = transform(index++,
element)\n        destination.addAll(list)\n    }\n    return destination\n}\n\n/**\n * Appends all elements yielded from
results of [transform] function being invoked on each element\n * and its index in the original array, to the given
[destination].\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("flatMapIndexedSequenceTo")\n@kotlin.internal.InlineOnly\npub
blic inline fun <T, R, C : MutableCollection<in R>> Array<out T>.flatMapIndexedTo(destination: C, transform:
(index: Int, T) -> Sequence<R>): C {\n    var index = 0\n    for (element in this) {\n        val list =
transform(index++, element)\n        destination.addAll(list)\n    }\n    return destination\n}\n\n/**\n * Appends all
elements yielded from results of [transform] function being invoked on each element of original array, to the given
[destination].\n *\npublic inline fun <T, R, C : MutableCollection<in R>> Array<out T>.flatMapTo(destination: C,
transform: (T) -> Iterable<R>): C {\n    for (element in this) {\n        val list = transform(element)\n
destination.addAll(list)\n    }\n    return destination\n}\n\n/**\n * Appends all elements yielded from results of
[transform] function being invoked on each element of original array, to the given [destination].\n *\npublic inline
fun <R, C : MutableCollection<in R>> ByteArray.flatMapTo(destination: C, transform: (Byte) -> Iterable<R>): C
{\n    for (element in this) {\n        val list = transform(element)\n        destination.addAll(list)\n    }\n    return
destination\n}\n\n/**\n * Appends all elements yielded from results of
[transform] function being invoked on each element of original array, to the given [destination].\n *\npublic inline
fun <R, C : MutableCollection<in R>> ShortArray.flatMapTo(destination: C, transform: (Short) -> Iterable<R>): C
{\n    for (element in this) {\n        val list = transform(element)\n        destination.addAll(list)\n    }\n    return
destination\n}\n\n/**\n * Appends all elements yielded from results of [transform] function being invoked on each
element of original array, to the given [destination].\n *\npublic inline fun <R, C : MutableCollection<in R>>
IntArray.flatMapTo(destination: C, transform: (Int) -> Iterable<R>): C {\n    for (element in this) {\n        val list =
transform(element)\n        destination.addAll(list)\n    }\n    return destination\n}\n\n/**\n * Appends all elements
yielded from results of [transform] function being invoked on each element of original array, to the given
[destination].\n *\npublic inline fun <R, C : MutableCollection<in R>> LongArray.flatMapTo(destination:
C, transform: (Long) -> Iterable<R>): C {\n    for (element in this) {\n        val list = transform(element)\n
destination.addAll(list)\n    }\n    return destination\n}\n\n/**\n * Appends all elements yielded from results of
[transform] function being invoked on each element of original array, to the given [destination].\n *\npublic inline
fun <R, C : MutableCollection<in R>> FloatArray.flatMapTo(destination: C, transform: (Float) -> Iterable<R>): C
{\n    for (element in this) {\n        val list = transform(element)\n        destination.addAll(list)\n    }\n    return
destination\n}\n\n/**\n * Appends all elements yielded from results of [transform] function being invoked on each
element of original array, to the given [destination].\n *\npublic inline fun <R, C : MutableCollection<in R>>
DoubleArray.flatMapTo(destination: C, transform: (Double) -> Iterable<R>): C {\n    for (element in this) {\n
val list = transform(element)\n

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destination.addAll(list)\n } \n return destination\n}\n\n/**\n * Appends all elements yielded from results of
[transform] function being invoked on each element of original array, to the given [destination].\n */\npublic inline
fun <R, C : MutableCollection<in R>> BooleanArray.flatMapTo(destination: C, transform: (Boolean) ->
Iterable<R>): C {\n for (element in this) {\n val list = transform(element)\n destination.addAll(list)\n
}\n return destination\n}\n\n/**\n * Appends all elements yielded from results of [transform] function being
invoked on each element of original array, to the given [destination].\n */\npublic inline fun <R, C :
MutableCollection<in R>> CharArray.flatMapTo(destination: C, transform: (Char) -> Iterable<R>): C {\n for
(element in this) {\n val list = transform(element)\n destination.addAll(list)\n }\n return
destination\n}\n\n/**\n * Appends all elements yielded from results of [transform] function being invoked
on each element of original array, to the given [destination].\n
*/\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("flatMapSequenceTo")\npublic inline fun <T, R, C :
MutableCollection<in R>> Array<out T>.flatMapTo(destination: C, transform: (T) -> Sequence<R>): C {\n for
(element in this) {\n val list = transform(element)\n destination.addAll(list)\n }\n return
destination\n}\n\n/**\n * Groups elements of the original array by the key returned by the given [keySelector]
function\n * applied to each element and returns a map where each group key is associated with a list of
corresponding elements.\n * \n * The returned map preserves the entry iteration order of the keys produced from the
original array.\n * \n * @sample samples.collections.Collections.Transformations.groupBy\n */\npublic inline fun
<T, K> Array<out T>.groupBy(keySelector: (T) -> K): Map<K, List<T>>
{\n return groupByTo(LinkedHashMap<K, MutableList<T>>(), keySelector)\n}\n\n/**\n * Groups elements of
the original array by the key returned by the given [keySelector] function\n * applied to each element and returns a
map where each group key is associated with a list of corresponding elements.\n * \n * The returned map preserves
the entry iteration order of the keys produced from the original array.\n * \n * @sample
samples.collections.Collections.Transformations.groupBy\n */\npublic inline fun <K>
ByteArray.groupBy(keySelector: (Byte) -> K): Map<K, List<Byte>> {\n return groupByTo(LinkedHashMap<K,
MutableList<Byte>>(), keySelector)\n}\n\n/**\n * Groups elements of the original array by the key returned by the
given [keySelector] function\n * applied to each element and returns a map where each group key is associated with
a list of corresponding elements.\n * \n * The returned map preserves the entry iteration order of the keys produced
from the original array.\n * \n * @sample
samples.collections.Collections.Transformations.groupBy\n */\npublic inline fun <K>
ShortArray.groupBy(keySelector: (Short) -> K): Map<K, List<Short>> {\n return
groupByTo(LinkedHashMap<K, MutableList<Short>>(), keySelector)\n}\n\n/**\n * Groups elements of the
original array by the key returned by the given [keySelector] function\n * applied to each element and returns a map
where each group key is associated with a list of corresponding elements.\n * \n * The returned map preserves the
entry iteration order of the keys produced from the original array.\n * \n * @sample
samples.collections.Collections.Transformations.groupBy\n */\npublic inline fun <K>
IntArray.groupBy(keySelector: (Int) -> K): Map<K, List<Int>> {\n return groupByTo(LinkedHashMap<K,
MutableList<Int>>(), keySelector)\n}\n\n/**\n * Groups elements of the original array by the key returned by the
given [keySelector] function\n * applied to each element and returns a map where each group key is associated with
a
list of corresponding elements.\n * \n * The returned map preserves the entry iteration order of the keys produced
from the original array.\n * \n * @sample samples.collections.Collections.Transformations.groupBy\n */\npublic
inline fun <K> LongArray.groupBy(keySelector: (Long) -> K): Map<K, List<Long>> {\n return
groupByTo(LinkedHashMap<K, MutableList<Long>>(), keySelector)\n}\n\n/**\n * Groups elements of the
original array by the key returned by the given [keySelector] function\n * applied to each element and returns a map
where each group key is associated with a list of corresponding elements.\n * \n * The returned map preserves the
entry iteration order of the keys produced from the original array.\n * \n * @sample
samples.collections.Collections.Transformations.groupBy\n */\npublic inline fun <K>

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FloatArray.groupBy(keySelector: (Float) -> K): Map<K, List<Float>> {\n  return groupByTo(LinkedHashMap<K,
MutableList<Float>>(), keySelector)\n}\n\n/**\n * Groups elements of the
original array by the key returned by the given [keySelector] function\n * applied to each element and returns a map
where each group key is associated with a list of corresponding elements.\n * \n * The returned map preserves the
entry iteration order of the keys produced from the original array.\n * \n * @sample
samples.collections.Collections.Transformations.groupBy\n */\npublic inline fun <K>
DoubleArray.groupBy(keySelector: (Double) -> K): Map<K, List<Double>> {\n  return
groupByTo(LinkedHashMap<K, MutableList<Double>>(), keySelector)\n}\n\n/**\n * Groups elements of the
original array by the key returned by the given [keySelector] function\n * applied to each element and returns a map
where each group key is associated with a list of corresponding elements.\n * \n * The returned map preserves the
entry iteration order of the keys produced from the original array.\n * \n * @sample
samples.collections.Collections.Transformations.groupBy\n */\npublic inline fun <K>
BooleanArray.groupBy(keySelector:
(Boolean) -> K): Map<K, List<Boolean>> {\n  return groupByTo(LinkedHashMap<K,
MutableList<Boolean>>(), keySelector)\n}\n\n/**\n * Groups elements of the original array by the key returned by
the given [keySelector] function\n * applied to each element and returns a map where each group key is associated
with a list of corresponding elements.\n * \n * The returned map preserves the entry iteration order of the keys
produced from the original array.\n * \n * @sample samples.collections.Collections.Transformations.groupBy\n */\npublic inline fun <K> CharArray.groupBy(keySelector: (Char) -> K): Map<K, List<Char>> {\n  return
groupByTo(LinkedHashMap<K, MutableList<Char>>(), keySelector)\n}\n\n/**\n * Groups values returned by the
[valueTransform] function applied to each element of the original array\n * by the key returned by the given
[keySelector] function applied to the element\n * and returns a map where each group key is associated with a list of
corresponding values.\n
* \n * The returned map preserves the entry iteration order of the keys produced from the original array.\n * \n *
@sample samples.collections.Collections.Transformations.groupByKeysAndValues\n */\npublic inline fun <T, K,
V> Array<out T>.groupBy(keySelector: (T) -> K, valueTransform: (T) -> V): Map<K, List<V>> {\n  return
groupByTo(LinkedHashMap<K, MutableList<V>>(), keySelector, valueTransform)\n}\n\n/**\n * Groups values
returned by the [valueTransform] function applied to each element of the original array\n * by the key returned by
the given [keySelector] function applied to the element\n * and returns a map where each group key is associated
with a list of corresponding values.\n * \n * The returned map preserves the entry iteration order of the keys
produced from the original array.\n * \n * @sample
samples.collections.Collections.Transformations.groupByKeysAndValues\n */\npublic inline fun <K, V>
ByteArray.groupBy(keySelector: (Byte) -> K, valueTransform: (Byte) -> V):
Map<K, List<V>> {\n  return groupByTo(LinkedHashMap<K, MutableList<V>>(), keySelector,
valueTransform)\n}\n\n/**\n * Groups values returned by the [valueTransform] function applied to each element of
the original array\n * by the key returned by the given [keySelector] function applied to the element\n * and returns
a map where each group key is associated with a list of corresponding values.\n * \n * The returned map preserves
the entry iteration order of the keys produced from the original array.\n * \n * @sample
samples.collections.Collections.Transformations.groupByKeysAndValues\n */\npublic inline fun <K, V>
ShortArray.groupBy(keySelector: (Short) -> K, valueTransform: (Short) -> V): Map<K, List<V>> {\n  return
groupByTo(LinkedHashMap<K, MutableList<V>>(), keySelector, valueTransform)\n}\n\n/**\n * Groups values
returned by the [valueTransform] function applied to each element of the original array\n * by the key returned by
the given [keySelector] function applied to the element\n
* and returns a map where each group key is associated with a list of corresponding values.\n * \n * The returned
map preserves the entry iteration order of the keys produced from the original array.\n * \n * @sample
samples.collections.Collections.Transformations.groupByKeysAndValues\n */\npublic inline fun <K, V>
IntArray.groupBy(keySelector: (Int) -> K, valueTransform: (Int) -> V): Map<K, List<V>> {\n  return
groupByTo(LinkedHashMap<K, MutableList<V>>(), keySelector, valueTransform)\n}\n\n/**\n * Groups values

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returned by the [valueTransform] function applied to each element of the original array\n \* by the key returned by the given [keySelector] function applied to the element\n \* and returns a map where each group key is associated with a list of corresponding values.\n \* \n \* The returned map preserves the entry iteration order of the keys produced from the original array.\n \* \n \* @sample

```

samples.collections.Collections.Transformations.groupByKeysAndValues\n */\npublic
inline fun <K, V> LongArray.groupBy(keySelector: (Long) -> K, valueTransform: (Long) -> V): Map<K,
List<V>> {\n    return groupByTo(LinkedHashMap<K, MutableList<V>>(), keySelector,
valueTransform)\n}\n\n/**\n * Groups values returned by the [valueTransform] function applied to each element of
the original array\n * by the key returned by the given [keySelector] function applied to the element\n * and returns
a map where each group key is associated with a list of corresponding values.\n * \n * The returned map preserves
the entry iteration order of the keys produced from the original array.\n * \n * @sample
samples.collections.Collections.Transformations.groupByKeysAndValues\n */\npublic inline fun <K, V>
FloatArray.groupBy(keySelector: (Float) -> K, valueTransform: (Float) -> V): Map<K, List<V>> {\n    return
groupByTo(LinkedHashMap<K, MutableList<V>>(), keySelector, valueTransform)\n}\n\n/**\n * Groups values
returned by the [valueTransform] function applied to each element of the
original array\n * by the key returned by the given [keySelector] function applied to the element\n * and returns a
map where each group key is associated with a list of corresponding values.\n * \n * The returned map preserves the
entry iteration order of the keys produced from the original array.\n * \n * @sample
samples.collections.Collections.Transformations.groupByKeysAndValues\n */\npublic inline fun <K, V>
DoubleArray.groupBy(keySelector: (Double) -> K, valueTransform: (Double) -> V): Map<K, List<V>> {\n
return groupByTo(LinkedHashMap<K, MutableList<V>>(), keySelector, valueTransform)\n}\n\n/**\n * Groups
values returned by the [valueTransform] function applied to each element of the original array\n * by the key
returned by the given [keySelector] function applied to the element\n * and returns a map where each group key is
associated with a list of corresponding values.\n * \n * The returned map preserves the entry iteration order of the
keys produced from the original array.\n
* \n * @sample samples.collections.Collections.Transformations.groupByKeysAndValues\n */\npublic inline fun
<K, V> BooleanArray.groupBy(keySelector: (Boolean) -> K, valueTransform: (Boolean) -> V): Map<K, List<V>>
{\n    return groupByTo(LinkedHashMap<K, MutableList<V>>(), keySelector, valueTransform)\n}\n\n/**\n *
Groups values returned by the [valueTransform] function applied to each element of the original array\n * by the
key returned by the given [keySelector] function applied to the element\n * and returns a map where each group key
is associated with a list of corresponding values.\n * \n * The returned map preserves the entry iteration order of the
keys produced from the original array.\n * \n * @sample
samples.collections.Collections.Transformations.groupByKeysAndValues\n */\npublic inline fun <K, V>
CharArray.groupBy(keySelector: (Char) -> K, valueTransform: (Char) -> V): Map<K, List<V>> {\n    return
groupByTo(LinkedHashMap<K, MutableList<V>>(), keySelector, valueTransform)\n}\n\n/**\n *
* Groups elements of the original array by the key returned by the given [keySelector] function\n * applied to each
element and puts to the [destination] map each group key associated with a list of corresponding elements.\n * \n *
@return The [destination] map.\n * \n * @sample samples.collections.Collections.Transformations.groupBy\n
*/\npublic inline fun <T, K, M : MutableMap<in K, MutableList<T>>> Array<out T>.groupByTo(destination: M,
keySelector: (T) -> K): M {\n    for (element in this) {\n        val key = keySelector(element)\n        val list =
destination.getOrPut(key) { ArrayList<T>() }\n        list.add(element)\n    }\n    return destination\n}\n\n/**\n *
Groups elements of the original array by the key returned by the given [keySelector] function\n * applied to each
element and puts to the [destination] map each group key associated with a list of corresponding elements.\n * \n *
@return The [destination] map.\n * \n * @sample samples.collections.Collections.Transformations.groupBy\n
*/\npublic inline fun <K, M : MutableMap<in K, MutableList<Byte>>> ByteArray.groupByTo(destination: M,
keySelector: (Byte) -> K): M {\n    for (element in this) {\n        val key = keySelector(element)\n        val list =
destination.getOrPut(key) { ArrayList<Byte>() }\n        list.add(element)\n    }\n    return destination\n}\n\n/**\n *
Groups elements of the original array by the key returned by the given [keySelector] function\n * applied to each

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element and puts to the [destination] map each group key associated with a list of corresponding elements.\n * \n *
@return The [destination] map.\n * \n * @sample samples.collections.Collections.Transformations.groupBy\n
*/\npublic inline fun <K, M : MutableMap<in K, MutableList<Short>>>> ShortArray.groupByTo(destination: M,
keySelector: (Short) -> K): M {\n    for (element in this) {\n        val key = keySelector(element)\n        val list =
destination.getOrPut(key) { ArrayList<Short>() }\n        list.add(element)\n
    }\n    return destination\n}\n\n/**\n * Groups elements of the original array by the key returned by the given
[keySelector] function\n * applied to each element and puts to the [destination] map each group key associated with
a list of corresponding elements.\n * \n * @return The [destination] map.\n * \n * @sample
samples.collections.Collections.Transformations.groupBy\n */\npublic inline fun <K, M : MutableMap<in K,
MutableList<Int>>>> IntArray.groupByTo(destination: M, keySelector: (Int) -> K): M {\n    for (element in this) {\n
        val key = keySelector(element)\n        val list = destination.getOrPut(key) { ArrayList<Int>() }\n
list.add(element)\n    }\n    return destination\n}\n\n/**\n * Groups elements of the original array by the key returned
by the given [keySelector] function\n * applied to each element and puts to the [destination] map each group key
associated with a list of corresponding elements.\n * \n * @return The [destination] map.\n * \n
* @sample samples.collections.Collections.Transformations.groupBy\n */\npublic inline fun <K, M :
MutableMap<in K, MutableList<Long>>>> LongArray.groupByTo(destination: M, keySelector: (Long) -> K): M
{\n    for (element in this) {\n        val key = keySelector(element)\n        val list = destination.getOrPut(key) {
ArrayList<Long>() }\n        list.add(element)\n    }\n    return destination\n}\n\n/**\n * Groups elements of the
original array by the key returned by the given [keySelector] function\n * applied to each element and puts to the
[destination] map each group key associated with a list of corresponding elements.\n * \n * @return The
[destination] map.\n * \n * @sample samples.collections.Collections.Transformations.groupBy\n */\npublic inline
fun <K, M : MutableMap<in K, MutableList<Float>>>> FloatArray.groupByTo(destination: M, keySelector: (Float)
-> K): M {\n    for (element in this) {\n        val key = keySelector(element)\n        val list =
destination.getOrPut(key) {
ArrayList<Float>() }\n        list.add(element)\n    }\n    return destination\n}\n\n/**\n * Groups elements of the
original array by the key returned by the given [keySelector] function\n * applied to each element and puts to the
[destination] map each group key associated with a list of corresponding elements.\n * \n * @return The
[destination] map.\n * \n * @sample samples.collections.Collections.Transformations.groupBy\n */\npublic inline
fun <K, M : MutableMap<in K, MutableList<Double>>>> DoubleArray.groupByTo(destination: M, keySelector:
(Double) -> K): M {\n    for (element in this) {\n        val key = keySelector(element)\n        val list =
destination.getOrPut(key) { ArrayList<Double>() }\n        list.add(element)\n    }\n    return destination\n}\n\n/**
 * Groups elements of the original array by the key returned by the given [keySelector] function\n * applied to each
element and puts to the [destination] map each group key associated with a list of corresponding elements.\n
 * \n * @return The [destination] map.\n * \n * @sample
samples.collections.Collections.Transformations.groupBy\n */\npublic inline fun <K, M : MutableMap<in K,
MutableList<Boolean>>>> BooleanArray.groupByTo(destination: M, keySelector: (Boolean) -> K): M {\n    for
(element in this) {\n        val key = keySelector(element)\n        val list = destination.getOrPut(key) {
ArrayList<Boolean>() }\n        list.add(element)\n    }\n    return destination\n}\n\n/**\n * Groups elements of the
original array by the key returned by the given [keySelector] function\n * applied to each element and puts to the
[destination] map each group key associated with a list of corresponding elements.\n * \n * @return The
[destination] map.\n * \n * @sample samples.collections.Collections.Transformations.groupBy\n */\npublic inline
fun <K, M : MutableMap<in K, MutableList<Char>>>> CharArray.groupByTo(destination: M, keySelector: (Char)
-> K): M {\n    for (element in this) {\n        val key = keySelector(element)\n
        val list = destination.getOrPut(key) { ArrayList<Char>() }\n        list.add(element)\n    }\n    return
destination\n}\n\n/**\n * Groups values returned by the [valueTransform] function applied to each element of the
original array\n * by the key returned by the given [keySelector] function applied to the element\n * and puts to the
[destination] map each group key associated with a list of corresponding values.\n * \n * @return The [destination]
map.\n * \n * @sample samples.collections.Collections.Transformations.groupByKeysAndValues\n */\npublic

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inline fun <T, K, V, M : MutableMap<in K, MutableList<V>>> Array<out T>.groupByTo(destination: M,
keySelector: (T) -> K, valueTransform: (T) -> V): M {\n  for (element in this) {\n    val key =
keySelector(element)\n    val list = destination.getOrPut(key) { ArrayList<V>() }\n
list.add(valueTransform(element))\n  }\n  return destination\n}\n\n/**\n * Groups values returned by the
[valueTransform] function
  applied to each element of the original array\n * by the key returned by the given [keySelector] function applied to
the element\n * and puts to the [destination] map each group key associated with a list of corresponding values.\n *
\n * @return The [destination] map.\n * \n * @sample
samples.collections.Collections.Transformations.groupByKeyAndValues\n */\npublic inline fun <K, V, M :
MutableMap<in K, MutableList<V>>> ByteArray.groupByTo(destination: M, keySelector: (Byte) -> K,
valueTransform: (Byte) -> V): M {\n  for (element in this) {\n    val key = keySelector(element)\n    val list =
destination.getOrPut(key) { ArrayList<V>() }\n    list.add(valueTransform(element))\n  }\n  return
destination\n}\n\n/**\n * Groups values returned by the [valueTransform] function applied to each element of the
original array\n * by the key returned by the given [keySelector] function applied to the element\n * and puts to the
[destination] map each group key associated with
  a list of corresponding values.\n * \n * @return The [destination] map.\n * \n * @sample
samples.collections.Collections.Transformations.groupByKeyAndValues\n */\npublic inline fun <K, V, M :
MutableMap<in K, MutableList<V>>> ShortArray.groupByTo(destination: M, keySelector: (Short) -> K,
valueTransform: (Short) -> V): M {\n  for (element in this) {\n    val key = keySelector(element)\n    val list =
destination.getOrPut(key) { ArrayList<V>() }\n    list.add(valueTransform(element))\n  }\n  return
destination\n}\n\n/**\n * Groups values returned by the [valueTransform] function applied to each element of the
original array\n * by the key returned by the given [keySelector] function applied to the element\n * and puts to the
[destination] map each group key associated with a list of corresponding values.\n * \n * @return The [destination]
map.\n * \n * @sample samples.collections.Collections.Transformations.groupByKeyAndValues\n */\npublic
inline fun <K, V, M : MutableMap<in
K, MutableList<V>>> IntArray.groupByTo(destination: M, keySelector: (Int) -> K, valueTransform: (Int) -> V): M
{\n  for (element in this) {\n    val key = keySelector(element)\n    val list = destination.getOrPut(key) {
ArrayList<V>() }\n    list.add(valueTransform(element))\n  }\n  return destination\n}\n\n/**\n * Groups values
returned by the [valueTransform] function applied to each element of the original array\n * by the key returned by
the given [keySelector] function applied to the element\n * and puts to the [destination] map each group key
associated with a list of corresponding values.\n * \n * @return The [destination] map.\n * \n * @sample
samples.collections.Collections.Transformations.groupByKeyAndValues\n */\npublic inline fun <K, V, M :
MutableMap<in K, MutableList<V>>> LongArray.groupByTo(destination: M, keySelector: (Long) -> K,
valueTransform: (Long) -> V): M {\n  for (element in this) {\n    val key = keySelector(element)\n
    val list = destination.getOrPut(key) { ArrayList<V>() }\n    list.add(valueTransform(element))\n  }\n
return destination\n}\n\n/**\n * Groups values returned by the [valueTransform] function applied to each element of the
original array\n * by the key returned by the given [keySelector] function applied to the element\n * and puts to the
[destination] map each group key associated with a list of corresponding values.\n * \n * @return The [destination]
map.\n * \n * @sample samples.collections.Collections.Transformations.groupByKeyAndValues\n */\npublic
inline fun <K, V, M : MutableMap<in K, MutableList<V>>> FloatArray.groupByTo(destination: M, keySelector:
(Float) -> K, valueTransform: (Float) -> V): M {\n  for (element in this) {\n    val key = keySelector(element)\n
    val list = destination.getOrPut(key) { ArrayList<V>() }\n    list.add(valueTransform(element))\n  }\n
return destination\n}\n\n/**\n * Groups values returned by the [valueTransform] function
  applied to each element of the original array\n * by the key returned by the given [keySelector] function applied to
the element\n * and puts to the [destination] map each group key associated with a list of corresponding values.\n *
\n * @return The [destination] map.\n * \n * @sample
samples.collections.Collections.Transformations.groupByKeyAndValues\n */\npublic inline fun <K, V, M :
MutableMap<in K, MutableList<V>>> DoubleArray.groupByTo(destination: M, keySelector: (Double) -> K,

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valueTransform: (Double) -> V): M {\n  for (element in this) {\n    val key = keySelector(element)\n    val list
= destination.getOrPut(key) { ArrayList<V>() }\n    list.add(valueTransform(element))\n  }\n  return
destination}\n}\n\n/**\n * Groups values returned by the [valueTransform] function applied to each element of the
original array\n * by the key returned by the given [keySelector] function applied to the element\n * and puts to the
[destination] map each group key associated
with a list of corresponding values.\n * \n * @return The [destination] map.\n * \n * @sample
samples.collections.Collections.Transformations.groupByKeyAndValues\n */\n\npublic inline fun <K, V, M :
MutableMap<in K, MutableList<V>>> BooleanArray.groupByTo(destination: M, keySelector: (Boolean) -> K,
valueTransform: (Boolean) -> V): M {\n  for (element in this) {\n    val key = keySelector(element)\n    val list
= destination.getOrPut(key) { ArrayList<V>() }\n    list.add(valueTransform(element))\n  }\n  return
destination}\n}\n\n/**\n * Groups values returned by the [valueTransform] function applied to each element of the
original array\n * by the key returned by the given [keySelector] function applied to the element\n * and puts to the
[destination] map each group key associated with a list of corresponding values.\n * \n * @return The [destination]
map.\n * \n * @sample samples.collections.Collections.Transformations.groupByKeyAndValues\n */\n\npublic
inline fun <K,
V, M : MutableMap<in K, MutableList<V>>> CharArray.groupByTo(destination: M, keySelector: (Char) -> K,
valueTransform: (Char) -> V): M {\n  for (element in this) {\n    val key = keySelector(element)\n    val list =
destination.getOrPut(key) { ArrayList<V>() }\n    list.add(valueTransform(element))\n  }\n  return
destination}\n}\n\n/**\n * Creates a [Grouping] source from an array to be used later with one of group-and-fold
operations\n * using the specified [keySelector] function to extract a key from each element.\n * \n * @sample
samples.collections.Grouping.groupingByEachCount\n */\n\n@SinceKotlin("1.1")\n\npublic inline fun <T, K>
Array<out T>.groupingBy(crossinline keySelector: (T) -> K): Grouping<T, K> {\n  return object : Grouping<T,
K> {\n    override fun sourceIterator(): Iterator<T> = this@groupingBy.iterator()\n    override fun
keyOf(element: T): K = keySelector(element)\n  }\n}\n\n/**\n * Returns a list containing the results of applying
the given
[transform] function\n * to each element in the original array.\n * \n * @sample
samples.collections.Collections.Transformations.map\n */\n\npublic inline fun <T, R> Array<out T>.map(transform:
(T) -> R): List<R> {\n  return mapTo(ArrayList<R>(size), transform)\n}\n}\n\n/**\n * Returns a list containing the
results of applying the given [transform] function\n * to each element in the original array.\n * \n * @sample
samples.collections.Collections.Transformations.map\n */\n\npublic inline fun <R> ByteArray.map(transform: (Byte)
-> R): List<R> {\n  return mapTo(ArrayList<R>(size), transform)\n}\n}\n\n/**\n * Returns a list containing the
results of applying the given [transform] function\n * to each element in the original array.\n * \n * @sample
samples.collections.Collections.Transformations.map\n */\n\npublic inline fun <R> ShortArray.map(transform:
(Short) -> R): List<R> {\n  return mapTo(ArrayList<R>(size), transform)\n}\n}\n\n/**\n * Returns a list containing
the results of applying the
given [transform] function\n * to each element in the original array.\n * \n * @sample
samples.collections.Collections.Transformations.map\n */\n\npublic inline fun <R> IntArray.map(transform: (Int) ->
R): List<R> {\n  return mapTo(ArrayList<R>(size), transform)\n}\n}\n\n/**\n * Returns a list containing the results
of applying the given [transform] function\n * to each element in the original array.\n * \n * @sample
samples.collections.Collections.Transformations.map\n */\n\npublic inline fun <R> LongArray.map(transform:
(Long) -> R): List<R> {\n  return mapTo(ArrayList<R>(size), transform)\n}\n}\n\n/**\n * Returns a list containing
the results of applying the given [transform] function\n * to each element in the original array.\n * \n * @sample
samples.collections.Collections.Transformations.map\n */\n\npublic inline fun <R> FloatArray.map(transform: (Float)
-> R): List<R> {\n  return mapTo(ArrayList<R>(size), transform)\n}\n}\n\n/**\n * Returns a list containing the
results of applying the
given [transform] function\n * to each element in the original array.\n * \n * @sample
samples.collections.Collections.Transformations.map\n */\n\npublic inline fun <R> DoubleArray.map(transform:
(Double) -> R): List<R> {\n  return mapTo(ArrayList<R>(size), transform)\n}\n}\n\n/**\n * Returns a list containing

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the results of applying the given [transform] function to each element in the original array.

```

@sample samples.collections.Collections.Transformations.map
public inline fun <R> BooleanArray.map(transform: (Boolean) -> R): List<R> {
    return mapTo(ArrayList<R>(size), transform)
}
Returns a list containing the results of applying the given [transform] function to each element in the original array.
@sample samples.collections.Collections.Transformations.map
public inline fun <R> CharArray.map(transform: (Char) -> R): List<R> {
    return mapTo(ArrayList<R>(size), transform)
}
Returns a list containing the results of applying the given [transform] function to each element and its index in the original array.
@param [transform] function that takes the index of an element and the element itself and returns the result of the transform applied to the element.
public inline fun <T, R> Array<out T>.mapIndexed(transform: (index: Int, T) -> R): List<R> {
    return mapIndexedTo(ArrayList<R>(size), transform)
}
Returns a list containing the results of applying the given [transform] function to each element and its index in the original array.
@param [transform] function that takes the index of an element and the element itself and returns the result of the transform applied to the element.
public inline fun <R> ByteArray.mapIndexed(transform: (index: Int, Byte) -> R): List<R> {
    return mapIndexedTo(ArrayList<R>(size), transform)
}
Returns a list containing the results of applying the given [transform] function to each element and its index in the original array.
@param [transform] function that takes the index of an element and the element itself and returns the result of the transform applied to the element.
public inline fun <R> ShortArray.mapIndexed(transform: (index: Int, Short) -> R): List<R> {
    return mapIndexedTo(ArrayList<R>(size), transform)
}
Returns a list containing the results of applying the given [transform] function to each element and its index in the original array.
@param [transform] function that takes the index of an element and the element itself and returns the result of the transform applied to the element.
public inline fun <R> IntArray.mapIndexed(transform: (index: Int, Int) -> R): List<R> {
    return mapIndexedTo(ArrayList<R>(size), transform)
}
Returns a list containing the results of applying the given [transform] function to each element and its index in the original array.
@param [transform] function that takes the index of an element and the element itself and returns the result of the transform applied to the element.
public inline fun <R> LongArray.mapIndexed(transform: (index: Int, Long) -> R): List<R> {
    return mapIndexedTo(ArrayList<R>(size), transform)
}
Returns a list containing the results of applying the given [transform] function to each element and its index in the original array.
@param [transform] function that takes the index of an element and the element itself and returns the result of the transform applied to the element.
public inline fun <R> FloatArray.mapIndexed(transform: (index: Int, Float) -> R): List<R> {
    return mapIndexedTo(ArrayList<R>(size), transform)
}
Returns a list containing the results of applying the given [transform] function to each element and its index in the original array.
@param [transform] function that takes the index of an element and the element itself and returns the result of the transform applied to the element.
public inline fun <R> DoubleArray.mapIndexed(transform: (index: Int, Double) -> R): List<R> {
    return mapIndexedTo(ArrayList<R>(size), transform)
}
Returns a list containing the results of applying the given [transform] function to each element and its index in the original array.
@param [transform] function that takes the index of an element and the element itself and returns the result of the transform applied to the element.
public inline fun <R> BooleanArray.mapIndexed(transform: (index: Int, Boolean) -> R): List<R> {
    return mapIndexedTo(ArrayList<R>(size), transform)
}
Returns a list containing the results of applying the given [transform] function to each element and its index in the original array.
@param [transform] function that takes the index of an element and the element itself and returns the result of the transform applied to the element.
public inline fun <R> CharArray.mapIndexed(transform: (index: Int, Char) -> R): List<R> {
    return mapIndexedTo(ArrayList<R>(size), transform)
}
Returns a list containing only the non-null results of applying the given [transform] function to each element and its index in the original array.
@param [transform] function that takes the index of an element and the element itself and returns the result of the transform applied to the element.
public inline fun <T, R : Any>

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Array<out T>.mapIndexedNotNull(transform: (index: Int, T) -> R?): List<R> {
    return
    mapIndexedNotNullTo(ArrayList<R>(), transform)\n\n/**
    * Applies the given [transform] function to each
    element and its index in the original array
    * and appends only the non-null results to the given [destination].
    * @param [transform] function that takes the index of an element and the element itself
    * and returns the result of the transform applied to the element.
    */\n\npublic inline fun <T, R : Any, C : MutableCollection<in
    R>> Array<out T>.mapIndexedNotNullTo(destination: C, transform: (index: Int, T) -> R?): C {
    forEachIndexed { index, element -> transform(index, element)?.let { destination.add(it) } }
    return
    destination\n\n/**
    * Applies the given [transform] function to each element and its index in the original array
    * and appends the results to the given [destination].
    * @param [transform] function that takes the index of an
    element and the element itself
    * and returns the result of the transform applied to the element.
    */\n\npublic inline
    fun <T, R, C : MutableCollection<in R>> Array<out T>.mapIndexedTo(destination: C, transform: (index: Int, T) ->
    R): C {\n    var index = 0\n    for (item in this)\n        destination.add(transform(index++, item))\n    return
    destination\n\n/**
    * Applies the given [transform] function to each element and its index in the original array
    * and appends the results to the given [destination].
    * @param [transform] function that takes the
    index of an element and the element itself
    * and returns the result of the transform applied to the element.
    */\n\npublic inline fun <R, C : MutableCollection<in R>> ByteArray.mapIndexedTo(destination: C, transform:
    (index: Int, Byte) -> R): C {\n    var index = 0\n    for (item in this)\n        destination.add(transform(index++,
    item))\n    return destination\n\n/**
    * Applies the given [transform] function to each element and its index in
    the original array
    * and appends the results to the given [destination].
    * @param [transform] function that takes
    the index of an element and the element itself
    * and returns the result of the transform applied to the element.
    */\n\npublic inline fun <R, C : MutableCollection<in R>> ShortArray.mapIndexedTo(destination: C, transform:
    (index: Int, Short) -> R): C {\n    var index = 0\n    for (item in this)\n        destination.add(transform(index++,
    item))\n    return destination\n\n/**
    * Applies the given [transform] function to
    each element and its index in the original array
    * and appends the results to the given [destination].
    * @param
    [transform] function that takes the index of an element and the element itself
    * and returns the result of the
    transform applied to the element.
    */\n\npublic inline fun <R, C : MutableCollection<in R>>
    IntArray.mapIndexedTo(destination: C, transform: (index: Int, Int) -> R): C {\n    var index = 0\n    for (item in
    this)\n        destination.add(transform(index++, item))\n    return destination\n\n/**
    * Applies the given
    [transform] function to each element and its index in the original array
    * and appends the results to the given
    [destination].
    * @param [transform] function that takes the index of an element and the element itself
    * and
    returns the result of the transform applied to the element.
    */\n\npublic inline fun <R, C : MutableCollection<in R>>
    LongArray.mapIndexedTo(destination: C, transform: (index: Int, Long) -> R): C {\n    var index = 0\n    for
    (item in this)\n        destination.add(transform(index++, item))\n    return destination\n\n/**
    * Applies the
    given [transform] function to each element and its index in the original array
    * and appends the results to the given
    [destination].
    * @param [transform] function that takes the index of an element and the element itself
    * and
    returns the result of the transform applied to the element.
    */\n\npublic inline fun <R, C : MutableCollection<in R>>
    FloatArray.mapIndexedTo(destination: C, transform: (index: Int, Float) -> R): C {\n    var index = 0\n    for (item in
    this)\n        destination.add(transform(index++, item))\n    return destination\n\n/**
    * Applies the given
    [transform] function to each element and its index in the original array
    * and appends the results to the given
    [destination].
    * @param [transform] function that takes the index of an element and the element itself
    * and
    returns the result of the transform applied to the element.
    */\n\npublic inline
    fun <R, C : MutableCollection<in R>> DoubleArray.mapIndexedTo(destination: C, transform: (index: Int, Double)
    -> R): C {\n    var index = 0\n    for (item in this)\n        destination.add(transform(index++, item))\n    return
    destination\n\n/**
    * Applies the given [transform] function to each element and its index in the original array
    * and appends the results to the given [destination].
    * @param [transform] function that takes the index of an
    element and the element itself
    * and returns the result of the transform applied to the element.
    */\n\npublic inline
    fun <R, C : MutableCollection<in R>> BooleanArray.mapIndexedTo(destination: C, transform: (index: Int,
    Boolean) -> R): C {\n    var index = 0\n    for (item in this)\n        destination.add(transform(index++, item))

```

```

return destination\n}\n\n/**\n * Applies the given [transform] function to each element and its index in the original
array\n * and appends the results to the given [destination].\n * @param [transform]
function that takes the index of an element and the element itself\n * and returns the result of the transform applied
to the element.\n */\npublic inline fun <R, C : MutableCollection<in R>> CharArray.mapIndexedTo(destination: C,
transform: (index: Int, Char) -> R): C {\n    var index = 0\n    for (item in this)\n        destination.add(transform(index++, item))\n    return destination\n}\n\n/**\n * Returns a list containing only the
non-null results of applying the given [transform] function\n * to each element in the original array.\n * \n *
@sample samples.collections.Collections.Transformations.mapNotNull\n */\npublic inline fun <T, R : Any>
Array<out T>.mapNotNull(transform: (T) -> R?): List<R> {\n    return mapNotNullTo(ArrayList<R>(),
transform)\n}\n\n/**\n * Applies the given [transform] function to each element in the original array\n * and
appends only the non-null results to the given [destination].\n */\npublic inline fun <T, R : Any, C :
MutableCollection<in R>>
Array<out T>.mapNotNullTo(destination: C, transform: (T) -> R?): C {\n    forEach { element ->
transform(element)?.let { destination.add(it) } }\n    return destination\n}\n\n/**\n * Applies the given [transform]
function to each element of the original array\n * and appends the results to the given [destination].\n */\npublic
inline fun <T, R, C : MutableCollection<in R>> Array<out T>.mapTo(destination: C, transform: (T) -> R): C {\n
for (item in this)\n    destination.add(transform(item))\n    return destination\n}\n\n/**\n * Applies the given
[transform] function to each element of the original array\n * and appends the results to the given [destination].\n
*/\npublic inline fun <R, C : MutableCollection<in R>> ByteArray.mapTo(destination: C, transform: (Byte) -> R):
C {\n    for (item in this)\n        destination.add(transform(item))\n    return destination\n}\n\n/**\n * Applies the
given [transform] function to each element of the original array\n * and appends the results
to the given [destination].\n */\npublic inline fun <R, C : MutableCollection<in R>>
ShortArray.mapTo(destination: C, transform: (Short) -> R): C {\n    for (item in this)\n
        destination.add(transform(item))\n    return destination\n}\n\n/**\n * Applies the given [transform] function to each
element of the original array\n * and appends the results to the given [destination].\n */\npublic inline fun <R, C :
MutableCollection<in R>> IntArray.mapTo(destination: C, transform: (Int) -> R): C {\n    for (item in this)\n
        destination.add(transform(item))\n    return destination\n}\n\n/**\n * Applies the given [transform] function to each
element of the original array\n * and appends the results to the given [destination].\n */\npublic inline fun <R, C :
MutableCollection<in R>> LongArray.mapTo(destination: C, transform: (Long) -> R): C {\n    for (item in this)\n
        destination.add(transform(item))\n    return destination\n}\n\n/**\n * Applies the given [transform] function
to each element of the original array\n * and appends the results to the given [destination].\n */\npublic inline fun
<R, C : MutableCollection<in R>> FloatArray.mapTo(destination: C, transform: (Float) -> R): C {\n    for (item in
this)\n        destination.add(transform(item))\n    return destination\n}\n\n/**\n * Applies the given [transform]
function to each element of the original array\n * and appends the results to the given [destination].\n */\npublic
inline fun <R, C : MutableCollection<in R>> DoubleArray.mapTo(destination: C, transform: (Double) -> R): C {\n
for (item in this)\n    destination.add(transform(item))\n    return destination\n}\n\n/**\n * Applies the given
[transform] function to each element of the original array\n * and appends the results to the given [destination].\n
*/\npublic inline fun <R, C : MutableCollection<in R>> BooleanArray.mapTo(destination: C, transform: (Boolean)
-> R): C {\n    for (item in this)\n        destination.add(transform(item))\n    return destination\n}\n\n/**\n * Applies the given [transform] function to each element of the original array\n *
and appends the results to the given [destination].\n */\npublic inline fun <R, C : MutableCollection<in R>>
CharArray.mapTo(destination: C, transform: (Char) -> R): C {\n    for (item in this)\n
        destination.add(transform(item))\n    return destination\n}\n\n/**\n * Returns a lazy [Iterable] that wraps each
element of the original array\n * into an [IndexedValue] containing the index of that element and the element
itself.\n */\npublic fun <T> Array<out T>.withIndex(): Iterable<IndexedValue<T>> {\n    return IndexingIterable {
iterator() }\n}\n\n/**\n * Returns a lazy [Iterable] that wraps each element of the original array\n * into an
[IndexedValue] containing the index of that element and the element itself.\n */\npublic fun ByteArray.withIndex():
Iterable<IndexedValue<Byte>> {\n    return IndexingIterable { iterator() }\n}\n\n/**\n * Returns a lazy [Iterable]

```



that wraps each element of the original array into an [IndexedValue] containing the index of that element and the element itself.

```

public fun ShortArray.withIndex(): Iterable<IndexedValue<Short>> {
    return IndexingIterable { iterator() }
}

```

Returns a lazy [Iterable] that wraps each element of the original array into an [IndexedValue] containing the index of that element and the element itself.

```

public fun IntArray.withIndex(): Iterable<IndexedValue<Int>> {
    return IndexingIterable { iterator() }
}

```

Returns a lazy [Iterable] that wraps each element of the original array into an [IndexedValue] containing the index of that element and the element itself.

```

public fun LongArray.withIndex():
Iterable<IndexedValue<Long>> {
    return IndexingIterable { iterator() }
}

```

Returns a lazy [Iterable] that wraps each element of the original array into an [IndexedValue] containing the index of that element and the element itself.

```

public fun FloatArray.withIndex(): Iterable<IndexedValue<Float>> {
    return IndexingIterable { iterator() }
}

```

Returns a lazy [Iterable] that wraps each element of the original array into an [IndexedValue] containing the index of that element and the element itself.

```

public fun DoubleArray.withIndex():
Iterable<IndexedValue<Double>> {
    return IndexingIterable { iterator() }
}

```

Returns a lazy [Iterable] that wraps each element of the original array into an [IndexedValue] containing the index of that element and the element itself.

```

public fun BooleanArray.withIndex(): Iterable<IndexedValue<Boolean>> {
    return IndexingIterable { iterator() }
}

```

Returns a lazy [Iterable] that wraps each element of the original array into an [IndexedValue] containing the index of that element and the element itself.

```

public fun CharArray.withIndex(): Iterable<IndexedValue<Char>> {
    return IndexingIterable { iterator() }
}

```

Returns a list containing only distinct elements from the given array. Among equal elements of the given array, only the first one will be present in the resulting list. The elements in the resulting list are in the same order as they were in the source array.

```

@sample
samples.collections.Collections.Transformations.distinctAndDistinctBy

```

```

public fun <T> Array<out T>.distinct(): List<T> {
    return this.toMutableSet().toList()
}

```

Returns a list containing only distinct elements from the given array. The elements in the resulting list are in the same order as they were in the source array.

```

@sample
samples.collections.Collections.Transformations.distinctAndDistinctBy

```

```

public fun ByteArray.distinct(): List<Byte> {
    return this.toMutableSet().toList()
}

```

Returns a list containing only distinct elements from the given array. The elements in the resulting list are in the same order as they were in

the source array.

```

@sample
samples.collections.Collections.Transformations.distinctAndDistinctBy

```

```

public fun ShortArray.distinct(): List<Short> {
    return this.toMutableSet().toList()
}

```

Returns a list containing only distinct elements from the given array. The elements in the resulting list are in the same order as they were in the source array.

```

@sample
samples.collections.Collections.Transformations.distinctAndDistinctBy

```

```

public fun IntArray.distinct():
List<Int> {
    return this.toMutableSet().toList()
}

```

Returns a list containing only distinct elements from the given array. The elements in the resulting list are in the same order as they were in the source array.

```

@sample
samples.collections.Collections.Transformations.distinctAndDistinctBy

```

```

public fun LongArray.distinct(): List<Long> {
    return this.toMutableSet().toList()
}

```

Returns a list containing only distinct elements from the given array. The elements in the resulting list are in the same order as they were in the source array.

```

@sample
samples.collections.Collections.Transformations.distinctAndDistinctBy

```

```

public fun FloatArray.distinct(): List<Float> {
    return this.toMutableSet().toList()
}

```

Returns a list containing only distinct elements from the given array. The elements in the resulting list are in the same order as they were in the source array.

```

@sample
samples.collections.Collections.Transformations.distinctAndDistinctBy

```

```

public fun DoubleArray.distinct():
List<Double> {
    return this.toMutableSet().toList()
}

```

Returns a list containing only distinct elements from the given array. The elements in the resulting list are in the same order as they were in the source array.

```

@sample
samples.collections.Collections.Transformations.distinctAndDistinctBy

```

```

BooleanArray.distinct(): List<Boolean> {\n  return
  this.toMutableSet().toList()\n}\n\n/**\n * Returns a list containing only distinct elements from the given array.\n *
\n * The elements in the resulting list are in the same order as they were in the source array.\n * \n * @sample
samples.collections.Collections.Transformations.distinctAndDistinctBy\n */\npublic fun CharArray.distinct():
List<Char> {\n  return this.toMutableSet().toList()\n}\n\n/**\n * Returns a list containing only elements from the
given array\n * having distinct keys returned by the given [selector] function.\n * \n * Among elements of the given
array with equal keys, only the first one will be present in the resulting list.\n * The elements in the resulting list are
in the same order as they were in the source array.\n * \n * @sample
samples.collections.Collections.Transformations.distinctAndDistinctBy\n */\npublic inline fun <T, K> Array<out
T>.distinctBy(selector: (T) -> K): List<T> {\n  val set = HashSet<K>()\n  val list = ArrayList<T>()\n  for (e
in this) {\n    val key = selector(e)\n    if (set.add(key))\n      list.add(e)\n  }\n  return list\n}\n\n/**\n *
Returns a list containing only elements from the given array\n * having distinct keys returned by the given [selector]
function.\n * \n * The elements in the resulting list are in the same order as they were in the source array.\n * \n *
@sample samples.collections.Collections.Transformations.distinctAndDistinctBy\n */\npublic inline fun <K>
ByteArray.distinctBy(selector: (Byte) -> K): List<Byte> {\n  val set = HashSet<K>()\n  val list =
ArrayList<Byte>()\n  for (e in this) {\n    val key = selector(e)\n    if (set.add(key))\n      list.add(e)\n  }\n
return list\n}\n\n/**\n * Returns a list containing only elements from the given array\n * having distinct keys
returned by the given [selector] function.\n * \n * The elements in the resulting list are in the same order as they
were in the source array.\n * \n * @sample
samples.collections.Collections.Transformations.distinctAndDistinctBy\n */\npublic inline fun <K> ShortArray.distinctBy(selector: (Short) -> K): List<Short> {\n  val set =
HashSet<K>()\n  val list = ArrayList<Short>()\n  for (e in this) {\n    val key = selector(e)\n    if
(set.add(key))\n      list.add(e)\n  }\n  return list\n}\n\n/**\n * Returns a list containing only elements from the
given array\n * having distinct keys returned by the given [selector] function.\n * \n * The elements in the resulting
list are in the same order as they were in the source array.\n * \n * @sample
samples.collections.Collections.Transformations.distinctAndDistinctBy\n */\npublic inline fun <K> IntArray.distinctBy(selector: (Int) -> K): List<Int> {\n  val set = HashSet<K>()\n  val list = ArrayList<Int>()\n
for (e in this) {\n    val key = selector(e)\n    if (set.add(key))\n      list.add(e)\n  }\n  return list\n}\n\n/**\n *
Returns a list containing only elements from
the given array\n * having distinct keys returned by the given [selector] function.\n * \n * The elements in the
resulting list are in the same order as they were in the source array.\n * \n * @sample
samples.collections.Collections.Transformations.distinctAndDistinctBy\n */\npublic inline fun <K> LongArray.distinctBy(selector: (Long) -> K): List<Long> {\n  val set = HashSet<K>()\n  val list =
ArrayList<Long>()\n  for (e in this) {\n    val key = selector(e)\n    if (set.add(key))\n      list.add(e)\n  }\n
return list\n}\n\n/**\n * Returns a list containing only elements from the given array\n * having distinct keys
returned by the given [selector] function.\n * \n * The elements in the resulting list are in the same order as they
were in the source array.\n * \n * @sample
samples.collections.Collections.Transformations.distinctAndDistinctBy\n */\npublic inline fun <K> FloatArray.distinctBy(selector: (Float) -> K): List<Float> {\n  val set = HashSet<K>()\n
val list = ArrayList<Float>()\n  for (e in this) {\n    val key = selector(e)\n    if (set.add(key))\n      list.add(e)\n  }\n  return list\n}\n\n/**\n * Returns a list containing only elements from the given array\n * having
distinct keys returned by the given [selector] function.\n * \n * The elements in the resulting list are in the same
order as they were in the source array.\n * \n * @sample
samples.collections.Collections.Transformations.distinctAndDistinctBy\n */\npublic inline fun <K> DoubleArray.distinctBy(selector: (Double) -> K): List<Double> {\n  val set = HashSet<K>()\n  val list =
ArrayList<Double>()\n  for (e in this) {\n    val key = selector(e)\n    if (set.add(key))\n      list.add(e)\n  }\n
return list\n}\n\n/**\n * Returns a list containing only elements from the given array\n * having distinct keys
returned by the given [selector] function.\n * \n * The elements in the resulting list are in the same order as they

```

were

```
in the source array.\n * \n * @sample samples.collections.Collections.Transformations.distinctAndDistinctBy\n * \npublic inline fun <K> BooleanArray.distinctBy(selector: (Boolean) -> K): List<Boolean> {\n    val set = HashSet<K>()\n    val list = ArrayList<Boolean>()\n    for (e in this) {\n        val key = selector(e)\n        if (set.add(key))\n            list.add(e)\n    }\n    return list\n}\n\n * \n * Returns a list containing only elements from the given array\n * having distinct keys returned by the given [selector] function.\n * \n * The elements in the resulting list are in the same order as they were in the source array.\n * \n * @sample samples.collections.Collections.Transformations.distinctAndDistinctBy\n * \npublic inline fun <K> CharArray.distinctBy(selector: (Char) -> K): List<Char> {\n    val set = HashSet<K>()\n    val list = ArrayList<Char>()\n    for (e in this) {\n        val key = selector(e)\n        if (set.add(key))\n            list.add(e)\n    }\n    return list\n}\n\n * \n * Returns a set containing all elements that are contained by both this array and the specified collection.\n * \n * The returned set preserves the element iteration order of the original array.\n * \n * To get a set containing all elements that are contained at least in one of these collections use [union].\n * \npublic infix fun <T> Array<out T>.intersect(other: Iterable<T>): Set<T> {\n    val set = this.toMutableSet()\n    set.retainAll(other)\n    return set\n}\n\n * \n * Returns a set containing all elements that are contained by both this array and the specified collection.\n * \n * The returned set preserves the element iteration order of the original array.\n * \n * To get a set containing all elements that are contained at least in one of these collections use [union].\n * \npublic infix fun ByteArray.intersect(other: Iterable<Byte>): Set<Byte> {\n    val set = this.toMutableSet()\n    set.retainAll(other)\n    return set\n}\n\n * \n * Returns a set containing all elements that are contained by both this array and the specified collection.\n * \n * The returned set preserves the element iteration order of the original array.\n * \n * To get a set containing all elements that are contained at least in one of these collections use [union].\n * \npublic infix fun ShortArray.intersect(other: Iterable<Short>): Set<Short> {\n    val set = this.toMutableSet()\n    set.retainAll(other)\n    return set\n}\n\n * \n * Returns a set containing all elements that are contained by both this array and the specified collection.\n * \n * The returned set preserves the element iteration order of the original array.\n * \n * To get a set containing all elements that are contained at least in one of these collections use [union].\n * \npublic infix fun IntArray.intersect(other: Iterable<Int>): Set<Int> {\n    val set = this.toMutableSet()\n    set.retainAll(other)\n    return set\n}\n\n * \n * Returns a set containing all elements that are contained by both this array and the specified collection.\n * \n * The returned set preserves the element iteration order of the original array.\n * \n * To get a set containing all elements that are contained at least in one of these collections use [union].\n * \npublic infix fun LongArray.intersect(other: Iterable<Long>): Set<Long> {\n    val set = this.toMutableSet()\n    set.retainAll(other)\n    return set\n}\n\n * \n * Returns a set containing all elements that are contained by both this array and the specified collection.\n * \n * The returned set preserves the element iteration order of the original array.\n * \n * To get a set containing all elements that are contained at least in one of these collections use [union].\n * \npublic infix fun FloatArray.intersect(other: Iterable<Float>): Set<Float> {\n    val set = this.toMutableSet()\n    set.retainAll(other)\n    return set\n}\n\n * \n * Returns a set containing all elements that are contained by both this array and the specified collection.\n * \n * The returned set preserves the element iteration order of the original array.\n * \n * To get a set containing all elements that are contained at least in one of these collections use [union].\n * \npublic infix fun DoubleArray.intersect(other: Iterable<Double>): Set<Double> {\n    val set = this.toMutableSet()\n    set.retainAll(other)\n    return set\n}\n\n * \n * Returns a set containing all elements that are contained by both this array and the specified collection.\n * \n * The returned set preserves the element iteration order of the original array.\n * \n * To get a set containing all elements that are contained at least in one of these collections use [union].\n * \npublic infix fun BooleanArray.intersect(other: Iterable<Boolean>): Set<Boolean> {\n    val set = this.toMutableSet()\n    set.retainAll(other)\n    return set\n}\n\n * \n * Returns a set containing all elements that are contained by both this array and the specified collection.\n * \n * The returned set preserves
```

the element iteration order of the original array.

To get a set containing all elements that are contained at least in one of these collections use [union].

```
public infix fun CharArray.intersect(other: Iterable<Char>): Set<Char> {
    val set = this.toMutableSet()
    set.retainAll(other)
    return set
}
```

Returns a set containing all elements that are contained by this array and not contained by the specified collection. The returned set preserves the element iteration order of the original array.

```
public infix fun <T> Array<out T>.subtract(other: Iterable<T>): Set<T> {
    val set = this.toMutableSet()
    set.removeAll(other)
    return set
}
```

Returns a set containing all elements that are contained by this array and not contained by the specified collection. The returned set preserves the element iteration order of the original array.

```
public infix fun ByteArray.subtract(other: Iterable<Byte>): Set<Byte> {
    val set = this.toMutableSet()
    set.removeAll(other)
    return set
}
```

Returns a set containing all elements that are contained by this array and not contained by the specified collection. The returned set preserves the element iteration order of the original array.

```
public infix fun ShortArray.subtract(other: Iterable<Short>): Set<Short> {
    val set = this.toMutableSet()
    set.removeAll(other)
    return set
}
```

Returns a set containing all elements that are contained by this array and not contained by the specified collection. The returned set preserves the element iteration order of the original array.

```
public infix fun IntArray.subtract(other: Iterable<Int>): Set<Int> {
    val set = this.toMutableSet()
    set.removeAll(other)
    return set
}
```

Returns a set containing all elements that are contained by this array and not contained by the specified collection. The returned set preserves the element iteration order of the original array.

```
public infix fun LongArray.subtract(other: Iterable<Long>): Set<Long> {
    val set = this.toMutableSet()
    set.removeAll(other)
    return set
}
```

Returns a set containing all elements that are contained by this array and not contained by the specified collection. The returned set preserves the element iteration order of the original array.

```
public infix fun FloatArray.subtract(other: Iterable<Float>): Set<Float> {
    val set = this.toMutableSet()
    set.removeAll(other)
    return set
}
```

Returns a set containing all elements that are contained by this array and not contained by the specified collection. The returned set preserves the element iteration order of the original array.

```
public infix fun DoubleArray.subtract(other: Iterable<Double>): Set<Double> {
    val set = this.toMutableSet()
    set.removeAll(other)
    return set
}
```

Returns a set containing all elements that are contained by this array and not contained by the specified collection. The returned set preserves the element iteration order of the original array.

```
public infix fun BooleanArray.subtract(other: Iterable<Boolean>): Set<Boolean> {
    val set = this.toMutableSet()
    set.removeAll(other)
    return set
}
```

Returns a set containing all elements that are contained by this array and not contained by the specified collection. The returned set preserves the element iteration order of the original array.

```
CharArray.subtract(other: Iterable<Char>): Set<Char> {
    val set = this.toMutableSet()
    set.removeAll(other)
    return set
}
```

Returns a new [MutableSet] containing all distinct elements from the given array. The returned set preserves the element iteration order of the original array.

```
<T> Array<out T>.toMutableSet(): MutableSet<T> {
    return toCollection(LinkedHashSet<T>(mapCapacity(size)))
}
```

Returns a new [MutableSet] containing all distinct elements from the given array. The returned set preserves the element iteration order of the original array.

```
ByteArray.toMutableSet(): MutableSet<Byte> {
    return toCollection(LinkedHashSet<Byte>(mapCapacity(size)))
}
```

Returns a new [MutableSet] containing all distinct elements from the given array. The returned set preserves the element iteration order of the original array.

```
ShortArray.toMutableSet(): MutableSet<Short> {
    return toCollection(LinkedHashSet<Short>(mapCapacity(size)))
}
```

Returns a new [MutableSet] containing all distinct elements from the given array. The returned set preserves the element iteration order of the original array.

```
IntArray.toMutableSet(): MutableSet<Int> {
    return toCollection(LinkedHashSet<Int>(mapCapacity(size)))
}
```

Returns a new [MutableSet] containing all distinct elements from the given array. The returned set preserves the element iteration order of the original array.

```
LongArray.toMutableSet(): MutableSet<Long> {
    return toCollection(LinkedHashSet<Long>(mapCapacity(size)))
}
```

Returns a new [MutableSet] containing all

distinct elements from the given array.\n \* \n \* The returned set preserves the element iteration order of the original array.\n \*/\npublic fun FloatArray.toMutableSet(): MutableSet<Float> {\n return toCollection(LinkedHashSet<Float>(mapCapacity(size)))\n}\n\n/\*\*\n \* Returns a new [MutableSet] containing all distinct elements from the given array.\n \* \n \* The returned set preserves the element iteration order of the original array.\n \*/\npublic fun DoubleArray.toMutableSet(): MutableSet<Double> {\n return toCollection(LinkedHashSet<Double>(mapCapacity(size)))\n}\n\n/\*\*\n \* Returns a new [MutableSet] containing all distinct elements from the given array.\n \* \n \* The returned set preserves the element iteration order of the original array.\n \*/\npublic fun BooleanArray.toMutableSet(): MutableSet<Boolean> {\n return toCollection(LinkedHashSet<Boolean>(mapCapacity(size)))\n}\n\n/\*\*\n \* Returns a new [MutableSet] containing all distinct elements from the given array.\n \* \n \* The returned set preserves the element iteration order of the original array.\n \*/\npublic fun CharArray.toMutableSet(): MutableSet<Char> {\n return toCollection(LinkedHashSet<Char>(mapCapacity(size.coerceAtMost(128))))\n}\n\n/\*\*\n \* Returns a set containing all distinct elements from both collections.\n \* \n \* The returned set preserves the element iteration order of the original array.\n \* Those elements of the [other] collection that are unique are iterated in the end\n \* in the order of the [other] collection.\n \* \n \* To get a set containing all elements that are contained in both collections use [intersect].\n \*/\npublic infix fun <T> Array<out T>.union(other: Iterable<T>): Set<T> {\n val set = this.toMutableSet()\n set.addAll(other)\n return set\n}\n\n/\*\*\n \* Returns a set containing all distinct elements from both collections.\n \* \n \* The returned set preserves the element iteration order of the original array.\n \* Those elements of the [other] collection that are unique are iterated in the end\n \* in the order of the [other] collection.\n \* \n \* To get a set containing all elements that are contained in both collections use [intersect].\n \*/\npublic infix fun ByteArray.union(other: Iterable<Byte>): Set<Byte> {\n val set = this.toMutableSet()\n set.addAll(other)\n return set\n}\n\n/\*\*\n \* Returns a set containing all distinct elements from both collections.\n \* \n \* The returned set preserves the element iteration order of the original array.\n \* Those elements of the [other] collection that are unique are iterated in the end\n \* in the order of the [other] collection.\n \* \n \* To get a set containing all elements that are contained in both collections use [intersect].\n \*/\npublic infix fun ShortArray.union(other: Iterable<Short>): Set<Short> {\n val set = this.toMutableSet()\n set.addAll(other)\n return set\n}\n\n/\*\*\n \* Returns a set containing all distinct elements from both collections.\n \* \n \* The returned set preserves the element iteration order of the original array.\n \* Those elements of the [other] collection that are unique are iterated in the end\n \* in the order of the [other] collection.\n \* \n \* To get a set containing all elements that are contained in both collections use [intersect].\n \*/\npublic infix fun IntArray.union(other: Iterable<Int>): Set<Int> {\n val set = this.toMutableSet()\n set.addAll(other)\n return set\n}\n\n/\*\*\n \* Returns a set containing all distinct elements from both collections.\n \* \n \* The returned set preserves the element iteration order of the original array.\n \* Those elements of the [other] collection that are unique are iterated in the end\n \* in the order of the [other] collection.\n \* \n \* To get a set containing all elements that are contained in both collections use [intersect].\n \*/\npublic infix fun LongArray.union(other: Iterable<Long>): Set<Long> {\n val set = this.toMutableSet()\n set.addAll(other)\n return set\n}\n\n/\*\*\n \* Returns a set containing all distinct elements from both collections.\n \* \n \* The returned set preserves the element iteration order of the original array.\n \* Those elements of the [other] collection that are unique are iterated in the end\n \* in the order of the [other] collection.\n \* \n \* To get a set containing all elements that are contained in both collections use [intersect].\n \*/\npublic infix fun FloatArray.union(other: Iterable<Float>): Set<Float> {\n val set = this.toMutableSet()\n set.addAll(other)\n return set\n}\n\n/\*\*\n \* Returns a set containing all distinct elements from both collections.\n \* \n \* The returned set preserves the element iteration order of the original array.\n \* Those elements of the [other] collection that are unique are iterated in the end\n \* in the order of the [other] collection.\n \* \n \* To get a set containing all elements that are contained in both collections use [intersect].\n \*/\npublic infix fun DoubleArray.union(other: Iterable<Double>): Set<Double> {\n val set = this.toMutableSet()\n set.addAll(other)\n return set\n}\n\n/\*\*\n \* Returns a set containing all distinct elements



Returns `true` if all elements match the given [predicate].\n \* \n \* Note that if the array contains no elements, the function returns `true`\n \* because there are no elements in it that \_do not\_ match the predicate.\n \* See a more detailed explanation of this logic concept in ["Vacuous truth"](https://en.wikipedia.org/wiki/Vacuous\_truth) article.\n \* \n \* @sample samples.collections.Collections.Aggregates.all\n \*/\npublic inline fun  
BooleanArray.all(predicate: (Boolean) -> Boolean): Boolean {\n for (element in this) if (!predicate(element))  
return false\n return true\n}\n\n/\*\*\n \* Returns `true` if all elements match the given [predicate].\n \* \n \* Note that if the array contains no elements, the function returns `true`\n \* because there are no elements in it that \_do not\_ match the predicate.\n \* See a more detailed explanation of this logic concept in ["Vacuous truth"](https://en.wikipedia.org/wiki/Vacuous\_truth) article.\n \* \n \* @sample  
samples.collections.Collections.Aggregates.all\n \*/\npublic inline fun CharArray.all(predicate: (Char) -> Boolean):  
Boolean {\n for (element in this) if (!predicate(element)) return false\n return true\n}\n\n/\*\*\n \* Returns `true` if array has at least one element.\n \* \n \* @sample samples.collections.Collections.Aggregates.any\n \*/\npublic fun  
<T>  
Array<out T>.any(): Boolean {\n return !isEmpty()\n}\n\n/\*\*\n \* Returns `true` if array has at least one element.\n \* \n \* @sample samples.collections.Collections.Aggregates.any\n \*/\npublic fun ByteArray.any():  
Boolean {\n return !isEmpty()\n}\n\n/\*\*\n \* Returns `true` if array has at least one element.\n \* \n \* @sample  
samples.collections.Collections.Aggregates.any\n \*/\npublic fun ShortArray.any(): Boolean {\n return  
!isEmpty()\n}\n\n/\*\*\n \* Returns `true` if array has at least one element.\n \* \n \* @sample  
samples.collections.Collections.Aggregates.any\n \*/\npublic fun IntArray.any(): Boolean {\n return  
!isEmpty()\n}\n\n/\*\*\n \* Returns `true` if array has at least one element.\n \* \n \* @sample  
samples.collections.Collections.Aggregates.any\n \*/\npublic fun LongArray.any(): Boolean {\n return  
!isEmpty()\n}\n\n/\*\*\n \* Returns `true` if array has at least one element.\n \* \n \* @sample  
samples.collections.Collections.Aggregates.any\n \*/\npublic fun FloatArray.any(): Boolean  
{\n return !isEmpty()\n}\n\n/\*\*\n \* Returns `true` if array has at least one element.\n \* \n \* @sample  
samples.collections.Collections.Aggregates.any\n \*/\npublic fun DoubleArray.any(): Boolean {\n return  
!isEmpty()\n}\n\n/\*\*\n \* Returns `true` if array has at least one element.\n \* \n \* @sample  
samples.collections.Collections.Aggregates.any\n \*/\npublic fun BooleanArray.any(): Boolean {\n return  
!isEmpty()\n}\n\n/\*\*\n \* Returns `true` if at least one element matches the given [predicate].\n \* \n \* @sample  
samples.collections.Collections.Aggregates.anyWithPredicate\n \*/\npublic inline fun <T> Array<out  
T>.any(predicate: (T) -> Boolean): Boolean {\n for (element in this) if (predicate(element)) return true\n return  
false\n}\n\n/\*\*\n \* Returns `true` if at least one element matches  
the given [predicate].\n \* \n \* @sample samples.collections.Collections.Aggregates.anyWithPredicate\n \*/\npublic  
inline fun ByteArray.any(predicate: (Byte) -> Boolean): Boolean {\n for (element in this) if (predicate(element))  
return true\n return false\n}\n\n/\*\*\n \* Returns `true` if at least one element matches the given [predicate].\n \* \n \* \n \* @sample samples.collections.Collections.Aggregates.anyWithPredicate\n \*/\npublic inline fun  
ShortArray.any(predicate: (Short) -> Boolean): Boolean {\n for (element in this) if (predicate(element)) return  
true\n return false\n}\n\n/\*\*\n \* Returns `true` if at least one element matches the given [predicate].\n \* \n \* \n \* @sample samples.collections.Collections.Aggregates.anyWithPredicate\n \*/\npublic inline fun  
IntArray.any(predicate: (Int) -> Boolean): Boolean {\n for (element in this) if (predicate(element)) return true\n  
return false\n}\n\n/\*\*\n \* Returns `true` if at least one element matches the given [predicate].\n \* \n \* \n \* @sample samples.collections.Collections.Aggregates.anyWithPredicate\n \*/\npublic inline fun  
LongArray.any(predicate: (Long) -> Boolean): Boolean {\n for (element in this) if (predicate(element)) return  
true\n return false\n}\n\n/\*\*\n \* Returns `true` if at least one element matches the given [predicate].\n \* \n \* \n \* @sample samples.collections.Collections.Aggregates.anyWithPredicate\n \*/\npublic inline fun  
FloatArray.any(predicate: (Float) -> Boolean): Boolean {\n for (element in this) if (predicate(element)) return  
true\n return false\n}\n\n/\*\*\n \* Returns `true` if at least one element matches the given [predicate].\n \* \n \* \n \* @sample samples.collections.Collections.Aggregates.anyWithPredicate\n \*/\npublic inline fun

```

@sample samples.collections.Collections.Aggregates.anyWithPredicate\n *\npublic inline fun
DoubleArray.any(predicate: (Double) -> Boolean): Boolean {\n  for (element in this) if (predicate(element)) return
true\n  return false\n}\n\n/**\n * Returns `true` if at least one element matches the given [predicate].\n *\n *\n @sample samples.collections.Collections.Aggregates.anyWithPredicate\n
*\npublic inline fun BooleanArray.any(predicate: (Boolean) -> Boolean): Boolean {\n  for (element in this) if
(predicate(element)) return true\n  return false\n}\n\n/**\n * Returns `true` if at least one element matches the
given [predicate].\n *\n *\n @sample samples.collections.Collections.Aggregates.anyWithPredicate\n *\npublic
inline fun CharArray.any(predicate: (Char) -> Boolean): Boolean {\n  for (element in this) if (predicate(element))
return true\n  return false\n}\n\n/**\n * Returns the number of elements in this array.\n
*\n @kotlin.internal.InlineOnly\npublic inline fun <T> Array<out T>.count(): Int {\n  return size\n}\n\n/**\n *
Returns the number of elements in this array.\n
*\n @kotlin.internal.InlineOnly\npublic inline fun
ByteArray.count(): Int {\n  return size\n}\n\n/**\n * Returns the number of elements in this array.\n
*\n @kotlin.internal.InlineOnly\npublic inline fun ShortArray.count(): Int {\n  return size\n}\n\n/**\n *
Returns the number of elements in this array.\n
*\n @kotlin.internal.InlineOnly\npublic inline fun
IntArray.count(): Int {\n  return size\n}\n\n/**\n * Returns the number of elements in this array.\n
*\n @kotlin.internal.InlineOnly\npublic inline fun LongArray.count(): Int {\n  return size\n}\n\n/**\n * Returns
the number of elements in this array.\n
*\n @kotlin.internal.InlineOnly\npublic inline fun FloatArray.count(): Int {\n  return size\n}\n\n/**\n * Returns
the number of elements in this array.\n
*\n @kotlin.internal.InlineOnly\npublic
inline fun DoubleArray.count(): Int {\n  return size\n}\n\n/**\n * Returns the number of elements in this array.\n
*\n @kotlin.internal.InlineOnly\npublic inline fun BooleanArray.count(): Int {\n  return size\n}\n\n/**\n * Returns
the number of elements in this array.\n
*\n @kotlin.internal.InlineOnly\npublic inline fun CharArray.count(): Int {\n
  return size\n}\n\n/**\n * Returns the number of elements matching the given [predicate].\n
*\n *\n public inline fun <T> Array<out T>.count(predicate: (T) -> Boolean): Int {\n  var count = 0\n  for (element in
this) if (predicate(element)) ++count\n  return count\n}\n\n/**\n * Returns the number of elements matching the
given [predicate].\n
*\n public inline fun ByteArray.count(predicate: (Byte) -> Boolean): Int {\n  var count = 0\n  for (element in
this) if (predicate(element)) ++count\n  return count\n}\n\n/**\n * Returns the number of elements
matching the given [predicate].\n
*\n public inline fun ShortArray.count(predicate: (Short) -> Boolean): Int {\n  var
count = 0\n  for (element in this) if (predicate(element)) ++count\n  return count\n}\n\n/**\n * Returns the
number of elements matching the given [predicate].\n
*\n public inline fun IntArray.count(predicate: (Int) ->
Boolean): Int {\n  var count = 0\n  for (element in this) if (predicate(element)) ++count\n  return
count\n}\n\n/**\n * Returns the number of elements matching the given
[predicate].\n
*\n public inline fun LongArray.count(predicate: (Long) -> Boolean): Int {\n  var count = 0\n  for
(element in this) if (predicate(element)) ++count\n  return count\n}\n\n/**\n * Returns the number of elements
matching the given [predicate].\n
*\n public inline fun FloatArray.count(predicate: (Float) -> Boolean): Int {\n  var
count = 0\n  for (element in this) if (predicate(element)) ++count\n  return count\n}\n\n/**\n * Returns the
number of elements matching the given [predicate].\n
*\n public inline fun DoubleArray.count(predicate: (Double) -
> Boolean): Int {\n  var count = 0\n  for (element in this) if (predicate(element)) ++count\n  return
count\n}\n\n/**\n * Returns the number of elements matching the given [predicate].\n
*\n public inline fun BooleanArray.count(predicate: (Boolean) -> Boolean): Int {\n  var count = 0\n  for (element in
this) if (predicate(element)) ++count\n  return count\n}\n\n/**\n * Returns the number of elements matching
the given [predicate].\n
*\n public inline fun CharArray.count(predicate: (Char) -> Boolean): Int {\n  var count =
0\n  for (element in this) if (predicate(element)) ++count\n  return count\n}\n\n/**\n * Accumulates value starting
with [initial] value and applying [operation] from left to right\n
*\n * to current accumulator value and each element.\n
*\n *\n * Returns the specified [initial] value if the array is empty.\n
*\n *\n * @param [operation] function that takes
current accumulator value and an element, and calculates the next accumulator value.\n
*\n public inline fun <T, R>
Array<out T>.fold(initial: R, operation: (acc: R, T) -> R): R {\n  var accumulator = initial\n  for (element in
this) accumulator = operation(accumulator, element)\n  return accumulator\n}\n\n/**\n * Accumulates value starting
with [initial] value and applying [operation] from left to right\n
*\n * to current accumulator value and each element.\n
*\n

```



`\n * Returns the specified [initial] value if the array is empty.\n * \n * @param [operation] function that takes current accumulator value and an element, and calculates the next accumulator value.\n */\npublic inline fun <R> ByteArray.fold(initial: R, operation: (acc: R, Byte) -> R): R {\n var accumulator = initial\n for (element in this) accumulator = operation(accumulator, element)\n return accumulator\n}\n\n/**\n * Accumulates value starting with [initial] value and applying [operation] from left to right\n * to current accumulator value and each element.\n * \n * Returns the specified [initial] value if the array is empty.\n * \n * @param [operation] function that takes current accumulator value and an element, and calculates the next accumulator value.\n */\npublic inline fun <R> ShortArray.fold(initial: R, operation: (acc: R, Short) -> R): R {\n var accumulator = initial\n for (element in this) accumulator = operation(accumulator, element)\n return accumulator\n}\n\n/**\n * Accumulates value starting with [initial] value and applying [operation] from left to right\n * to current accumulator value and each element.\n * \n * Returns the specified [initial] value if the array is empty.\n * \n * @param [operation] function that takes current accumulator value and an element, and calculates the next accumulator value.\n */\npublic inline fun <R> IntArray.fold(initial: R, operation: (acc: R, Int) -> R): R {\n var accumulator = initial\n for (element in this) accumulator = operation(accumulator, element)\n return accumulator\n}\n\n/**\n * Accumulates value starting with [initial] value and applying [operation] from left to right\n * to current accumulator value and each element.\n * \n * Returns the specified [initial] value if the array is empty.\n * \n * @param [operation] function that takes current accumulator value and an element, and calculates the next accumulator value.\n */\npublic inline fun <R> LongArray.fold(initial: R, operation: (acc: R, Long) -> R): R {\n var accumulator = initial\n for (element in this) accumulator = operation(accumulator, element)\n return accumulator\n}\n\n/**\n * Accumulates value starting with [initial] value and applying [operation] from left to right\n * to current accumulator value and each element.\n * \n * Returns the specified [initial] value if the array is empty.\n * \n * @param [operation] function that takes current accumulator value and an element, and calculates the next accumulator value.\n */\npublic inline fun <R> FloatArray.fold(initial: R, operation: (acc: R, Float) -> R): R {\n var accumulator = initial\n for (element in this) accumulator = operation(accumulator, element)\n return accumulator\n}\n\n/**\n * Accumulates value starting with [initial] value and applying [operation] from left to right\n * to current accumulator value and each element.\n * \n * Returns the specified [initial] value if the array is empty.\n * \n * @param [operation] function that takes current accumulator value and an element, and calculates the next accumulator value.\n */\npublic inline fun <R> DoubleArray.fold(initial: R, operation: (acc: R, Double) -> R): R {\n var accumulator = initial\n for (element in this) accumulator = operation(accumulator, element)\n return accumulator\n}\n\n/**\n * Accumulates value starting with [initial] value and applying [operation] from left to right\n * to current accumulator value and each element.\n * \n * Returns the specified [initial] value if the array is empty.\n * \n * @param [operation] function that takes current accumulator value and an element, and calculates the next accumulator value.\n */\npublic inline fun <R> BooleanArray.fold(initial: R, operation: (acc: R, Boolean) -> R): R {\n var accumulator = initial\n for (element in this) accumulator = operation(accumulator, element)\n return accumulator\n}\n\n/**\n * Accumulates value starting with [initial] value and applying [operation] from left to right\n * to current accumulator value and each element.\n * \n * Returns the specified [initial] value if the array is empty.\n * \n * @param [operation] function that takes current accumulator value and an element, and calculates the next accumulator value.\n */\npublic inline fun <R> CharArray.fold(initial: R, operation: (acc: R, Char) -> R): R {\n var accumulator = initial\n for (element in this) accumulator = operation(accumulator, element)\n return accumulator\n}\n\n/**\n * Accumulates value starting with [initial] value and applying [operation] from left to right\n * to current accumulator value and each element with its index in the original array.\n * \n * Returns the specified [initial] value if the array is empty.\n * \n * @param [operation] function that takes the index of an element, current accumulator value\n * and the element itself, and calculates the next accumulator value.\n */\npublic inline fun <T, R> Array<out T>.foldIndexed(initial: R, operation: (index: Int, acc: R, T) -> R): R {\n var index = 0\n var accumulator = initial\n for (element in this) accumulator = operation(index++, accumulator, element)\n return accumulator\n}\n\n/**\n * Accumulates value starting with [initial] value and applying [operation] from left`

to right\n \* to current accumulator value and each element with its index in the original array.\n \* \n \* Returns the specified [initial] value if the array is empty.\n \* \n \* @param [operation] function that takes the index of an element, current accumulator value\n \* and the element itself, and calculates the next accumulator value.\n \*  
`public inline fun <R> ByteArray.foldIndexed(initial: R, operation: (index: Int, acc: R, Byte) -> R): R {\n var index = 0\n var accumulator = initial\n for (element in this) accumulator = operation(index++, accumulator, element)\n return accumulator\n}`  
\n \* Accumulates value starting with [initial] value and applying [operation] from left to right\n \* to current accumulator value and each element with its index in the original array.\n \* \n \* Returns the specified [initial] value if the array is empty.\n \* \n \* @param [operation] function that takes the index of an element, current accumulator value\n \* and the element itself, and calculates the next accumulator value.\n \*  
`public inline fun <R> ShortArray.foldIndexed(initial: R, operation: (index: Int, acc: R, Short) -> R): R {\n var index = 0\n var accumulator = initial\n for (element in this) accumulator = operation(index++, accumulator, element)\n return accumulator\n}`  
\n \* Accumulates value starting with [initial] value and applying [operation] from left to right\n \* to current accumulator value and each element with its index in the original array.\n \* \n \* Returns the specified [initial] value if the array is empty.\n \* \n \* @param [operation] function that takes the index of an element, current accumulator value\n \* and the element itself, and calculates the next accumulator value.\n \*  
`public inline fun <R> IntArray.foldIndexed(initial: R, operation: (index: Int, acc: R, Int) -> R): R {\n var index = 0\n var accumulator = initial\n for (element in this) accumulator = operation(index++, accumulator, element)\n return accumulator\n}`  
\n \* Accumulates value starting with [initial] value and applying [operation] from left to right\n \* to current accumulator value and each element with its index in the original array.\n \* \n \* Returns the specified [initial] value if the array is empty.\n \* \n \* @param [operation] function that takes the index of an element, current accumulator value\n \* and the element itself, and calculates the next accumulator value.\n \*  
`public inline fun <R> LongArray.foldIndexed(initial: R, operation: (index: Int, acc: R, Long) -> R): R {\n var index = 0\n var accumulator = initial\n for (element in this) accumulator = operation(index++, accumulator, element)\n return accumulator\n}`  
\n \* Accumulates value starting with [initial] value and applying [operation] from left to right\n \* to current accumulator value and each element with its index in the original array.\n \* \n \* Returns the specified [initial] value if the array is empty.\n \* \n \* @param [operation] function that takes the index of an element, current accumulator value\n \* and the element itself, and calculates the next accumulator value.\n \*  
`public inline fun <R> FloatArray.foldIndexed(initial: R, operation: (index: Int, acc: R, Float) -> R): R {\n var index = 0\n var accumulator = initial\n for (element in this) accumulator = operation(index++, accumulator, element)\n return accumulator\n}`  
\n \* Accumulates value starting with [initial] value and applying [operation] from left to right\n \* to current accumulator value and each element with its index in the original array.\n \* \n \* Returns the specified [initial] value if the array is empty.\n \* \n \* @param [operation] function that takes the index of an element, current accumulator value\n \* and the element itself, and calculates the next accumulator value.\n \*  
`public inline fun <R> DoubleArray.foldIndexed(initial: R, operation: (index: Int, acc: R, Double) -> R): R {\n var index = 0\n var accumulator = initial\n for (element in this) accumulator = operation(index++, accumulator, element)\n return accumulator\n}`  
\n \* Accumulates value starting with [initial] value and applying [operation] from left to right\n \* to current accumulator value and each element with its index in the original array.\n \* \n \* Returns the specified [initial] value if the array is empty.\n \* \n \* @param [operation] function that takes the index of an element, current accumulator value\n \* and the element itself, and calculates the next accumulator value.\n \*  
`public inline fun <R> BooleanArray.foldIndexed(initial: R, operation: (index: Int, acc: R, Boolean) -> R): R {\n var index = 0\n var accumulator = initial\n for (element in this) accumulator = operation(index++, accumulator, element)\n return accumulator\n}`  
\n \* Accumulates value starting with [initial] value and applying [operation] from left to right\n \* to current accumulator value and each element with its index in the original array.\n \* \n \* Returns the specified [initial] value if the array is empty.\n \* \n \* @param [operation] function that takes the index of an element, current accumulator value\n \* and the element itself, and calculates the next accumulator value.\n \*  
`public inline fun <R> CharArray.foldIndexed(initial: R, operation: (index: Int, acc: R,`

Char) -> R): R {  
var index = 0  
var accumulator = initial  
for (element in this) accumulator =  
operation(index++, accumulator, element)  
return accumulator  
} Accumulates value starting with  
[initial] value and applying [operation] from right to left  
to each element and current accumulator value.  
Returns the specified [initial] value if the array is empty.  
@param  
[operation] function that takes an element and current accumulator  
value, and calculates the next accumulator  
value.

```

public inline fun <T, R> Array<out T>.foldRight(initial: R, operation: (T, acc: R) -> R): R {
var index = lastIndex
var accumulator = initial
while (index >= 0) {
accumulator = operation(get(index--), accumulator)
}
return accumulator
}

```

Accumulates value starting with [initial] value and applying [operation] from right to left  
to each element and current accumulator value.  
Returns the specified [initial] value if the array is empty.  
@param [operation] function that takes an element and current  
accumulator value, and calculates the next accumulator value.

```

public inline fun <R> ByteArray.foldRight(initial: R, operation: (Byte, acc: R) -> R): R {
var index = lastIndex
var accumulator = initial
while (index >= 0) {
accumulator = operation(get(index--), accumulator)
}
return accumulator
}

```

Accumulates value starting with [initial] value and applying [operation] from  
right to left  
to each element and current accumulator value.  
Returns the specified [initial] value if the  
array is empty.  
@param [operation] function that takes an element and current accumulator value, and  
calculates the next accumulator value.

```

public inline fun <R> ShortArray.foldRight(initial: R, operation: (Short, acc: R) -> R): R {
var index = lastIndex
var accumulator = initial
while (index >= 0) {
accumulator = operation(get(index--), accumulator)
}
return accumulator
}

```

Accumulates value  
starting with [initial] value and applying [operation] from right to left  
to each element and current accumulator  
value.  
Returns the specified [initial] value if the array is empty.  
@param [operation] function that  
takes an element and current accumulator value, and calculates the next  
accumulator value.

```

public inline fun <R> IntArray.foldRight(initial: R, operation: (Int, acc: R) -> R): R {
var index = lastIndex
var accumulator = initial
while (index >= 0) {
accumulator =
operation(get(index--), accumulator)
}
return accumulator
}

```

Accumulates value starting with  
[initial] value and applying [operation] from right to left  
to each element and current accumulator value.  
Returns the specified [initial] value if the array is empty.  
@param [operation] function that takes an element  
and current accumulator value, and calculates the next accumulator value.

```

public inline fun <R> LongArray.foldRight(initial: R, operation: (Long, acc: R) -> R): R {
var index = lastIndex
var accumulator = initial
while (index >= 0) {
accumulator = operation(get(index--), accumulator)
}
return accumulator
}

```

Accumulates value starting with [initial] value and applying [operation]  
from right to left  
to each element and current accumulator value.  
Returns the specified [initial] value if  
the array is empty.  
@param [operation] function that takes an element and current accumulator value, and  
calculates the next accumulator value.

```

public inline fun <R> FloatArray.foldRight(initial: R, operation: (Float, acc: R) -> R): R {
var index = lastIndex
var accumulator = initial
while (index >= 0) {
accumulator = operation(get(index--), accumulator)
}
return accumulator
}

```

Accumulates value  
starting with [initial] value and applying [operation] from right to left  
to each element and current accumulator  
value.  
Returns the specified [initial] value if the array is empty.  
@param [operation] function that  
takes an element and current accumulator value, and calculates the next accumulator value.

```

public inline fun <R> DoubleArray.foldRight(initial: R, operation: (Double, acc:
R) -> R): R {
var index = lastIndex
var accumulator = initial
while (index >= 0) {
accumulator =
operation(get(index--), accumulator)
}
return accumulator
}

```

Accumulates value starting with  
[initial] value and applying [operation] from right to left  
to each element and current accumulator value.  
Returns the specified [initial] value if the array is empty.  
@param [operation] function that takes an element  
and current accumulator value, and calculates the next accumulator value.

```

public inline fun <R> BooleanArray.foldRight(initial: R, operation: (Boolean, acc: R) -> R): R {
var index = lastIndex
var accumulator = initial
while (index >= 0) {
accumulator = operation(get(index--), accumulator)
}
return accumulator
}

```

Accumulates value starting with [initial] value and applying [operation] from right

to left to each element and current accumulator value. Returns the specified [initial] value if the array is empty. @param [operation] function that takes an element and current accumulator value, and calculates the next accumulator value.

```
public inline fun <R> CharArray.foldRight(initial: R, operation: (Char, acc: R) -> R): R {
    var index = lastIndex
    var accumulator = initial
    while (index >= 0) {
        accumulator = operation(get(index--), accumulator)
    }
    return accumulator
}
```

Accumulates value starting with [initial] value and applying [operation] from right to left to each element with its index in the original array and current accumulator value. Returns the specified [initial] value if the array is empty. @param [operation] function that takes the index of an element, the element itself and current accumulator value, and calculates the next accumulator value.

```
public inline fun <T, R> Array<out T>.foldRightIndexed(initial: R, operation: (index: Int, T, acc: R) -> R): R {
    var index = lastIndex
    var accumulator = initial
    while (index >= 0) {
        accumulator = operation(index, get(index), accumulator)
        --index
    }
    return accumulator
}
```

Accumulates value starting with [initial] value and applying [operation] from right to left to each element with its index in the original array and current accumulator value. Returns the specified [initial] value if the array is empty. @param [operation] function that takes the index of an element, the element itself and current accumulator value, and calculates the next accumulator value.

```
public inline fun <R> ByteArray.foldRightIndexed(initial: R, operation: (index: Int, Byte, acc: R) -> R): R {
    var index = lastIndex
    var accumulator = initial
    while (index >= 0) {
        accumulator = operation(index, get(index), accumulator)
        --index
    }
    return accumulator
}
```

Accumulates value starting with [initial] value and applying [operation] from right to left to each element with its index in the original array and current accumulator value. Returns the specified [initial] value if the array is empty. @param [operation] function that takes the index of an element, the element itself and current accumulator value, and calculates the next accumulator value.

```
public inline fun <R> ShortArray.foldRightIndexed(initial: R, operation: (index: Int, Short, acc: R) -> R): R {
    var index = lastIndex
    var accumulator = initial
    while (index >= 0) {
        accumulator = operation(index, get(index), accumulator)
        --index
    }
    return accumulator
}
```

Accumulates value starting with [initial] value and applying [operation] from right to left to each element with its index in the original array and current accumulator value. Returns the specified [initial] value if the array is empty. @param [operation] function that takes the index of an element, the element itself and current accumulator value, and calculates the next accumulator value.

```
public inline fun <R> IntArray.foldRightIndexed(initial: R, operation: (index: Int, Int, acc: R) -> R): R {
    var index = lastIndex
    var accumulator = initial
    while (index >= 0) {
        accumulator = operation(index, get(index), accumulator)
        --index
    }
    return accumulator
}
```

Accumulates value starting with [initial] value and applying [operation] from right to left to each element with its index in the original array and current accumulator value. Returns the specified [initial] value if the array is empty. @param [operation] function that takes the index of an element, the element itself and current accumulator value, and calculates the next accumulator value.

```
public inline fun <R> LongArray.foldRightIndexed(initial: R, operation: (index: Int, Long, acc: R) -> R): R {
    var index = lastIndex
    var accumulator = initial
    while (index >= 0) {
        accumulator = operation(index, get(index), accumulator)
        --index
    }
    return accumulator
}
```

Accumulates value starting with [initial] value and applying [operation] from right to left to each element with its index in the original array and current accumulator value. Returns the specified [initial] value if the array is empty. @param [operation] function that takes the index of an element, the element itself and current accumulator value, and calculates the next accumulator value.

```
public inline fun <R> FloatArray.foldRightIndexed(initial: R, operation: (index: Int, Float, acc: R) -> R): R {
    var index = lastIndex
    var accumulator = initial
    while (index >= 0) {
        accumulator = operation(index, get(index), accumulator)
        --index
    }
    return accumulator
}
```

Accumulates value starting with [initial] value and applying [operation] from right to left to each element with its index in the original array and current accumulator value. Returns the specified [initial] value if the array is empty. @param [operation] function that takes the index of an element, the element itself and current accumulator value, and calculates the next accumulator value.

function that takes the index of an element, the element itself and current accumulator value, and calculates the next accumulator value.

```
public inline fun <R> DoubleArray.foldRightIndexed(initial: R, operation: (index: Int, Double, acc: R) -> R): R {
    var index = lastIndex
    var accumulator = initial
    while (index >= 0) {
        accumulator = operation(index, get(index), accumulator)
        --index
    }
    return accumulator
}
```

Accumulates value starting with [initial] value and applying [operation] from right to left to each element with its index in the original array and current accumulator value. Returns the specified [initial] value if the array is empty.

@param [operation] function

that takes the index of an element, the element itself and current accumulator value, and calculates the next accumulator value.

```
public inline fun <R> BooleanArray.foldRightIndexed(initial: R, operation: (index: Int, Boolean, acc: R) -> R): R {
    var index = lastIndex
    var accumulator = initial
    while (index >= 0) {
        accumulator = operation(index, get(index), accumulator)
        --index
    }
    return accumulator
}
```

Accumulates value starting with [initial] value and applying [operation] from right to left to each element with its index in the original array and current accumulator value. Returns the specified [initial] value if the array is empty.

@param [operation] function that takes the index of an element, the element itself and current accumulator value, and calculates the next accumulator value.

```
public inline fun <R> CharArray.foldRightIndexed(initial: R, operation: (index: Int, Char, acc: R) -> R): R {
    var index = lastIndex
    var accumulator = initial
    while (index >= 0) {
        accumulator = operation(index, get(index), accumulator)
        --index
    }
    return accumulator
}
```

Performs the given [action] on each element.

```
public inline fun <T> Array<out T>.forEach(action: (T) -> Unit): Unit {
    for (element in this) action(element)
}
```

Performs the given [action] on each element.

```
public inline fun ByteArray.forEach(action: (Byte) -> Unit): Unit {
    for (element in this) action(element)
}
```

Performs the given [action] on each element.

```
public inline fun ShortArray.forEach(action: (Short) -> Unit): Unit {
    for (element in this) action(element)
}
```

Performs the given [action] on each element.

```
public inline fun IntArray.forEach(action: (Int) -> Unit): Unit {
    for (element in this) action(element)
}
```

Performs the given [action] on each element.

```
public inline fun LongArray.forEach(action: (Long) -> Unit): Unit {
    for (element in this) action(element)
}
```

Performs the given [action] on each element.

```
public inline fun FloatArray.forEach(action: (Float) -> Unit): Unit {
    for (element in this) action(element)
}
```

Performs the given [action] on each element.

```
public inline fun DoubleArray.forEach(action: (Double) -> Unit): Unit {
    for (element in this) action(element)
}
```

Performs the given [action] on each element.

```
public inline fun BooleanArray.forEach(action: (Boolean) -> Unit): Unit {
    for (element in this) action(element)
}
```

Performs the given [action] on each element.

```
public inline fun CharArray.forEach(action: (Char) -> Unit): Unit {
    for (element in this) action(element)
}
```

Performs the given [action] on each element, providing sequential index with the element.

@param [action] function that takes the index of an element and the element itself and performs the action on the element.

```
public inline fun <T> Array<out T>.forEachIndexed(action: (index: Int, T) -> Unit): Unit {
    var index = 0
    for (item in this) action(index++, item)
}
```

Performs the given [action] on each element, providing sequential index with the element.

@param [action] function that takes the index of an element and the element itself and performs the action on the element.

```
public inline fun ByteArray.forEachIndexed(action: (index: Int, Byte) -> Unit): Unit {
    var index = 0
    for (item in this) action(index++, item)
}
```

Performs the given [action] on each element, providing sequential index with the element.

@param [action] function that takes the index of an element and the element itself and performs the action on the element.

```
public inline fun ShortArray.forEachIndexed(action: (index: Int, Short) -> Unit): Unit {
    var index = 0
    for (item in this) action(index++, item)
}
```

Performs the given [action] on each element, providing sequential index with the element.

@param [action] function that takes the index of an element and the element itself and performs the action on the element.

```
public inline fun IntArray.forEachIndexed(action: (index: Int, Int) -> Unit): Unit {
    var index = 0
    for (item in this) action(index++, item)
}
```

Performs the given [action] on each element, providing sequential index with

the element.\n \* @param [action] function that takes the index of an element and the element itself\n \* and performs the action on the element.\n \*/\npublic inline fun LongArray.forEachIndexed(action: (index: Int, Long) -> Unit): Unit {\n var index = 0\n for (item in this) action(index++, item)\n}\n\n/\*\*\n \* Performs the given [action] on each element, providing sequential index with the element.\n \* @param [action] function that takes the index of an element and the element itself\n \* and performs the action on the element.\n \*/\npublic inline fun FloatArray.forEachIndexed(action: (index: Int, Float) -> Unit): Unit {\n var index = 0\n for (item in this) action(index++, item)\n}\n\n/\*\*\n \* Performs the given [action] on each element, providing sequential index with the element.\n \* @param [action] function that takes the index of an element and the element itself\n \* and performs the action on the element.\n \*/\npublic inline fun DoubleArray.forEachIndexed(action: (index: Int, Double) -> Unit): Unit {\n var index = 0\n for (item in this) action(index++, item)\n}\n\n/\*\*\n \* Performs the given [action] on each element, providing sequential index with the element.\n \* @param [action] function that takes the index of an element and the element itself\n \* and performs the action on the element.\n \*/\npublic inline fun BooleanArray.forEachIndexed(action: (index: Int, Boolean) -> Unit): Unit {\n var index = 0\n for (item in this) action(index++, item)\n}\n\n/\*\*\n \* Performs the given [action] on each element, providing sequential index with the element.\n \* @param [action] function that takes the index of an element and the element itself\n \* and performs the action on the element.\n \*/\npublic inline fun CharArray.forEachIndexed(action: (index: Int, Char) -> Unit): Unit {\n var index = 0\n for (item in this) action(index++, item)\n}\n\n/\*\*\n \* Returns the largest element.\n \* \n \* If any of elements is `NaN` returns `NaN`.\n \* \n \* @throws NoSuchElementException if the array is empty.\n \*/\n\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxOrThrow")\n@Suppress("CONFLICTING\_OVERLOADS")\npublic fun Array<out Double>.max(): Double {\n if (isEmpty()) throw NoSuchElementException()\n var max = this[0]\n for (i in 1..lastIndex) {\n val e = this[i]\n max = maxOf(max, e)\n }\n return max\n}\n\n/\*\*\n \* Returns the largest element.\n \* \n \* If any of elements is `NaN` returns `NaN`.\n \* \n \* @throws NoSuchElementException if the array is empty.\n \*/\n\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxOrThrow")\n@Suppress("CONFLICTING\_OVERLOADS")\npublic fun Array<out Float>.max(): Float {\n if (isEmpty()) throw NoSuchElementException()\n var max = this[0]\n for (i in 1..lastIndex) {\n val e = this[i]\n max = maxOf(max, e)\n }\n return max\n}\n\n/\*\*\n \* Returns the largest element.\n \* \n \* @throws NoSuchElementException if the array is empty.\n \*/\n\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxOrThrow")\n@Suppress("CONFLICTING\_OVERLOADS")\npublic fun <T : Comparable<T>> Array<out T>.max(): T {\n if (isEmpty()) throw NoSuchElementException()\n var max = this[0]\n for (i in 1..lastIndex) {\n val e = this[i]\n if (max < e) max = e\n }\n return max\n}\n\n/\*\*\n \* Returns the largest element.\n \* \n \* @throws NoSuchElementException if the array is empty.\n \*/\n\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxOrThrow")\n@Suppress("CONFLICTING\_OVERLOADS")\npublic fun ByteArray.max(): Byte {\n if (isEmpty()) throw NoSuchElementException()\n var max = this[0]\n for (i in 1..lastIndex) {\n val e = this[i]\n if (max < e) max = e\n }\n return max\n}\n\n/\*\*\n \* Returns the largest element.\n \* \n \* @throws NoSuchElementException if the array is empty.\n \*/\n\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxOrThrow")\n@Suppress("CONFLICTING\_OVERLOADS")\npublic fun ShortArray.max(): Short {\n if (isEmpty()) throw NoSuchElementException()\n var max = this[0]\n for (i in 1..lastIndex) {\n val e = this[i]\n if (max < e) max = e\n }\n return max\n}\n\n/\*\*\n \* Returns the largest element.\n \* \n \* @throws NoSuchElementException if the array is empty.\n \*/\n\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxOrThrow")\n@Suppress("CONFLICTING\_OVERLOADS")\npublic fun IntArray.max(): Int {\n if (isEmpty()) throw NoSuchElementException()\n var max = this[0]\n for (i in 1..lastIndex) {\n val e = this[i]\n if (max < e) max = e\n }\n return max\n}\n\n/\*\*\n \* Returns the largest element.\n \* \n \* @throws NoSuchElementException if the array is empty.\n \*/\n\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxOrThrow")\n@Suppress("CONFLICTING\_OVERLOADS")

```

DS\)\npublic fun LongArray.max(): Long {\n  if (isEmpty()) throw NoSuchElementException()\n  var max =
this[0]\n  for (i in 1..lastIndex) {\n    val e = this[i]\n    if (max < e) max = e\n  }\n  return max\n}\n\n/**\n * Returns the largest element.\n * \n * If any of elements is `NaN` returns `NaN`.\n * \n * @throws
NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxOrThrow")\n@Suppress("CONFLICTING_OVERLOA
DS\)\npublic fun FloatArray.max(): Float {\n  if (isEmpty()) throw NoSuchElementException()\n  var max =
this[0]\n  for (i in 1..lastIndex) {\n    val e = this[i]\n    max = maxOf(max, e)\n  }\n  return max\n}\n\n/**\n * Returns the largest
element.\n * \n * If any of elements is `NaN` returns `NaN`.\n * \n * @throws NoSuchElementException if the
array is empty.\n
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxOrThrow")\n@Suppress("CONFLICTING_OVERLOA
DS\)\npublic fun DoubleArray.max(): Double {\n  if (isEmpty()) throw NoSuchElementException()\n  var max =
this[0]\n  for (i in 1..lastIndex) {\n    val e = this[i]\n    max = maxOf(max, e)\n  }\n  return max\n}\n\n/**\n * Returns the largest element.\n * \n * @throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxOrThrow")\n@Suppress("CONFLICTING_OVERLOA
DS\)\npublic fun CharArray.max(): Char {\n  if (isEmpty()) throw NoSuchElementException()\n  var max =
this[0]\n  for (i in 1..lastIndex) {\n    val e = this[i]\n    if (max < e) max = e\n  }\n  return max\n}\n\n/**\n * Returns the first element yielding the largest value of the given function.\n * \n * @throws
NoSuchElementException
if the array is empty.\n * \n * @sample samples.collections.Collections.Aggregates.maxBy\n
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxByOrThrow")\n@Suppress("CONFLICTING_OVERL
OADS\)\npublic inline fun <T, R : Comparable<R>> Array<out T>.maxBy(selector: (T) -> R): T {\n  if
(isEmpty()) throw NoSuchElementException()\n  var maxElem = this[0]\n  val lastIndex = this.lastIndex\n  if
(lastIndex == 0) return maxElem\n  var maxValue = selector(maxElem)\n  for (i in 1..lastIndex) {\n    val e =
this[i]\n    val v = selector(e)\n    if (maxValue < v) {\n      maxElem = e\n      maxValue = v\n    }\n  }\n  return maxElem\n}\n\n/**\n * Returns the first element yielding the largest value of the given function.\n * \n * @throws NoSuchElementException if the array is empty.\n * \n * @sample
samples.collections.Collections.Aggregates.maxBy\n
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxByOrThrow")\n@Suppress("CONFLICTING_OVERL
OADS\)\npublic
inline fun <R : Comparable<R>> ByteArray.maxBy(selector: (Byte) -> R): Byte {\n  if (isEmpty()) throw
NoSuchElementException()\n  var maxElem = this[0]\n  val lastIndex = this.lastIndex\n  if (lastIndex == 0)
return maxElem\n  var maxValue = selector(maxElem)\n  for (i in 1..lastIndex) {\n    val e = this[i]\n    val v
= selector(e)\n    if (maxValue < v) {\n      maxElem = e\n      maxValue = v\n    }\n  }\n  return
maxElem\n}\n\n/**\n * Returns the first element yielding the largest value of the given function.\n * \n * @throws
NoSuchElementException if the array is empty.\n * \n * @sample
samples.collections.Collections.Aggregates.maxBy\n
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxByOrThrow")\n@Suppress("CONFLICTING_OVERL
OADS\)\npublic inline fun <R : Comparable<R>> ShortArray.maxBy(selector: (Short) -> R): Short {\n  if
(isEmpty()) throw NoSuchElementException()\n  var maxElem = this[0]\n  val lastIndex
= this.lastIndex\n  if (lastIndex == 0) return maxElem\n  var maxValue = selector(maxElem)\n  for (i in
1..lastIndex) {\n    val e = this[i]\n    val v = selector(e)\n    if (maxValue < v) {\n      maxElem = e\n
maxValue = v\n    }\n  }\n  return maxElem\n}\n\n/**\n * Returns the first element yielding the largest value
of the given function.\n * \n * @throws NoSuchElementException if the array is empty.\n * \n * @sample
samples.collections.Collections.Aggregates.maxBy\n
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxByOrThrow")\n@Suppress("CONFLICTING_OVERL
OADS\)\npublic inline fun <R : Comparable<R>> IntArray.maxBy(selector: (Int) -> R): Int {\n  if
(isEmpty())
throw NoSuchElementException()\n  var maxElem = this[0]\n  val lastIndex = this.lastIndex\n  if (lastIndex ==

```

```

0) return maxElem\n    var maxValue = selector(maxElem)\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        val v = selector(e)\n        if (maxValue < v) {\n            maxElem = e\n            maxValue = v\n        }\n    }\n    return maxElem\n}\n\n/**\n * Returns the first element yielding the largest value of the given function.\n * @throws NoSuchElementException if the array is empty.\n */\n\n@sample samples.collections.Collections.Aggregates.maxBy\n\n*\/\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxByOrThrow")\n@Suppress("CONFLICTING_OVERLOADS")\npublic inline fun <R : Comparable<R>> LongArray.maxBy(selector: (Long) -> R): Long {\n    if (isEmpty()) throw NoSuchElementException()\n    var maxElem = this[0]\n    val lastIndex = this.lastIndex\n    if (lastIndex == 0) return maxElem\n    var maxValue = selector(maxElem)\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        val v = selector(e)\n        if (maxValue < v) {\n            maxElem = e\n            maxValue = v\n        }\n    }\n    return maxElem\n}\n\n/**\n * Returns the first element yielding the largest value of the given function.\n * @throws NoSuchElementException if the array is empty.\n */\n\n@sample samples.collections.Collections.Aggregates.maxBy\n\n*\/\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxByOrThrow")\n@Suppress("CONFLICTING_OVERLOADS")\npublic inline fun <R : Comparable<R>> FloatArray.maxBy(selector: (Float) -> R): Float {\n    if (isEmpty()) throw NoSuchElementException()\n    var maxElem = this[0]\n    val lastIndex = this.lastIndex\n    if (lastIndex == 0) return maxElem\n    var maxValue = selector(maxElem)\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        val v = selector(e)\n        if (maxValue < v) {\n            maxElem = e\n            maxValue = v\n        }\n    }\n    return maxElem\n}\n\n/**\n * Returns the first element yielding the largest value of the given function.\n * @throws NoSuchElementException if the array is empty.\n */\n\n@sample samples.collections.Collections.Aggregates.maxBy\n\n*\/\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxByOrThrow")\n@Suppress("CONFLICTING_OVERLOADS")\npublic inline fun <R : Comparable<R>> DoubleArray.maxBy(selector: (Double) -> R): Double {\n    if (isEmpty()) throw NoSuchElementException()\n    var maxElem = this[0]\n    val lastIndex = this.lastIndex\n    if (lastIndex == 0) return maxElem\n    var maxValue = selector(maxElem)\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        val v = selector(e)\n        if (maxValue < v) {\n            maxElem = e\n            maxValue = v\n        }\n    }\n    return maxElem\n}\n\n/**\n * Returns the first element yielding the largest value of the given function.\n * @throws NoSuchElementException if the array is empty.\n */\n\n@sample samples.collections.Collections.Aggregates.maxBy\n\n*\/\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxByOrThrow")\n@Suppress("CONFLICTING_OVERLOADS")\npublic inline fun <R : Comparable<R>> BooleanArray.maxBy(selector: (Boolean) -> R): Boolean {\n    if (isEmpty()) throw NoSuchElementException()\n    var maxElem = this[0]\n    val lastIndex = this.lastIndex\n    if (lastIndex == 0) return maxElem\n    var maxValue = selector(maxElem)\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        val v = selector(e)\n        if (maxValue < v) {\n            maxElem = e\n            maxValue = v\n        }\n    }\n    return maxElem\n}\n\n/**\n * Returns the first element yielding the largest value of the given function or `null` if there are no elements.\n * @sample samples.collections.Collections.Aggregates.maxByOrNull\n */\n\n*\/\n@SinceKotlin("1.4")\npublic inline fun <T, R : Comparable<R>> Array<out T>.maxByOrNull(selector: (T) -> R): T? {\n    if (isEmpty()) return null\n    var maxElem = this[0]\n    val lastIndex = this.lastIndex\n    if (lastIndex

```



```

== 0) return maxElem\n    var maxValue = selector(maxElem)\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        val v = selector(e)\n        if (maxValue < v) {\n            maxElem = e\n            maxValue = v\n        }\n    }\n    return maxElem\n}\n\n/**\n * Returns the first element yielding the largest value of the given function or `null` if there are no elements.\n * \n * @sample samples.collections.Collections.Aggregates.maxByOrNull\n */\n@SinceKotlin("1.4")\npublic inline fun <R : Comparable<R>> ByteArray.maxByOrNull(selector: (Byte) -> R): Byte? {\n    if (isEmpty()) return null\n    var maxElem = this[0]\n    val lastIndex = this.lastIndex\n    if (lastIndex == 0) return maxElem\n    var maxValue = selector(maxElem)\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        val v = selector(e)\n        if (maxValue < v) {\n            maxElem = e\n            maxValue = v\n        }\n    }\n    return maxElem\n}\n\n/**\n * Returns the first element yielding the largest value of the given function or `null` if there are no elements.\n * \n * @sample samples.collections.Collections.Aggregates.maxByOrNull\n */\n@SinceKotlin("1.4")\npublic inline fun <R : Comparable<R>> ShortArray.maxByOrNull(selector: (Short) -> R): Short? {\n    if (isEmpty()) return null\n    var maxElem = this[0]\n    val lastIndex = this.lastIndex\n    if (lastIndex == 0) return maxElem\n    var maxValue = selector(maxElem)\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        val v = selector(e)\n        if (maxValue < v) {\n            maxElem = e\n            maxValue = v\n        }\n    }\n    return maxElem\n}\n\n/**\n * Returns the first element yielding the largest value of the given function or `null` if there are no elements.\n * \n * @sample samples.collections.Collections.Aggregates.maxByOrNull\n */\n@SinceKotlin("1.4")\npublic inline fun <R : Comparable<R>> IntArray.maxByOrNull(selector: (Int) -> R): Int? {\n    if (isEmpty()) return null\n    var maxElem = this[0]\n    val lastIndex = this.lastIndex\n    if (lastIndex == 0) return maxElem\n    var maxValue = selector(maxElem)\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        val v = selector(e)\n        if (maxValue < v) {\n            maxElem = e\n            maxValue = v\n        }\n    }\n    return maxElem\n}\n\n/**\n * Returns the first element yielding the largest value of the given function or `null` if there are no elements.\n * \n * @sample samples.collections.Collections.Aggregates.maxByOrNull\n */\n@SinceKotlin("1.4")\npublic inline fun <R : Comparable<R>> LongArray.maxByOrNull(selector: (Long) -> R): Long? {\n    if (isEmpty()) return null\n    var maxElem = this[0]\n    val lastIndex = this.lastIndex\n    if (lastIndex == 0) return maxElem\n    var maxValue = selector(maxElem)\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        val v = selector(e)\n        if (maxValue < v) {\n            maxElem = e\n            maxValue = v\n        }\n    }\n    return maxElem\n}\n\n/**\n * Returns the first element yielding the largest value of the given function or `null` if there are no elements.\n * \n * @sample samples.collections.Collections.Aggregates.maxByOrNull\n */\n@SinceKotlin("1.4")\npublic inline fun <R : Comparable<R>> FloatArray.maxByOrNull(selector: (Float) -> R): Float? {\n    if (isEmpty()) return null\n    var maxElem = this[0]\n    val lastIndex = this.lastIndex\n    if (lastIndex == 0) return maxElem\n    var maxValue = selector(maxElem)\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        val v = selector(e)\n        if (maxValue < v) {\n            maxElem = e\n            maxValue = v\n        }\n    }\n    return maxElem\n}\n\n/**\n * Returns the first element yielding the largest value of the given function or `null` if there are no elements.\n * \n * @sample samples.collections.Collections.Aggregates.maxByOrNull\n */\n@SinceKotlin("1.4")\npublic inline fun <R : Comparable<R>> DoubleArray.maxByOrNull(selector: (Double) -> R): Double? {\n    if (isEmpty()) return null\n    var maxElem = this[0]\n    val lastIndex = this.lastIndex\n    if (lastIndex == 0) return maxElem\n    var maxValue = selector(maxElem)\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        val v = selector(e)\n        if (maxValue < v) {\n            maxElem = e\n            maxValue = v\n        }\n    }\n    return maxElem\n}\n\n/**\n * Returns the first element yielding the largest value of the given function or `null` if there are no elements.\n * \n * @sample samples.collections.Collections.Aggregates.maxByOrNull\n */\n@SinceKotlin("1.4")\npublic inline fun <R : Comparable<R>> BooleanArray.maxByOrNull(selector: (Boolean) -> R): Boolean? {\n    if (isEmpty()) return null\n    var maxElem = this[0]\n    val lastIndex = this.lastIndex\n    if (lastIndex == 0) return maxElem\n    var maxValue = selector(maxElem)\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        val v = selector(e)\n        if (maxValue < v) {\n            maxElem = e\n            maxValue = v\n        }\n    }\n    return maxElem\n}\n\n/**\n * Returns the first element yielding the largest value of the given function or `null` if there are no elements.\n * \n * @sample

```

```

samples.collections.Collections.Aggregates.maxByOrNull\n *\n@SinceKotlin(\n"1.4\n")\npublic inline fun <R : Comparable<R>> CharArray.maxByOrNull(selector: (Char) -> R): Char? {\n    if (isEmpty()) return null\n    var maxElem = this[0]\n    val lastIndex = this.lastIndex\n    if (lastIndex == 0) return maxElem\n    var maxValue = selector(maxElem)\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        val v = selector(e)\n        if (maxValue < v) {\n            maxElem = e\n            maxValue = v\n        }\n    }\n    return maxElem\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to each element in the array.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n * \n * @throws NoSuchElementException if the array is empty.\n */\n}\n\n*\n@SinceKotlin(\n"1.4\n")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T> Array<out T>.maxOf(selector: (T) -> Double): Double {\n    if (isEmpty()) throw NoSuchElementException()\n    var maxValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        maxValue = maxOf(maxValue, v)\n    }\n    return maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to each element in the array.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n * \n * @throws NoSuchElementException if the array is empty.\n */\n}\n\n*\n@SinceKotlin(\n"1.4\n")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun ByteArray.maxOf(selector: (Byte) -> Double): Double {\n    if (isEmpty()) throw NoSuchElementException()\n    var maxValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        maxValue = maxOf(maxValue, v)\n    }\n    return maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to each element in the array.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n * \n * @throws NoSuchElementException if the array is empty.\n */\n}\n\n*\n@SinceKotlin(\n"1.4\n")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun ShortArray.maxOf(selector: (Short) -> Double): Double {\n    if (isEmpty()) throw NoSuchElementException()\n    var maxValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        maxValue = maxOf(maxValue, v)\n    }\n    return maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to each element in the array.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n * \n * @throws NoSuchElementException if the array is empty.\n */\n}\n\n*\n@SinceKotlin(\n"1.4\n")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun IntArray.maxOf(selector: (Int) -> Double): Double {\n    if (isEmpty()) throw NoSuchElementException()\n    var maxValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        maxValue = maxOf(maxValue, v)\n    }\n    return maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to each element in the array.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n * \n * @throws NoSuchElementException if the array is empty.\n */\n}\n\n*\n@SinceKotlin(\n"1.4\n")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun LongArray.maxOf(selector: (Long) -> Double): Double {\n    if (isEmpty()) throw NoSuchElementException()\n    var maxValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        maxValue = maxOf(maxValue, v)\n    }\n    return maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to each element in the array.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n * \n * @throws NoSuchElementException if the array is empty.\n */\n}\n\n*\n@SinceKotlin(\n"1.4\n")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun FloatArray.maxOf(selector: (Float) -> Double): Double {\n    if (isEmpty()) throw NoSuchElementException()\n    var maxValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        maxValue = maxOf(maxValue, v)\n    }\n    return

```

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maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to
each element
in the array.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n * \n *
@throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun DoubleArray.maxOf(selector: (Double) ->
Double): Double {\n if (isEmpty()) throw NoSuchElementException()\n var maxValue = selector(this[0])\n for
(i in 1..lastIndex) {\n val v = selector(this[i])\n maxValue = maxOf(maxValue, v)\n }\n return
maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to
each element in the array.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is
`NaN`.\n * \n * @throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic
inline fun BooleanArray.maxOf(selector: (Boolean) -> Double): Double {\n if (isEmpty()) throw
NoSuchElementException()\n var maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v =
selector(this[i])\n maxValue = maxOf(maxValue, v)\n }\n return maxValue\n}\n\n/**\n * Returns the
largest value among all values produced by [selector] function\n * applied to each element in the array.\n * \n * If
any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n * \n * @throws
NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun CharArray.maxOf(selector: (Char) ->
Double): Double {\n if (isEmpty()) throw NoSuchElementException()\n var maxValue = selector(this[0])\n
for (i in 1..lastIndex) {\n val v = selector(this[i])\n maxValue = maxOf(maxValue, v)\n }\n return
maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to
each element in the array.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is
`NaN`.\n * \n * @throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T> Array<out T>.maxOf(selector: (T) ->
Float): Float {\n if (isEmpty()) throw NoSuchElementException()\n var maxValue = selector(this[0])\n for (i
in 1..lastIndex) {\n val v = selector(this[i])\n maxValue = maxOf(maxValue, v)\n }\n return
maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to
each element in the array.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is
`NaN`.\n * \n * @throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun ByteArray.maxOf(selector: (Byte) -> Float):
Float {\n if (isEmpty()) throw NoSuchElementException()\n var maxValue = selector(this[0])\n for (i in
1..lastIndex) {\n val v = selector(this[i])\n maxValue = maxOf(maxValue, v)\n }\n return
maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to
each element in the array.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is
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*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic
inline fun ShortArray.maxOf(selector: (Short) -> Float): Float {\n if (isEmpty()) throw
NoSuchElementException()\n var maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v =
selector(this[i])\n maxValue = maxOf(maxValue, v)\n }\n return maxValue\n}\n\n/**\n * Returns the
largest value among all values produced by [selector] function\n * applied to each element in the array.\n * \n * If
any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n * \n * @throws
NoSuchElementException if the array is empty.\n

```

NoSuchElementException if the array is empty.\n

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun IntArray.maxOf(selector: (Int) -> Float):  
Float {\n    if (isEmpty()) throw NoSuchElementException()\n    var maxValue = selector(this[0])\n    for (i in  
1..lastIndex)
```

```
{\n    val v = selector(this[i])\n    maxValue = maxOf(maxValue, v)\n }\n return maxValue\n}\n\n/**\n *
```

Returns the largest value among all values produced by [selector] function\n \* applied to each element in the  
array.\n \* \n \* If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n \* \n \*

@throws NoSuchElementException if the array is empty.\n

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun LongArray.maxOf(selector: (Long) ->  
Float): Float {\n    if (isEmpty()) throw NoSuchElementException()\n    var maxValue = selector(this[0])\n    for (i  
in 1..lastIndex) {\n        val v = selector(this[i])\n        maxValue = maxOf(maxValue, v)\n    }\n    return  
maxValue\n}\n\n/**\n *
```

Returns the largest value among all values produced by [selector] function\n \* applied to  
each element in the array.\n \* \n \* If any of values

produced by [selector] function is `NaN`, the returned result is `NaN`.\n \* \n \*

@throws NoSuchElementException  
if the array is empty.\n

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun FloatArray.maxOf(selector: (Float) ->  
Float): Float {\n    if (isEmpty()) throw NoSuchElementException()\n    var maxValue = selector(this[0])\n    for (i  
in 1..lastIndex) {\n        val v = selector(this[i])\n        maxValue = maxOf(maxValue, v)\n    }\n    return  
maxValue\n}\n\n/**\n *
```

Returns the largest value among all values produced by [selector] function\n \* applied to  
each element in the array.\n \* \n \* If any of values produced by [selector] function is `NaN`, the returned result is  
`NaN`.\n \* \n \*

@throws NoSuchElementException if the array is empty.\n

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic
```

```
inline fun DoubleArray.maxOf(selector: (Double) -> Float): Float {\n    if (isEmpty()) throw
```

```
NoSuchElementException()\n    var maxValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v =
```

```
selector(this[i])\n        maxValue = maxOf(maxValue, v)\n    }\n    return maxValue\n}\n\n/**\n *
```

Returns the  
largest value among all values produced by [selector] function\n \* applied to each element in the array.\n \* \n \* If

any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n \* \n \*

@throws

NoSuchElementException if the array is empty.\n

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun BooleanArray.maxOf(selector: (Boolean) ->  
Float): Float {\n    if (isEmpty()) throw NoSuchElementException()\n    var maxValue = selector(this[0])\n    for (i  
in 1..lastIndex) {\n        val v
```

```
= selector(this[i])\n        maxValue = maxOf(maxValue, v)\n    }\n    return maxValue\n}\n\n/**\n *
```

Returns the  
largest value among all values produced by [selector] function\n \* applied to each element in the array.\n \* \n \* If

any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n \* \n \*

@throws

NoSuchElementException if the array is empty.\n

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun CharArray.maxOf(selector: (Char) -> Float):  
Float {\n    if (isEmpty()) throw NoSuchElementException()\n    var maxValue = selector(this[0])\n    for (i in  
1..lastIndex) {\n        val v = selector(this[i])\n        maxValue = maxOf(maxValue, v)\n    }\n    return  
maxValue\n}\n\n/**\n *
```

Returns the largest value among all values produced by [selector] function\n \* applied to  
each element in the array.\n \* \n \* @throws NoSuchElementException

if the array is empty.\n

\n

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
```

```

ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T, R : Comparable<R>> Array<out
T>.maxOf(selector: (T) -> R): R {\n  if (isEmpty()) throw NoSuchElementException()\n  var maxValue =
selector(this[0])\n  for (i in 1..lastIndex) {\n    val v = selector(this[i])\n    if (maxValue < v) {\n
maxValue = v\n    }\n  }\n  return maxValue\n}\n\n/**\n * Returns the largest value among all values produced
by [selector] function\n * applied to each element in the array.\n * \n * @throws NoSuchElementException if the
array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>
ByteArray.maxOf(selector: (Byte) -> R): R {\n  if (isEmpty()) throw NoSuchElementException()\n
  var maxValue = selector(this[0])\n  for (i in 1..lastIndex) {\n    val v = selector(this[i])\n    if (maxValue <
v) {\n    maxValue = v\n    }\n  }\n  return maxValue\n}\n\n/**\n * Returns the largest value among all
values produced by [selector] function\n * applied to each element in the array.\n * \n * @throws
NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>
ShortArray.maxOf(selector: (Short) -> R): R {\n  if (isEmpty()) throw NoSuchElementException()\n  var
maxValue = selector(this[0])\n  for (i in 1..lastIndex) {\n    val v = selector(this[i])\n    if (maxValue < v) {\n
maxValue = v\n    }\n  }\n  return maxValue\n}\n\n/**\n * Returns the largest value among all values
produced by [selector] function\n * applied to each element
in the array.\n * \n * @throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>
IntArray.maxOf(selector: (Int) -> R): R {\n  if (isEmpty()) throw NoSuchElementException()\n  var maxValue =
selector(this[0])\n  for (i in 1..lastIndex) {\n    val v = selector(this[i])\n    if (maxValue < v) {\n
maxValue = v\n    }\n  }\n  return maxValue\n}\n\n/**\n * Returns the largest value among all values produced
by [selector] function\n * applied to each element in the array.\n * \n * @throws NoSuchElementException if the
array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>
LongArray.maxOf(selector: (Long) -> R):
R {\n  if (isEmpty()) throw NoSuchElementException()\n  var maxValue = selector(this[0])\n  for (i in
1..lastIndex) {\n    val v = selector(this[i])\n    if (maxValue < v) {\n    maxValue = v\n    }\n  }\n
return maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n *
applied to each element in the array.\n * \n * @throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>
FloatArray.maxOf(selector: (Float) -> R): R {\n  if (isEmpty()) throw NoSuchElementException()\n  var
maxValue = selector(this[0])\n  for (i in 1..lastIndex) {\n    val v = selector(this[i])\n    if (maxValue < v) {\n
maxValue = v\n    }\n  }\n  return maxValue\n}\n\n/**\n * Returns the largest value among all values
produced
by [selector] function\n * applied to each element in the array.\n * \n * @throws NoSuchElementException if the
array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>
DoubleArray.maxOf(selector: (Double) -> R): R {\n  if (isEmpty()) throw NoSuchElementException()\n  var
maxValue = selector(this[0])\n  for (i in 1..lastIndex) {\n    val v = selector(this[i])\n    if (maxValue < v) {\n
maxValue = v\n    }\n  }\n  return maxValue\n}\n\n/**\n * Returns the largest value among all values
produced by [selector] function\n * applied to each element in the array.\n * \n * @throws

```

NoSuchElementException if the array is empty.\n

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R
```

```
: Comparable<R>> BooleanArray.maxOf(selector: (Boolean) -> R): R {\n    if (isEmpty()) throw\n    NoSuchElementException()\n    var maxV = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v =\n        selector(this[i])\n        if (maxV < v) {\n            maxV = v\n        }\n    }\n    return maxV\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to each element in the\n * array.\n * \n * @throws NoSuchElementException if the array is empty.\n */
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>
```

```
CharArray.maxOf(selector: (Char) -> R): R {\n    if (isEmpty()) throw NoSuchElementException()\n    var\n    maxV = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        if (maxV < v) {\n            maxV = v\n        }\n    }\n    return maxV\n}\n\n/**\n *
```

```
 * Returns the largest value among all values produced by [selector] function\n * applied to each element in the\n * array or `null` if there are no elements.\n * \n * If any of values produced by [selector] function is `NaN`, the\n * returned result is `NaN`.\n */
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T> Array<out T>.maxOfOrNull(selector:
```

```
(T) -> Double): Double? {\n    if (isEmpty()) return null\n    var maxV = selector(this[0])\n    for (i in\n    1..lastIndex) {\n        val v = selector(this[i])\n        maxV = maxOf(maxV, v)\n    }\n    return\n    maxV\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to\n * each element in the array or `null` if there are no elements.\n * \n * If any of values produced by [selector] function\n * is `NaN`, the returned result is `NaN`.\n */
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic
```

```
inline fun ByteArray.maxOfOrNull(selector: (Byte) -> Double): Double? {\n    if (isEmpty()) return null\n    var\n    maxV = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        maxV =\n        maxOf(maxV, v)\n    }\n    return maxV\n}\n\n/**\n * Returns the largest value among all values produced\n * by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n * \n * If any of\n * values produced by [selector] function is `NaN`, the returned result is `NaN`.\n */
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun ShortArray.maxOfOrNull(selector: (Short) -
```

```
> Double): Double? {\n    if (isEmpty()) return null\n    var maxV = selector(this[0])\n    for (i\n    in 1..lastIndex) {\n        val v = selector(this[i])\n        maxV = maxOf(maxV, v)\n    }\n    return\n    maxV\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to\n * each element in the array or `null` if there are no elements.\n * \n * If any of values produced by [selector] function\n * is `NaN`, the returned result is `NaN`.\n */
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun IntArray.maxOfOrNull(selector: (Int) ->
```

```
Double): Double? {\n    if (isEmpty()) return null\n    var maxV = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        maxV = maxOf(maxV, v)\n    }\n    return maxV\n}\n\n/**\n * Returns\n * the largest value among all values produced by [selector] function\n * applied to each element in the array or `null`\n * if there are no elements.\n * \n * \n */
```

```
 * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n */
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun LongArray.maxOfOrNull(selector: (Long) -
```

```
> Double): Double? {\n    if (isEmpty()) return null\n    var maxV = selector(this[0])\n    for (i in 1..lastIndex)\n    {\n        val v = selector(this[i])\n        maxV = maxOf(maxV, v)\n    }\n    return maxV\n}\n\n/**\n *
```

Returns the largest value among all values produced by [selector] function applied to each element in the array or `null` if there are no elements. If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun FloatArray.maxOrNull(selector:\n(Float) -> Double): Double? {\n    if (isEmpty()) return null\n    var maxValue = selector(this[0])\n    for (i in\n1..lastIndex) {\n        val v = selector(this[i])\n        maxValue = maxOf(maxValue, v)\n    }\n    return\nmaxValue\n}\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n * If any of values produced by [selector] function\n * is `NaN`, the returned result is `NaN`.
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun DoubleArray.maxOrNull(selector:\n(Double) -> Double): Double? {\n    if (isEmpty()) return null\n    var maxValue = selector(this[0])\n    for (i in\n1..lastIndex) {\n        val v = selector(this[i])\n        maxValue = maxOf(maxValue, v)\n    }\n    return\nmaxValue\n}\n/**\n * Returns the largest value among all values\n * produced by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n * If any of values produced by [selector] function\n * is `NaN`, the returned result is `NaN`.
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun BooleanArray.maxOrNull(selector:\n(Boolean) -> Double): Double? {\n    if (isEmpty()) return null\n    var maxValue = selector(this[0])\n    for (i in\n1..lastIndex) {\n        val v = selector(this[i])\n        maxValue = maxOf(maxValue, v)\n    }\n    return\nmaxValue\n}\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n * If any of values produced by [selector] function\n * is `NaN`, the returned result is `NaN`.
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic\ninline fun CharArray.maxOrNull(selector: (Char) -> Double): Double? {\n    if (isEmpty()) return null\n    var\nmaxValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        maxValue =\nmaxOf(maxValue, v)\n    }\n    return maxValue\n}\n/**\n * Returns the largest value among all values produced\n * by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n * If any of\n * values produced by [selector] function\n * is `NaN`, the returned result is `NaN`.
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T> Array<out T>.maxOrNull(selector:\n(T) -> Float): Float? {\n    if (isEmpty()) return null\n    var maxValue = selector(this[0])\n    for (i in 1..lastIndex)\n{\n        val v = selector(this[i])\n        maxValue = maxOf(maxValue, v)\n    }\n    return maxValue\n}\n/**\n * Returns the largest value among all\n * values produced by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n * If any\n * of values produced by [selector] function\n * is `NaN`, the returned result is `NaN`.
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun ByteArray.maxOrNull(selector: (Byte) ->\nFloat): Float? {\n    if (isEmpty()) return null\n    var maxValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        maxValue = maxOf(maxValue, v)\n    }\n    return maxValue\n}\n/**\n * Returns\n * the largest value among all values produced by [selector] function\n * applied to each element in the array or `null`\n * if there are no elements.\n * If any of values produced by [selector] function\n * is\n * `NaN`, the returned result is `NaN`.
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun ShortArray.maxOrNull(selector: (Short) ->\n> Float): Float? {\n    if (isEmpty()) return null\n    var maxValue = selector(this[0])\n    for (i in 1..lastIndex) {\n
```

```

val v = selector(this[i])\n    maxValue = maxOf(maxValue, v)\n    }\n    return maxValue\n}\n\n/**\n * Returns
the largest value among all values produced by [selector] function\n * applied to each element in the array or `null`
if there are no elements.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is
`NaN`.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun IntArray.maxOrNull(selector: (Int) ->
Float): Float? {\n    if (isEmpty()) return
null\n    var maxValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        maxValue
= maxOf(maxValue, v)\n    }\n    return maxValue\n}\n\n/**\n * Returns the largest value among all values
produced by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n * \n * If
any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun LongArray.maxOrNull(selector: (Long) -
> Float): Float? {\n    if (isEmpty()) return null\n    var maxValue = selector(this[0])\n    for (i in 1..lastIndex) {\n
val v = selector(this[i])\n        maxValue = maxOf(maxValue, v)\n    }\n    return maxValue\n}\n\n/**\n * Returns
the largest value among all values produced by [selector] function\n * applied to each element in
the array or `null` if there are no elements.\n * \n * If any of values produced by [selector] function is `NaN`, the
returned result is `NaN`.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun FloatArray.maxOrNull(selector: (Float) -
> Float): Float? {\n    if (isEmpty()) return null\n    var maxValue = selector(this[0])\n    for (i in 1..lastIndex) {\n
val v = selector(this[i])\n        maxValue = maxOf(maxValue, v)\n    }\n    return maxValue\n}\n\n/**\n * Returns
the largest value among all values produced by [selector] function\n * applied to each element in the array or `null`
if there are no elements.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is
`NaN`.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic
inline fun DoubleArray.maxOrNull(selector: (Double) -> Float): Float? {\n    if (isEmpty()) return null\n    var
maxValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        maxValue =
maxOf(maxValue, v)\n    }\n    return maxValue\n}\n\n/**\n * Returns the largest value among all values produced
by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n * \n * If any of
values produced by [selector] function is `NaN`, the returned result is `NaN`.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun BooleanArray.maxOrNull(selector:
(Boolean) -> Float): Float? {\n    if (isEmpty()) return null\n    var maxValue = selector(this[0])\n    for (i in
1..lastIndex) {\n        val v = selector(this[i])\n        maxValue = maxOf(maxValue, v)\n    }\n    return
maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to each element in the
array or `null` if there are no elements.\n * \n * If any of values produced by [selector] function is `NaN`, the
returned result is `NaN`.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun CharArray.maxOrNull(selector: (Char) ->
Float): Float? {\n    if (isEmpty()) return null\n    var maxValue = selector(this[0])\n    for (i in 1..lastIndex) {\n
val v = selector(this[i])\n        maxValue = maxOf(maxValue, v)\n    }\n    return maxValue\n}\n\n/**\n * Returns
the largest value among all values produced by [selector] function\n * applied to each element in the array or `null`
if there are no elements.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic

```



```
inline fun <T, R : Comparable<R>> Array<out T>.maxOrNull(selector: (T) -> R): R? {\n  if (isEmpty()) return\n  null\n  var maxValue = selector(this[0])\n  for (i in 1..lastIndex) {\n    val v = selector(this[i])\n    if\n    (maxValue < v) {\n      maxValue = v\n    }\n  }\n  return maxValue\n}\n\n/**\n * Returns the largest value\n among all values produced by [selector] function\n * applied to each element in the array or `null` if there are no\n elements.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>
```

```
ByteArray.maxOrNull(selector: (Byte) -> R): R? {\n  if (isEmpty()) return null\n  var maxValue =\n  selector(this[0])\n  for (i in 1..lastIndex) {\n    val v = selector(this[i])\n    if (maxValue < v) {\n      maxValue = v\n    }\n  }\n  return maxValue\n}\n\n/**\n
```

```
* Returns the largest value among all values produced by [selector] function\n * applied to each element in the\n array or `null` if there are no elements.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>
```

```
ShortArray.maxOrNull(selector: (Short) -> R): R? {\n  if (isEmpty()) return null\n  var maxValue =\n  selector(this[0])\n  for (i in 1..lastIndex) {\n    val v = selector(this[i])\n    if (maxValue < v) {\n      maxValue = v\n    }\n  }\n  return maxValue\n}\n\n/**\n * Returns the largest value among all values produced\n by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>
```

```
IntArray.maxOrNull(selector: (Int) -> R): R? {\n  if (isEmpty()) return null\n  var maxValue =\n  selector(this[0])\n  for (i in 1..lastIndex) {\n    val v = selector(this[i])\n    if (maxValue < v) {\n      maxValue = v\n    }\n  }\n  return maxValue\n}\n\n/**\n * Returns the largest value among all values produced\n by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>
```

```
LongArray.maxOrNull(selector: (Long) -> R): R? {\n  if (isEmpty()) return null\n  var maxValue =\n  selector(this[0])\n  for (i in 1..lastIndex) {\n    val v = selector(this[i])\n    if (maxValue < v) {\n      maxValue = v\n    }\n  }\n  return maxValue\n}\n\n/**\n * Returns the largest value among all values produced\n by [selector]
```

```
function\n * applied to each element in the array or `null` if there are no elements.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>
```

```
FloatArray.maxOrNull(selector: (Float) -> R): R? {\n  if (isEmpty()) return null\n  var maxValue =\n  selector(this[0])\n  for (i in 1..lastIndex) {\n    val v = selector(this[i])\n    if (maxValue < v) {\n      maxValue = v\n    }\n  }\n  return maxValue\n}\n\n/**\n * Returns the largest value among all values produced\n by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>
```

```
DoubleArray.maxOrNull(selector: (Double) -> R): R? {\n  if\n  (isEmpty()) return null\n  var maxValue = selector(this[0])\n  for (i in 1..lastIndex) {\n    val v =\n    selector(this[i])\n    if (maxValue < v) {\n      maxValue = v\n    }\n  }\n  return maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to each element in the array\n or `null` if there are no elements.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>
```

```
BooleanArray.maxOrNull(selector: (Boolean) -> R): R? {\n  if (isEmpty()) return null\n  var maxValue =\n  selector(this[0])\n  for (i in 1..lastIndex) {\n    val v = selector(this[i])\n    if (maxValue < v) {\n
```

```

maxValue = v\n    }\n    }\n    return maxValue\n}\n\n/**\n * Returns the largest value among all values produced
by [selector] function\n * applied to each element in the array
or `null` if there are no elements.\n
*/\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>
CharArray.maxOfOrNull(selector: (Char) -> R): R? {\n    if (isEmpty()) return null\n    var maxValue =
selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        if (maxValue < v) {\n
maxValue = v\n        }\n    }\n    return maxValue\n}\n\n/**\n * Returns the largest value according to the provided
[comparator]\n * among all values produced by [selector] function applied to each element in the array.\n * \n *
@throws NoSuchElementException if the array is empty.\n
*/\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T, R> Array<out
T>.maxOfWith(comparator: Comparator<in R>, selector: (T)
-> R): R {\n    if (isEmpty()) throw NoSuchElementException()\n    var maxValue = selector(this[0])\n    for (i in
1..lastIndex) {\n        val v = selector(this[i])\n        if (comparator.compare(maxValue, v) < 0) {\n            maxValue
= v\n        }\n    }\n    return maxValue\n}\n\n/**\n * Returns the largest value according to the provided
[comparator]\n * among all values produced by [selector] function applied to each element in the array.\n * \n *
@throws NoSuchElementException if the array is empty.\n
*/\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R> ByteArray.maxOfWith(comparator:
Comparator<in R>, selector: (Byte) -> R): R {\n    if (isEmpty()) throw NoSuchElementException()\n    var
maxValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        if
(comparator.compare(maxValue, v) < 0) {\n            maxValue
= v\n        }\n    }\n    return maxValue\n}\n\n/**\n * Returns the largest value according to the provided
[comparator]\n * among all values produced by [selector] function applied to each element in the array.\n * \n *
@throws NoSuchElementException if the array is empty.\n
*/\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R> ShortArray.maxOfWith(comparator:
Comparator<in R>, selector: (Short) -> R): R {\n    if (isEmpty()) throw NoSuchElementException()\n    var
maxValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        if
(comparator.compare(maxValue, v) < 0) {\n            maxValue = v\n        }\n    }\n    return maxValue\n}\n\n/**\n * Returns the largest value according to the provided [comparator]\n * among all values produced by [selector]
function applied to each element in the array.\n * \n * @throws
NoSuchElementException if the array is empty.\n
*/\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R> IntArray.maxOfWith(comparator:
Comparator<in R>, selector: (Int) -> R): R {\n    if (isEmpty()) throw NoSuchElementException()\n    var maxValue
= selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        if
(comparator.compare(maxValue, v) < 0) {\n            maxValue = v\n        }\n    }\n    return maxValue\n}\n\n/**\n * Returns the largest value according to the provided [comparator]\n * among all values produced by [selector]
function applied to each element in the array.\n * \n * @throws NoSuchElementException if the array is empty.\n
*/\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R> LongArray.maxOfWith(comparator:
Comparator<in R>, selector: (Long) -> R): R {\n    if (isEmpty()) throw NoSuchElementException()\n    var
maxValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        if
(comparator.compare(maxValue, v) < 0) {\n            maxValue = v\n        }\n    }\n    return maxValue\n}\n\n/**\n * Returns the largest value according to the provided [comparator]\n * among all values produced by [selector]
function applied to each element in the array.\n * \n * @throws NoSuchElementException if the array is empty.\n

```

```

*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R> FloatArray.maxOfWith(comparator:
Comparator<in R>, selector: (Float) -> R): R {\n  if (isEmpty()) throw NoSuchElementException()\n  var
maxValue = selector(this[0])\n  for (i in 1..lastIndex) {\n    val v = selector(this[i])\n    if
(comparator.compare(maxValue, v) < 0) {\n      maxValue = v\n    }\n  }\n  return maxValue\n}\n\n/**\n *
Returns the largest value according to the provided [comparator]\n * among all values produced by [selector]
function applied to each element in the array.\n * \n * @throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R> DoubleArray.maxOfWith(comparator:
Comparator<in R>, selector: (Double) -> R): R {\n  if (isEmpty()) throw NoSuchElementException()\n  var
maxValue = selector(this[0])\n  for (i in 1..lastIndex) {\n    val v = selector(this[i])\n    if
(comparator.compare(maxValue, v) < 0) {\n      maxValue = v\n    }\n  }\n  return maxValue\n}\n\n/**\n *
Returns the largest value according to the provided [comparator]\n * among all values produced by [selector]
function
applied to each element in the array.\n * \n * @throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R> BooleanArray.maxOfWith(comparator:
Comparator<in R>, selector: (Boolean) -> R): R {\n  if (isEmpty()) throw NoSuchElementException()\n  var
maxValue = selector(this[0])\n  for (i in 1..lastIndex) {\n    val v = selector(this[i])\n    if
(comparator.compare(maxValue, v) < 0) {\n      maxValue = v\n    }\n  }\n  return maxValue\n}\n\n/**\n *
Returns the largest value according to the provided [comparator]\n * among all values produced by [selector]
function applied to each element in the array.\n * \n * @throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic
inline fun <R> CharArray.maxOfWith(comparator: Comparator<in R>, selector: (Char) -> R): R {\n  if
(isEmpty()) throw NoSuchElementException()\n  var maxValue = selector(this[0])\n  for (i in 1..lastIndex) {\n
val v = selector(this[i])\n    if (comparator.compare(maxValue, v) < 0) {\n      maxValue = v\n    }\n  }\n
return maxValue\n}\n\n/**\n * Returns the largest value according to the provided [comparator]\n * among all
values produced by [selector] function applied to each element in the array or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T, R> Array<out
T>.maxOfWithOrNull(comparator: Comparator<in R>, selector: (T) -> R): R? {\n  if (isEmpty()) return null\n
var maxValue = selector(this[0])\n  for (i in 1..lastIndex) {\n    val v =
selector(this[i])\n    if (comparator.compare(maxValue, v) < 0) {\n      maxValue = v\n    }\n  }\n  return
maxValue\n}\n\n/**\n * Returns the largest value according to the provided [comparator]\n * among all values
produced by [selector] function applied to each element in the array or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R>
ByteArray.maxOfWithOrNull(comparator: Comparator<in R>, selector: (Byte) -> R): R? {\n  if (isEmpty()) return
null\n  var maxValue = selector(this[0])\n  for (i in 1..lastIndex) {\n    val v = selector(this[i])\n    if
(comparator.compare(maxValue, v) < 0) {\n      maxValue = v\n    }\n  }\n  return maxValue\n}\n\n/**\n *
Returns the largest value according to the provided [comparator]\n * among all values produced by [selector]
function applied to
each element in the array or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R>
ShortArray.maxOfWithOrNull(comparator: Comparator<in R>, selector: (Short) -> R): R? {\n  if (isEmpty())
return null\n  var maxValue = selector(this[0])\n  for (i in 1..lastIndex) {\n    val v = selector(this[i])\n    if

```

```

(comparator.compare(maxValue, v) < 0) {\n      maxValue = v\n    }\n }\n return maxValue\n}\n\n/**\n * Returns the largest value according to the provided [comparator]\n * among all values produced by [selector] function applied to each element in the array or `null` if there are no elements.\n */\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R>\nIntArray.maxOfWithOrNull(comparator: Comparator<in R>, selector: (Int) -> R): R? {\n    if (isEmpty()) return null\n    var maxValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        if (comparator.compare(maxValue, v) < 0) {\n            maxValue = v\n        }\n    }\n    return maxValue\n}\n\n/**\n * Returns the largest value according to the provided [comparator]\n * among all values produced by [selector] function applied to each element in the array or `null` if there are no elements.\n */\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R>\nLongArray.maxOfWithOrNull(comparator: Comparator<in R>, selector: (Long) -> R): R? {\n    if (isEmpty()) return null\n    var maxValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        if (comparator.compare(maxValue, v) < 0) {\n            maxValue = v\n        }\n    }\n    return maxValue\n}\n\n/**\n * Returns the largest value according to the provided [comparator]\n * among all values produced by [selector] function applied to each element in the array or `null` if there are no elements.\n */\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R>\nFloatArray.maxOfWithOrNull(comparator: Comparator<in R>, selector: (Float) -> R): R? {\n    if (isEmpty()) return null\n    var maxValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        if (comparator.compare(maxValue, v) < 0) {\n            maxValue = v\n        }\n    }\n    return maxValue\n}\n\n/**\n * Returns the largest value according to the provided [comparator]\n * among all values produced by [selector] function applied to each element in the array or `null` if there are no elements.\n */\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R>\nDoubleArray.maxOfWithOrNull(comparator: Comparator<in R>, selector: (Double) -> R): R? {\n    if (isEmpty()) return null\n    var maxValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        if (comparator.compare(maxValue, v) < 0) {\n            maxValue = v\n        }\n    }\n    return maxValue\n}\n\n/**\n * Returns the largest value according to the provided [comparator]\n * among all values produced by [selector] function applied to each element in the array or `null` if there are no elements.\n */\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R>\nBooleanArray.maxOfWithOrNull(comparator: Comparator<in R>, selector: (Boolean) -> R): R? {\n    if (isEmpty()) return null\n    var\n        maxValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        if (comparator.compare(maxValue, v) < 0) {\n            maxValue = v\n        }\n    }\n    return maxValue\n}\n\n/**\n * Returns the largest value according to the provided [comparator]\n * among all values produced by [selector] function applied to each element in the array or `null` if there are no elements.\n */\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R>\nCharArray.maxOfWithOrNull(comparator: Comparator<in R>, selector: (Char) -> R): R? {\n    if (isEmpty()) return null\n    var maxValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        if (comparator.compare(maxValue, v) < 0) {\n            maxValue = v\n        }\n    }\n    return maxValue\n}\n\n/**\n * Returns the largest element or `null` if there

```

are no elements. If any of elements is NaN returns NaN.

```

@SinceKotlin("1.4")
public fun Array<out Double>.maxOrNull(): Double? {
    if (isEmpty()) return null
    var max = this[0]
    for (i in 1..lastIndex) {
        val e = this[i]
        max = maxOf(max, e)
    }
    return max
}

```

Returns the largest element or null if there are no elements.

```

@SinceKotlin("1.4")
public fun Array<out Float>.maxOrNull(): Float? {
    if (isEmpty()) return null
    var max = this[0]
    for (i in 1..lastIndex) {
        val e = this[i]
        max = maxOf(max, e)
    }
    return max
}

```

Returns the largest element or null if there are no elements.

```

@SinceKotlin("1.4")
public fun <T : Comparable<T>> Array<out T>.maxOrNull(): T? {
    if (isEmpty()) return null
    var max = this[0]
    for (i in 1..lastIndex) {
        val e = this[i]
        if (max < e) max = e
    }
    return max
}

```

Returns the largest element or null if there are no elements.

```

@SinceKotlin("1.4")
public fun ByteArray.maxOrNull(): Byte? {
    if (isEmpty()) return null
    var max = this[0]
    for (i in 1..lastIndex) {
        val e = this[i]
        if (max < e) max = e
    }
    return max
}

```

Returns the largest element or null if there are no elements.

```

@SinceKotlin("1.4")
public fun ShortArray.maxOrNull(): Short? {
    if (isEmpty()) return null
    var max = this[0]
    for (i in 1..lastIndex) {
        val e = this[i]
        if (max < e) max = e
    }
    return max
}

```

Returns the largest element or null if there are no elements.

```

@SinceKotlin("1.4")
public fun IntArray.maxOrNull(): Int? {
    if (isEmpty()) return null
    var max = this[0]
    for (i in 1..lastIndex) {
        val e = this[i]
        if (max < e) max = e
    }
    return max
}

```

Returns the largest element or null if there are no elements.

```

@SinceKotlin("1.4")
public fun LongArray.maxOrNull(): Long? {
    if (isEmpty()) return null
    var max = this[0]
    for (i in 1..lastIndex) {
        val e = this[i]
        if (max < e) max = e
    }
    return max
}

```

Returns the largest element or null if there are no elements.

If any of elements is NaN returns NaN.

```

@SinceKotlin("1.4")
public fun FloatArray.maxOrNull(): Float? {
    if (isEmpty()) return null
    var max = this[0]
    for (i in 1..lastIndex) {
        val e = this[i]
        max = maxOf(max, e)
    }
    return max
}

```

Returns the largest element or null if there are no elements.

If any of elements is NaN returns NaN.

```

@SinceKotlin("1.4")
public fun DoubleArray.maxOrNull(): Double? {
    if (isEmpty()) return null
    var max = this[0]
    for (i in 1..lastIndex) {
        val e = this[i]
        max = maxOf(max, e)
    }
    return max
}

```

Returns the largest element or null if there are no elements.

```

@SinceKotlin("1.4")
public fun CharArray.maxOrNull(): Char? {
    if (isEmpty()) return null
    var max = this[0]
    for (i in 1..lastIndex) {
        val e = this[i]
        if (max < e) max = e
    }
    return max
}

```

Returns the first element having the largest value according to the provided [comparator].

```

@throws NoSuchElementException if the array is empty.
@SinceKotlin("1.7")
@kotlin.jvm.JvmName("maxWithOrThrow")
@Suppress("CONFLICTING_OVERLOADS")
public fun <T> Array<out T>.maxWith(comparator: Comparator<in T>): T {
    if (isEmpty()) throw NoSuchElementException()
    var max = this[0]
    for (i in 1..lastIndex) {
        val e = this[i]
        if (comparator.compare(max, e) < 0) max = e
    }
    return max
}

```

Returns the first element having the largest value according to the provided [comparator].

```

@throws NoSuchElementException if the array is empty.
@SinceKotlin("1.7")
@kotlin.jvm.JvmName("maxWithOrThrow")
@Suppress("CONFLICTING_OVERLOADS")
public fun ByteArray.maxWith(comparator: Comparator<in Byte>): Byte {
    if (isEmpty()) throw NoSuchElementException()
    var max = this[0]
    for (i in 1..lastIndex) {
        val e = this[i]
        if (comparator.compare(max, e) < 0) max = e
    }
    return max
}

```

Returns the first element having the largest value according to the provided [comparator].

```

@throws NoSuchElementException if the array is empty.
@SinceKotlin("1.7")
@kotlin.jvm.JvmName("maxWithOrThrow")
@Suppress("CONFLICTING_OVERLOADS")
public fun ShortArray.maxWith(comparator: Comparator<in Short>): Short {
    if (isEmpty()) throw NoSuchElementException()
    var max = this[0]
    for (i in 1..lastIndex) {
        val e = this[i]
        if (comparator.compare(max, e) < 0) max = e
    }
    return max
}

```

Returns the first element having the largest value according to the provided [comparator].

```

first element having the largest value according to the provided [comparator].\n * \n * @throws
NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxWithOrThrow")\n@Suppress("CONFLICTING_OVER
LOADS")\npublic fun IntArray.maxWith(comparator: Comparator<in Int>): Int {\n if (isEmpty()) throw
NoSuchElementException()\n var max = this[0]\n for (i in 1..lastIndex) {\n val e = this[i]\n if
(comparator.compare(max, e) < 0) max = e\n }\n return max\n}\n\n/**\n * Returns the first element having the
largest value according to the provided [comparator].\n * \n * @throws NoSuchElementException if the array is
empty.\n
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxWithOrThrow")\n@Suppress("CONFLICTING_OVER
LOADS")\npublic fun LongArray.maxWith(comparator: Comparator<in Long>): Long {\n if (isEmpty()) throw
NoSuchElementException()\n var max = this[0]\n for (i in 1..lastIndex) {\n val e = this[i]\n
if (comparator.compare(max, e) < 0) max = e\n }\n return max\n}\n\n/**\n * Returns the first element
having the largest value according to the provided [comparator].\n * \n * @throws NoSuchElementException if the
array is empty.\n
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxWithOrThrow")\n@Suppress("CONFLICTING_OVER
LOADS")\npublic fun FloatArray.maxWith(comparator: Comparator<in Float>): Float {\n if (isEmpty()) throw
NoSuchElementException()\n var max = this[0]\n for (i in 1..lastIndex) {\n val e = this[i]\n if
(comparator.compare(max, e) < 0) max = e\n }\n return max\n}\n\n/**\n * Returns the first element having the
largest value according to the provided [comparator].\n * \n * @throws NoSuchElementException if the array is
empty.\n
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxWithOrThrow")\n@Suppress("CONFLICTING_OVER
LOADS")\npublic fun DoubleArray.maxWith(comparator: Comparator<in Double>): Double {\n if (isEmpty())
throw NoSuchElementException()\n var max = this[0]\n for (i in 1..lastIndex) {\n val e = this[i]\n if
(comparator.compare(max, e) < 0) max = e\n }\n return max\n}\n\n/**\n * Returns the first element having the
largest value according to the provided [comparator].\n * \n * @throws NoSuchElementException if the array is
empty.\n
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxWithOrThrow")\n@Suppress("CONFLICTING_OVER
LOADS")\npublic fun BooleanArray.maxWith(comparator: Comparator<in Boolean>): Boolean {\n if
(isEmpty()) throw NoSuchElementException()\n var max = this[0]\n for (i in 1..lastIndex) {\n val e =
this[i]\n if (comparator.compare(max, e) < 0) max = e\n }\n return max\n}\n\n/**\n * Returns the first
element having the largest value according to the provided [comparator].\n * \n * @throws
NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxWithOrThrow")\n@Suppress("CONFLICTING_OVER
LOADS")\npublic
fun CharArray.maxWith(comparator: Comparator<in Char>): Char {\n if (isEmpty()) throw
NoSuchElementException()\n var max = this[0]\n for (i in 1..lastIndex) {\n val e = this[i]\n if
(comparator.compare(max, e) < 0) max = e\n }\n return max\n}\n\n/**\n * Returns the first element having the
largest value according to the provided [comparator] or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\npublic fun <T> Array<out T>.maxWithOrNull(comparator: Comparator<in T>): T? {\n
if (isEmpty()) return null\n var max = this[0]\n for (i in 1..lastIndex) {\n val e = this[i]\n if
(comparator.compare(max, e) < 0) max = e\n }\n return max\n}\n\n/**\n * Returns the first element having the
largest value according to the provided [comparator] or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\npublic fun ByteArray.maxWithOrNull(comparator: Comparator<in Byte>): Byte? {\n
if (isEmpty())
return null\n var max = this[0]\n for (i in 1..lastIndex) {\n val e = this[i]\n if (comparator.compare(max,
e) < 0) max = e\n }\n return max\n}\n\n/**\n * Returns the first element having the largest value according to the
provided [comparator] or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\npublic fun
ShortArray.maxWithOrNull(comparator: Comparator<in Short>): Short? {\n if (isEmpty()) return null\n var max

```

```

= this[0]\n for (i in 1..lastIndex) {\n val e = this[i]\n if (comparator.compare(max, e) < 0) max = e\n }\n
return max\n}\n\n/**\n * Returns the first element having the largest value according to the provided [comparator]
or `null` if there are no elements.\n *\n@SinceKotlin("1.4")\npublic fun IntArray.maxWithOrNull(comparator:
Comparator<in Int>): Int? {\n if (isEmpty()) return null\n var max = this[0]\n for (i in 1..lastIndex) {\n val
e = this[i]\n if (comparator.compare(max, e)
< 0) max = e\n }\n return max\n}\n\n/**\n * Returns the first element having the largest value according to the
provided [comparator] or `null` if there are no elements.\n *\n@SinceKotlin("1.4")\npublic fun
LongArray.maxWithOrNull(comparator: Comparator<in Long>): Long? {\n if (isEmpty()) return null\n var max
= this[0]\n for (i in 1..lastIndex) {\n val e = this[i]\n if (comparator.compare(max, e) < 0) max = e\n }\n
return max\n}\n\n/**\n * Returns the first element having the largest value according to the provided [comparator]
or `null` if there are no elements.\n *\n@SinceKotlin("1.4")\npublic fun FloatArray.maxWithOrNull(comparator:
Comparator<in Float>): Float? {\n if (isEmpty()) return null\n var max = this[0]\n for (i in 1..lastIndex) {\n
val e = this[i]\n if (comparator.compare(max, e) < 0) max = e\n }\n return max\n}\n\n/**\n * Returns the
first element having the largest value according to the provided [comparator]
or `null` if there are no elements.\n *\n@SinceKotlin("1.4")\npublic fun DoubleArray.maxWithOrNull(comparator: Comparator<in Double>): Double? {\n if (isEmpty()) return null\n
var max = this[0]\n for (i in 1..lastIndex) {\n val e = this[i]\n if (comparator.compare(max, e) < 0) max =
e\n }\n return max\n}\n\n/**\n * Returns the first element having the largest value according to the provided
[comparator] or `null` if there are no elements.\n *\n@SinceKotlin("1.4")\npublic fun BooleanArray.maxWithOrNull(comparator: Comparator<in Boolean>): Boolean? {\n if (isEmpty()) return null\n
var max = this[0]\n for (i in 1..lastIndex) {\n val e = this[i]\n if (comparator.compare(max, e) < 0) max =
e\n }\n return max\n}\n\n/**\n * Returns the first element having the largest value according to the provided
[comparator] or `null` if there are no elements.\n *\n@SinceKotlin("1.4")\npublic fun CharArray.maxWithOrNull(comparator:
Comparator<in Char>): Char? {\n if (isEmpty()) return null\n var max = this[0]\n for (i in 1..lastIndex) {\n
val e = this[i]\n if (comparator.compare(max, e) < 0) max = e\n }\n return max\n}\n\n/**\n * Returns the
smallest element.\n * \n * If any of elements is `NaN` returns `NaN`.\n * \n * @throws NoSuchElementException if
the array is empty.\n
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minOrThrow")\n@Suppress("CONFLICTING_OVERLOA
DS")\npublic fun Array<out Double>.min(): Double {\n if (isEmpty()) throw NoSuchElementException()\n var
min = this[0]\n for (i in 1..lastIndex) {\n val e = this[i]\n min = minOf(min, e)\n }\n return
min\n}\n\n/**\n * Returns the smallest element.\n * \n * If any of elements is `NaN` returns `NaN`.\n * \n *
@throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minOrThrow")\n@Suppress("CONFLICTING_OVERLOA
DS")\npublic fun Array<out Float>.min():
Float {\n if (isEmpty()) throw NoSuchElementException()\n var min = this[0]\n for (i in 1..lastIndex) {\n
val e = this[i]\n min = minOf(min, e)\n }\n return min\n}\n\n/**\n * Returns the smallest element.\n * \n *
@throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minOrThrow")\n@Suppress("CONFLICTING_OVERLOA
DS")\npublic fun <T : Comparable<T>> Array<out T>.min(): T {\n if (isEmpty()) throw
NoSuchElementException()\n var min = this[0]\n for (i in 1..lastIndex) {\n val e = this[i]\n if (min > e)
min = e\n }\n return min\n}\n\n/**\n * Returns the smallest element.\n * \n * @throws
NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minOrThrow")\n@Suppress("CONFLICTING_OVERLOA
DS")\npublic fun ByteArray.min(): Byte {\n if (isEmpty()) throw NoSuchElementException()\n var min =
this[0]\n for (i in 1..lastIndex) {\n
val e = this[i]\n if (min > e) min = e\n }\n return min\n}\n\n/**\n * Returns the smallest element.\n * \n
* @throws NoSuchElementException if the array is empty.\n

```

```

*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minOrThrow")\n@Suppress("CONFLICTING_OVERLOADS")\npublic fun ShortArray.min(): Short {\n    if (isEmpty()) throw NoSuchElementException()\n    var min = this[0]\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        if (min > e) min = e\n    }\n    return min\n}\n\n/**\n * Returns the smallest element.\n * \n * @throws NoSuchElementException if the array is empty.\n */
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minOrThrow")\n@Suppress("CONFLICTING_OVERLOADS")\npublic fun IntArray.min(): Int {\n    if (isEmpty()) throw NoSuchElementException()\n    var min = this[0]\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        if (min > e) min = e\n    }\n    return min\n}\n\n/**\n * Returns the smallest element.\n * \n * @throws NoSuchElementException\n * if the array is empty.\n */
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minOrThrow")\n@Suppress("CONFLICTING_OVERLOADS")\npublic fun LongArray.min(): Long {\n    if (isEmpty()) throw NoSuchElementException()\n    var min = this[0]\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        if (min > e) min = e\n    }\n    return min\n}\n\n/**\n * Returns the smallest element.\n * \n * If any of elements is `NaN` returns `NaN`.\n * \n * @throws\n * NoSuchElementException if the array is empty.\n */
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minOrThrow")\n@Suppress("CONFLICTING_OVERLOADS")\npublic fun FloatArray.min(): Float {\n    if (isEmpty()) throw NoSuchElementException()\n    var min = this[0]\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        min = minOf(min, e)\n    }\n    return min\n}\n\n/**\n * Returns the smallest element.\n * \n * If any of elements is `NaN` returns `NaN`.\n * \n * @throws\n * NoSuchElementException if the array is empty.\n */
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minOrThrow")\n@Suppress("CONFLICTING_OVERLOADS")\npublic fun DoubleArray.min(): Double {\n    if (isEmpty()) throw NoSuchElementException()\n    var min = this[0]\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        min = minOf(min, e)\n    }\n    return min\n}\n\n/**\n * Returns the smallest element.\n * \n * @throws NoSuchElementException if the array is empty.\n */
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minOrThrow")\n@Suppress("CONFLICTING_OVERLOADS")\npublic fun CharArray.min(): Char {\n    if (isEmpty()) throw NoSuchElementException()\n    var min = this[0]\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        if (min > e) min = e\n    }\n    return min\n}\n\n/**\n * Returns the first element yielding the smallest value of the given function.\n * \n * @throws\n * NoSuchElementException if the array is empty.\n * \n * @sample\n * samples.collections.Collections.Aggregates.minBy\n */
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minByOrThrow")\n@Suppress("CONFLICTING_OVERLOADS")\npublic\n    inline fun <T, R : Comparable<R>> Array<out T>.minBy(selector: (T) -> R): T {\n        if (isEmpty()) throw\n        NoSuchElementException()\n        var minElem = this[0]\n        val lastIndex = this.lastIndex\n        if (lastIndex == 0)\n            return minElem\n        var minValue = selector(minElem)\n        for (i in 1..lastIndex) {\n            val e = this[i]\n            val v =\n            selector(e)\n            if (minValue > v) {\n                minElem = e\n                minValue = v\n            }\n        }\n        return\n        minElem\n}\n\n/**\n * Returns the first element yielding the smallest value of the given function.\n * \n * @throws\n * NoSuchElementException if the array is empty.\n * \n * @sample\n * samples.collections.Collections.Aggregates.minBy\n */
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minByOrThrow")\n@Suppress("CONFLICTING_OVERLOADS")\npublic inline fun <R : Comparable<R>> ByteArray.minBy(selector: (Byte) -> R): Byte {\n    if (isEmpty())\n        throw\n        NoSuchElementException()\n    var minElem = this[0]\n    val lastIndex = this.lastIndex\n    if (lastIndex == 0)\n        return minElem\n    var minValue = selector(minElem)\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        val v =\n        selector(e)\n        if (minValue > v) {\n            minElem = e\n            minValue = v\n        }\n    }\n    return\n    minElem\n}\n\n/**\n * Returns the first element yielding the smallest value of the given function.\n * \n * @throws\n * NoSuchElementException if the array is empty.\n * \n * @sample\n * samples.collections.Collections.Aggregates.minBy\n */
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minByOrThrow")\n@Suppress("CONFLICTING_OVERLOADS")

```



```

ADS`)npublic inline fun <R : Comparable<R>> ShortArray.minBy(selector: (Short) -> R): Short {n  if
(isEmpty()) throw NoSuchElementException()n  var minElem = this[0]n  val lastIndex = this.lastIndexn  if
(lastIndex == 0) return minElemn  var minValue = selector(minElem)n  for (i in 1..lastIndex)
{n  val e = this[i]n  val v = selector(e)n  if (minValue > v) {n  minElem = e\n  minValue
= v\n  }}n  }n  return minElem\n}\n\n/**n * Returns the first element yielding the smallest value of the given
function.\n * \n * @throws NoSuchElementException if the array is empty.\n * \n * @sample
samples.collections.Collections.Aggregates.minBy\n
*/\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minByOrThrow")\n@Suppress("CONFLICTING_OVERLO
ADS`)npublic inline fun <R : Comparable<R>> IntArray.minBy(selector: (Int) -> R): Int {n  if (isEmpty())
throw NoSuchElementException()n  var minElem = this[0]n  val lastIndex = this.lastIndexn  if (lastIndex ==
0) return minElemn  var minValue = selector(minElem)n  for (i in 1..lastIndex) {n  val e = this[i]n  val
v = selector(e)n  if (minValue > v) {n  minElem = e\n  minValue = v\n  }}n  }n  return
minElem\n}\n\n/**n * Returns
the first element yielding the smallest value of the given function.\n * \n * @throws NoSuchElementException if
the array is empty.\n * \n * @sample samples.collections.Collections.Aggregates.minBy\n
*/\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minByOrThrow")\n@Suppress("CONFLICTING_OVERLO
ADS`)npublic inline fun <R : Comparable<R>> LongArray.minBy(selector: (Long) -> R): Long {n  if
(isEmpty()) throw NoSuchElementException()n  var minElem = this[0]n  val lastIndex = this.lastIndexn  if
(lastIndex == 0) return minElemn  var minValue = selector(minElem)n  for (i in 1..lastIndex) {n  val e =
this[i]n  val v = selector(e)n  if (minValue > v) {n  minElem = e\n  minValue = v\n  }}n  }n  return
minElem\n}\n\n/**n * Returns the first element yielding the smallest value of the given function.\n * \n
* @throws NoSuchElementException if the array is empty.\n * \n * @sample
samples.collections.Collections.Aggregates.minBy\n
*/\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minByOrThrow")\n@Suppress("CONFLICTING_OVERLO
ADS`)npublic inline fun <R : Comparable<R>> FloatArray.minBy(selector: (Float) -> R): Float {n  if
(isEmpty()) throw NoSuchElementException()n  var minElem = this[0]n  val lastIndex = this.lastIndexn  if
(lastIndex == 0) return minElemn  var minValue = selector(minElem)n  for (i in 1..lastIndex) {n  val e =
this[i]n  val v = selector(e)n  if (minValue > v) {n  minElem = e\n  minValue = v\n  }}n  }n  return
minElem\n}\n\n/**n * Returns the first element yielding the smallest value of the given function.\n * \n
* @throws NoSuchElementException if the array is empty.\n * \n * @sample
samples.collections.Collections.Aggregates.minBy\n
*/\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minByOrThrow")\n@Suppress("CONFLICTING_OVERLO
ADS`)npublic inline fun <R : Comparable<R>> DoubleArray.minBy(selector: (Double) ->
R): Double {n  if (isEmpty()) throw NoSuchElementException()n  var minElem = this[0]n  val lastIndex =
this.lastIndexn  if (lastIndex == 0) return minElemn  var minValue = selector(minElem)n  for (i in
1..lastIndex) {n  val e = this[i]n  val v = selector(e)n  if (minValue > v) {n  minElem = e\n
minValue = v\n  }}n  }n  return minElem\n}\n\n/**n * Returns the first element yielding the smallest value
of the given function.\n * \n * @throws NoSuchElementException if the array is empty.\n * \n * @sample
samples.collections.Collections.Aggregates.minBy\n
*/\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minByOrThrow")\n@Suppress("CONFLICTING_OVERLO
ADS`)npublic inline fun <R : Comparable<R>> BooleanArray.minBy(selector: (Boolean) -> R): Boolean {n  if
(isEmpty()) throw NoSuchElementException()n  var minElem = this[0]n  val lastIndex = this.lastIndexn  if
(lastIndex == 0) return minElemn  var minValue
= selector(minElem)n  for (i in 1..lastIndex) {n  val e = this[i]n  val v = selector(e)n  if (minValue >
v) {n  minElem = e\n  minValue = v\n  }}n  }n  return minElem\n}\n\n/**n * Returns the first
element yielding the smallest value of the given function.\n * \n * @throws NoSuchElementException if the array is
empty.\n * \n * @sample samples.collections.Collections.Aggregates.minBy\n
*/\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minByOrThrow")\n@Suppress("CONFLICTING_OVERLO

```

```

ADS`)
public inline fun <R : Comparable<R>> CharArray.minBy(selector: (Char) -> R): Char {
    if (isEmpty()) throw NoSuchElementException()
    var minElem = this[0]
    val lastIndex = this.lastIndex
    if (lastIndex == 0) return minElem
    var minValue = selector(minElem)
    for (i in 1..lastIndex) {
        val e = this[i]
        val v = selector(e)
        if (minValue > v) {
            minElem = e
            minValue = v
        }
    }
    return minElem
}

/**
 * Returns the first element yielding the smallest value of the given function or `null` if there are no elements.
 */
@sample samples.collections.Collections.Aggregates.minByOrNull

*
@SinceKotlin("1.4")
public inline fun <T, R : Comparable<R>> Array<out T>.minByOrNull(selector: (T) -> R): T? {
    if (isEmpty()) return null
    var minElem = this[0]
    val lastIndex = this.lastIndex
    if (lastIndex == 0) return minElem
    var minValue = selector(minElem)
    for (i in 1..lastIndex) {
        val e = this[i]
        val v = selector(e)
        if (minValue > v) {
            minElem = e
            minValue = v
        }
    }
    return minElem
}

/**
 * Returns the first element yielding the smallest value of the given function or `null` if there are no elements.
 */
@sample samples.collections.Collections.Aggregates.minByOrNull

*
@SinceKotlin("1.4")
public inline fun <R : Comparable<R>> ByteArray.minByOrNull(selector: (Byte) -> R): Byte? {
    if (isEmpty()) return null
    var minElem = this[0]
    val lastIndex = this.lastIndex
    if (lastIndex == 0) return minElem
    var minValue = selector(minElem)
    for (i in 1..lastIndex) {
        val e = this[i]
        val v = selector(e)
        if (minValue > v) {
            minElem = e
            minValue = v
        }
    }
    return minElem
}

/**
 * Returns the first element yielding the smallest value of the given function or `null` if there are no elements.
 */
@sample samples.collections.Collections.Aggregates.minByOrNull

*
@SinceKotlin("1.4")
public inline fun <R : Comparable<R>> ShortArray.minByOrNull(selector: (Short) -> R): Short? {
    if (isEmpty()) return null
    var minElem = this[0]
    val lastIndex = this.lastIndex
    if (lastIndex == 0) return minElem
    var minValue = selector(minElem)
    for (i in 1..lastIndex) {
        val e = this[i]
        val v = selector(e)
        if (minValue > v) {
            minElem = e
            minValue = v
        }
    }
    return minElem
}

/**
 * Returns the first element yielding the smallest value of the given function or `null` if there are no elements.
 */
@sample samples.collections.Collections.Aggregates.minByOrNull

*
@SinceKotlin("1.4")
public inline fun <R : Comparable<R>> IntArray.minByOrNull(selector: (Int) -> R): Int? {
    if (isEmpty()) return null
    var minElem = this[0]
    val lastIndex = this.lastIndex
    if (lastIndex == 0) return minElem
    var minValue = selector(minElem)
    for (i in 1..lastIndex) {
        val e = this[i]
        val v = selector(e)
        if (minValue > v) {
            minElem = e
            minValue = v
        }
    }
    return minElem
}

/**
 * Returns the first element yielding the smallest value of the given function or `null` if there are no elements.
 */
@sample samples.collections.Collections.Aggregates.minByOrNull

*
@SinceKotlin("1.4")
public inline fun <R : Comparable<R>> LongArray.minByOrNull(selector: (Long) -> R): Long? {
    if (isEmpty()) return null
    var minElem = this[0]
    val lastIndex = this.lastIndex
    if (lastIndex == 0) return minElem
    var minValue = selector(minElem)
    for (i in 1..lastIndex) {
        val e = this[i]
        val v = selector(e)
        if (minValue > v) {
            minElem = e
            minValue = v
        }
    }
    return minElem
}

/**
 * Returns the first element yielding the smallest value of the given function or `null` if there are no elements.
 */
@sample samples.collections.Collections.Aggregates.minByOrNull

*
@SinceKotlin("1.4")
public inline fun <R : Comparable<R>> FloatArray.minByOrNull(selector: (Float) -> R): Float? {
    if (isEmpty()) return null
    var minElem = this[0]
    val lastIndex = this.lastIndex
    if (lastIndex == 0) return minElem
    var minValue = selector(minElem)
    for (i in 1..lastIndex) {
        val e = this[i]
        val v = selector(e)
        if (minValue > v) {
            minElem = e
            minValue = v
        }
    }
    return minElem
}

/**
 * Returns the first element yielding the smallest value of the given function or `null` if there are no elements.
 */
@sample samples.collections.Collections.Aggregates.minByOrNull

*
@SinceKotlin("1.4")
public inline fun <R : Comparable<R>> DoubleArray.minByOrNull(selector: (Double) -> R): Double? {
    if (isEmpty()) return null
    var minElem = this[0]
    val lastIndex = this.lastIndex
    if (lastIndex == 0) return minElem
    var minValue = selector(minElem)
    for (i in 1..lastIndex) {
        val e = this[i]
        val v = selector(e)
        if (minValue > v) {
            minElem = e
            minValue = v
        }
    }
    return minElem
}

/**
 * Returns the first

```

```

element yielding the smallest value of the given function or `null`
if there are no elements.\n * \n * @sample samples.collections.Collections.Aggregates.minByOrNull\n
*\n@SinceKotlin("1.4")\npublic inline fun <R : Comparable<R>> BooleanArray.minByOrNull(selector:
(Boolean) -> R): Boolean? {\n if (isEmpty()) return null\n var minElem = this[0]\n val lastIndex =
this.lastIndex\n if (lastIndex == 0) return minElem\n var minValue = selector(minElem)\n for (i in
1..lastIndex) {\n val e = this[i]\n val v = selector(e)\n if (minValue > v) {\n minElem = e\n
minValue = v\n }\n }\n return minElem\n}\n\n**\n * Returns the first element yielding the smallest value
of the given function or `null` if there are no elements.\n * \n * @sample
samples.collections.Collections.Aggregates.minByOrNull\n *\n@SinceKotlin("1.4")\npublic inline fun <R :
Comparable<R>> CharArray.minByOrNull(selector: (Char) -> R): Char? {\n if (isEmpty()) return null\n var
minElem = this[0]\n val lastIndex
= this.lastIndex\n if (lastIndex == 0) return minElem\n var minValue = selector(minElem)\n for (i in
1..lastIndex) {\n val e = this[i]\n val v = selector(e)\n if (minValue > v) {\n minElem = e\n
minValue = v\n }\n }\n return minElem\n}\n\n**\n * Returns the smallest value among all values produced
by [selector] function\n * applied to each element in the array.\n * \n * If any of values produced by [selector]
function is `NaN`, the returned result is `NaN`.\n * \n * @throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T> Array<out T>.minOf(selector: (T) ->
Double): Double {\n if (isEmpty()) throw NoSuchElementException()\n var minValue = selector(this[0])\n for
(i in 1..lastIndex) {\n val v = selector(this[i])\n minValue
= minOf(minValue, v)\n }\n return
minValue\n}\n\n**\n * Returns the smallest value among all values
produced by [selector] function\n * applied to each element in the array.\n * \n * If any of values produced by
[selector] function is `NaN`, the returned result is `NaN`.\n * \n * @throws NoSuchElementException if the array is
empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun ByteArray.minOf(selector: (Byte) ->
Double): Double {\n if (isEmpty()) throw NoSuchElementException()\n var minValue = selector(this[0])\n for
(i in 1..lastIndex) {\n val v = selector(this[i])\n minValue
= minOf(minValue, v)\n }\n return
minValue\n}\n\n**\n * Returns the smallest value among all values
produced by [selector] function\n * applied to each element in the array.\n * \n * If any of values produced by
[selector] function is `NaN`, the returned result is `NaN`.\n * \n * @throws NoSuchElementException if the array is
empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun ShortArray.minOf(selector: (Short) ->
Double): Double {\n if (isEmpty()) throw NoSuchElementException()\n var minValue = selector(this[0])\n for
(i in 1..lastIndex) {\n val v = selector(this[i])\n minValue
= minOf(minValue, v)\n }\n return
minValue\n}\n\n**\n * Returns the smallest value among all values
produced by [selector] function\n * applied to each element in the array.\n * \n * If any of values produced by
[selector] function is `NaN`, the returned result is `NaN`.\n * \n * @throws NoSuchElementException if the array is
empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic
inline fun IntArray.minOf(selector: (Int) -> Double): Double {\n if (isEmpty()) throw
NoSuchElementException()\n var minValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v =
selector(this[i])\n minValue = minOf(minValue, v)\n }\n return
minValue\n}\n\n**\n * Returns the smallest
value among all values produced by [selector] function\n * applied to each element in the array.\n * \n * If any of
values produced by [selector] function is `NaN`, the returned result is `NaN`.\n * \n * @throws
NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun LongArray.minOf(selector: (Long) ->

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Double): Double {
    if (isEmpty()) throw NoSuchElementException()
    var minValue = selector(this[0])
    for (i in 1..lastIndex) {
        val v = selector(this[i])
        minValue = minOf(minValue, v)
    }
    return minValue
}
/**
 * Returns the smallest value among all values produced by [selector]
 * function applied to each element in the array.
 * If any of values produced by [selector] function is `NaN`,
 * the returned result is `NaN`.
 * @throws NoSuchElementException if the array is empty.
 */
@SinceKotlin("1.4")
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolutionByLambdaReturnType
@kotlin.internal.InlineOnly
public inline fun FloatArray.minOf(selector: (Float) -> Double): Double {
    if (isEmpty()) throw NoSuchElementException()
    var minValue = selector(this[0])
    for (i in 1..lastIndex) {
        val v = selector(this[i])
        minValue = minOf(minValue, v)
    }
    return minValue
}
/**
 * Returns the smallest value among all values produced by [selector]
 * function applied to each element in the array.
 * If any of values produced by [selector] function is `NaN`,
 * the returned result is `NaN`.
 * @throws NoSuchElementException if the array is empty.
 */
@SinceKotlin("1.4")
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolutionByLambdaReturnType
@kotlin.internal.InlineOnly
public inline fun DoubleArray.minOf(selector: (Double) -> Double): Double {
    if (isEmpty()) throw NoSuchElementException()
    var minValue = selector(this[0])
    for (i in 1..lastIndex) {
        val v = selector(this[i])
        minValue = minOf(minValue, v)
    }
    return minValue
}
/**
 * Returns the smallest value among all values produced by [selector]
 * function applied to each element in the array.
 * If any of values produced by [selector] function is `NaN`,
 * the returned result is `NaN`.
 * @throws NoSuchElementException if the array is empty.
 */
@SinceKotlin("1.4")
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolutionByLambdaReturnType
@kotlin.internal.InlineOnly
public inline fun BooleanArray.minOf(selector: (Boolean) -> Double): Double {
    if (isEmpty()) throw NoSuchElementException()
    var minValue = selector(this[0])
    for (i in 1..lastIndex) {
        val v = selector(this[i])
        minValue = minOf(minValue, v)
    }
    return minValue
}
/**
 * Returns the smallest value among all values produced by [selector]
 * function applied to each element in the array.
 * If any of values produced by [selector] function is `NaN`,
 * the returned result is `NaN`.
 * @throws NoSuchElementException if the array is empty.
 */
@SinceKotlin("1.4")
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolutionByLambdaReturnType
@kotlin.internal.InlineOnly
public inline fun CharArray.minOf(selector: (Char) -> Double): Double {
    if (isEmpty()) throw NoSuchElementException()
    var minValue = selector(this[0])
    for (i in 1..lastIndex) {
        val v = selector(this[i])
        minValue = minOf(minValue, v)
    }
    return minValue
}
/**
 * Returns the smallest value among all values produced by [selector]
 * function applied to each element in the array.
 * If any of values produced by [selector] function is `NaN`,
 * the returned result is `NaN`.
 * @throws NoSuchElementException if the array is empty.
 */
@SinceKotlin("1.4")
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolutionByLambdaReturnType
@kotlin.internal.InlineOnly
public inline fun <T> Array<out T>.minOf(selector: (T) -> Float): Float {
    if (isEmpty()) throw NoSuchElementException()
    var minValue = selector(this[0])
    for (i in 1..lastIndex) {
        val v = selector(this[i])
        minValue = minOf(minValue, v)
    }
    return minValue
}
/**
 * Returns the smallest value among all values produced by [selector]
 * function applied to each element in the array.
 * If any of values produced by [selector] function is `NaN`,
 * the returned result is `NaN`.
 * @throws NoSuchElementException if the array is empty.
 */
@SinceKotlin("1.4")
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolutionByLambdaReturnType
@kotlin.internal.InlineOnly
public inline fun ByteArray.minOf(selector: (Byte) -> Float): Float {
    if (isEmpty()) throw NoSuchElementException()
    var minValue = selector(this[0])
    for (i in 1..lastIndex) {
        val v = selector(this[i])
        minValue = minOf(minValue, v)
    }
    return minValue
}
/**
 * Returns the smallest value among all values produced by [selector]
 * function applied to each element in the array.
 * If any of values produced by [selector] function is `NaN`,
 * the returned result is `NaN`.
 * @throws NoSuchElementException if the array is empty.
 */

```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun ShortArray.minOf(selector:\n (Short) -> Float): Float {\n if (isEmpty()) throw NoSuchElementException()\n var minValue =\n selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n minValue = minOf(minValue, v)\n }\n return minValue\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n * applied to each element in the array.\n * \n * If any of values produced by [selector] function is `NaN`, the returned\n result is `NaN`.\n * \n * @throws NoSuchElementException if the array is empty.\n
```

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*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun IntArray.minOf(selector: (Int) -> Float):\n Float {\n if (isEmpty()) throw NoSuchElementException()\n var minValue = selector(this[0])\n for (i in\n 1..lastIndex) {\n val v = selector(this[i])\n minValue = minOf(minValue, v)\n }\n return\n minValue\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n * applied to\n each element in the array.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is\n `NaN`.\n * \n * @throws NoSuchElementException if the array is empty.\n
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*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun LongArray.minOf(selector: (Long) ->\n Float): Float {\n if (isEmpty()) throw NoSuchElementException()\n var minValue = selector(this[0])\n for (i in\n 1..lastIndex) {\n val v = selector(this[i])\n minValue = minOf(minValue, v)\n }\n return\n minValue\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n * applied to\n each element in the array.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is\n `NaN`.\n * \n * @throws\n NoSuchElementException if the array is empty.\n
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*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun FloatArray.minOf(selector: (Float) -> Float):\n Float {\n if (isEmpty()) throw NoSuchElementException()\n var minValue = selector(this[0])\n for (i in\n 1..lastIndex) {\n val v = selector(this[i])\n minValue = minOf(minValue, v)\n }\n return\n minValue\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n * applied to\n each element in the array.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is\n `NaN`.\n * \n * @throws\n NoSuchElementException if the array is empty.\n
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*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun DoubleArray.minOf(selector:\n (Double) -> Float): Float {\n if (isEmpty()) throw NoSuchElementException()\n var minValue =\n selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n minValue = minOf(minValue, v)\n }\n return minValue\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n * applied to each element in the array.\n * \n * If any of values produced by [selector] function is `NaN`, the returned\n result is `NaN`.\n * \n * @throws NoSuchElementException if the array is empty.\n
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*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun BooleanArray.minOf(selector: (Boolean) ->\n Float): Float {\n if (isEmpty()) throw NoSuchElementException()\n var minValue = selector(this[0])\n for (i in\n 1..lastIndex) {\n val v = selector(this[i])\n minValue = minOf(minValue, v)\n }\n return\n minValue\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n * applied to each element in the\n array.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is\n `NaN`.\n * \n * @throws\n NoSuchElementException if the array is empty.\n
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minValue}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n * applied to each element in the array.\n * \n * @throws NoSuchElementException if the array is empty.\n *\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic\ninline fun <T, R : Comparable<R>> Array<out T>.minOf(selector: (T) -> R): R {\n    if (isEmpty()) throw\n    NoSuchElementException()\n    var minValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v =\n        selector(this[i])\n        if (minValue > v) {\n            minValue = v\n        }\n    }\n    return minValue}\n\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n * applied to each element in the array.\n * \n * @throws NoSuchElementException if the array is empty.\n *\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>\nByteArray.minOf(selector: (Byte) -> R): R {\n    if (isEmpty()) throw NoSuchElementException()\n    var minValue\n    = selector(this[0])\n    for (i in 1..lastIndex) {\n        val\n        v = selector(this[i])\n        if (minValue > v) {\n            minValue = v\n        }\n    }\n    return minValue}\n\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n * applied to each element in the array.\n * \n * @throws NoSuchElementException if the array is empty.\n *\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>\nShortArray.minOf(selector: (Short) -> R): R {\n    if (isEmpty()) throw NoSuchElementException()\n    var\n    minValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        if (minValue > v) {\n           \n            minValue = v\n        }\n    }\n    return minValue}\n\n}\n\n/**\n * Returns the smallest value among all values\n * produced by [selector] function\n * applied to each element in the array.\n * \n * @throws\n * NoSuchElementException if the array is empty.\n *\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>\nIntArray.minOf(selector: (Int) -> R): R {\n    if (isEmpty()) throw NoSuchElementException()\n    var minValue =\n    selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        if (minValue > v) {\n           \n            minValue = v\n        }\n    }\n    return minValue}\n\n}\n\n/**\n * Returns the smallest value among all values produced\n * by [selector] function\n * applied to each element in the array.\n * \n * @throws\n * NoSuchElementException if the\n * array is empty.\n *\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>\nLongArray.minOf(selector: (Long) -> R): R {\n    if (isEmpty()) throw NoSuchElementException()\n    var\n    minValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        if (minValue > v) {\n           \n            minValue = v\n        }\n    }\n    return minValue}\n\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n * applied to each element in the array.\n * \n * @throws\n * NoSuchElementException if the array is empty.\n *\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>\nFloatArray.minOf(selector: (Float) -> R): R {\n    if (isEmpty()) throw NoSuchElementException()\n    var\n    minValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        if (minValue > v) {\n           \n            minValue = v\n        }\n    }\n    return minValue}\n\n}\n\n/**\n * Returns the smallest value among all values\n * produced by [selector] function\n * applied to each element in the array.\n * \n * @throws\n * NoSuchElementException if the array is empty.\n *\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>\nDoubleArray.minOf(selector: (Double) -> R): R {\n    if (isEmpty()) throw NoSuchElementException()\n    var\n    minValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        if (minValue > v) {\n           \n            minValue = v\n        }\n    }\n    return minValue}\n\n}\n

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    minValue = v\n    }\n    }\n    return minValue\n}\n\n/**\n * Returns the smallest value among all values
produced by [selector] function\n * applied to each element in the array.\n * \n * @throws
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BooleanArray.minOf(selector: (Boolean) -> R): R {\n    if (isEmpty())
throw NoSuchElementException()\n    var minValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v =
selector(this[i])\n        if (minValue > v) {\n            minValue = v\n        }\n    }\n    return minValue\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n * applied to each element in the
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ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>
CharArray.minOf(selector: (Char) -> R): R {\n    if (isEmpty()) throw NoSuchElementException()\n    var minValue
= selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        if (minValue > v) {\n
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ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T> Array<out T>.minOfOrNull(selector:
(T) -> Double): Double? {\n    if (isEmpty()) return null\n    var minValue = selector(this[0])\n    for (i in
1..lastIndex) {\n        val v = selector(this[i])\n        minValue = minOf(minValue, v)\n    }\n    return
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*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic
inline fun ByteArray.minOfOrNull(selector: (Byte) -> Double): Double? {\n    if (isEmpty()) return null\n    var
minValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        minValue =
minOf(minValue, v)\n    }\n    return minValue\n}\n\n/**\n * Returns the smallest value among all values produced
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*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun ShortArray.minOfOrNull(selector: (Short) -
> Double): Double? {\n    if (isEmpty()) return null\n    var minValue = selector(this[0])\n    for (i in 1..lastIndex) {\n
val v = selector(this[i])\n        minValue
= minOf(minValue, v)\n    }\n    return minValue\n}\n\n/**\n * Returns the smallest value among all values
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*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun IntArray.minOfOrNull(selector: (Int) ->
Double): Double? {\n    if (isEmpty()) return null\n    var minValue = selector(this[0])\n    for (i in 1..lastIndex) {\n
val v = selector(this[i])\n        minValue = minOf(minValue, v)\n    }\n    return minValue\n}\n\n/**\n * Returns
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*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun LongArray.minOfOrNull(selector: (Long) -

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> Double): Double? {\n if (isEmpty()) return null\n var minValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n minValue = minOf(minValue, v)\n }\n return minValue}\n\n/n/\*\*\n \* Returns the smallest value among all values produced by [selector] function\n \* applied to each element in the array or `null`\n if there are no elements.\n \* \n \* If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n

\*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun FloatArray.minOfOrNull(selector: (Float) -> Double): Double? {\n if (isEmpty()) return null\n

var minValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n minValue = minOf(minValue, v)\n }\n return minValue}\n\n/n/\*\*\n \* Returns the smallest value among all values produced by [selector] function\n \* applied to each element in the array or `null` if there are no elements.\n \* \n \* If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n

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inline fun CharArray.minOfOrNull(selector: (Char) -> Double): Double? {\n if (isEmpty()) return null\n var minValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n minValue = minOf(minValue, v)\n }\n return minValue}\n\n/n/\*\*\n \* Returns the smallest value among all values produced by [selector] function\n \* applied to each element in the array or `null` if there are no elements.\n \* \n \* If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n

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inline fun ShortArray.minOfOrNull(selector: (Short) -> Float): Float? {\n if (isEmpty()) return null\n var
minValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n minValue =
minOf(minValue, v)\n } return minValue\n}\n\n**\n * Returns the smallest value among all values produced
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*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun IntArray.minOfOrNull(selector: (Int) ->
Float): Float? {\n if (isEmpty()) return null\n var minValue = selector(this[0])\n for (i in 1..lastIndex)
{\n val v = selector(this[i])\n minValue = minOf(minValue, v)\n }\n return minValue\n}\n\n**\n *
Returns the smallest value among all values produced by [selector] function\n * applied to each element in the array
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ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun LongArray.minOfOrNull(selector: (Long) -
> Float): Float? {\n if (isEmpty()) return null\n var minValue = selector(this[0])\n for (i in 1..lastIndex) {\n
val v = selector(this[i])\n minValue = minOf(minValue, v)\n }\n return minValue\n}\n\n**\n * Returns the
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ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun FloatArray.minOfOrNull(selector: (Float) ->
Float): Float? {\n if (isEmpty()) return null\n var minValue = selector(this[0])\n for (i in 1..lastIndex) {\n
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(Boolean) -> Float): Float? {\n if (isEmpty()) return null\n var minValue = selector(this[0])\n for (i in
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ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun CharArray.minOfOrNull(selector: (Char) ->
Float): Float? {\n if (isEmpty()) return null\n var minValue = selector(this[0])\n for (i in 1..lastIndex) {\n
val v = selector(this[i])\n minValue = minOf(minValue, v)\n }\n return minValue\n}\n\n**\n * Returns the
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    ByteArray.minOfOrNull(selector: (Byte) -> R): R? {\n    if (isEmpty()) return null\n    var minValue =
    selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        if (minValue > v) {\n
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    IntArray.minOfOrNull(selector: (Int) -> R): R? {\n
        if (isEmpty()) return null\n    var minValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v =
    selector(this[i])\n        if (minValue > v) {\n            minValue = v\n        }\n    }\n    return minValue\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n * applied to each element in the array
    or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>
    LongArray.minOfOrNull(selector: (Long) -> R): R? {\n    if (isEmpty()) return null\n    var minValue =
    selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        if (minValue > v) {\n
    minValue = v\n        }\n    }\n    return minValue\n}\n\n/**\n * Returns the smallest value among all values produced
    by [selector] function\n * applied to each element in the
    array or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>
    FloatArray.minOfOrNull(selector: (Float) -> R): R? {\n    if (isEmpty()) return null\n    var minValue =
    selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        if (minValue > v) {\n
    minValue = v\n        }\n    }\n    return minValue\n}\n\n/**\n * Returns the smallest value among all values produced
    by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>
    DoubleArray.minOfOrNull(selector: (Double) -> R): R? {\n    if (isEmpty()) return null\n    var minValue =
    selector(this[0])\n
    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        if (minValue > v) {\n            minValue = v\n
        }\n    }\n    return minValue\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>
    BooleanArray.minOfOrNull(selector: (Boolean) -> R): R? {\n    if (isEmpty()) return null\n    var minValue =

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selector(this[0])\n  for (i in 1..lastIndex) {\n      val v = selector(this[i])\n      if (minValue > v) {\n
minValue = v\n      }\n  }\n  return minValue\n}\n\n/**\n * Returns the smallest value among all values produced
by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n
*\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic
inline fun <R : Comparable<R>> CharArray.minOfOrNull(selector: (Char) -> R): R? {\n  if (isEmpty()) return
null\n  var minValue = selector(this[0])\n  for (i in 1..lastIndex) {\n      val v = selector(this[i])\n      if
(minValue > v) {\n          minValue = v\n      }\n  }\n  return minValue\n}\n\n/**\n * Returns the smallest value
according to the provided [comparator]\n * among all values produced by [selector] function applied to each
element in the array.\n * \n * @throws NoSuchElementException if the array is empty.\n
*\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T, R> Array<out
T>.minOfWith(comparator: Comparator<in R>, selector: (T) -> R): R {\n  if (isEmpty()) throw
NoSuchElementException()\n
  var minValue = selector(this[0])\n  for (i in 1..lastIndex) {\n      val v = selector(this[i])\n      if
(comparator.compare(minValue, v) > 0) {\n          minValue = v\n      }\n  }\n  return minValue\n}\n\n/**\n *
Returns the smallest value according to the provided [comparator]\n * among all values produced by [selector]
function applied to each element in the array.\n * \n * @throws NoSuchElementException if the array is empty.\n
*\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R> ByteArray.minOfWith(comparator:
Comparator<in R>, selector: (Byte) -> R): R {\n  if (isEmpty()) throw NoSuchElementException()\n  var
minValue = selector(this[0])\n  for (i in 1..lastIndex) {\n      val v = selector(this[i])\n      if
(comparator.compare(minValue, v) > 0) {\n          minValue = v\n      }\n  }\n  return minValue\n}\n\n/**\n *
Returns the smallest value according to the provided [comparator]\n * among all values produced by [selector]
function applied to each element in the array.\n * \n * @throws NoSuchElementException if the array is empty.\n
*\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R> ShortArray.minOfWith(comparator:
Comparator<in R>, selector: (Short) -> R): R {\n  if (isEmpty()) throw NoSuchElementException()\n  var
minValue = selector(this[0])\n  for (i in 1..lastIndex) {\n      val v = selector(this[i])\n      if
(comparator.compare(minValue, v) > 0) {\n          minValue = v\n      }\n  }\n  return minValue\n}\n\n/**\n *
Returns the smallest value according to the provided [comparator]\n * among all values produced by [selector]
function applied to each element in the array.\n * \n * @throws NoSuchElementException if the array is empty.\n
*\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R> IntArray.minOfWith(comparator:
Comparator<in R>, selector: (Int) -> R): R {\n  if (isEmpty()) throw NoSuchElementException()\n  var minValue
= selector(this[0])\n  for (i in 1..lastIndex) {\n      val v = selector(this[i])\n      if (comparator.compare(minValue,
v) > 0) {\n          minValue = v\n      }\n  }\n  return minValue\n}\n\n/**\n * Returns the smallest value
according to the provided [comparator]\n * among all values produced by [selector] function applied to each
element in the array.\n * \n * @throws NoSuchElementException if the array is empty.\n
*\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R> LongArray.minOfWith(comparator:
Comparator<in R>, selector:
(Long) -> R): R {\n  if (isEmpty()) throw NoSuchElementException()\n  var minValue = selector(this[0])\n  for
(i in 1..lastIndex) {\n      val v = selector(this[i])\n      if (comparator.compare(minValue, v) > 0) {\n
minValue = v\n      }\n  }\n  return minValue\n}\n\n/**\n * Returns the smallest value according to the provided
[comparator]\n * among all values produced by [selector] function applied to each element in the array.\n * \n *
@throws NoSuchElementException if the array is empty.\n
*\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution

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ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R> FloatArray.minOfWith(comparator:
Comparator<in R>, selector: (Float) -> R): R {\n  if (isEmpty()) throw NoSuchElementException()\n  var
minValue = selector(this[0])\n  for (i in 1..lastIndex) {\n    val v = selector(this[i])\n    if
(comparator.compare(minValue, v) > 0) {\n
      minValue = v\n    }\n  }\n  return minValue\n}\n\n/**\n * Returns the smallest value according to the
provided [comparator]\n * among all values produced by [selector] function applied to each element in the array.\n *
\n * @throws NoSuchElementException if the array is empty.\n
*\n*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R> DoubleArray.minOfWith(comparator:
Comparator<in R>, selector: (Double) -> R): R {\n  if (isEmpty()) throw NoSuchElementException()\n  var
minValue = selector(this[0])\n  for (i in 1..lastIndex) {\n    val v = selector(this[i])\n    if
(comparator.compare(minValue, v) > 0) {\n
      minValue = v\n    }\n  }\n  return minValue\n}\n\n/**\n * Returns the smallest value according to the provided [comparator]\n *
among all values produced by [selector]
function applied to each element in the array.\n
\n * @throws NoSuchElementException if the array is empty.\n
*\n*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R> BooleanArray.minOfWith(comparator:
Comparator<in R>, selector: (Boolean) -> R): R {\n  if (isEmpty()) throw NoSuchElementException()\n  var
minValue = selector(this[0])\n  for (i in 1..lastIndex) {\n    val v = selector(this[i])\n    if
(comparator.compare(minValue, v) > 0) {\n
      minValue = v\n    }\n  }\n  return minValue\n}\n\n/**\n * Returns the smallest value according to the provided [comparator]\n *
among all values produced by [selector]
function applied to each element in the array.\n
\n * @throws NoSuchElementException if the array is empty.\n
*\n*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic
inline fun <R> CharArray.minOfWith(comparator: Comparator<in R>, selector: (Char) -> R): R {\n  if
(isEmpty()) throw NoSuchElementException()\n  var minValue = selector(this[0])\n  for (i in 1..lastIndex) {\n
    val v = selector(this[i])\n    if (comparator.compare(minValue, v) > 0) {\n
      minValue = v\n    }\n  }\n  return minValue\n}\n\n/**\n * Returns the smallest value according to the provided [comparator]\n *
among all
values produced by [selector] function applied to each element in the array or `null` if there are no elements.\n
*\n*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T, R> Array<out
T>.minOfWithOrNull(comparator: Comparator<in R>, selector: (T) -> R): R? {\n  if (isEmpty()) return null\n
var minValue = selector(this[0])\n  for (i in 1..lastIndex) {\n    val v = selector(this[i])\n    if
(comparator.compare(minValue,
v) > 0) {\n
      minValue = v\n    }\n  }\n  return minValue\n}\n\n/**\n * Returns the smallest value
according to the provided [comparator]\n * among all values produced by [selector] function applied to each
element in the array or `null` if there are no elements.\n
*\n*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R>
ByteArray.minOfWithOrNull(comparator: Comparator<in R>, selector: (Byte) -> R): R? {\n  if (isEmpty()) return
null\n  var minValue = selector(this[0])\n  for (i in 1..lastIndex) {\n    val v = selector(this[i])\n    if
(comparator.compare(minValue, v) > 0) {\n
      minValue = v\n    }\n  }\n  return minValue\n}\n\n/**\n * Returns the smallest value according to the provided [comparator]\n *
among all values produced by [selector]
function applied to each element in the array or `null`
if there are no elements.\n
*\n*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R>
ShortArray.minOfWithOrNull(comparator: Comparator<in R>, selector: (Short) -> R): R? {\n  if (isEmpty())

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return null\n    var minValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        if (comparator.compare(minValue, v) > 0) {\n            minValue = v\n        }\n    }\n    return minValue\n}\n\nReturns the smallest value according to the provided [comparator] * among all values produced by [selector] function applied to each element in the array or `null` if there are no elements.\n\n*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R> IntArray.minOfWithOrNull(comparator: Comparator<in R>, selector: (Int) -> R): R? {\n    if (isEmpty()) return null\n    var minValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        if (comparator.compare(minValue, v) > 0) {\n            minValue = v\n        }\n    }\n    return minValue\n}\n\nReturns the smallest value according to the provided [comparator] * among all values produced by [selector] function applied to each element in the array or `null` if there are no elements.\n\n*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R> LongArray.minOfWithOrNull(comparator: Comparator<in R>, selector: (Long) -> R): R? {\n    if (isEmpty()) return null\n    var minValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        if (comparator.compare(minValue, v) > 0) {\n            minValue = v\n        }\n    }\n    return minValue\n}\n\nReturns the smallest value according to the provided [comparator] * among all values produced by [selector] function applied to each element in the array or `null` if there are no elements.\n\n*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R> FloatArray.minOfWithOrNull(comparator: Comparator<in R>, selector: (Float) -> R): R? {\n    if (isEmpty()) return null\n    var minValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        if (comparator.compare(minValue, v) > 0) {\n            minValue = v\n        }\n    }\n    return minValue\n}\n\nReturns the smallest value according to the provided [comparator] * among all values produced by [selector] function applied to each element in the array or `null` if there are no elements.\n\n*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R> DoubleArray.minOfWithOrNull(comparator: Comparator<in R>, selector: (Double) -> R): R? {\n    if (isEmpty()) return null\n    var minValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        if (comparator.compare(minValue, v) > 0) {\n            minValue = v\n        }\n    }\n    return minValue\n}\n\nReturns the smallest value according to the provided [comparator] * among all values produced by [selector] function applied to each element in the array or `null` if there are no elements.\n\n*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R> BooleanArray.minOfWithOrNull(comparator: Comparator<in R>, selector: (Boolean) -> R): R? {\n    if (isEmpty()) return null\n    var minValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        if (comparator.compare(minValue, v) > 0) {\n            minValue = v\n        }\n    }\n    return minValue\n}\n\nReturns the smallest value according to the provided [comparator] * among all values produced by [selector] function applied to each element in the array or `null` if there are no elements.\n\n*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R> CharArray.minOfWithOrNull(comparator: Comparator<in R>, selector: (Char) -> R): R? {\n    if (isEmpty()) return null\n    var minValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        if (comparator.compare(minValue, v) > 0) {\n            minValue = v\n        }\n    }\n    return minValue\n}\n\nReturns the smallest element or `null` if there are no elements.\n * \n * If any of elements is `NaN` returns `NaN`.\n\n*\n@SinceKotlin("1.4")\npublic fun Array<out Double>.minOrNull(): Double? {\n    if (isEmpty()) return null\n    var min = this[0]\n    for (i in 1..lastIndex) {\n        val e = this[i]\n
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min = minOf(min, e)\n    }\n    return min\n}\n\n/**\n * Returns the smallest element or `null` if there are no
elements.\n * \n * If any of elements is `NaN` returns `NaN`.\n */\n@SinceKotlin("1.4")\npublic fun Array<out
Float>.minOrNull(): Float? {\n    if (isEmpty()) return null\n    var min = this[0]\n    for (i in 1..lastIndex) {\n        val
e = this[i]\n        min = minOf(min, e)\n    }\n    return min\n}\n\n/**\n * Returns the smallest element or `null` if
there are no elements.\n */\n@SinceKotlin("1.4")\npublic fun <T : Comparable<T>> Array<out T>.minOrNull():
T? {\n    if (isEmpty()) return null\n    var min = this[0]\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        if (min
> e) min = e\n    }\n    return min\n}\n\n/**\n * Returns the smallest element or `null` if there are no elements.\n */\n@SinceKotlin("1.4")\npublic fun
ByteArray.minOrNull(): Byte? {\n    if (isEmpty()) return null\n    var min = this[0]\n    for (i in 1..lastIndex) {\n        val
e = this[i]\n        if (min > e) min = e\n    }\n    return min\n}\n\n/**\n * Returns the smallest element or `null` if
there are no elements.\n */\n@SinceKotlin("1.4")\npublic fun ShortArray.minOrNull(): Short? {\n    if (isEmpty())
return null\n    var min = this[0]\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        if (min > e) min = e\n    }\n
return min\n}\n\n/**\n * Returns the smallest element or `null` if there are no elements.\n */\n@SinceKotlin("1.4")\npublic fun IntArray.minOrNull(): Int? {\n    if (isEmpty()) return null\n    var min =
this[0]\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        if (min > e) min = e\n    }\n    return min\n}\n\n/**\n * Returns the smallest element or `null` if there are no
elements.\n */\n@SinceKotlin("1.4")\npublic fun LongArray.minOrNull(): Long? {\n    if (isEmpty()) return
null\n    var min = this[0]\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        if (min > e) min = e\n    }\n    return
min\n}\n\n/**\n * Returns the smallest element or `null` if there are no elements.\n * \n * If any of elements is
`NaN` returns `NaN`.\n */\n@SinceKotlin("1.4")\npublic fun FloatArray.minOrNull(): Float? {\n    if (isEmpty())
return null\n    var min = this[0]\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        min = minOf(min, e)\n    }\n
return min\n}\n\n/**\n * Returns the smallest element or `null` if there are no elements.\n * \n * If any of elements is
`NaN` returns `NaN`.\n */\n@SinceKotlin("1.4")\npublic fun DoubleArray.minOrNull(): Double? {\n    if
(isEmpty()) return null\n    var min = this[0]\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        min = minOf(min,
e)\n    }\n    return min\n}\n\n/**\n * Returns
the smallest element or `null` if there are no elements.\n */\n@SinceKotlin("1.4")\npublic fun
CharArray.minOrNull(): Char? {\n    if (isEmpty()) return null\n    var min = this[0]\n    for (i in 1..lastIndex) {\n        val
e = this[i]\n        if (min > e) min = e\n    }\n    return min\n}\n\n/**\n * Returns the first element having the
smallest value according to the provided [comparator].\n * \n * @throws NoSuchElementException if the array is
empty.\n */\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minWithOrThrow")\n@Suppress("CONFLICTING_OVER
LOADS")\npublic fun <T> Array<out T>.minWith(comparator: Comparator<in T>): T {\n    if (isEmpty()) throw
NoSuchElementException()\n    var min = this[0]\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        if
(comparator.compare(min, e) > 0) min = e\n    }\n    return min\n}\n\n/**\n * Returns the first element having the
smallest value according to the provided [comparator].\n * \n * @throws NoSuchElementException if the
array is empty.\n */\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minWithOrThrow")\n@Suppress("CONFLICTING_OVER
LOADS")\npublic fun ByteArray.minWith(comparator: Comparator<in Byte>): Byte {\n    if (isEmpty()) throw
NoSuchElementException()\n    var min = this[0]\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        if
(comparator.compare(min, e) > 0) min = e\n    }\n    return min\n}\n\n/**\n * Returns the first element having the
smallest value according to the provided [comparator].\n * \n * @throws NoSuchElementException if the array is
empty.\n */\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minWithOrThrow")\n@Suppress("CONFLICTING_OVER
LOADS")\npublic fun ShortArray.minWith(comparator: Comparator<in Short>): Short {\n    if (isEmpty()) throw
NoSuchElementException()\n    var min = this[0]\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        if
(comparator.compare(min, e) > 0) min = e\n    }\n    return min\n}\n\n/**\n * Returns the first element having
the smallest value according to the provided [comparator].\n * \n * @throws NoSuchElementException if the array
is empty.\n */

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*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minWithOrThrow")\n@Suppress("CONFLICTING_OVERLOADS")\npublic fun IntArray.minWith(comparator: Comparator<in Int>): Int {\n    if (isEmpty()) throw NoSuchElementException()\n    var min = this[0]\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        if (comparator.compare(min, e) > 0) min = e\n    }\n    return min\n}\n\n/**\n * Returns the first element having the smallest value according to the provided [comparator].\n * \n * @throws NoSuchElementException if the array is empty.\n */
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minWithOrThrow")\n@Suppress("CONFLICTING_OVERLOADS")\npublic fun LongArray.minWith(comparator: Comparator<in Long>): Long {\n    if (isEmpty()) throw NoSuchElementException()\n    var min = this[0]\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        if (comparator.compare(min, e) > 0) min = e\n    }\n    return min\n}\n\n/**\n * Returns the first element having the smallest value according to the provided [comparator].\n * \n * @throws NoSuchElementException if the array is empty.\n */
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minWithOrThrow")\n@Suppress("CONFLICTING_OVERLOADS")\npublic fun FloatArray.minWith(comparator: Comparator<in Float>): Float {\n    if (isEmpty()) throw NoSuchElementException()\n    var min = this[0]\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        if (comparator.compare(min, e) > 0) min = e\n    }\n    return min\n}\n\n/**\n * Returns the first element having the smallest value according to the provided [comparator].\n * \n * @throws NoSuchElementException if the array is empty.\n */
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minWithOrThrow")\n@Suppress("CONFLICTING_OVERLOADS")\npublic fun DoubleArray.minWith(comparator: Comparator<in Double>): Double {\n    if (isEmpty()) throw NoSuchElementException()\n    var min = this[0]\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        if (comparator.compare(min, e) > 0) min = e\n    }\n    return min\n}\n\n/**\n * Returns the first element having the smallest value according to the provided [comparator].\n * \n * @throws NoSuchElementException if the array is empty.\n */
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minWithOrThrow")\n@Suppress("CONFLICTING_OVERLOADS")\npublic fun BooleanArray.minWith(comparator: Comparator<in Boolean>): Boolean {\n    if (isEmpty()) throw NoSuchElementException()\n    var min = this[0]\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        if (comparator.compare(min, e) > 0) min = e\n    }\n    return min\n}\n\n/**\n * Returns the first element having the smallest value according to the provided [comparator].\n * \n * @throws NoSuchElementException if the array is empty.\n */
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minWithOrThrow")\n@Suppress("CONFLICTING_OVERLOADS")\npublic fun CharArray.minWith(comparator: Comparator<in Char>): Char {\n    if (isEmpty()) throw NoSuchElementException()\n    var min = this[0]\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        if (comparator.compare(min, e) > 0) min = e\n    }\n    return min\n}\n\n/**\n * Returns the first element having the smallest value according to the provided [comparator] or `null` if there are no elements.\n */
*\n@SinceKotlin("1.4")\npublic fun <T> Array<out T>.minWithOrNull(comparator: Comparator<in T>): T? {\n    if (isEmpty()) return null\n    var min = this[0]\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        if (comparator.compare(min, e) > 0) min = e\n    }\n    return min\n}\n\n/**\n * Returns the first element having the smallest value according to the provided [comparator] or `null` if there are no elements.\n */
*\n@SinceKotlin("1.4")\npublic fun ByteArray.minWithOrNull(comparator: Comparator<in Byte>): Byte? {\n    if (isEmpty()) return null\n    var min = this[0]\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        if (comparator.compare(min, e) > 0) min = e\n    }\n    return min\n}\n\n/**\n * Returns the first element having the smallest value according to the provided [comparator] or `null` if there are no elements.\n */
*\n@SinceKotlin("1.4")\npublic fun ShortArray.minWithOrNull(comparator: Comparator<in Short>): Short? {\n    if (isEmpty()) return null\n    var min = this[0]\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        if (comparator.compare(min, e) > 0) min = e\n    }\n    return min\n}\n\n/**\n * Returns the first element having the smallest value according to the provided [comparator]

```

```

or `null` if there are no elements.\n * \n @SinceKotlin("1.4")\npublic fun IntArray.minWithOrNull(comparator:
Comparator<in Int>): Int? {\n if (isEmpty()) return null\n var min = this[0]\n for (i in 1..lastIndex) {\n val
e = this[i]\n if (comparator.compare(min, e) > 0) min
= e\n }\n return min\n}\n\n/**\n * Returns the first element having the smallest value according to the provided
[comparator] or `null` if there are no elements.\n * \n @SinceKotlin("1.4")\npublic fun
LongArray.minWithOrNull(comparator: Comparator<in Long>): Long? {\n if (isEmpty()) return null\n var min
= this[0]\n for (i in 1..lastIndex) {\n val e = this[i]\n if (comparator.compare(min, e) > 0) min = e\n }\n
return min\n}\n\n/**\n * Returns the first element having the smallest value according to the provided [comparator]
or `null` if there are no elements.\n * \n @SinceKotlin("1.4")\npublic fun FloatArray.minWithOrNull(comparator:
Comparator<in Float>): Float? {\n if (isEmpty()) return null\n var min = this[0]\n for (i in 1..lastIndex) {\n
val e = this[i]\n if (comparator.compare(min, e) > 0) min = e\n }\n return min\n}\n\n/**\n * Returns the first
element having the smallest value according to the provided [comparator]
or `null` if there are no elements.\n * \n @SinceKotlin("1.4")\npublic fun
DoubleArray.minWithOrNull(comparator: Comparator<in Double>): Double? {\n if (isEmpty()) return null\n
var min = this[0]\n for (i in 1..lastIndex) {\n val e = this[i]\n if (comparator.compare(min, e) > 0) min =
e\n }\n return min\n}\n\n/**\n * Returns the first element having the smallest value according to the provided
[comparator] or `null` if there are no elements.\n * \n @SinceKotlin("1.4")\npublic fun
BooleanArray.minWithOrNull(comparator: Comparator<in Boolean>): Boolean? {\n if (isEmpty()) return null\n
var min = this[0]\n for (i in 1..lastIndex) {\n val e = this[i]\n if (comparator.compare(min, e) > 0) min =
e\n }\n return min\n}\n\n/**\n * Returns the first element having the smallest value according to the provided
[comparator] or `null` if there are no elements.\n * \n @SinceKotlin("1.4")\npublic fun
CharArray.minWithOrNull(comparator: Comparator<in
Char>): Char? {\n if (isEmpty()) return null\n var min = this[0]\n for (i in 1..lastIndex) {\n val e = this[i]\n
if (comparator.compare(min, e) > 0) min = e\n }\n return min\n}\n\n/**\n * Returns `true` if the array has no
elements.\n * \n * @sample samples.collections.Collections.Aggregates.none\n * \n @public fun <T> Array<out
T>.none(): Boolean {\n return isEmpty()\n}\n\n/**\n * Returns `true` if the array has no elements.\n * \n *
@sample samples.collections.Collections.Aggregates.none\n * \n @public fun ByteArray.none(): Boolean {\n return
isEmpty()\n}\n\n/**\n * Returns `true` if the array has no elements.\n * \n * @sample
samples.collections.Collections.Aggregates.none\n * \n @public fun ShortArray.none(): Boolean {\n return
isEmpty()\n}\n\n/**\n * Returns `true` if the array has no elements.\n * \n * @sample
samples.collections.Collections.Aggregates.none\n * \n @public fun IntArray.none(): Boolean {\n return
isEmpty()\n}\n\n/**\n * Returns `true` if the array has no elements.\n * \n * @sample samples.collections.Collections.Aggregates.none\n
* \n @public fun LongArray.none(): Boolean {\n return isEmpty()\n}\n\n/**\n * Returns `true` if the array has no
elements.\n * \n * @sample samples.collections.Collections.Aggregates.none\n * \n @public fun FloatArray.none():
Boolean {\n return isEmpty()\n}\n\n/**\n * Returns `true` if the array has no elements.\n * \n * @sample
samples.collections.Collections.Aggregates.none\n * \n @public fun DoubleArray.none(): Boolean {\n return
isEmpty()\n}\n\n/**\n * Returns `true` if the array has no elements.\n * \n * @sample
samples.collections.Collections.Aggregates.none\n * \n @public fun BooleanArray.none(): Boolean {\n return
isEmpty()\n}\n\n/**\n * Returns `true` if the array has no elements.\n * \n * @sample
samples.collections.Collections.Aggregates.none\n * \n @public fun CharArray.none(): Boolean {\n return
isEmpty()\n}\n\n/**\n * Returns `true` if no elements match the
given [predicate].\n * \n * @sample samples.collections.Collections.Aggregates.noneWithPredicate\n * \n @public
inline fun <T> Array<out T>.none(predicate: (T) -> Boolean): Boolean {\n for (element in this) if
(predicate(element)) return false\n return true\n}\n\n/**\n * Returns `true` if no elements match the given
[predicate].\n * \n * @sample samples.collections.Collections.Aggregates.noneWithPredicate\n * \n @public inline fun
ByteArray.none(predicate: (Byte) -> Boolean): Boolean {\n for (element in this) if (predicate(element)) return
false\n return true\n}\n\n/**\n * Returns `true` if no elements match the given [predicate].\n * \n * @sample

```



```

samples.collections.Collections.Aggregates.noneWithPredicate\n */\npublic inline fun ShortArray.none(predicate:
(Short) -> Boolean): Boolean {\n for (element in this) if (predicate(element)) return false\n return
true\n}\n\n/**\n * Returns `true` if no elements match the given [predicate].\n * \n * @sample
samples.collections.Collections.Aggregates.noneWithPredicate\n
*/\npublic inline fun IntArray.none(predicate: (Int) -> Boolean): Boolean {\n for (element in this) if
(predicate(element)) return false\n return true\n}\n\n/**\n * Returns `true` if no elements match the given
[predicate].\n * \n * @sample samples.collections.Collections.Aggregates.noneWithPredicate\n */\npublic inline fun
LongArray.none(predicate: (Long) -> Boolean): Boolean {\n for (element in this) if (predicate(element)) return
false\n return true\n}\n\n/**\n * Returns `true` if no elements match the given [predicate].\n * \n * @sample
samples.collections.Collections.Aggregates.noneWithPredicate\n */\npublic inline fun FloatArray.none(predicate:
(Float) -> Boolean): Boolean {\n for (element in this) if (predicate(element)) return false\n return
true\n}\n\n/**\n * Returns `true` if no elements match the given [predicate].\n * \n * @sample
samples.collections.Collections.Aggregates.noneWithPredicate\n */\npublic inline fun
DoubleArray.none(predicate: (Double) -> Boolean): Boolean {\n for (element in this) if (predicate(element))
return false\n return true\n}\n\n/**\n * Returns `true` if no elements match the given [predicate].\n * \n * @sample
samples.collections.Collections.Aggregates.noneWithPredicate\n */\npublic inline fun
BooleanArray.none(predicate: (Boolean) -> Boolean): Boolean {\n for (element in this) if (predicate(element))
return false\n return true\n}\n\n/**\n * Returns `true` if no elements match the given [predicate].\n * \n * @sample
samples.collections.Collections.Aggregates.noneWithPredicate\n */\npublic inline fun CharArray.none(predicate:
(Char) -> Boolean): Boolean {\n for (element in this) if (predicate(element)) return false\n return
true\n}\n\n/**\n * Performs the given [action] on each element and returns the array itself afterwards.\n
*/\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun <T> Array<out T>.onEach(action: (T) ->
Unit): Array<out
T> {\n return apply { for (element in this) action(element) }\n}\n\n/**\n * Performs the given [action] on each
element and returns the array itself afterwards.\n */\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic
inline fun ByteArray.onEach(action: (Byte) -> Unit): ByteArray {\n return apply { for (element in this)
action(element) }\n}\n\n/**\n * Performs the given [action] on each element and returns the array itself
afterwards.\n */\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun ShortArray.onEach(action:
(Short) -> Unit): ShortArray {\n return apply { for (element in this) action(element) }\n}\n\n/**\n * Performs the
given [action] on each element and returns the array itself afterwards.\n
*/\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun IntArray.onEach(action: (Int) -> Unit):
IntArray {\n return apply { for (element in this) action(element) }\n}\n\n/**\n * Performs the given [action] on
each element and returns
the array itself afterwards.\n */\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun
LongArray.onEach(action: (Long) -> Unit): LongArray {\n return apply { for (element in this) action(element)
}\n}\n\n/**\n * Performs the given [action] on each element and returns the array itself afterwards.\n
*/\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun FloatArray.onEach(action: (Float) ->
Unit): FloatArray {\n return apply { for (element in this) action(element) }\n}\n\n/**\n * Performs the given
[action] on each element and returns the array itself afterwards.\n
*/\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun DoubleArray.onEach(action: (Double) ->
Unit): DoubleArray {\n return apply { for (element in this) action(element) }\n}\n\n/**\n * Performs the given
[action] on each element and returns the array itself afterwards.\n
*/\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun BooleanArray.onEach(action:
(Boolean) -> Unit): BooleanArray {\n return apply { for (element in this) action(element) }\n}\n\n/**\n *
Performs the given [action] on each element and returns the array itself afterwards.\n
*/\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun CharArray.onEach(action: (Char) ->
Unit): CharArray {\n return apply { for (element in this) action(element) }\n}\n\n/**\n * Performs the given
[action] on each element, providing sequential index with the element,\n * and returns the array itself afterwards.\n
*/

```

```

@param [action] function that takes the index of an element and the element itself\n * and performs the action on
the element.\n *\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun <T> Array<out
T>.onEachIndexed(action: (index: Int, T) -> Unit): Array<out T> {\n    return apply { forEachIndexed(action)
}\n}\n\n/>\n * Performs the given [action] on each element, providing sequential index with the element,\n * and
returns the
array itself afterwards.\n * @param [action] function that takes the index of an element and the element itself\n *
and performs the action on the element.\n *\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun
ByteArray.onEachIndexed(action: (index: Int, Byte) -> Unit): ByteArray {\n    return apply {
forEachIndexed(action) }\n}\n\n/>\n * Performs the given [action] on each element, providing sequential index
with the element,\n * and returns the array itself afterwards.\n * @param [action] function that takes the index of an
element and the element itself\n * and performs the action on the element.\n
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun ShortArray.onEachIndexed(action:
(index: Int, Short) -> Unit): ShortArray {\n    return apply { forEachIndexed(action) }\n}\n\n/>\n * Performs the
given [action] on each element, providing sequential index with the element,\n * and returns the array itself
afterwards.\n * @param [action] function
that takes the index of an element and the element itself\n * and performs the action on the element.\n
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun IntArray.onEachIndexed(action: (index:
Int, Int) -> Unit): IntArray {\n    return apply { forEachIndexed(action) }\n}\n\n/>\n * Performs the given [action]
on each element, providing sequential index with the element,\n * and returns the array itself afterwards.\n *
@param [action] function that takes the index of an element and the element itself\n * and performs the action on
the element.\n *\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun
LongArray.onEachIndexed(action: (index: Int, Long) -> Unit): LongArray {\n    return apply {
forEachIndexed(action) }\n}\n\n/>\n * Performs the given [action] on each element, providing sequential index
with the element,\n * and returns the array itself afterwards.\n * @param [action] function that takes the index of an
element and the element
itself\n * and performs the action on the element.\n *\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic
inline fun FloatArray.onEachIndexed(action: (index: Int, Float) -> Unit): FloatArray {\n    return apply {
forEachIndexed(action) }\n}\n\n/>\n * Performs the given [action] on each element, providing sequential index
with the element,\n * and returns the array itself afterwards.\n * @param [action] function that takes the index of an
element and the element itself\n * and performs the action on the element.\n
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun DoubleArray.onEachIndexed(action:
(index: Int, Double) -> Unit): DoubleArray {\n    return apply { forEachIndexed(action) }\n}\n\n/>\n * Performs
the given [action] on each element, providing sequential index with the element,\n * and returns the array itself
afterwards.\n * @param [action] function that takes the index of an element and the element itself\n * and performs
the action on the
element.\n *\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun
BooleanArray.onEachIndexed(action: (index: Int, Boolean) -> Unit): BooleanArray {\n    return apply {
forEachIndexed(action) }\n}\n\n/>\n * Performs the given [action] on each element, providing sequential index
with the element,\n * and returns the array itself afterwards.\n * @param [action] function that takes the index of an
element and the element itself\n * and performs the action on the element.\n
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun CharArray.onEachIndexed(action:
(index: Int, Char) -> Unit): CharArray {\n    return apply { forEachIndexed(action) }\n}\n\n/>\n * Accumulates
value starting with the first element and applying [operation] from left to right\n * to current accumulator value and
each element.\n * \n * Throws an exception if this array is empty. If the array can be empty in an expected way,\n *
please use [reduceOrNull] instead. It returns `null`
when its receiver is empty.\n * \n * @param [operation] function that takes current accumulator value and an
element,\n * and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduce\n *\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun <S, T : S> Array<out

```

```

T>.reduce(operation: (acc: S, T) -> S): S {
    if (isEmpty())
        throw UnsupportedOperationException("Empty array can't be reduced.")
    var accumulator: S = this[0]
    for (index in 1..lastIndex) {
        accumulator = operation(accumulator, this[index])
    }
    return accumulator
}

```

Accumulates value starting with the first element and applying [operation] from left to right to current accumulator value and each element.
 Throws an exception if this array is empty. If the array can be empty in an expected way, please use [reduceOrNull] instead. It returns `null` when its receiver is empty.
 @param [operation] function that takes current accumulator value and an element, and calculates the next accumulator value.
 @sample

```

samples.collections.Collections.Aggregates.reduce

```

```

public inline fun ByteArray.reduce(operation: (acc: Byte, Byte) -> Byte): Byte {
    if (isEmpty())
        throw UnsupportedOperationException("Empty array can't be reduced.")
    var accumulator = this[0]
    for (index in 1..lastIndex) {
        accumulator = operation(accumulator, this[index])
    }
    return accumulator
}

```

Accumulates value starting with the first element and applying [operation] from left to right to current accumulator value and each element.
 Throws an exception if this array is empty. If the array can be empty in an expected way, please use [reduceOrNull] instead. It returns `null` when its receiver is empty.
 @param [operation] function that takes current accumulator value and an element, and calculates the next accumulator value.
 @sample

```

samples.collections.Collections.Aggregates.reduce

```

```

public inline fun ShortArray.reduce(operation: (acc: Short, Short) -> Short): Short {
    if (isEmpty())
        throw UnsupportedOperationException("Empty array can't be reduced.")
    var accumulator = this[0]
    for (index in 1..lastIndex) {
        accumulator = operation(accumulator, this[index])
    }
    return accumulator
}

```

Accumulates value starting with the first element and applying [operation] from left to right to current accumulator value and each element.
 Throws an exception if this array is empty. If the array can be empty in an expected way, please use [reduceOrNull] instead. It returns `null` when its receiver is empty.
 @param [operation] function that takes current accumulator value and an element, and calculates the next accumulator value.
 @sample

```

samples.collections.Collections.Aggregates.reduce

```

```

public inline fun IntArray.reduce(operation: (acc: Int, Int) -> Int): Int {
    if (isEmpty())
        throw UnsupportedOperationException("Empty array can't be reduced.")
    var accumulator = this[0]
    for (index in 1..lastIndex) {
        accumulator = operation(accumulator, this[index])
    }
    return accumulator
}

```

Accumulates value starting with the first element and applying [operation] from left to right to current accumulator value and each element.
 Throws an exception if this array is empty. If the array can be empty in an expected way, please use [reduceOrNull] instead. It returns `null` when its receiver is empty.
 @param [operation] function that takes current accumulator value and an element, and calculates the next accumulator value.
 @sample

```

samples.collections.Collections.Aggregates.reduce

```

```

public inline fun LongArray.reduce(operation: (acc: Long, Long) -> Long): Long {
    if (isEmpty())
        throw UnsupportedOperationException("Empty array can't be reduced.")
    var accumulator = this[0]
    for (index in 1..lastIndex) {
        accumulator = operation(accumulator, this[index])
    }
    return accumulator
}

```

Accumulates value starting with the first element and applying [operation] from left to right to current accumulator value and each element.
 Throws an exception if this array is empty. If the array can be empty in an expected way, please use [reduceOrNull] instead. It returns `null` when its receiver is empty.
 @param [operation] function that takes current accumulator value and an element, and calculates the next accumulator value.
 @sample

```

samples.collections.Collections.Aggregates.reduce

```

```

public inline fun FloatArray.reduce(operation: (acc: Float, Float) -> Float): Float {
    if (isEmpty())
        throw UnsupportedOperationException("Empty array can't be reduced.")
    var accumulator = this[0]
    for (index in 1..lastIndex) {
        accumulator = operation(accumulator, this[index])
    }
    return accumulator
}

```

Accumulates value starting with the first element and applying [operation] from left to right to current accumulator value and each element.
 Throws an exception if this array is empty. If the array can be empty in an expected way, please use [reduceOrNull] instead. It returns `null` when its receiver is empty.
 @param [operation] function that takes current accumulator value and an element, and calculates the next accumulator value.
 @sample

and calculates the next accumulator value.

```

samples.collections.Collections.Aggregates.reduce
*
public inline fun DoubleArray.reduce(operation: (acc: Double, Double) -> Double): Double {
    if (isEmpty())
        throw UnsupportedOperationException("Empty array can't be reduced.")
    var accumulator = this[0]
    for (index in 1..lastIndex) {
        accumulator = operation(accumulator, this[index])
    }
    return accumulator
}

```

Accumulates value starting with the first element and applying [operation] from left to right to current accumulator value and each element. Throws an exception if this array is empty. If the array can be empty in an expected way, please use [reduceOrNull] instead. It returns `null` when its receiver is empty.

@param [operation] function that takes current accumulator value and an element, and calculates the next accumulator value.

@sample

```

samples.collections.Collections.Aggregates.reduce
*
public inline fun BooleanArray.reduce(operation: (acc: Boolean, Boolean) -> Boolean): Boolean {
    if (isEmpty())
        throw UnsupportedOperationException("Empty array can't be reduced.")
    var accumulator = this[0]
    for (index in 1..lastIndex) {
        accumulator = operation(accumulator, this[index])
    }
    return accumulator
}

```

Accumulates value starting with the first element and applying [operation] from left to right to current accumulator value and each element. Throws an exception if this array is empty. If the array can be empty in an expected way, please use [reduceOrNull] instead. It returns `null` when its receiver is empty.

@param [operation] function that takes current accumulator value and an element, and calculates the next accumulator value.

@sample

```

samples.collections.Collections.Aggregates.reduce
*
public inline fun CharArray.reduce(operation: (acc: Char, Char) -> Char): Char {
    if (isEmpty())
        throw UnsupportedOperationException("Empty array can't be reduced.")
    var accumulator = this[0]
    for (index in 1..lastIndex) {
        accumulator = operation(accumulator, this[index])
    }
    return accumulator
}

```

Accumulates value starting with the first element and applying [operation] from left to right to current accumulator value and each element with its index in the original array. Throws an exception if this array is empty. If the array can be empty in an expected way, please use [reduceIndexedOrNull] instead. It returns `null` when its receiver is empty.

@param [operation] function that takes the index of an element, current accumulator value and the element itself, and calculates the next accumulator value.

@sample

```

samples.collections.Collections.Aggregates.reduce
*
public inline fun <S, T : S> Array<out T>.reduceIndexed(operation: (index: Int, acc: S, T) -> S): S {
    if (isEmpty())
        throw UnsupportedOperationException("Empty array can't be reduced.")
    var accumulator: S = this[0]
    for (index in 1..lastIndex) {
        accumulator = operation(index, accumulator, this[index])
    }
    return accumulator
}

```

Accumulates value starting with the first element and applying [operation] from left to right to current accumulator value and each element with its index in the original array. Throws an exception if this array is empty. If the array can be empty in an expected way, please use [reduceIndexedOrNull] instead. It returns `null` when its receiver is empty.

@param [operation] function that takes the index of an element, current accumulator value and the element itself, and calculates the next accumulator value.

@sample

```

samples.collections.Collections.Aggregates.reduce
*
public inline fun ByteArray.reduceIndexed(operation: (index: Int, acc: Byte, Byte) -> Byte): Byte {
    if (isEmpty())
        throw UnsupportedOperationException("Empty array can't be reduced.")
    var accumulator = this[0]
    for (index in 1..lastIndex) {
        accumulator = operation(index, accumulator, this[index])
    }
    return accumulator
}

```

Accumulates value starting with the first element and applying [operation] from left to right to current accumulator value and each element with its index in the original array. Throws an exception if this array is empty. If the array can be empty in an expected way, please use [reduceIndexedOrNull] instead. It returns `null` when its receiver is empty.

@param [operation] function that takes the index of an element, current accumulator value and the element itself, and calculates the next accumulator value.

@sample

```

samples.collections.Collections.Aggregates.reduce
*
public inline fun ShortArray.reduceIndexed(operation: (index: Int, acc: Short, Short) -> Short): Short {
    if (isEmpty())
        throw

```

```

UnsupportedOperationException("Empty array can't be reduced.")\n  var accumulator = this[0]\n  for (index in 1..lastIndex) {\n    accumulator = operation(index, accumulator, this[index])\n  }\n  return accumulator\n}\n\n/**\n * Accumulates value starting with the first element and applying [operation] from left to right\n * to current accumulator value and each element with its index in the original array.\n * \n * Throws an exception if this array is empty. If the array can be empty in an expected way,\n * please use [reduceIndexedOrNull] instead. It returns `null` when its receiver is empty.\n * \n * @param [operation] function that takes the index of an element, current accumulator value and the element itself,\n * and calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduce\n */\npublic inline fun IntArray.reduceIndexed(operation: (index: Int, acc: Int, Int) -> Int): Int {\n  if (isEmpty())\n    throw UnsupportedOperationException("Empty array can't be reduced.")\n  var accumulator = this[0]\n  for (index in 1..lastIndex) {\n    accumulator = operation(index, accumulator, this[index])\n  }\n  return accumulator\n}\n\n/**\n * Accumulates value starting with the first element and applying [operation] from left to right\n * to current accumulator value and each element with its index in the original array.\n * \n * Throws an exception if this array is empty. If the array can be empty in an expected way,\n * please use [reduceIndexedOrNull] instead. It returns `null` when its receiver is empty.\n * \n * @param [operation] function that takes the index of an element, current accumulator value and the element itself,\n * and calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduce\n */\npublic inline fun LongArray.reduceIndexed(operation: (index: Int, acc: Long, Long) -> Long): Long {\n  if (isEmpty())\n    throw UnsupportedOperationException("Empty array can't be reduced.")\n  var accumulator = this[0]\n  for (index in 1..lastIndex) {\n    accumulator = operation(index, accumulator, this[index])\n  }\n  return accumulator\n}\n\n/**\n * Accumulates value starting with the first element and applying [operation] from left to right\n * to current accumulator value and each element with its index in the original array.\n * \n * Throws an exception if this array is empty. If the array can be empty in an expected way,\n * please use [reduceIndexedOrNull] instead. It returns `null` when its receiver is empty.\n * \n * @param [operation] function that takes the index of an element, current accumulator value and the element itself,\n * and calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduce\n */\npublic inline fun FloatArray.reduceIndexed(operation: (index: Int, acc: Float, Float) -> Float): Float {\n  if (isEmpty())\n    throw UnsupportedOperationException("Empty array can't be reduced.")\n  var accumulator = this[0]\n  for (index in 1..lastIndex) {\n    accumulator = operation(index, accumulator, this[index])\n  }\n  return accumulator\n}\n\n/**\n * Accumulates value starting with the first element and applying [operation] from left to right\n * to current accumulator value and each element with its index in the original array.\n * \n * Throws an exception if this array is empty. If the array can be empty in an expected way,\n * please use [reduceIndexedOrNull] instead. It returns `null` when its receiver is empty.\n * \n * @param [operation] function that takes the index of an element, current accumulator value and the element itself,\n * and calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduce\n */\npublic inline fun DoubleArray.reduceIndexed(operation: (index: Int, acc: Double, Double) -> Double): Double {\n  if (isEmpty())\n    throw UnsupportedOperationException("Empty array can't be reduced.")\n  var accumulator = this[0]\n  for (index in 1..lastIndex) {\n    accumulator = operation(index, accumulator, this[index])\n  }\n  return accumulator\n}\n\n/**\n * Accumulates value starting with the first element and applying [operation] from left to right\n * to current accumulator value and each element with its index in the original array.\n * \n * Throws an exception if this array is empty. If the array can be empty in an expected way,\n * please use [reduceIndexedOrNull] instead. It returns `null` when its receiver is empty.\n * \n * @param [operation] function that takes the index of an element, current accumulator value and the element itself,\n * and calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduce\n */\npublic inline fun BooleanArray.reduceIndexed(operation: (index: Int, acc: Boolean, Boolean) -> Boolean): Boolean {\n  if (isEmpty())\n    throw UnsupportedOperationException("Empty array can't be reduced.")\n  var accumulator = this[0]\n  for (index in 1..lastIndex) {\n    accumulator = operation(index, accumulator, this[index])\n  }\n  return accumulator\n}\n\n/**\n * Accumulates value starting with the first element and

```

applying [operation] from left to right\n \* to current accumulator value and each element with its index in the original array.\n \* \n \* Throws an exception if this array is empty. If the array can be empty in an expected way,\n \* please use [reduceIndexedOrNull] instead. It returns `null` when its receiver is empty.\n \* \n \* @param [operation] function that takes the index of an element, current accumulator value and the element itself,\n \* and calculates the next accumulator value.\n \* \n \* @sample samples.collections.Collections.Aggregates.reduce\n \* \n \* \n \* @public inline fun CharArray.reduceIndexed(operation: (index: Int, acc: Char, Char) -> Char): Char {\n if (isEmpty())\n throw UnsupportedOperationException("Empty array can't be reduced.")\n var accumulator = this[0]\n for (index in 1..lastIndex) {\n accumulator = operation(index, accumulator, this[index])\n }\n return accumulator}\n \* \n \* \n \* Accumulates value starting with the first element and applying [operation] from left to right\n \* to current accumulator value and each element with its index in the original array.\n \* \n \* Returns `null` if the array is empty.\n \* \n \* @param [operation] function that takes the index of an element, current accumulator value and the element itself,\n \* and calculates the next accumulator value.\n \* \n \* @sample samples.collections.Collections.Aggregates.reduceOrNull\n \* \n \* \n \* @SinceKotlin("1.4")\n \* \n \* @public inline fun <S, T : S> Array<out T>.reduceIndexedOrNull(operation: (index: Int, acc: S, T) -> S): S? {\n if (isEmpty())\n return null\n var accumulator: S = this[0]\n for (index in 1..lastIndex) {\n accumulator = operation(index, accumulator, this[index])\n }\n return accumulator}\n \* \n \* \n \* Accumulates value starting with the first element and applying [operation] from left to right\n \* to current accumulator value and each element with its index in the original array.\n \* \n \* Returns `null` if the array is empty.\n \* \n \* @param [operation] function that takes the index of an element, current accumulator value and the element itself,\n \* and calculates the next accumulator value.\n \* \n \* @sample samples.collections.Collections.Aggregates.reduceOrNull\n \* \n \* \n \* @SinceKotlin("1.4")\n \* \n \* @public inline fun ByteArray.reduceIndexedOrNull(operation: (index: Int, acc: Byte, Byte) -> Byte): Byte? {\n if (isEmpty())\n return null\n var accumulator = this[0]\n for (index in 1..lastIndex) {\n accumulator = operation(index, accumulator, this[index])\n }\n return accumulator}\n \* \n \* \n \* Accumulates value starting with the first element and applying [operation] from left to right\n \* to current accumulator value and each element with its index in the original array.\n \* \n \* Returns `null` if the array is empty.\n \* \n \* @param [operation] function that takes the index of an element, current accumulator value and the element itself,\n \* and calculates the next accumulator value.\n \* \n \* @sample samples.collections.Collections.Aggregates.reduceOrNull\n \* \n \* \n \* @SinceKotlin("1.4")\n \* \n \* @public inline fun ShortArray.reduceIndexedOrNull(operation: (index: Int, acc: Short, Short) -> Short): Short? {\n if (isEmpty())\n return null\n var accumulator = this[0]\n for (index in 1..lastIndex) {\n accumulator = operation(index, accumulator, this[index])\n }\n return accumulator}\n \* \n \* \n \* Accumulates value starting with the first element and applying [operation] from left to right\n \* to current accumulator value and each element with its index in the original array.\n \* \n \* Returns `null` if the array is empty.\n \* \n \* @param [operation] function that takes the index of an element, current accumulator value and the element itself,\n \* and calculates the next accumulator value.\n \* \n \* @sample samples.collections.Collections.Aggregates.reduceOrNull\n \* \n \* \n \* @SinceKotlin("1.4")\n \* \n \* @public inline fun IntArray.reduceIndexedOrNull(operation: (index: Int, acc: Int, Int) -> Int): Int? {\n if (isEmpty())\n return null\n var accumulator = this[0]\n for (index in 1..lastIndex) {\n accumulator = operation(index, accumulator, this[index])\n }\n return accumulator}\n \* \n \* \n \* Accumulates value starting with the first element and applying [operation] from left to right\n \* to current accumulator value and each element with its index in the original array.\n \* \n \* Returns `null` if the array is empty.\n \* \n \* @param [operation] function that takes the index of an element, current accumulator value and the element itself,\n \* and calculates the next accumulator value.\n \* \n \* @sample samples.collections.Collections.Aggregates.reduceOrNull\n \* \n \* \n \* @SinceKotlin("1.4")\n \* \n \* @public inline fun LongArray.reduceIndexedOrNull(operation: (index: Int, acc: Long, Long) -> Long): Long? {\n if (isEmpty())\n return null\n var accumulator = this[0]\n for (index in 1..lastIndex) {\n accumulator = operation(index, accumulator, this[index])\n }\n return accumulator}\n \* \n \* \n \* Accumulates value starting with the first element and applying [operation] from left to right\n \* to current accumulator value and each element with

its index in the original array.\n \* \n \* Returns `null` if the array is empty.\n \* \n \* @param [operation] function that takes the index of an element, current accumulator value and the element itself,\n \* and calculates the next accumulator value.\n \* \n \* @sample samples.collections.Collections.Aggregates.reduceOrNull\n

```

*\n@SinceKotlin("1.4")\npublic inline fun FloatArray.reduceIndexedOrNull(operation: (index: Int, acc: Float, Float) -> Float): Float? {\n    if (isEmpty())\n        return null\n    var accumulator = this[0]\n    for (index in 1..lastIndex) {\n        accumulator = operation(index, accumulator, this[index])\n    }\n    return accumulator\n}\n\n/**\n * Accumulates value starting with the first element and applying [operation] from left to right\n * to current accumulator value and each element with its index in the original array.\n * \n * Returns `null` if the array is empty.\n * \n * @param [operation] function that takes the index of an element, current accumulator value and the element itself,\n * and calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduceOrNull\n *\n@SinceKotlin("1.4")\npublic inline fun DoubleArray.reduceIndexedOrNull(operation: (index: Int, acc: Double, Double) -> Double): Double? {\n    if (isEmpty())\n        return null\n    var accumulator = this[0]\n    for (index in 1..lastIndex) {\n        accumulator = operation(index, accumulator, this[index])\n    }\n    return accumulator\n}\n\n/**\n * Accumulates value starting with the first element and applying [operation] from left to right\n * to current accumulator value and each element with its index in the original array.\n * \n * Returns `null` if the array is empty.\n * \n * @param [operation] function that takes the index of an element, current accumulator value and the element itself,\n * and calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduceOrNull\n *\n@SinceKotlin("1.4")\npublic inline fun BooleanArray.reduceIndexedOrNull(operation: (index: Int, acc: Boolean, Boolean) -> Boolean): Boolean? {\n    if (isEmpty())\n        return null\n    var accumulator = this[0]\n    for (index in 1..lastIndex) {\n        accumulator = operation(index, accumulator, this[index])\n    }\n    return accumulator\n}\n\n/**\n * Accumulates value starting with the first element and applying [operation] from left to right\n * to current accumulator value and each element with its index in the original array.\n * \n * Returns `null` if the array is empty.\n * \n * @param [operation] function that takes the index of an element, current accumulator value and the element itself,\n * and calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduceOrNull\n *\n@SinceKotlin("1.4")\npublic inline fun CharArray.reduceIndexedOrNull(operation: (index: Int, acc: Char, Char) -> Char): Char? {\n    if (isEmpty())\n        return null\n    var accumulator = this[0]\n    for (index in 1..lastIndex) {\n        accumulator = operation(index, accumulator, this[index])\n    }\n    return accumulator\n}\n\n/**\n * Accumulates value starting with the first element and applying [operation] from left to right\n * to current accumulator value and each element.\n * \n * Returns `null` if the array is empty.\n * \n * @param [operation] function that takes current accumulator value and an element,\n * and calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduceOrNull\n *\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic inline fun <S, T : S> Array<out T>.reduceOrNull(operation: (acc: S, T) -> S): S? {\n    if (isEmpty())\n        return null\n    var accumulator: S = this[0]\n    for (index in 1..lastIndex) {\n        accumulator = operation(accumulator, this[index])\n    }\n    return accumulator\n}\n\n/**\n * Accumulates value starting with the first element and applying [operation] from left to right\n * to current accumulator value and each element.\n * \n * Returns `null` if the array is empty.\n * \n * @param [operation] function that takes current accumulator value and an element,\n * and calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduceOrNull\n *\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic inline fun ByteArray.reduceOrNull(operation: (acc: Byte, Byte) -> Byte): Byte? {\n    if (isEmpty())\n        return null\n    var accumulator = this[0]\n    for (index in 1..lastIndex) {\n        accumulator = operation(accumulator, this[index])\n    }\n    return accumulator\n}\n\n/**\n * Accumulates value starting with the first element and applying [operation] from left to right\n * to current accumulator value and each element.\n * \n * Returns `null` if the array is empty.\n * \n * @param [operation] function that takes current accumulator

```

```

value and an element,\n * and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceOrNull\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic inline fun
ShortArray.reduceOrNull(operation: (acc: Short, Short) -> Short): Short? {\n if (isEmpty())\n return null\n
var accumulator = this[0]\n for (index in 1..lastIndex) {\n accumulator = operation(accumulator, this[index])\n
}\n return accumulator\n}\n\n/**\n * Accumulates value starting with the first element and applying [operation]
from left to right\n * to current accumulator value and each element.\n * \n * Returns `null` if the array is empty.\n *
\n * @param [operation] function that takes current accumulator value and an element,\n * and calculates the next
accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduceOrNull\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic
inline fun IntArray.reduceOrNull(operation: (acc: Int, Int) -> Int): Int? {\n if (isEmpty())\n return null\n var
accumulator = this[0]\n for (index in 1..lastIndex) {\n accumulator = operation(accumulator, this[index])\n
}\n return accumulator\n}\n\n/**\n * Accumulates value starting with the first element and applying [operation]
from left to right\n * to current accumulator value and each element.\n * \n * Returns `null` if the array is empty.\n *
\n * @param [operation] function that takes current accumulator value and an element,\n * and calculates the next
accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduceOrNull\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic inline fun
LongArray.reduceOrNull(operation: (acc: Long, Long) -> Long): Long? {\n if (isEmpty())\n return null\n
var accumulator = this[0]\n for (index in 1..lastIndex) {\n accumulator
= operation(accumulator, this[index])\n }\n return accumulator\n}\n\n/**\n * Accumulates value starting with
the first element and applying [operation] from left to right\n * to current accumulator value and each element.\n *
\n * Returns `null` if the array is empty.\n * \n * @param [operation] function that takes current accumulator value
and an element,\n * and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceOrNull\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic inline fun
FloatArray.reduceOrNull(operation: (acc: Float, Float) -> Float): Float? {\n if (isEmpty())\n return null\n var
accumulator = this[0]\n for (index in 1..lastIndex) {\n accumulator = operation(accumulator, this[index])\n
}\n return accumulator\n}\n\n/**\n * Accumulates value starting with the first element and applying [operation]
from left to right\n * to current accumulator value and each
element.\n * \n * Returns `null` if the array is empty.\n * \n * @param [operation] function that takes current
accumulator value and an element,\n * and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceOrNull\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic inline fun
DoubleArray.reduceOrNull(operation: (acc: Double, Double) -> Double): Double? {\n if (isEmpty())\n return
null\n var accumulator = this[0]\n for (index in 1..lastIndex) {\n accumulator = operation(accumulator,
this[index])\n }\n return accumulator\n}\n\n/**\n * Accumulates value starting with the first element and
applying [operation] from left to right\n * to current accumulator value and each element.\n * \n * Returns `null` if
the array is empty.\n * \n * @param [operation] function that takes current accumulator value and an element,\n *
and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceOrNull\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic inline fun
BooleanArray.reduceOrNull(operation: (acc: Boolean, Boolean) -> Boolean): Boolean? {\n if (isEmpty())\n
return null\n var accumulator = this[0]\n for (index in 1..lastIndex) {\n accumulator =
operation(accumulator, this[index])\n }\n return accumulator\n}\n\n/**\n * Accumulates value starting with the
first element and applying [operation] from left to right\n * to current accumulator value and each element.\n * \n *
Returns `null` if the array is empty.\n * \n * @param [operation] function that takes current accumulator value and
an element,\n * and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceOrNull\n

```



```

*^@SinceKotlin("1.4")^@WasExperimental(ExperimentalStdlibApi::class)^npublic inline fun
CharArray.reduceOrNull(operation: (acc: Char, Char) ->
Char): Char? {^n if (isEmpty())^n return null^n var accumulator = this[0]^n for (index in 1..lastIndex) {^n
accumulator = operation(accumulator, this[index])^n }^n return accumulator^n}^n/n/**^n * Accumulates value
starting with the last element and applying [operation] from right to left^n * to each element and current accumulator
value.^n * ^n * Throws an exception if this array is empty. If the array can be empty in an expected way,^n * please
use [reduceRightOrNull] instead. It returns `null` when its receiver is empty.^n * ^n * @param [operation] function
that takes an element and current accumulator value,^n * and calculates the next accumulator value.^n * ^n *
@sample samples.collections.Collections.Aggregates.reduceRight^n *^npublic inline fun <S, T : S> Array<out
T>.reduceRight(operation: (T, acc: S) -> S): S {^n var index = lastIndex^n if (index < 0) throw
UnsupportedOperationException("Empty array can't be reduced.")^n var accumulator:
S = get(index--)^n while (index >= 0) {^n accumulator = operation(get(index--), accumulator)^n }^n return
accumulator^n}^n/n/**^n * Accumulates value starting with the last element and applying [operation] from right to
left^n * to each element and current accumulator value.^n * ^n * Throws an exception if this array is empty. If the
array can be empty in an expected way,^n * please use [reduceRightOrNull] instead. It returns `null` when its
receiver is empty.^n * ^n * @param [operation] function that takes an element and current accumulator value,^n *
and calculates the next accumulator value.^n * ^n * @sample
samples.collections.Collections.Aggregates.reduceRight^n *^npublic inline fun ByteArray.reduceRight(operation:
(Byte, acc: Byte) -> Byte): Byte {^n var index = lastIndex^n if (index < 0) throw
UnsupportedOperationException("Empty array can't be reduced.")^n var accumulator = get(index--)^n while
(index >= 0) {^n accumulator = operation(get(index--),
accumulator)^n }^n return accumulator^n}^n/n/**^n * Accumulates value starting with the last element and
applying [operation] from right to left^n * to each element and current accumulator value.^n * ^n * Throws an
exception if this array is empty. If the array can be empty in an expected way,^n * please use [reduceRightOrNull]
instead. It returns `null` when its receiver is empty.^n * ^n * @param [operation] function that takes an element and
current accumulator value,^n * and calculates the next accumulator value.^n * ^n * @sample
samples.collections.Collections.Aggregates.reduceRight^n *^npublic inline fun ShortArray.reduceRight(operation:
(Short, acc: Short) -> Short): Short {^n var index = lastIndex^n if (index < 0) throw
UnsupportedOperationException("Empty array can't be reduced.")^n var accumulator = get(index--)^n while
(index >= 0) {^n accumulator = operation(get(index--), accumulator)^n }^n return accumulator^n}^n/n/**^n *
Accumulates
value starting with the last element and applying [operation] from right to left^n * to each element and current
accumulator value.^n * ^n * Throws an exception if this array is empty. If the array can be empty in an expected
way,^n * please use [reduceRightOrNull] instead. It returns `null` when its receiver is empty.^n * ^n * @param
[operation] function that takes an element and current accumulator value,^n * and calculates the next accumulator
value.^n * ^n * @sample samples.collections.Collections.Aggregates.reduceRight^n *^npublic inline fun
IntArray.reduceRight(operation: (Int, acc: Int) -> Int): Int {^n var index = lastIndex^n if (index < 0) throw
UnsupportedOperationException("Empty array can't be reduced.")^n var accumulator = get(index--)^n while
(index >= 0) {^n accumulator = operation(get(index--), accumulator)^n }^n return accumulator^n}^n/n/**^n *
Accumulates value starting with the last element and applying [operation] from right to left^n
* to each element and current accumulator value.^n * ^n * Throws an exception if this array is empty. If the array
can be empty in an expected way,^n * please use [reduceRightOrNull] instead. It returns `null` when its receiver is
empty.^n * ^n * @param [operation] function that takes an element and current accumulator value,^n * and calculates
the next accumulator value.^n * ^n * @sample samples.collections.Collections.Aggregates.reduceRight^n *^npublic
inline fun LongArray.reduceRight(operation: (Long, acc: Long) -> Long): Long {^n var index = lastIndex^n if
(index < 0) throw UnsupportedOperationException("Empty array can't be reduced.")^n var accumulator =
get(index--)^n while (index >= 0) {^n accumulator = operation(get(index--), accumulator)^n }^n return
accumulator^n}^n/n/**^n * Accumulates value starting with the last element and applying [operation] from right to

```

left to each element and current accumulator value. Throws an exception if this array is empty. If the array can be empty in an expected way, please use [reduceRightOrNull] instead. It returns `null` when its receiver is empty.

`@param [operation]` function that takes an element and current accumulator value, and calculates the next accumulator value.

`@sample`

```
samples.collections.Collections.Aggregates.reduceRight
public inline fun FloatArray.reduceRight(operation: (Float, acc: Float) -> Float): Float {
    var index = lastIndex
    if (index < 0) throw UnsupportedOperationException("Empty array can't be reduced.")
    var accumulator = get(index--)
    while (index >= 0) {
        accumulator = operation(get(index--), accumulator)
    }
    return accumulator
}
```

Accumulates value starting with the last element and applying [operation] from right to left to each element and current accumulator value. Throws an exception if this array is empty. If the array can be empty in an expected way, please use [reduceRightOrNull] instead. It returns `null` when its receiver is empty.

`@param [operation]` function that takes an element and current accumulator value, and calculates the next accumulator value.

`@sample`

```
samples.collections.Collections.Aggregates.reduceRight
public inline fun DoubleArray.reduceRight(operation: (Double, acc: Double) -> Double): Double {
    var index = lastIndex
    if (index < 0) throw UnsupportedOperationException("Empty array can't be reduced.")
    var accumulator = get(index--)
    while (index >= 0) {
        accumulator = operation(get(index--), accumulator)
    }
    return accumulator
}
```

Accumulates value starting with the last element and applying [operation] from right to left to each element and current accumulator value. Throws an exception if this array is empty. If the array can be empty in an expected way, please use [reduceRightOrNull] instead. It returns `null` when its receiver is empty.

`@param [operation]` function that takes an element and current accumulator value, and calculates the next accumulator value.

`@sample`

```
samples.collections.Collections.Aggregates.reduceRight
public inline fun BooleanArray.reduceRight(operation: (Boolean, acc: Boolean) -> Boolean): Boolean {
    var index = lastIndex
    if (index < 0) throw UnsupportedOperationException("Empty array can't be reduced.")
    var accumulator = get(index--)
    while (index >= 0) {
        accumulator = operation(get(index--), accumulator)
    }
    return accumulator
}
```

Accumulates value starting with the last element and applying [operation] from right to left to each element and current accumulator value. Throws an exception if this array is empty. If the array can be empty in an expected way, please use [reduceRightOrNull] instead. It returns `null` when its receiver is empty.

`@param [operation]` function that takes an element and current accumulator value, and calculates the next accumulator value.

`@sample`

```
samples.collections.Collections.Aggregates.reduceRight
public inline fun CharArray.reduceRight(operation: (Char, acc: Char) -> Char): Char {
    var index = lastIndex
    if (index < 0) throw UnsupportedOperationException("Empty array can't be reduced.")
    var accumulator = get(index--)
    while (index >= 0) {
        accumulator = operation(get(index--), accumulator)
    }
    return accumulator
}
```

Accumulates value starting with the last element and applying [operation] from right to left to each element with its index in the original array and current accumulator value. Throws an exception if this array is empty. If the array can be empty in an expected way, please use [reduceRightIndexedOrNull] instead. It returns `null` when its receiver is empty.

`@param [operation]` function that takes the index of an element, the element itself and current accumulator value, and calculates the next accumulator value.

`@sample`

```
samples.collections.Collections.Aggregates.reduceRightIndexed
public inline fun <S, T : S> Array<out T>.reduceRightIndexed(operation: (index: Int, T, acc: S) -> S): S {
    var index = lastIndex
    if (index < 0) throw UnsupportedOperationException("Empty array can't be reduced.")
    var accumulator: S = get(index--)
    while (index >= 0) {
        accumulator = operation(index, get(index), accumulator)
        --index
    }
    return accumulator
}
```

Accumulates value starting with the last element and applying [operation] from right to left to each element with its index in the original array and current accumulator value. Throws an exception if this array is empty. If the array can be empty in an expected way, please use

[reduceRightIndexedOrNull] instead. It returns `null` when its receiver is empty.

`@param [operation]` function that takes the index of an element, the element itself and current accumulator value, and calculates the next accumulator value.

`@sample samples.collections.Collections.Aggregates.reduceRight`

```
public inline fun
ByteArray.reduceRightIndexed(operation: (index: Int, Byte, acc: Byte) -> Byte): Byte {
    var index = lastIndex
    if (index < 0) throw UnsupportedOperationException("Empty array can't be reduced.")
    var accumulator = get(index--)
    while (index >= 0) {
        accumulator = operation(index, get(index), accumulator)
        --index
    }
    return accumulator
}
```

Accumulates value starting with the last element and applying [operation] from right to left to each element with its index in the original array and current accumulator value.

Throws an exception if this array is empty. If the array can be empty in an expected way, please use [reduceRightIndexedOrNull] instead. It returns `null` when its receiver is empty.

`@param [operation]` function that takes the index of an element, the element itself and current accumulator value, and calculates the next accumulator value.

`@sample samples.collections.Collections.Aggregates.reduceRight`

```
public inline fun
ShortArray.reduceRightIndexed(operation: (index: Int, Short, acc: Short) -> Short): Short {
    var index = lastIndex
    if (index < 0) throw UnsupportedOperationException("Empty array can't be reduced.")
    var accumulator = get(index--)
    while (index >= 0) {
        accumulator = operation(index, get(index), accumulator)
        --index
    }
    return accumulator
}
```

Accumulates value starting with the last element and applying [operation] from right to left to each element with its index in the original array and current accumulator value.

Throws an exception if this array is empty. If the array can be empty in an expected way, please use [reduceRightIndexedOrNull] instead. It returns `null` when its receiver is empty.

`@param [operation]` function that takes the index of an element, the element itself and current accumulator value, and calculates the next accumulator value.

`@sample samples.collections.Collections.Aggregates.reduceRight`

```
public inline fun
IntArray.reduceRightIndexed(operation: (index: Int, Int, acc: Int) -> Int): Int {
    var index = lastIndex
    if (index < 0) throw UnsupportedOperationException("Empty array can't be reduced.")
    var accumulator = get(index--)
    while (index >= 0) {
        accumulator = operation(index, get(index), accumulator)
        --index
    }
    return accumulator
}
```

Accumulates value starting with the last element and applying [operation] from right to left to each element with its index in the original array and current accumulator value.

Throws an exception if this array is empty. If the array can be empty in an expected way, please use [reduceRightIndexedOrNull] instead. It returns `null` when its receiver is empty.

`@param [operation]` function that takes the index of an element, the element itself and current accumulator value, and calculates the next accumulator value.

`@sample samples.collections.Collections.Aggregates.reduceRight`

```
public inline fun
LongArray.reduceRightIndexed(operation: (index: Int, Long, acc: Long) -> Long): Long {
    var index = lastIndex
    if (index < 0) throw UnsupportedOperationException("Empty array can't be reduced.")
    var accumulator = get(index--)
    while (index >= 0) {
        accumulator = operation(index, get(index), accumulator)
        --index
    }
    return accumulator
}
```

Accumulates value starting with the last element and applying [operation] from right to left to each element with its index in the original array and current accumulator value.

Throws an exception if this array is empty. If the array can be empty in an expected way, please use [reduceRightIndexedOrNull] instead. It returns `null` when its receiver is empty.

`@param [operation]` function that takes the index of an element, the element itself and current accumulator value, and calculates the next accumulator value.

`@sample samples.collections.Collections.Aggregates.reduceRight`

```
public inline fun
FloatArray.reduceRightIndexed(operation: (index: Int, Float, acc: Float) -> Float): Float {
    var index = lastIndex
    if (index < 0) throw UnsupportedOperationException("Empty array can't be reduced.")
    var accumulator = get(index--)
    while (index >= 0) {
        accumulator = operation(index, get(index), accumulator)
        --index
    }
    return accumulator
}
```

Accumulates value starting with the last element and applying [operation] from right to left to each element with its index in the original array and

current accumulator value.  
 Throws an exception if this array is empty. If the array can be empty in an expected way, please use [reduceRightIndexedOrNull] instead. It returns `null` when its receiver is empty.  
 @param [operation] function that takes the index of an element, the element itself and current accumulator value, and calculates the next accumulator value.  
 @sample  
 samples.collections.Collections.Aggregates.reduceRight

```

public inline fun DoubleArray.reduceRightIndexed(operation: (index: Int, Double, acc: Double) -> Double): Double {
    var index = lastIndex
    if (index < 0) throw UnsupportedOperationException("Empty array can't be reduced.")
    var accumulator = get(index--)
    while (index >= 0) {
        accumulator = operation(index, get(index), accumulator)
        --index
    }
    return accumulator
}

```

Accumulates value starting with the last element and applying [operation] from right to left to each element with its index in the original array and current accumulator value.  
 Throws an exception if this array is empty. If the array can be empty in an expected way, please use [reduceRightIndexedOrNull] instead. It returns `null` when its receiver is empty.  
 @param [operation] function that takes the index of an element, the element itself and current accumulator value, and calculates the next accumulator value.  
 @sample  
 samples.collections.Collections.Aggregates.reduceRight

```

public inline fun BooleanArray.reduceRightIndexed(operation: (index: Int, Boolean, acc: Boolean) -> Boolean): Boolean {
    var index = lastIndex
    if (index < 0) throw UnsupportedOperationException("Empty array can't be reduced.")
    var accumulator = get(index--)
    while (index >= 0) {
        accumulator = operation(index, get(index), accumulator)
        --index
    }
    return accumulator
}

```

Accumulates value starting with the last element and applying [operation] from right to left to each element with its index in the original array and current accumulator value.  
 Throws an exception if this array is empty. If the array can be empty in an expected way, please use [reduceRightIndexedOrNull] instead. It returns `null` when its receiver is empty.  
 @param [operation] function that takes the index of an element, the element itself and current accumulator value, and calculates the next accumulator value.  
 @sample  
 samples.collections.Collections.Aggregates.reduceRight

```

public inline fun CharArray.reduceRightIndexed(operation: (index: Int, Char, acc: Char) -> Char): Char {
    var index = lastIndex
    if (index < 0) throw UnsupportedOperationException("Empty array can't be reduced.")
    var accumulator = get(index--)
    while (index >= 0) {
        accumulator = operation(index, get(index), accumulator)
        --index
    }
    return accumulator
}

```

Accumulates value starting with the last element and applying [operation] from right to left to each element with its index in the original array and current accumulator value.  
 Returns `null` if the array is empty.  
 @param [operation] function that takes the index of an element, the element itself and current accumulator value, and calculates the next accumulator value.  
 @sample  
 samples.collections.Collections.Aggregates.reduceRightOrNull

```

@SinceKotlin("1.4")
public inline fun <S, T : S> Array<out T>.reduceRightIndexedOrNull(operation: (index: Int, T, acc: S) -> S): S? {
    var index = lastIndex
    if (index < 0) return null
    var accumulator: S = get(index--)
    while (index >= 0) {
        accumulator = operation(index, get(index), accumulator)
        --index
    }
    return accumulator
}

```

Accumulates value starting with the last element and applying [operation] from right to left to each element with its index in the original array and current accumulator value.  
 Returns `null` if the array is empty.  
 @param [operation] function that takes the index of an element, the element itself and current accumulator value, and calculates the next accumulator value.  
 @sample  
 samples.collections.Collections.Aggregates.reduceRightOrNull

```

@SinceKotlin("1.4")
public inline fun ByteArray.reduceRightIndexedOrNull(operation: (index: Int, Byte, acc: Byte) -> Byte): Byte? {
    var index = lastIndex
    if (index < 0) return null
    var accumulator = get(index--)
    while (index >= 0) {
        accumulator = operation(index, get(index), accumulator)
        --index
    }
    return accumulator
}

```

Accumulates value starting with the last element and applying [operation] from right to left to each element with its index in the original array and current accumulator value.  
 Returns `null` if the array is empty.  
 @param [operation] function that takes the index of an element, the element itself and current accumulator value,

\* and calculates the next accumulator value.

```

    @sample samples.collections.Collections.Aggregates.reduceRightOrNull
    *^@SinceKotlin("1.4")
    public inline fun ShortArray.reduceRightIndexedOrNull(operation: (index: Int, Short,
    acc: Short) -> Short): Short? {
        var index = lastIndex
        if (index < 0) return null
        var accumulator =
        get(index--)
        while (index >= 0) {
            accumulator = operation(index, get(index), accumulator)
            --index
        }
        return accumulator
    }
    ** Accumulates value starting with the last element and applying [operation]
    from right to left
    * to each element with its index in the original array and current accumulator value.
    * Returns `null` if the array is empty.
    * @param [operation] function that takes the index of an element, the
    element itself and current accumulator value.
    * and calculates the next accumulator value.
    * @sample
    samples.collections.Collections.Aggregates.reduceRightOrNull
    *^@SinceKotlin("1.4")
    public
    inline fun IntArray.reduceRightIndexedOrNull(operation: (index: Int, Int, acc: Int) -> Int): Int? {
        var index =
        lastIndex
        if (index < 0) return null
        var accumulator = get(index--)
        while (index >= 0) {
            accumulator = operation(index, get(index), accumulator)
            --index
        }
        return accumulator
    }
    ** Accumulates value starting with the last element and applying [operation] from right to left
    * to each element with
    its index in the original array and current accumulator value.
    * Returns `null` if the array is empty.
    * @param [operation] function that takes the index of an element, the element itself and current accumulator value,
    * and calculates the next accumulator value.
    * @sample
    samples.collections.Collections.Aggregates.reduceRightOrNull
    *^@SinceKotlin("1.4")
    public inline fun
    LongArray.reduceRightIndexedOrNull(operation: (index: Int, Long, acc: Long) -> Long): Long? {
        var index =
        lastIndex
        if (index < 0) return null
        var accumulator = get(index--)
        while (index >= 0) {
            accumulator =
            operation(index, get(index), accumulator)
            --index
        }
        return accumulator
    }
    ** Accumulates
    value starting with the last element and applying [operation] from right to left
    * to each element with its index in
    the original array and current accumulator value.
    * Returns `null` if the array is empty.
    * @param
    [operation] function that takes the index of an element, the element itself and current accumulator value,
    * and
    calculates the next accumulator value.
    * @sample
    samples.collections.Collections.Aggregates.reduceRightOrNull
    *^@SinceKotlin("1.4")
    public inline fun
    FloatArray.reduceRightIndexedOrNull(operation: (index: Int, Float, acc: Float) -> Float): Float? {
        var index =
        lastIndex
        if (index < 0) return null
        var accumulator = get(index--)
        while (index >= 0) {
            accumulator = operation(index,
            get(index), accumulator)
            --index
        }
        return accumulator
    }
    ** Accumulates value starting with
    the last element and applying [operation] from right to left
    * to each element with its index in the original array
    and current accumulator value.
    * Returns `null` if the array is empty.
    * @param [operation] function
    that takes the index of an element, the element itself and current accumulator value,
    * and calculates the next
    accumulator value.
    * @sample
    samples.collections.Collections.Aggregates.reduceRightOrNull
    *^@SinceKotlin("1.4")
    public inline fun DoubleArray.reduceRightIndexedOrNull(operation: (index: Int,
    Double, acc: Double) -> Double): Double? {
        var index = lastIndex
        if (index < 0) return null
        var
        accumulator = get(index--)
        while (index >= 0) {
            accumulator = operation(index, get(index),
            accumulator)
            --index
        }
        return accumulator
    }
    ** Accumulates value starting
    with the last element and applying [operation] from right to left
    * to each element with its index in the original
    array and current accumulator value.
    * Returns `null` if the array is empty.
    * @param [operation]
    function that takes the index of an element, the element itself and current accumulator value,
    * and calculates the next
    accumulator value.
    * @sample
    samples.collections.Collections.Aggregates.reduceRightOrNull
    *^@SinceKotlin("1.4")
    public inline fun BooleanArray.reduceRightIndexedOrNull(operation: (index: Int,
    Boolean, acc: Boolean) -> Boolean): Boolean? {
        var index = lastIndex
        if (index < 0) return null
        var
        accumulator = get(index--)
        while (index >= 0) {
            accumulator = operation(index, get(index),
            accumulator)
            --index
        }
        return accumulator
    }
    ** Accumulates value starting with the last
    element and applying [operation] from right to left
    * to each element with its index in the original array

```

```

and current accumulator value.\n * \n * Returns `null` if the array is empty.\n * \n * @param [operation] function
that takes the index of an element, the element itself and current accumulator value,\n * and calculates the next
accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduceRightOrNull\n
*\n@SinceKotlin("1.4")\npublic inline fun CharArray.reduceRightIndexedOrNull(operation: (index: Int, Char,
acc: Char) -> Char): Char? {\n    var index = lastIndex\n    if (index < 0) return null\n    var accumulator = get(index-
-)\n    while (index >= 0) {\n        accumulator = operation(index, get(index), accumulator)\n        --index\n    }\n    return accumulator\n}\n\n/>\n * Accumulates value starting with the last element and applying [operation] from
right to left\n * to each element and current accumulator value.\n * \n * Returns `null` if the array is empty.\n * \n *
@param [operation] function that takes an element and current accumulator value,\n
* and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceRightOrNull\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic inline fun <S, T : S>
Array<out T>.reduceRightOrNull(operation: (T, acc: S) -> S): S? {\n    var index = lastIndex\n    if (index < 0)
return null\n    var accumulator: S = get(index--)\n    while (index >= 0) {\n        accumulator = operation(get(index-
-), accumulator)\n    }\n    return accumulator\n}\n\n/>\n * Accumulates value starting with the last element and
applying [operation] from right to left\n * to each element and current accumulator value.\n * \n * Returns `null` if
the array is empty.\n * \n * @param [operation] function that takes an element and current accumulator value,\n *
and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceRightOrNull\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic
inline fun ByteArray.reduceRightOrNull(operation: (Byte, acc: Byte) -> Byte): Byte? {\n    var index = lastIndex\n
if (index < 0) return null\n    var accumulator = get(index--)\n    while (index >= 0) {\n        accumulator =
operation(get(index--), accumulator)\n    }\n    return accumulator\n}\n\n/>\n * Accumulates value starting with the
last element and applying [operation] from right to left\n * to each element and current accumulator value.\n * \n *
Returns `null` if the array is empty.\n * \n * @param [operation] function that takes an element and current
accumulator value,\n * and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceRightOrNull\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic inline fun
ShortArray.reduceRightOrNull(operation: (Short, acc: Short) -> Short): Short? {\n    var index = lastIndex\n    if
(index < 0) return null\n    var accumulator = get(index--)\n
    while (index >= 0) {\n        accumulator = operation(get(index--), accumulator)\n    }\n    return
accumulator\n}\n\n/>\n * Accumulates value starting with the last element and applying [operation] from right to
left\n * to each element and current accumulator value.\n * \n * Returns `null` if the array is empty.\n * \n * @param
[operation] function that takes an element and current accumulator value,\n * and calculates the next accumulator
value.\n * \n * @sample samples.collections.Collections.Aggregates.reduceRightOrNull\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic inline fun
IntArray.reduceRightOrNull(operation: (Int, acc: Int) -> Int): Int? {\n    var index = lastIndex\n    if (index < 0)
return null\n    var accumulator = get(index--)\n    while (index >= 0) {\n        accumulator = operation(get(index-
-), accumulator)\n    }\n    return accumulator\n}\n\n/>\n * Accumulates value starting with the last element and
applying [operation]
from right to left\n * to each element and current accumulator value.\n * \n * Returns `null` if the array is empty.\n
\n * \n * @param [operation] function that takes an element and current accumulator value,\n * and calculates the next
accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduceRightOrNull\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic inline fun
LongArray.reduceRightOrNull(operation: (Long, acc: Long) -> Long): Long? {\n    var index = lastIndex\n    if
(index < 0) return null\n    var accumulator = get(index--)\n    while (index >= 0) {\n        accumulator =
operation(get(index--), accumulator)\n    }\n    return accumulator\n}\n\n/>\n * Accumulates value starting with the
last element and applying [operation] from right to left\n * to each element and current accumulator value.\n * \n *

```

Returns `null` if the array is empty.

`@param [operation]` function that takes an element and current accumulator value, and calculates the next accumulator value.

`@sample`

```

samples.collections.Collections.Aggregates.reduceRightOrNull

*/\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic inline fun
FloatArray.reduceRightOrNull(operation: (Float, acc: Float) -> Float): Float? {\n  var index = lastIndex\n  if
(index < 0) return null\n  var accumulator = get(index--)\n  while (index >= 0) {\n    accumulator =
operation(get(index--), accumulator)\n  }\n  return accumulator\n}\n\n/**\n * Accumulates value starting with the
last element and applying [operation] from right to left\n * to each element and current accumulator value.\n * \n *
Returns `null` if the array is empty.\n * \n * @param [operation] function that takes an element and current
accumulator value,\n * and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceRightOrNull

*/\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic
inline fun DoubleArray.reduceRightOrNull(operation: (Double, acc: Double) -> Double): Double? {\n  var index
= lastIndex\n  if (index < 0) return null\n  var accumulator = get(index--)\n  while (index >= 0) {\n
accumulator = operation(get(index--), accumulator)\n  }\n  return accumulator\n}\n\n/**\n * Accumulates value
starting with the last element and applying [operation] from right to left\n * to each element and current accumulator
value.\n * \n * Returns `null` if the array is empty.\n * \n * @param [operation] function that takes an element and
current accumulator value,\n * and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceRightOrNull

*/\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic inline fun
BooleanArray.reduceRightOrNull(operation: (Boolean, acc: Boolean) -> Boolean): Boolean? {\n  var index =
lastIndex\n  if (index < 0) return null\n
  var accumulator = get(index--)\n  while (index >= 0) {\n    accumulator = operation(get(index--),
accumulator)\n  }\n  return accumulator\n}\n\n/**\n * Accumulates value starting with the last element and
applying [operation] from right to left\n * to each element and current accumulator value.\n * \n * Returns `null` if
the array is empty.\n * \n * @param [operation] function that takes an element and current accumulator value,\n *
and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceRightOrNull

*/\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic inline fun
CharArray.reduceRightOrNull(operation: (Char, acc: Char) -> Char): Char? {\n  var index = lastIndex\n  if (index
< 0) return null\n  var accumulator = get(index--)\n  while (index >= 0) {\n    accumulator =
operation(get(index--), accumulator)\n  }\n  return accumulator\n}\n\n/**\n * Returns a list containing successive
accumulation values generated by applying [operation] from left to right\n * to each element and current
accumulator value that starts with [initial] value.\n * \n * Note that `acc` value passed to [operation] function should
not be mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n * @param [operation]
function that takes current accumulator value and an element, and calculates the next accumulator value.\n * \n *
@sample samples.collections.Collections.Aggregates.runningFold

*/\n@SinceKotlin("1.4")\npublic inline fun
<T, R> Array<out T>.runningFold(initial: R, operation: (acc: R, T) -> R): List<R> {\n  if (isEmpty()) return
listOf(initial)\n  val result = ArrayList<R>(size + 1).apply { add(initial) }\n  var accumulator = initial\n  for
(element in this) {\n    accumulator = operation(accumulator, element)\n    result.add(accumulator)\n  }\n  return result\n}\n\n/**\n * Returns a list containing successive accumulation
values generated by applying [operation] from left to right\n * to each element and current accumulator value that
starts with [initial] value.\n * \n * Note that `acc` value passed to [operation] function should not be mutated;\n *
otherwise it would affect the previous value in resulting list.\n * \n * @param [operation] function that takes current
accumulator value and an element, and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.runningFold

*/\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun <R> ByteArray.runningFold(initial: R,

```

operation: (acc: R, Byte) -> R): List<R> {\n if (isEmpty()) return listOf(initial)\n val result = ArrayList<R>(size + 1).apply { add(initial) }\n var accumulator = initial\n for (element in this) {\n accumulator = operation(accumulator, element)\n result.add(accumulator)\n }\n return result\n}\n\n\*\*\n \* Returns a list containing successive accumulation

values generated by applying [operation] from left to right\n \* to each element and current accumulator value that starts with [initial] value.\n \* \n \* Note that `acc` value passed to [operation] function should not be mutated;\n \* otherwise it would affect the previous value in resulting list.\n \* \n \* @param [operation] function that takes current accumulator value and an element, and calculates the next accumulator value.\n \* \n \* @sample

samples.collections.Collections.Aggregates.runningFold\n

```
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun <R> ShortArray.runningFold(initial: R, operation: (acc: R, Short) -> R): List<R> {\n if (isEmpty()) return listOf(initial)\n val result = ArrayList<R>(size + 1).apply { add(initial) }\n var accumulator = initial\n for (element in this) {\n accumulator = operation(accumulator, element)\n result.add(accumulator)\n }\n return result\n}\n\n**\n * Returns a list containing successive accumulation
```

values generated by applying [operation] from left to right\n \* to each element and current accumulator value that starts with [initial] value.\n \* \n \* Note that `acc` value passed to [operation] function should not be mutated;\n \* otherwise it would affect the previous value in resulting list.\n \* \n \* @param [operation] function that takes current accumulator value and an element, and calculates the next accumulator value.\n \* \n \* @sample

samples.collections.Collections.Aggregates.runningFold\n

```
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun <R> IntArray.runningFold(initial: R, operation: (acc: R, Int) -> R): List<R> {\n if (isEmpty()) return listOf(initial)\n val result = ArrayList<R>(size + 1).apply { add(initial) }\n var accumulator = initial\n for (element in this) {\n accumulator = operation(accumulator, element)\n result.add(accumulator)\n }\n return result\n}\n\n**\n * Returns a list containing successive
```

accumulation values generated by applying [operation] from left to right\n \* to each element and current accumulator value that starts with [initial] value.\n \* \n \* Note that `acc` value passed to [operation] function should not be mutated;\n \* otherwise it would affect the previous value in resulting list.\n \* \n \* @param [operation] function that takes current accumulator value and an element, and calculates the next accumulator value.\n \* \n \* @sample

samples.collections.Collections.Aggregates.runningFold\n

```
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun <R> LongArray.runningFold(initial: R, operation: (acc: R, Long) -> R): List<R> {\n if (isEmpty()) return listOf(initial)\n val result = ArrayList<R>(size + 1).apply { add(initial) }\n var accumulator = initial\n for (element in this) {\n accumulator = operation(accumulator, element)\n result.add(accumulator)\n }\n return result\n}\n\n**\n * Returns a list containing successive
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accumulation values generated by applying [operation] from left to right\n \* to each element and current accumulator value that starts with [initial] value.\n \* \n \* Note that `acc` value passed to [operation] function should not be mutated;\n \* otherwise it would affect the previous value in resulting list.\n \* \n \* @param [operation] function that takes current accumulator value and an element, and calculates the next accumulator value.\n \* \n \* @sample

samples.collections.Collections.Aggregates.runningFold\n

```
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun <R> FloatArray.runningFold(initial: R, operation: (acc: R, Float) -> R): List<R> {\n if (isEmpty()) return listOf(initial)\n val result = ArrayList<R>(size + 1).apply { add(initial) }\n var accumulator = initial\n for (element in this) {\n accumulator = operation(accumulator, element)\n result.add(accumulator)\n }\n return result\n}\n\n**\n * Returns a list containing successive
```

accumulation values generated by applying [operation] from left to right\n \* to each element and current accumulator value that starts with [initial] value.\n \* \n \* Note that `acc` value passed to [operation] function should not be mutated;\n \* otherwise it would affect the previous value in resulting list.\n \* \n \* @param [operation] function that takes current accumulator value and an element, and calculates the next accumulator value.\n \* \n \* @sample



```
@sample samples.collections.Collections.Aggregates.runningFold\n
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun <R> DoubleArray.runningFold(initial: R,
operation: (acc: R, Double) -> R): List<R> {\n if (isEmpty()) return listOf(initial)\n val result =
ArrayList<R>(size + 1).apply { add(initial) }\n var accumulator = initial\n for (element in this) {\n
accumulator = operation(accumulator, element)\n result.add(accumulator)\n }\n return result\n}\n\n/**\n *
Returns a list containing
successive accumulation values generated by applying [operation] from left to right\n * to each element and current
accumulator value that starts with [initial] value.\n * \n * Note that `acc` value passed to [operation] function should
not be mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n * @param [operation]
function that takes current accumulator value and an element, and calculates the next accumulator value.\n * \n *
@sample samples.collections.Collections.Aggregates.runningFold\n
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun <R> BooleanArray.runningFold(initial:
R, operation: (acc: R, Boolean) -> R): List<R> {\n if (isEmpty()) return listOf(initial)\n val result =
ArrayList<R>(size + 1).apply { add(initial) }\n var accumulator = initial\n for (element in this) {\n
accumulator = operation(accumulator, element)\n result.add(accumulator)\n }\n return result\n}\n\n/**\n *
Returns a
list containing successive accumulation values generated by applying [operation] from left to right\n * to each
element and current accumulator value that starts with [initial] value.\n * \n * Note that `acc` value passed to
[operation] function should not be mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n *
@param [operation] function that takes current accumulator value and an element, and calculates the next
accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.runningFold\n
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun <R> CharArray.runningFold(initial: R,
operation: (acc: R, Char) -> R): List<R> {\n if (isEmpty()) return listOf(initial)\n val result = ArrayList<R>(size
+ 1).apply { add(initial) }\n var accumulator = initial\n for (element in this) {\n accumulator =
operation(accumulator, element)\n result.add(accumulator)\n }\n return result\n}\n\n/**\n * Returns
a list containing successive accumulation values generated by applying [operation] from left to right\n * to each
element, its index in the original array and current accumulator value that starts with [initial] value.\n * \n * Note
that `acc` value passed to [operation] function should not be mutated;\n * otherwise it would affect the previous
value in resulting list.\n * \n * @param [operation] function that takes the index of an element, current accumulator
value\n * and the element itself, and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.runningFold\n
*\n@SinceKotlin("1.4")\npublic inline fun <T, R>
Array<out T>.runningFoldIndexed(initial: R, operation: (index: Int, acc: R, T) -> R): List<R> {\n if (isEmpty())
return listOf(initial)\n val result = ArrayList<R>(size + 1).apply { add(initial) }\n var accumulator = initial\n
for (index in indices) {\n accumulator = operation(index, accumulator, this[index])\n
result.add(accumulator)\n }\n return result\n}\n\n/**\n * Returns a list containing successive accumulation
values generated by applying [operation] from left to right\n * to each element, its index in the original array and
current accumulator value that starts with [initial] value.\n * \n * Note that `acc` value passed to [operation] function
should not be mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n * @param [operation]
function that takes the index of an element, current accumulator value\n * and the element itself, and calculates the
next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.runningFold\n
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun <R>
ByteArray.runningFoldIndexed(initial: R, operation: (index: Int, acc: R, Byte) -> R): List<R> {\n if (isEmpty())
return listOf(initial)\n val result = ArrayList<R>(size + 1).apply { add(initial) }\n var accumulator
= initial\n for (index in indices) {\n accumulator = operation(index, accumulator, this[index])\n
result.add(accumulator)\n }\n return result\n}\n\n/**\n * Returns a list containing successive accumulation
values generated by applying [operation] from left to right\n * to each element, its index in the original array and
current accumulator value that starts with [initial] value.\n * \n * Note that `acc` value passed to [operation] function
should not be mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n * @param [operation]
function
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function that takes the index of an element, current accumulator value\n * and the element itself, and calculates the
next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.runningFold\n
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun <R>
ShortArray.runningFoldIndexed(initial: R, operation: (index: Int, acc: R, Short) -> R): List<R> {\n  if (isEmpty())
return
  listOf(initial)\n  val result = ArrayList<R>(size + 1).apply { add(initial) }\n  var accumulator = initial\n  for
(index in indices) {\n    accumulator = operation(index, accumulator, this[index])\n    result.add(accumulator)\n
  }\n  return result\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying
[operation] from left to right\n * to each element, its index in the original array and current accumulator value that
starts with [initial] value.\n * \n * Note that `acc` value passed to [operation] function should not be mutated;\n *
otherwise it would affect the previous value in resulting list.\n * \n * @param [operation] function that takes the
index of an element, current accumulator value\n * and the element itself, and calculates the next accumulator
value.\n * \n * @sample samples.collections.Collections.Aggregates.runningFold\n
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun <R>
IntArray.runningFoldIndexed(initial:
R, operation: (index: Int, acc: R, Int) -> R): List<R> {\n  if (isEmpty()) return listOf(initial)\n  val result =
ArrayList<R>(size + 1).apply { add(initial) }\n  var accumulator = initial\n  for (index in indices) {\n
accumulator = operation(index, accumulator, this[index])\n    result.add(accumulator)\n  }\n  return
result\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying [operation] from
left to right\n * to each element, its index in the original array and current accumulator value that starts with [initial]
value.\n * \n * Note that `acc` value passed to [operation] function should not be mutated;\n * otherwise it would
affect the previous value in resulting list.\n * \n * @param [operation] function that takes the index of an element,
current accumulator value\n * and the element itself, and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.runningFold\n
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun <R>
LongArray.runningFoldIndexed(initial: R, operation: (index: Int, acc: R, Long) -> R): List<R> {\n  if (isEmpty())
return listOf(initial)\n  val result = ArrayList<R>(size + 1).apply { add(initial) }\n  var accumulator = initial\n
for (index in indices) {\n    accumulator = operation(index, accumulator, this[index])\n    result.add(accumulator)\n
  }\n  return result\n}\n\n/**\n * Returns a list containing successive accumulation
values generated by applying [operation] from left to right\n * to each element, its index in the original array and
current accumulator value that starts with [initial] value.\n * \n * Note that `acc` value passed to [operation] function
should not be mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n * @param [operation]
function that takes the index of an element, current accumulator value\n * and the element itself,
and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.runningFold\n
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun <R>
FloatArray.runningFoldIndexed(initial: R, operation: (index: Int, acc: R, Float) -> R): List<R> {\n  if (isEmpty())
return listOf(initial)\n  val result = ArrayList<R>(size + 1).apply { add(initial) }\n  var accumulator = initial\n
for (index in indices) {\n    accumulator = operation(index, accumulator, this[index])\n    result.add(accumulator)\n
  }\n  return result\n}\n\n/**\n * Returns a list containing successive accumulation
values generated by applying [operation] from left to right\n * to each element, its index in the original array and
current accumulator value that starts with [initial] value.\n * \n * Note that `acc` value passed to [operation] function
should not be mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n * @param [operation]
function that takes the index of an element, current accumulator value\n * and the element itself, and calculates the
next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.runningFold\n
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun <R>
DoubleArray.runningFoldIndexed(initial: R, operation: (index: Int, acc: R, Double) -> R): List<R> {\n  if
(isEmpty()) return listOf(initial)\n  val result = ArrayList<R>(size + 1).apply { add(initial) }\n  var accumulator =

```

initial\n for (index in indices) {\n accumulator = operation(index, accumulator, this[index])\n result.add(accumulator)\n }\n return result\n}\n\n/\*\*\n \* Returns a list containing successive accumulation values generated by applying [operation] from left to right\n \* to each element, its index in the original array and current accumulator value that starts with [initial] value.\n \* \n \* Note that `acc` value passed to [operation] function should

not be mutated;\n \* otherwise it would affect the previous value in resulting list.\n \* \n \* @param [operation] function that takes the index of an element, current accumulator value\n \* and the element itself, and calculates the next accumulator value.\n \* \n \* @sample samples.collections.Collections.Aggregates.runningFold\n

```
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun <R>
```

```
BooleanArray.runningFoldIndexed(initial: R, operation: (index: Int, acc: R, Boolean) -> R): List<R> {\n if (isEmpty()) return listOf(initial)\n val result = ArrayList<R>(size + 1).apply { add(initial) }\n var accumulator = initial\n for (index in indices) {\n accumulator = operation(index, accumulator, this[index])\n result.add(accumulator)\n }\n return result\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying [operation] from left to right\n * to each element, its index in the original array and current accumulator
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value that starts with [initial] value.\n * \n * Note that `acc` value passed to [operation] function should not be mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n * @param [operation] function that takes the index of an element, current accumulator value\n * and the element itself, and calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.runningFold\n
```

```
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun <R>
```

```
CharArray.runningFoldIndexed(initial: R, operation: (index: Int, acc: R, Char) -> R): List<R> {\n if (isEmpty()) return listOf(initial)\n val result = ArrayList<R>(size + 1).apply { add(initial) }\n var accumulator = initial\n for (index in indices) {\n accumulator = operation(index, accumulator, this[index])\n result.add(accumulator)\n }\n return result\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying
```

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[operation] from left to right\n * to each element and current accumulator value that starts with the first element of this array.\n * \n * Note that `acc` value passed to [operation] function should not be mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n * @param [operation] function that takes current accumulator value and the element, and calculates the next accumulator value.\n * \n * @sample
```

```
samples.collections.Collections.Aggregates.runningReduce\n
```

```
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic inline fun <S, T : S>
```

```
Array<out T>.runningReduce(operation: (acc: S, T) -> S): List<S> {\n if (isEmpty()) return emptyList()\n var accumulator: S = this[0]\n val result = ArrayList<S>(size).apply { add(accumulator) }\n for (index in 1 until size) {\n accumulator = operation(accumulator, this[index])\n result.add(accumulator)\n }\n return result\n}\n\n/**\n * Returns a list containing
```

```
successive accumulation values generated by applying [operation] from left to right\n * to each element and current accumulator value that starts with the first element of this array.\n * \n * @param [operation] function that takes current accumulator value and an element, and calculates the next accumulator value.\n * \n * @sample
```

```
samples.collections.Collections.Aggregates.runningReduce\n
```

```
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun ByteArray.runningReduce(operation:
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```
(acc: Byte, Byte) -> Byte): List<Byte> {\n if (isEmpty()) return emptyList()\n var accumulator = this[0]\n val result = ArrayList<Byte>(size).apply { add(accumulator) }\n for (index in 1 until size) {\n accumulator = operation(accumulator, this[index])\n result.add(accumulator)\n }\n return result\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying [operation] from left to right\n * to each element and current accumulator
```

```
value that starts with the first element of this array.\n * \n * @param [operation] function that takes current accumulator value and an element, and calculates the next accumulator value.\n * \n * @sample
```

```
samples.collections.Collections.Aggregates.runningReduce\n
```

```
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun ShortArray.runningReduce(operation:  
(acc: Short, Short) -> Short): List<Short> {\n    if (isEmpty()) return emptyList()\n    var accumulator = this[0]\n    val result = ArrayList<Short>(size).apply { add(accumulator) }\n    for (index in 1 until size) {\n        accumulator =  
operation(accumulator, this[index])\n        result.add(accumulator)\n    }\n    return result\n}\n\n/**\n * Returns a list  
containing successive accumulation values generated by applying [operation] from left to right\n * to each element  
and current accumulator value that starts with the first element of this array.\n * \n * @param [operation] function  
that takes current accumulator
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value and an element, and calculates the next accumulator value.\n * \n * @sample  
samples.collections.Collections.Aggregates.runningReduce\n
```

```
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun IntArray.runningReduce(operation: (acc:  
Int, Int) -> Int): List<Int> {\n    if (isEmpty()) return emptyList()\n    var accumulator = this[0]\n    val result =  
ArrayList<Int>(size).apply { add(accumulator) }\n    for (index in 1 until size) {\n        accumulator =  
operation(accumulator, this[index])\n        result.add(accumulator)\n    }\n    return result\n}\n\n/**\n * Returns a list  
containing successive accumulation values generated by applying [operation] from left to right\n * to each element  
and current accumulator value that starts with the first element of this array.\n * \n * @param [operation] function  
that takes current accumulator value and an element, and calculates the next accumulator value.\n * \n * @sample  
samples.collections.Collections.Aggregates.runningReduce\n
```

```
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun LongArray.runningReduce(operation:  
(acc: Long, Long) -> Long): List<Long> {\n    if (isEmpty()) return emptyList()\n    var accumulator = this[0]\n    val result = ArrayList<Long>(size).apply { add(accumulator) }\n    for (index in 1 until size) {\n        accumulator =  
operation(accumulator, this[index])\n        result.add(accumulator)\n    }\n    return result\n}\n\n/**\n * Returns a list  
containing successive accumulation values generated by applying [operation] from left to right\n * to each element  
and current accumulator value that starts with the first element of this array.\n * \n * @param [operation] function  
that takes current accumulator value and an element, and calculates the next accumulator value.\n * \n * @sample  
samples.collections.Collections.Aggregates.runningReduce\n
```

```
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun FloatArray.runningReduce(operation:  
(acc:  
Float, Float) -> Float): List<Float> {\n    if (isEmpty()) return emptyList()\n    var accumulator = this[0]\n    val  
result = ArrayList<Float>(size).apply { add(accumulator) }\n    for (index in 1 until size) {\n        accumulator =  
operation(accumulator, this[index])\n        result.add(accumulator)\n    }\n    return result\n}\n\n/**\n * Returns a list  
containing successive accumulation values generated by applying [operation] from left to right\n * to each element  
and current accumulator value that starts with the first element of this array.\n * \n * @param [operation] function  
that takes current accumulator value and an element, and calculates the next accumulator value.\n * \n * @sample  
samples.collections.Collections.Aggregates.runningReduce\n
```

```
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun DoubleArray.runningReduce(operation:  
(acc: Double, Double) -> Double): List<Double> {\n    if (isEmpty()) return emptyList()\n    var accumulator =  
this[0]\n    val  
result = ArrayList<Double>(size).apply { add(accumulator) }\n    for (index in 1 until size) {\n        accumulator =  
operation(accumulator, this[index])\n        result.add(accumulator)\n    }\n    return result\n}\n\n/**\n * Returns a list  
containing successive accumulation values generated by applying [operation] from left to right\n * to each element  
and current accumulator value that starts with the first element of this array.\n * \n * @param [operation] function  
that takes current accumulator value and an element, and calculates the next accumulator value.\n * \n * @sample  
samples.collections.Collections.Aggregates.runningReduce\n
```

```
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun BooleanArray.runningReduce(operation:  
(acc: Boolean, Boolean) -> Boolean): List<Boolean> {\n    if (isEmpty()) return emptyList()\n    var accumulator =  
this[0]\n    val result = ArrayList<Boolean>(size).apply { add(accumulator) }\n    for (index in 1 until size) {\n        accumulator
```

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= operation(accumulator, this[index])\n    result.add(accumulator)\n    }\n    return result\n}\n\n/**\n * Returns a
list containing successive accumulation values generated by applying [operation] from left to right\n * to each
element and current accumulator value that starts with the first element of this array.\n * \n * @param [operation]
function that takes current accumulator value and an element, and calculates the next accumulator value.\n * \n *
@sample samples.collections.Collections.Aggregates.runningReduce\n
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun CharArray.runningReduce(operation:
(acc: Char, Char) -> Char): List<Char> {\n    if (isEmpty()) return emptyList()\n    var accumulator = this[0]\n    val
result = ArrayList<Char>(size).apply { add(accumulator) }\n    for (index in 1 until size) {\n        accumulator =
operation(accumulator, this[index])\n        result.add(accumulator)\n    }\n    return result\n}\n\n/**\n * Returns
a list containing successive accumulation values generated by applying [operation] from left to right\n * to each
element, its index in the original array and current accumulator value that starts with the first element of this array.\n
* \n * Note that `acc` value passed to [operation] function should not be mutated;\n * otherwise it would affect the
previous value in resulting list.\n * \n * @param [operation] function that takes the index of an element, current
accumulator value\n * and the element itself, and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.runningReduce\n
*\n@SinceKotlin("1.4")\npublic inline fun <S, T :
S> Array<out T>.runningReduceIndexed(operation: (index: Int, acc: S, T) -> S): List<S> {\n    if (isEmpty()) return
emptyList()\n    var accumulator: S = this[0]\n    val result = ArrayList<S>(size).apply { add(accumulator) }\n    for
(index in 1 until size) {\n        accumulator = operation(index, accumulator,
this[index])\n        result.add(accumulator)\n    }\n    return result\n}\n\n/**\n * Returns a list containing successive
accumulation values generated by applying [operation] from left to right\n * to each element, its index in the original
array and current accumulator value that starts with the first element of this array.\n * \n * @param [operation]
function that takes the index of an element, current accumulator value\n * and the element itself, and calculates the
next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.runningReduce\n
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun
ByteArray.runningReduceIndexed(operation: (index: Int, acc: Byte, Byte) -> Byte): List<Byte> {\n    if (isEmpty())
return emptyList()\n    var accumulator = this[0]\n    val result = ArrayList<Byte>(size).apply { add(accumulator)
}\n    for (index in 1 until size) {\n        accumulator = operation(index, accumulator, this[index])\n    }\n    result.add(accumulator)\n
}\n    return result\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying
[operation] from left to right\n * to each element, its index in the original array and current accumulator value that
starts with the first element of this array.\n * \n * @param [operation] function that takes the index of an element,
current accumulator value\n * and the element itself, and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.runningReduce\n
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun
ShortArray.runningReduceIndexed(operation: (index: Int, acc: Short, Short) -> Short): List<Short> {\n    if
(isEmpty()) return emptyList()\n    var accumulator = this[0]\n    val result = ArrayList<Short>(size).apply {
add(accumulator) }\n    for (index in 1 until size) {\n        accumulator = operation(index, accumulator, this[index])\n
    }\n    result.add(accumulator)\n    }\n    return result\n}\n\n/**\n * Returns a list containing successive accumulation
values generated by applying
[operation] from left to right\n * to each element, its index in the original array and current accumulator value that
starts with the first element of this array.\n * \n * @param [operation] function that takes the index of an element,
current accumulator value\n * and the element itself, and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.runningReduce\n
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun
IntArray.runningReduceIndexed(operation: (index: Int, acc: Int, Int) -> Int): List<Int> {\n    if (isEmpty()) return
emptyList()\n    var accumulator = this[0]\n    val result = ArrayList<Int>(size).apply { add(accumulator) }\n    for
(index in 1 until size) {\n        accumulator = operation(index, accumulator, this[index])\n    }\n    result.add(accumulator)\n    }\n    return result\n}\n\n/**\n * Returns

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a list containing successive accumulation values generated by applying [operation] from left to right\n \* to each element, its index in the original array and current accumulator value that starts with the first element of this array.\n \* \n \* @param [operation] function that takes the index of an element, current accumulator value\n \* and the element itself, and calculates the next accumulator value.\n \* \n \* @sample samples.collections.Collections.Aggregates.runningReduce\n \* \n @SinceKotlin("1.4")\n @kotlin.internal.InlineOnly\n public inline fun

LongArray.runningReduceIndexed(operation: (index: Int, acc: Long, Long) -> Long): List<Long> {\n if (isEmpty()) return emptyList()\n var accumulator = this[0]\n val result = ArrayList<Long>(size).apply { add(accumulator) }\n for (index in 1 until size) {\n accumulator = operation(index, accumulator, this[index])\n result.add(accumulator)\n }\n return result\n }\n\n/\*\*\n \* Returns a list containing successive accumulation values generated by applying [operation] from left to right\n \* to each element, its index in the original array and current accumulator value that starts with the first element of this array.\n \* \n \* @param [operation] function that takes the index of an element, current accumulator value\n \* and the element itself, and calculates the next accumulator value.\n \* \n \* @sample samples.collections.Collections.Aggregates.runningReduce\n \* \n @SinceKotlin("1.4")\n @kotlin.internal.InlineOnly\n public inline fun

FloatArray.runningReduceIndexed(operation: (index: Int, acc: Float, Float) -> Float): List<Float> {\n if (isEmpty()) return emptyList()\n var accumulator = this[0]\n val result = ArrayList<Float>(size).apply { add(accumulator) }\n for (index in 1 until size) {\n accumulator = operation(index, accumulator, this[index])\n result.add(accumulator)\n }\n return result\n }\n\n/\*\*\n \* Returns a list containing successive accumulation values generated by applying [operation] from left to right\n \* to each element, its index in the original array and current accumulator value that starts with the first element of this array.\n \* \n \* @param [operation] function that takes the index of an element, current accumulator value\n \* and the element itself, and calculates the next accumulator value.\n \* \n \* @sample samples.collections.Collections.Aggregates.runningReduce\n \* \n @SinceKotlin("1.4")\n @kotlin.internal.InlineOnly\n public inline fun

DoubleArray.runningReduceIndexed(operation: (index: Int, acc: Double, Double) -> Double): List<Double> {\n if (isEmpty()) return emptyList()\n var accumulator = this[0]\n val result = ArrayList<Double>(size).apply { add(accumulator) }\n for (index in 1 until size) {\n accumulator = operation(index, accumulator, this[index])\n result.add(accumulator)\n }\n return result\n }\n\n/\*\*\n \* Returns a list containing successive accumulation values generated by applying [operation] from left to right\n \* to each element, its index in the original array and current accumulator value that starts with the first element of this array.\n \* \n \* @param [operation] function that takes the index of an element, current accumulator value\n \* and the element itself, and calculates the next accumulator value.\n \* \n \* @sample samples.collections.Collections.Aggregates.runningReduce\n \* \n @SinceKotlin("1.4")\n @kotlin.internal.InlineOnly\n public inline fun

BooleanArray.runningReduceIndexed(operation: (index: Int, acc: Boolean, Boolean) -> Boolean): List<Boolean> {\n if (isEmpty()) return emptyList()\n var accumulator = this[0]\n val result = ArrayList<Boolean>(size).apply { add(accumulator) }\n for (index in 1 until size) {\n accumulator = operation(index, accumulator, this[index])\n result.add(accumulator)\n }\n return result\n }\n\n/\*\*\n \* Returns a list containing successive accumulation values generated by applying [operation] from left to right\n \* to each element, its index in the original array and current accumulator value that starts with the first element of this array.\n \* \n \* @param [operation] function that takes the index of an element, current accumulator value\n \* and the element itself, and calculates the next accumulator value.\n \* \n \* @sample samples.collections.Collections.Aggregates.runningReduce\n \* \n @SinceKotlin("1.4")\n @kotlin.internal.InlineOnly\n public inline fun

CharArray.runningReduceIndexed(operation: (index: Int, acc: Char, Char) -> Char): List<Char> {\n if (isEmpty()) return emptyList()\n var accumulator = this[0]\n val result = ArrayList<Char>(size).apply { add(accumulator)

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}\n for (index in 1 until size) {\n     accumulator = operation(index, accumulator, this[index])\n
result.add(accumulator)\n } \n return result\n}\n\n/**\n * Returns a list containing successive accumulation
values generated by applying [operation] from left to right\n * to each element
and current accumulator value that starts with [initial] value.\n * \n * Note that `acc` value passed to [operation]
function should not be mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n * @param
[operation] function that takes current accumulator value and an element, and calculates the next accumulator
value.\n * \n * @sample samples.collections.Collections.Aggregates.scan\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic inline fun <T, R>
Array<out T>.scan(initial: R, operation: (acc: R, T) -> R): List<R> {\n return runningFold(initial,
operation)\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying [operation]
from left to right\n * to each element and current accumulator value that starts with [initial] value.\n * \n * Note that
`acc` value passed to [operation] function should not be mutated;\n * otherwise it would affect the previous value in
resulting list.\n
* \n * @param [operation] function that takes current accumulator value and an element, and calculates the next
accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.scan\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic
inline fun <R> ByteArray.scan(initial: R, operation: (acc: R, Byte) -> R): List<R> {\n return runningFold(initial,
operation)\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying [operation]
from left to right\n * to each element and current accumulator value that starts with [initial] value.\n * \n * Note that
`acc` value passed to [operation] function should not be mutated;\n * otherwise it would affect the previous value in
resulting list.\n * \n * @param [operation] function that takes current accumulator value and an element, and
calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.scan\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic
inline fun <R> ShortArray.scan(initial: R, operation: (acc: R, Short) -> R): List<R> {\n return
runningFold(initial, operation)\n}\n\n/**\n * Returns a list containing successive accumulation values generated by
applying [operation] from left to right\n * to each element and current accumulator value that starts with [initial]
value.\n * \n * Note that `acc` value passed to [operation] function should not be mutated;\n * otherwise it would
affect the previous value in resulting list.\n * \n * @param [operation] function that takes current accumulator value
and an element, and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.scan\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic
inline fun <R> IntArray.scan(initial: R, operation: (acc: R, Int) -> R): List<R> {\n
return runningFold(initial, operation)\n}\n\n/**\n * Returns a list containing successive accumulation values
generated by applying [operation] from left to right\n * to each element and current accumulator value that starts
with [initial] value.\n * \n * Note that `acc` value passed to [operation] function should not be mutated;\n *
otherwise it would affect the previous value in resulting list.\n * \n * @param [operation] function that takes current
accumulator value and an element, and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.scan\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic
inline fun <R> LongArray.scan(initial: R, operation: (acc: R, Long) -> R): List<R> {\n return
runningFold(initial, operation)\n}\n\n/**\n * Returns a list containing successive accumulation values generated by
applying [operation] from left to right\n * to each element and current accumulator
value that starts with [initial] value.\n * \n * Note that `acc` value passed to [operation] function should not be
mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n * @param [operation] function that
takes current accumulator value and an element, and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.scan\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic
inline fun <R> FloatArray.scan(initial: R, operation: (acc: R, Float) -> R): List<R> {\n return

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runningFold(initial, operation)\n}\n\n/**\n * Returns a list containing successive accumulation values generated by
applying [operation] from left to right\n * to each element and current accumulator value that starts with [initial]
value.\n * \n * Note that `acc` value passed to [operation] function should not be mutated;\n * otherwise it would
affect the previous value in resulting
list.\n * \n * @param [operation] function that takes current accumulator value and an element, and calculates the
next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.scan\n
*/\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic
inline fun <R> DoubleArray.scan(initial: R, operation: (acc: R, Double) -> R): List<R> {\n    return
runningFold(initial, operation)\n}\n\n/**\n * Returns a list containing successive accumulation values generated by
applying [operation] from left to right\n * to each element and current accumulator value that starts with [initial]
value.\n * \n * Note that `acc` value passed to [operation] function should not be mutated;\n * otherwise it would
affect the previous value in resulting list.\n * \n * @param [operation] function that takes current accumulator value
and an element, and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.scan\n
*/\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic
inline fun <R> BooleanArray.scan(initial: R, operation: (acc: R, Boolean) -> R): List<R> {\n    return
runningFold(initial, operation)\n}\n\n/**\n * Returns a list containing successive accumulation values generated by
applying [operation] from left to right\n * to each element and current accumulator value that starts with [initial]
value.\n * \n * Note that `acc` value passed to [operation] function should not be mutated;\n * otherwise it would
affect the previous value in resulting list.\n * \n * @param [operation] function that takes current accumulator value
and an element, and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.scan\n
*/\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic
inline fun <R> CharArray.scan(initial: R, operation: (acc: R, Char) ->
R): List<R> {\n    return runningFold(initial, operation)\n}\n\n/**\n * Returns a list containing successive
accumulation values generated by applying [operation] from left to right\n * to each element, its index in the original
array and current accumulator value that starts with [initial] value.\n * \n * Note that `acc` value passed to
[operation] function should not be mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n *
@param [operation] function that takes the index of an element, current accumulator value\n * and the element
itself, and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.scan\n
*/\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic inline fun <T, R>
Array<out T>.scanIndexed(initial: R, operation: (index: Int, acc: R, T) -> R): List<R> {\n    return
runningFoldIndexed(initial, operation)\n}\n\n/**\n * Returns a list containing successive accumulation values
generated by applying [operation] from left to right\n * to each element, its index in the original array and current
accumulator value that starts with [initial] value.\n * \n * Note that `acc` value passed to [operation] function should
not be mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n * @param [operation]
function that takes the index of an element, current accumulator value\n * and the element itself, and calculates the
next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.scan\n
*/\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic
inline fun <R> ByteArray.scanIndexed(initial: R, operation: (index: Int, acc: R, Byte) -> R): List<R> {\n    return
runningFoldIndexed(initial, operation)\n}\n\n/**\n * Returns a list containing successive accumulation values
generated by applying [operation] from left to right\n * to each element, its index in the original array
and current accumulator value that starts with [initial] value.\n * \n * Note that `acc` value passed to [operation]
function should not be mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n * @param
[operation] function that takes the index of an element, current accumulator value\n * and the element itself, and
calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.scan\n
*/\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic

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c inline fun <R> ShortArray.scanIndexed(initial: R, operation: (index: Int, acc: R, Short) -> R): List<R> {\n  return
runningFoldIndexed(initial, operation)\n}\n\n/**\n * Returns a list containing successive accumulation values
generated by applying [operation] from left to right\n * to each element, its index in the original array and current
accumulator value that starts with [initial] value.\n * \n * Note that `acc` value passed
to [operation] function should not be mutated;\n * otherwise it would affect the previous value in resulting list.\n *
\n * @param [operation] function that takes the index of an element, current accumulator value\n * and the element
itself, and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.scan\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic
c inline fun <R> IntArray.scanIndexed(initial: R, operation: (index: Int, acc: R, Int) -> R): List<R> {\n  return
runningFoldIndexed(initial, operation)\n}\n\n/**\n * Returns a list containing successive accumulation values
generated by applying [operation] from left to right\n * to each element, its index in the original array and current
accumulator value that starts with [initial] value.\n * \n * Note that `acc` value passed to [operation] function should
not be mutated;\n * otherwise it would affect the previous value in resulting
list.\n * \n * @param [operation] function that takes the index of an element, current accumulator value\n * and the
element itself, and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.scan\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic
c inline fun <R> LongArray.scanIndexed(initial: R, operation: (index: Int, acc: R, Long) -> R): List<R> {\n  return
runningFoldIndexed(initial, operation)\n}\n\n/**\n * Returns a list containing successive accumulation values
generated by applying [operation] from left to right\n * to each element, its index in the original array and current
accumulator value that starts with [initial] value.\n * \n * Note that `acc` value passed to [operation] function should
not be mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n * @param [operation]
function that takes the index of an element, current accumulator
value\n * and the element itself, and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.scan\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic
c inline fun <R> FloatArray.scanIndexed(initial: R, operation: (index: Int, acc: R, Float) -> R): List<R> {\n  return
runningFoldIndexed(initial, operation)\n}\n\n/**\n * Returns a list containing successive accumulation values
generated by applying [operation] from left to right\n * to each element, its index in the original array and current
accumulator value that starts with [initial] value.\n * \n * Note that `acc` value passed to [operation] function should
not be mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n * @param [operation]
function that takes the index of an element, current accumulator value\n * and the element itself, and calculates the
next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.scan\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic
c inline fun <R> DoubleArray.scanIndexed(initial: R, operation: (index: Int, acc: R, Double) -> R): List<R> {\n
return runningFoldIndexed(initial, operation)\n}\n\n/**\n * Returns a list containing successive accumulation values
generated by applying [operation] from left to right\n * to each element, its index in the original array and current
accumulator value that starts with [initial] value.\n * \n * Note that `acc` value passed to [operation] function should
not be mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n * @param [operation]
function that takes the index of an element, current accumulator value\n * and the element itself, and calculates the
next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.scan\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic
c
inline fun <R> BooleanArray.scanIndexed(initial: R, operation: (index: Int, acc: R, Boolean) -> R): List<R> {\n
return runningFoldIndexed(initial, operation)\n}\n\n/**\n * Returns a list containing successive accumulation values
generated by applying [operation] from left to right\n * to each element, its index in the original array and current
accumulator value that starts with [initial] value.\n * \n * Note that `acc` value passed to [operation] function should

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not be mutated;\n \* otherwise it would affect the previous value in resulting list.\n \* \n \* @param [operation] function that takes the index of an element, current accumulator value\n \* and the element itself, and calculates the next accumulator value.\n \* \n \* @sample samples.collections.Collections.Aggregates.scan\n \* \n \* @SinceKotlin("1.4")\n \* @WasExperimental(ExperimentalStdlibApi::class)\n \* @kotlin.internal.InlineOnly\n \* public inline fun <R> CharArray.scanIndexed(initial: R, operation: (index: Int, acc: R, Char) -> R): List<R> {\n return runningFoldIndexed(initial, operation)\n }\n }\n\n/\*\*\n \* Returns the sum of all values produced by [selector] function applied to each element in the array.\n \* \n \* @Deprecated("Use sumOf instead.")\n \* ReplaceWith("this.sumOf(selector)")\n \* @DeprecatedSinceKotlin(warningSince = "1.5")\n \* public inline fun <T> Array<out T>.sumBy(selector: (T) -> Int): Int {\n var sum: Int = 0\n for (element in this) {\n sum += selector(element)\n }\n return sum\n }\n }\n\n/\*\*\n \* Returns the sum of all values produced by [selector] function applied to each element in the array.\n \* \n \* @Deprecated("Use sumOf instead.")\n \* ReplaceWith("this.sumOf(selector)")\n \* @DeprecatedSinceKotlin(warningSince = "1.5")\n \* public inline fun ByteArray.sumBy(selector: (Byte) -> Int): Int {\n var sum: Int = 0\n for (element in this) {\n sum += selector(element)\n }\n return sum\n }\n }\n\n/\*\*\n \* Returns the sum of all values produced by [selector] function applied to each element in the array.\n \* \n \* @Deprecated("Use sumOf instead.")\n \* ReplaceWith("this.sumOf(selector)")\n \* @DeprecatedSinceKotlin(warningSince = "1.5")\n \* public inline fun ShortArray.sumBy(selector: (Short) -> Int): Int {\n var sum: Int = 0\n for (element in this) {\n sum += selector(element)\n }\n return sum\n }\n }\n\n/\*\*\n \* Returns the sum of all values produced by [selector] function applied to each element in the array.\n \* \n \* @Deprecated("Use sumOf instead.")\n \* ReplaceWith("this.sumOf(selector)")\n \* @DeprecatedSinceKotlin(warningSince = "1.5")\n \* public inline fun IntArray.sumBy(selector: (Int) -> Int): Int {\n var sum: Int = 0\n for (element in this) {\n sum += selector(element)\n }\n return sum\n }\n }\n\n/\*\*\n \* Returns the sum of all values produced by [selector] function applied to each element in the array.\n \* \n \* @Deprecated("Use sumOf instead.")\n \* ReplaceWith("this.sumOf(selector)")\n \* @DeprecatedSinceKotlin(warningSince = "1.5")\n \* public inline fun LongArray.sumBy(selector: (Long) -> Int): Int {\n var sum: Int = 0\n for (element in this) {\n sum += selector(element)\n }\n return sum\n }\n }\n\n/\*\*\n \* Returns the sum of all values produced by [selector] function applied to each element in the array.\n \* \n \* @Deprecated("Use sumOf instead.")\n \* ReplaceWith("this.sumOf(selector)")\n \* @DeprecatedSinceKotlin(warningSince = "1.5")\n \* public inline fun FloatArray.sumBy(selector: (Float) -> Int): Int {\n var sum: Int = 0\n for (element in this) {\n sum += selector(element)\n }\n return sum\n }\n }\n\n/\*\*\n \* Returns the sum of all values produced by [selector] function applied to each element in the array.\n \* \n \* @Deprecated("Use sumOf instead.")\n \* ReplaceWith("this.sumOf(selector)")\n \* @DeprecatedSinceKotlin(warningSince = "1.5")\n \* public inline fun DoubleArray.sumBy(selector: (Double) -> Int): Int {\n var sum: Int = 0\n for (element in this) {\n sum += selector(element)\n }\n return sum\n }\n }\n\n/\*\*\n \* Returns the sum of all values produced by [selector] function applied to each element in the array.\n \* \n \* @Deprecated("Use sumOf instead.")\n \* ReplaceWith("this.sumOf(selector)")\n \* @DeprecatedSinceKotlin(warningSince = "1.5")\n \* public inline fun BooleanArray.sumBy(selector: (Boolean) -> Int): Int {\n var sum: Int = 0\n for (element in this) {\n sum += selector(element)\n }\n return sum\n }\n }\n\n/\*\*\n \* Returns the sum of all values produced by [selector] function applied to each element in the array.\n \* \n \* @Deprecated("Use sumOf instead.")\n \* ReplaceWith("this.sumOf(selector)")\n \* @DeprecatedSinceKotlin(warningSince = "1.5")\n \* public inline fun CharArray.sumBy(selector: (Char) -> Int): Int {\n var sum: Int = 0\n for (element in this) {\n sum += selector(element)\n }\n return sum\n }\n }\n\n/\*\*\n \* Returns the sum of all values produced by [selector] function applied to each element in the array.\n \* \n \* @Deprecated("Use sumOf instead.")\n \* ReplaceWith("this.sumOf(selector)")\n \* @DeprecatedSinceKotlin(warningSince = "1.5")\n \* public inline fun <T> Array<out T>.sumByDouble(selector: (T) -> Double): Double {\n var sum: Double = 0.0\n for (element in this) {\n sum += selector(element)\n }\n return sum\n }\n }\n\n/\*\*\n \* Returns the sum of all values produced by

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[selector] function applied to each element in the array.\n *\n@Deprecated(\n"Use sumOf instead.\n",\n ReplaceWith(\n"this.sumOf(selector)\n"))\n@DeprecatedSinceKotlin(warningSince = \n"1.5\n")\npublic inline fun\n ByteArray.sumByDouble(selector: (Byte) -> Double): Double {\n    var sum: Double = 0.0\n    for (element in this)\n    {\n        sum += selector(element)\n    }\n    return sum\n}\n\n/n\n/**\n * Returns the sum of all values produced by\n [selector] function applied to each element in the array.\n *\n@Deprecated(\n"Use sumOf instead.\n",\n ReplaceWith(\n"this.sumOf(selector)\n"))\n@DeprecatedSinceKotlin(warningSince\n = \n"1.5\n")\npublic inline fun\n ShortArray.sumByDouble(selector: (Short) -> Double): Double {\n    var sum: Double\n = 0.0\n    for (element in this) {\n        sum += selector(element)\n    }\n    return sum\n}\n\n/n\n/**\n * Returns the sum\n of all values produced by [selector] function applied to each element in the array.\n *\n@Deprecated(\n"Use sumOf\n instead.\n",\n ReplaceWith(\n"this.sumOf(selector)\n"))\n@DeprecatedSinceKotlin(warningSince = \n"1.5\n")\npublic inline\n fun\n IntArray.sumByDouble(selector: (Int) -> Double): Double {\n    var sum: Double = 0.0\n    for (element in this)\n    {\n        sum += selector(element)\n    }\n    return sum\n}\n\n/n\n/**\n * Returns the sum of all values produced by\n [selector] function applied to each element in the array.\n *\n@Deprecated(\n"Use sumOf instead.\n",\n ReplaceWith(\n"this.sumOf(selector)\n"))\n@DeprecatedSinceKotlin(warningSince = \n"1.5\n")\npublic inline fun\n LongArray.sumByDouble(selector: (Long) -> Double): Double {\n    var sum: Double = 0.0\n    for (element\n in this) {\n        sum += selector(element)\n    }\n    return sum\n}\n\n/n\n/**\n * Returns the sum of all values produced\n by [selector] function applied to each element in the array.\n *\n@Deprecated(\n"Use sumOf instead.\n",\n ReplaceWith(\n"this.sumOf(selector)\n"))\n@DeprecatedSinceKotlin(warningSince = \n"1.5\n")\npublic inline fun\n FloatArray.sumByDouble(selector: (Float) -> Double): Double {\n    var sum: Double = 0.0\n    for (element in this)\n    {\n        sum += selector(element)\n    }\n    return sum\n}\n\n/n\n/**\n * Returns the sum of all values produced by\n [selector] function applied to each element in the array.\n *\n@Deprecated(\n"Use sumOf instead.\n",\n ReplaceWith(\n"this.sumOf(selector)\n"))\n@DeprecatedSinceKotlin(warningSince = \n"1.5\n")\npublic inline fun\n DoubleArray.sumByDouble(selector: (Double) -> Double): Double {\n    var sum: Double = 0.0\n    for (element in\n this) {\n        sum += selector(element)\n    }\n    return sum\n}\n\n/n\n/**\n * Returns the sum of all values produced\n by [selector] function applied to each element in the array.\n *\n@Deprecated(\n"Use sumOf instead.\n",\n ReplaceWith(\n"this.sumOf(selector)\n"))\n@DeprecatedSinceKotlin(warningSince = \n"1.5\n")\npublic inline fun\n BooleanArray.sumByDouble(selector: (Boolean) -> Double): Double {\n    var sum: Double = 0.0\n    for (element\n in this) {\n        sum += selector(element)\n    }\n    return sum\n}\n\n/n\n/**\n * Returns the sum of all values produced\n by [selector] function applied to each element in the array.\n *\n@Deprecated(\n"Use sumOf instead.\n",\n ReplaceWith(\n"this.sumOf(selector)\n"))\n@DeprecatedSinceKotlin(warningSince = \n"1.5\n")\npublic inline fun\n CharArray.sumByDouble(selector: (Char) -> Double): Double {\n    var sum: Double = 0.0\n    for (element in this)\n    {\n        sum += selector(element)\n    }\n    return sum\n}\n\n/n\n/**\n * Returns the sum of all values produced by\n [selector] function applied to each element in the array.\n\n *\n@SinceKotlin(\n"1.4\n")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\n ByLambdaReturnType\n@kotlin.jvm.JvmName(\n"sumOfDouble\n")\n@kotlin.internal.InlineOnly\npublic\n inline fun <T> Array<out T>.sumOf(selector: (T) -> Double): Double {\n    var sum: Double = 0.toDouble()\n    for\n (element in this) {\n        sum += selector(element)\n    }\n    return sum\n}\n\n/n\n/**\n * Returns the sum of all values\n produced by [selector] function applied to each element in the array.\n\n *\n@SinceKotlin(\n"1.4\n")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\n ByLambdaReturnType\n@kotlin.jvm.JvmName(\n"sumOfDouble\n")\n@kotlin.internal.InlineOnly\npublic inline fun\n ByteArray.sumOf(selector: (Byte) -> Double): Double {\n    var sum: Double = 0.toDouble()\n    for (element in\n this) {\n        sum += selector(element)\n    }\n    return sum\n}\n\n/n\n/**\n * Returns the sum of all values produced by\n [selector] function applied to each element in the array.\n\n *\n@SinceKotlin(\n"1.4\n")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\n ByLambdaReturnType\n@kotlin.jvm.JvmName(\n"sumOfDouble\n")\n@kotlin.internal.InlineOnly\npublic\n inline fun\n ShortArray.sumOf(selector: (Short) -> Double): Double {\n    var sum: Double = 0.toDouble()\n    for\n (element in this) {\n        sum += selector(element)\n    }\n    return sum\n}\n\n/n\n/**\n * Returns the sum of all values\n produced by [selector] function applied to each element in the array.\n\n\n
```

```

*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfDouble")\n@kotlin.internal.InlineOnly\npublic inline fun
IntArray.sumOf(selector: (Int) -> Double): Double {\n    var sum: Double = 0.toDouble()\n    for (element in this)
{\n        sum += selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values produced by
[selector] function applied to each element in the array.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfDouble")\n@kotlin.internal.InlineOnly\npublic
inline fun LongArray.sumOf(selector: (Long) -> Double): Double {\n    var sum: Double = 0.toDouble()\n    for
(element in this) {\n        sum += selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values
produced by [selector] function applied to each element in the array.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfDouble")\n@kotlin.internal.InlineOnly\npublic inline fun
FloatArray.sumOf(selector: (Float) -> Double): Double {\n    var sum: Double = 0.toDouble()\n    for (element in
this) {\n        sum += selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values produced by
[selector] function applied to each element in the array.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfDouble")\n@kotlin.internal.InlineOnly\npublic
inline fun DoubleArray.sumOf(selector: (Double) -> Double): Double {\n    var sum: Double = 0.toDouble()\n    for
(element in this) {\n        sum += selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values
produced by [selector] function applied to each element in the array.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfDouble")\n@kotlin.internal.InlineOnly\npublic inline fun
BooleanArray.sumOf(selector: (Boolean) -> Double): Double {\n    var sum: Double = 0.toDouble()\n    for
(element in this) {\n        sum += selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values
produced by [selector] function applied to each element in the array.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfDouble")\n@kotlin.internal.InlineOnly\npublic
inline fun CharArray.sumOf(selector: (Char) -> Double): Double {\n    var sum: Double = 0.toDouble()\n    for
(element in this) {\n        sum += selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values
produced by [selector] function applied to each element in the array.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfInt")\n@kotlin.internal.InlineOnly\npublic inline fun <T>
Array<out T>.sumOf(selector: (T) -> Int): Int {\n    var sum: Int = 0.toInt()\n    for (element in this) {\n        sum +=
selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function
applied to each element in the array.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfInt")\n@kotlin.internal.InlineOnly\npublic
inline fun ByteArray.sumOf(selector: (Byte) -> Int): Int {\n    var sum: Int = 0.toInt()\n    for (element in this) {\n
sum += selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector]
function applied to each element in the array.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfInt")\n@kotlin.internal.InlineOnly\npublic inline fun
ShortArray.sumOf(selector: (Short) -> Int): Int {\n    var sum: Int = 0.toInt()\n    for (element in this) {\n        sum +=
selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function
applied to each element in the array.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfInt")\n@kotlin.internal.InlineOnly\npublic

```

```

inline fun IntArray.sumOf(selector: (Int) -> Int): Int {
    var sum: Int = 0.toInt()
    for (element in this) {
        sum += selector(element)
    }
    return sum
}
/* Returns the sum of all values produced by [selector] function applied to each element in the array. */

@SinceKotlin("1.4")
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolutionByLambdaReturnType
@kotlin.jvm.JvmName("sumOfInt")
@kotlin.internal.InlineOnly
public inline fun LongArray.sumOf(selector: (Long) -> Int): Int {
    var sum: Int = 0.toInt()
    for (element in this) {
        sum += selector(element)
    }
    return sum
}
/* Returns the sum of all values produced by [selector] function applied to each element in the array. */

@SinceKotlin("1.4")
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolutionByLambdaReturnType
@kotlin.jvm.JvmName("sumOfInt")
@kotlin.internal.InlineOnly
public inline fun FloatArray.sumOf(selector: (Float) -> Int): Int {
    var sum: Int = 0.toInt()
    for (element in this) {
        sum += selector(element)
    }
    return sum
}
/* Returns the sum of all values produced by [selector] function applied to each element in the array. */

@SinceKotlin("1.4")
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolutionByLambdaReturnType
@kotlin.jvm.JvmName("sumOfInt")
@kotlin.internal.InlineOnly
public inline fun DoubleArray.sumOf(selector: (Double) -> Int): Int {
    var sum: Int = 0.toInt()
    for (element in this) {
        sum += selector(element)
    }
    return sum
}
/* Returns the sum of all values produced by [selector] function applied to each element in the array. */

@SinceKotlin("1.4")
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolutionByLambdaReturnType
@kotlin.jvm.JvmName("sumOfInt")
@kotlin.internal.InlineOnly
public inline fun BooleanArray.sumOf(selector: (Boolean) -> Int): Int {
    var sum: Int = 0.toInt()
    for (element in this) {
        sum += selector(element)
    }
    return sum
}
/* Returns the sum of all values produced by [selector] function applied to each element in the array. */

@SinceKotlin("1.4")
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolutionByLambdaReturnType
@kotlin.jvm.JvmName("sumOfInt")
@kotlin.internal.InlineOnly
public inline fun CharArray.sumOf(selector: (Char) -> Int): Int {
    var sum: Int = 0.toInt()
    for (element in this) {
        sum += selector(element)
    }
    return sum
}
/* Returns the sum of all values produced by [selector] function applied to each element in the array. */

@SinceKotlin("1.4")
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolutionByLambdaReturnType
@kotlin.jvm.JvmName("sumOfLong")
@kotlin.internal.InlineOnly
public inline fun <T> Array<out T>.sumOf(selector: (T) -> Long): Long {
    var sum: Long = 0.toLong()
    for (element in this) {
        sum += selector(element)
    }
    return sum
}
/* Returns the sum of all values produced by [selector] function applied to each element in the array. */

@SinceKotlin("1.4")
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolutionByLambdaReturnType
@kotlin.jvm.JvmName("sumOfLong")
@kotlin.internal.InlineOnly
public inline fun ByteArray.sumOf(selector: (Byte) -> Long): Long {
    var sum: Long = 0.toLong()
    for (element in this) {
        sum += selector(element)
    }
    return sum
}
/* Returns the sum of all values produced by [selector] function applied to each element in the array. */

@SinceKotlin("1.4")
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolutionByLambdaReturnType
@kotlin.jvm.JvmName("sumOfLong")
@kotlin.internal.InlineOnly
public inline fun ShortArray.sumOf(selector: (Short) -> Long): Long {
    var sum: Long = 0.toLong()
    for (element in this) {
        sum += selector(element)
    }
    return sum
}
/* Returns the sum of all values produced by [selector] function applied to each element in the array. */

@SinceKotlin("1.4")
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolutionByLambdaReturnType
@kotlin.jvm.JvmName("sumOfLong")
@kotlin.internal.InlineOnly
public inline fun IntArray.sumOf(selector: (Int) -> Long): Long {
    var sum: Long = 0.toLong()
    for (element in this) {
        sum += selector(element)
    }
    return sum
}
/* Returns the sum of all values produced by [selector] function applied to each element in the array. */

```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfLong")\n@kotlin.internal.InlineOnly\npublic\ninline fun LongArray.sumOf(selector: (Long) -> Long): Long {\n    var sum: Long = 0.toLong()\n    for (element in this) {\n        sum += selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each element in the array.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfLong")\n@kotlin.internal.InlineOnly\npublic inline fun\nFloatArray.sumOf(selector: (Float) -> Long): Long {\n    var sum: Long = 0.toLong()\n    for (element in this) {\n        sum += selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector]\n function applied to each element in the array.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfLong")\n@kotlin.internal.InlineOnly\npublic\ninline fun DoubleArray.sumOf(selector: (Double) -> Long): Long {\n    var sum: Long = 0.toLong()\n    for\n(element in this) {\n        sum += selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values\n produced by [selector] function applied to each element in the array.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfLong")\n@kotlin.internal.InlineOnly\npublic inline fun\nBooleanArray.sumOf(selector: (Boolean) -> Long): Long {\n    var sum: Long = 0.toLong()\n    for (element in this)\n{\n        sum += selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values produced by\n [selector] function applied to each element in the array.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfLong")\n@kotlin.internal.InlineOnly\npublic\ninline fun CharArray.sumOf(selector: (Char) -> Long): Long {\n    var sum: Long = 0.toLong()\n    for (element in\nthis) {\n        sum += selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values produced by\n [selector] function applied to each element in the array.\n
```

```
*\n@SinceKotlin("1.5")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfUInt")\n@WasExperimental(ExperimentalUnsignedType\ns::class)\n@kotlin.internal.InlineOnly\npublic inline fun <T> Array<out T>.sumOf(selector: (T) -> UInt): UInt {\n    var sum: UInt = 0.toUInt()\n    for (element in this) {\n        sum += selector(element)\n    }\n    return\nsum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each element in the\n array.\n
```

```
*\n@SinceKotlin("1.5")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfUInt")\n@WasExperimental(ExperimentalUnsignedType\ns::class)\n@kotlin.internal.InlineOnly\npublic\ninline fun ByteArray.sumOf(selector: (Byte) -> UInt): UInt {\n    var sum: UInt = 0.toUInt()\n    for (element in\nthis) {\n        sum += selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values produced by\n [selector] function applied to each element in the array.\n
```

```
*\n@SinceKotlin("1.5")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfUInt")\n@WasExperimental(ExperimentalUnsignedType\ns::class)\n@kotlin.internal.InlineOnly\npublic inline fun ShortArray.sumOf(selector: (Short) -> UInt): UInt {\n    var\nsum: UInt = 0.toUInt()\n    for (element in this) {\n        sum += selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function\n applied to each element in the array.\n
```

```
*\n@SinceKotlin("1.5")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfUInt")\n@WasExperimental(ExperimentalUnsignedType\ns::class)\n@kotlin.internal.InlineOnly\npublic inline fun IntArray.sumOf(selector: (Int) -> UInt): UInt {\n    var\nsum: UInt = 0.toUInt()\n    for (element in this) {\n        sum += selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each element in the array.\n
```

```

*\n@SinceKotlin("1.5")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfUInt")\n@WasExperimental(ExperimentalUnsignedType
s::class)\n@kotlin.internal.InlineOnly\npublic inline fun LongArray.sumOf(selector: (Long) -> UInt): UInt {\n  var
sum: UInt = 0.toUInt()\n  for (element in this) {\n    sum += selector(element)\n  }\n  return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each
element in the array.\n
*\n@SinceKotlin("1.5")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfUInt")\n@WasExperimental(ExperimentalUnsignedType
s::class)\n@kotlin.internal.InlineOnly\npublic inline fun FloatArray.sumOf(selector: (Float) -> UInt): UInt {\n  var
sum: UInt = 0.toUInt()\n  for (element in this) {\n    sum += selector(element)\n  }\n  return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each element in the
array.\n
*\n@SinceKotlin("1.5")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfUInt")\n@WasExperimental(ExperimentalUnsignedType
s::class)\n@kotlin.internal.InlineOnly\npublic inline fun DoubleArray.sumOf(selector: (Double) -> UInt): UInt
{\n  var sum: UInt = 0.toUInt()\n  for (element in this) {\n    sum += selector(element)\n  }\n  return
sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each element in the
array.\n
*\n@SinceKotlin("1.5")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfUInt")\n@WasExperimental(ExperimentalUnsignedType
s::class)\n@kotlin.internal.InlineOnly\npublic inline fun BooleanArray.sumOf(selector: (Boolean) -> UInt): UInt
{\n  var sum: UInt = 0.toUInt()\n  for (element in this) {\n    sum += selector(element)\n  }\n  return
sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each element in the
array.\n
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ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfUInt")\n@WasExperimental(ExperimentalUnsignedType
s::class)\n@kotlin.internal.InlineOnly\npublic
inline fun CharArray.sumOf(selector: (Char) -> UInt): UInt {\n  var sum: UInt = 0.toUInt()\n  for (element in
this) {\n    sum += selector(element)\n  }\n  return sum\n}\n\n/**\n * Returns the sum of all values produced by
[selector] function applied to each element in the array.\n
*\n@SinceKotlin("1.5")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfULong")\n@WasExperimental(ExperimentalUnsignedTy
pes::class)\n@kotlin.internal.InlineOnly\npublic inline fun <T> Array<out T>.sumOf(selector: (T) -> ULong):
ULong {\n  var sum: ULong = 0.toULong()\n  for (element in this) {\n    sum += selector(element)\n  }\n
return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each element in
the array.\n
*\n@SinceKotlin("1.5")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfULong")\n@WasExperimental(ExperimentalUnsignedTy
pes::class)\n@kotlin.internal.InlineOnly\npublic
inline fun ByteArray.sumOf(selector: (Byte) -> ULong): ULong {\n  var sum: ULong = 0.toULong()\n  for
(element in this) {\n    sum += selector(element)\n  }\n  return sum\n}\n\n/**\n * Returns the sum of all values
produced by [selector] function applied to each element in the array.\n
*\n@SinceKotlin("1.5")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfULong")\n@WasExperimental(ExperimentalUnsignedTy
pes::class)\n@kotlin.internal.InlineOnly\npublic inline fun ShortArray.sumOf(selector: (Short) -> ULong): ULong
{\n  var sum: ULong = 0.toULong()\n  for (element in this) {\n    sum += selector(element)\n  }\n  return
sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each element in the
array.\n

```

```
*\n@SinceKotlin("1.5")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfULong")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\npublic inline fun IntArray.sumOf(selector: (Int) -> ULong): ULong {\n    var sum: ULong = 0.toULong()\n    for (element in this) {\n        sum += selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each element in the array.\n */
```

```
*\n@SinceKotlin("1.5")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfULong")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\npublic inline fun LongArray.sumOf(selector: (Long) -> ULong): ULong {\n    var sum: ULong = 0.toULong()\n    for (element in this) {\n        sum += selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each element in the array.\n */
```

Returns the sum of all values produced by [selector] function applied to each element in the array.

```
*\n@SinceKotlin("1.5")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfULong")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\npublic inline fun FloatArray.sumOf(selector: (Float) -> ULong): ULong {\n    var sum: ULong = 0.toULong()\n    for (element in this) {\n        sum += selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each element in the array.\n */
```

```
*\n@SinceKotlin("1.5")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfULong")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\npublic inline fun DoubleArray.sumOf(selector: (Double) -> ULong): ULong {\n    var sum: ULong = 0.toULong()\n    for (element in this) {\n        sum += selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each element in the array.\n */
```

Returns the sum of all values produced by [selector] function applied to each element in the array.

```
*\n@SinceKotlin("1.5")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfULong")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\npublic inline fun BooleanArray.sumOf(selector: (Boolean) -> ULong): ULong {\n    var sum: ULong = 0.toULong()\n    for (element in this) {\n        sum += selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each element in the array.\n */
```

```
*\n@SinceKotlin("1.5")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfULong")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\npublic
```

```
inline fun CharArray.sumOf(selector: (Char) -> ULong): ULong {\n    var sum: ULong = 0.toULong()\n    for (element in this) {\n        sum += selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns an original collection containing all the non-`null` elements, throwing an [IllegalArgumentException] if there are any `null` elements.\n */
```

```
*\npublic fun <T : Any> Array<T>.requireNonNulls(): Array<T> {\n    for (element in this) {\n        if (element == null) {\n            throw IllegalArgumentException("null element found in $this.")\n        }\n    }\n}
```

```
@Suppress("UNCHECKED_CAST")\nreturn this as Array<T>\n}\n\n/**\n * Splits the original array into pair of lists,\n * where *first* list contains elements for which [predicate] yielded `true`,\n * while *second* list contains elements for which [predicate] yielded `false`.\n * \n * @sample
```

```
samples.collections.Arrays.Transformations.partitionArrayOfPrimitives\n */\npublic inline fun <T> Array<out T>.partition(predicate:
```

```
(T) -> Boolean): Pair<List<T>, List<T>> {\n    val first = ArrayList<T>()\n    val second = ArrayList<T>()\n    for (element in this) {\n        if (predicate(element)) {\n            first.add(element)\n        } else {\n            second.add(element)\n        }\n    }\n    return Pair(first, second)\n}\n\n/**\n * Splits the original array into pair of lists,\n * where *first* list contains elements for which [predicate] yielded `true`,\n * while *second* list contains elements for which [predicate] yielded `false`.\n * \n * @sample
```

```
samples.collections.Arrays.Transformations.partitionArrayOfPrimitives\n */\npublic inline fun <T> Array<out T>.partition(predicate:
```



```

samples.collections.Arrays.Transformations.partitionArrayOfPrimitives\n *\npublic inline fun
ByteArray.partition(predicate: (Byte) -> Boolean): Pair<List<Byte>, List<Byte>> {\n  val first =
ArrayList<Byte>()\n  val second = ArrayList<Byte>()\n  for (element in this) {\n    if (predicate(element)) {\n
    first.add(element)\n    } else {\n      second.add(element)\n    }\n  }\n  return Pair(first,
second)\n}\n\n/**\n * Splits the original array into pair of lists,\n * where *first* list contains elements for which [predicate] yielded
`true`,\n * while *second* list contains elements for which [predicate] yielded `false`.\n * \n * @sample
samples.collections.Arrays.Transformations.partitionArrayOfPrimitives\n *\npublic inline fun
ShortArray.partition(predicate: (Short) -> Boolean): Pair<List<Short>, List<Short>> {\n  val first =
ArrayList<Short>()\n  val second = ArrayList<Short>()\n  for (element in this) {\n    if (predicate(element)) {\n
    first.add(element)\n    } else {\n      second.add(element)\n    }\n  }\n  return Pair(first,
second)\n}\n\n/**\n * Splits the original array into pair of lists,\n * where *first* list contains elements for which
[predicate] yielded `true`,\n * while *second* list contains elements for which [predicate] yielded `false`.\n * \n *
@sample samples.collections.Arrays.Transformations.partitionArrayOfPrimitives\n *\npublic inline fun
IntArray.partition(predicate: (Int) -> Boolean): Pair<List<Int>, List<Int>> {\n  val first =
ArrayList<Int>()\n  val second = ArrayList<Int>()\n  for (element in this) {\n    if (predicate(element)) {\n
    first.add(element)\n    } else {\n      second.add(element)\n    }\n  }\n  return Pair(first,
second)\n}\n\n/**\n * Splits the original array into pair of lists,\n * where *first* list contains elements for which
[predicate] yielded `true`,\n * while *second* list contains elements for which [predicate] yielded `false`.\n * \n *
@sample samples.collections.Arrays.Transformations.partitionArrayOfPrimitives\n *\npublic inline fun
LongArray.partition(predicate: (Long) -> Boolean): Pair<List<Long>, List<Long>> {\n  val first =
ArrayList<Long>()\n  val second = ArrayList<Long>()\n  for (element in this) {\n    if (predicate(element)) {\n
    first.add(element)\n    } else {\n      second.add(element)\n    }\n  }\n  return Pair(first, second)\n}\n\n/**\n * Splits the original array into pair of lists,\n * where *first*
list contains elements for which [predicate] yielded `true`,\n * while *second* list contains elements for which
[predicate] yielded `false`.\n * \n * @sample
samples.collections.Arrays.Transformations.partitionArrayOfPrimitives\n *\npublic inline fun
FloatArray.partition(predicate: (Float) -> Boolean): Pair<List<Float>, List<Float>> {\n  val first =
ArrayList<Float>()\n  val second = ArrayList<Float>()\n  for (element in this) {\n    if (predicate(element)) {\n
    first.add(element)\n    } else {\n      second.add(element)\n    }\n  }\n  return Pair(first,
second)\n}\n\n/**\n * Splits the original array into pair of lists,\n * where *first* list contains elements for which
[predicate] yielded `true`,\n * while *second* list contains elements for which [predicate] yielded `false`.\n * \n *
@sample samples.collections.Arrays.Transformations.partitionArrayOfPrimitives\n *\npublic inline fun
DoubleArray.partition(predicate: (Double) -> Boolean): Pair<List<Double>, List<Double>>
{\n  val first = ArrayList<Double>()\n  val second = ArrayList<Double>()\n  for (element in this) {\n    if
(predicate(element)) {\n    first.add(element)\n    } else {\n      second.add(element)\n    }\n  }\n  return Pair(first, second)\n}\n\n/**\n * Splits the original array into pair of lists,\n * where *first* list contains
elements for which [predicate] yielded `true`,\n * while *second* list contains elements for which [predicate]
yielded `false`.\n * \n * @sample samples.collections.Arrays.Transformations.partitionArrayOfPrimitives\n *\npublic inline fun
BooleanArray.partition(predicate: (Boolean) -> Boolean): Pair<List<Boolean>,
List<Boolean>> {\n  val first = ArrayList<Boolean>()\n  val second = ArrayList<Boolean>()\n  for (element in
this) {\n    if (predicate(element)) {\n    first.add(element)\n    } else {\n      second.add(element)\n    }\n  }\n  return Pair(first,
second)\n}\n\n/**\n * Splits the original array into pair of lists,\n * where *first* list contains elements for which
[predicate] yielded `true`,\n * while *second* list contains elements for which [predicate] yielded `false`.\n * \n *
@sample samples.collections.Arrays.Transformations.partitionArrayOfPrimitives\n *\npublic inline fun
CharArray.partition(predicate: (Char) -> Boolean): Pair<List<Char>, List<Char>> {\n  val first =
ArrayList<Char>()\n  val second = ArrayList<Char>()\n  for (element in this) {\n    if (predicate(element)) {\n

```

```

    first.add(element)\n    } else {\n        second.add(element)\n    }\n }\n return Pair(first,
second)\n}\n\n/**\n * Returns a list of pairs built from the elements of `this` array and the [other] array with the
same index.\n * The returned list has length of the shortest collection.\n * \n *
@sample samples.collections.Iterables.Operations.zipIterable\n *\npublic infix fun <T, R> Array<out
T>.zip(other: Array<out R>): List<Pair<T, R>> {\n    return zip(other) { t1, t2 -> t1 to t2 }\n}\n\n/**\n * Returns a
list of pairs built from the elements of `this` array and the [other] array with the same index.\n * The returned list has
length of the shortest collection.\n * \n * @sample samples.collections.Iterables.Operations.zipIterable\n *\npublic
infix fun <R> ByteArray.zip(other: Array<out R>): List<Pair<Byte, R>> {\n    return zip(other) { t1, t2 -> t1 to t2
}\n}\n\n/**\n * Returns a list of pairs built from the elements of `this` array and the [other] array with the same
index.\n * The returned list has length of the shortest collection.\n * \n * @sample
samples.collections.Iterables.Operations.zipIterable\n *\npublic infix fun <R> ShortArray.zip(other: Array<out
R>): List<Pair<Short, R>> {\n    return zip(other) { t1, t2 -> t1 to t2 }\n}\n\n/**\n * Returns a list of pairs
built from the elements of `this` array and the [other] array with the same index.\n * The returned list has length of
the shortest collection.\n * \n * @sample samples.collections.Iterables.Operations.zipIterable\n *\npublic infix fun
<R> IntArray.zip(other: Array<out R>): List<Pair<Int, R>> {\n    return zip(other) { t1, t2 -> t1 to t2 }\n}\n\n/**\n *
Returns a list of pairs built from the elements of `this` array and the [other] array with the same index.\n * The
returned list has length of the shortest collection.\n * \n * @sample
samples.collections.Iterables.Operations.zipIterable\n *\npublic infix fun <R> LongArray.zip(other: Array<out
R>): List<Pair<Long, R>> {\n    return zip(other) { t1, t2 -> t1 to t2 }\n}\n\n/**\n * Returns a list of pairs built from
the elements of `this` array and the [other] array with the same index.\n * The returned list has length of the shortest
collection.\n * \n * @sample samples.collections.Iterables.Operations.zipIterable\n *\npublic infix fun
<R> FloatArray.zip(other: Array<out R>): List<Pair<Float, R>> {\n    return zip(other) { t1, t2 -> t1 to t2
}\n}\n\n/**\n * Returns a list of pairs built from the elements of `this` array and the [other] array with the same
index.\n * The returned list has length of the shortest collection.\n * \n * @sample
samples.collections.Iterables.Operations.zipIterable\n *\npublic infix fun <R> DoubleArray.zip(other: Array<out
R>): List<Pair<Double, R>> {\n    return zip(other) { t1, t2 -> t1 to t2 }\n}\n\n/**\n * Returns a list of pairs built
from the elements of `this` array and the [other] array with the same index.\n * The returned list has length of the
shortest collection.\n * \n * @sample samples.collections.Iterables.Operations.zipIterable\n *\npublic infix fun <R>
BooleanArray.zip(other: Array<out R>): List<Pair<Boolean, R>> {\n    return zip(other) { t1, t2 -> t1 to t2
}\n}\n\n/**\n * Returns a list of pairs built from the elements of `this` array and the [other] array with the same
index.\n * The returned list has length of the shortest collection.\n * \n * @sample
samples.collections.Iterables.Operations.zipIterable\n *\npublic infix fun <R> CharArray.zip(other: Array<out R>):
List<Pair<Char, R>> {\n    return zip(other) { t1, t2 -> t1 to t2 }\n}\n\n/**\n * Returns a list of values built from the
elements of `this` array and the [other] array with the same index\n * using the provided [transform] function
applied to each pair of elements.\n * The returned list has length of the shortest collection.\n * \n * @sample
samples.collections.Iterables.Operations.zipIterableWithTransform\n *\npublic inline fun <T, R, V> Array<out
T>.zip(other: Array<out R>, transform: (a: T, b: R) -> V): List<V> {\n    val size = minOf(size, other.size)\n    val
list = ArrayList<V>(size)\n    for (i in 0 until size) {\n        list.add(transform(this[i], other[i]))\n    }\n    return
list\n}\n\n/**\n * Returns a list of values built from the elements of `this` array and the [other]
array with the same index\n * using the provided [transform] function applied to each pair of elements.\n * The
returned list has length of the shortest collection.\n * \n * @sample
samples.collections.Iterables.Operations.zipIterableWithTransform\n *\npublic inline fun <R, V>
ByteArray.zip(other: Array<out R>, transform: (a: Byte, b: R) -> V): List<V> {\n    val size = minOf(size,
other.size)\n    val list = ArrayList<V>(size)\n    for (i in 0 until size) {\n        list.add(transform(this[i], other[i]))\n
}\n    return list\n}\n\n/**\n * Returns a list of values built from the elements of `this` array and the [other] array
with the same index\n * using the provided [transform] function applied to each pair of elements.\n * The returned
list has length of the shortest collection.\n * \n * @sample
samples.collections.Iterables.Operations.zipIterableWithTransform\n *\npublic inline fun <R, V>

```

```

ShortArray.zip(other: Array<out R>, transform: (a: Short, b: R) -> V): List<V> {
    val size = minOf(size, other.size)
    val list = ArrayList<V>(size)
    for (i in 0 until size) {
        list.add(transform(this[i], other[i]))
    }
    return list
}

```

Returns a list of values built from the elements of `this` array and the [other] array with the same index using the provided [transform] function applied to each pair of elements. The returned list has length of the shortest collection. @sample

```

samples.collections.Iterables.Operations.zipIterableWithTransform

```

```

IntArray.zip(other: Array<out R>, transform: (a: Int, b: R) -> V): List<V> {
    val size = minOf(size, other.size)
    val list = ArrayList<V>(size)
    for (i in 0 until size) {
        list.add(transform(this[i], other[i]))
    }
    return list
}

```

Returns a list of values built from the elements of `this` array and the [other] array with the same index using the provided [transform] function applied to each pair of elements. The returned list has length of the shortest collection. @sample

```

samples.collections.Iterables.Operations.zipIterableWithTransform

```

```

LongArray.zip(other: Array<out R>, transform: (a: Long, b: R) -> V): List<V> {
    val size = minOf(size,
other.size)
    val list = ArrayList<V>(size)
    for (i in 0 until size) {
        list.add(transform(this[i], other[i]))
    }
    return list
}

```

Returns a list of values built from the elements of `this` array and the [other] array with the same index using the provided [transform] function applied to each pair of elements. The returned list has length of the shortest collection. @sample

```

samples.collections.Iterables.Operations.zipIterableWithTransform

```

```

FloatArray.zip(other: Array<out R>, transform: (a: Float, b: R) -> V): List<V> {
    val size = minOf(size,
other.size)
    val list = ArrayList<V>(size)
    for (i in 0 until size) {
        list.add(transform(this[i],
other[i]))
    }
    return list
}

```

Returns a list of values built from the elements of `this` array and the [other] array with the same index using the provided [transform] function applied to each pair of elements. The returned list has length of the shortest collection. @sample

```

samples.collections.Iterables.Operations.zipIterableWithTransform

```

```

DoubleArray.zip(other: Array<out R>, transform: (a: Double, b: R) -> V): List<V> {
    val size = minOf(size,
other.size)
    val list = ArrayList<V>(size)
    for (i in 0 until size) {
        list.add(transform(this[i], other[i]))
    }
    return list
}

```

Returns a list of values built from the elements of `this` array and the [other] array with the same index using the provided [transform] function applied to each pair of elements. The returned list has length of the shortest collection. @sample

```

samples.collections.Iterables.Operations.zipIterableWithTransform

```

```

BooleanArray.zip(other: Array<out R>, transform: (a: Boolean, b: R) -> V): List<V>
{
    val size = minOf(size, other.size)
    val list = ArrayList<V>(size)
    for (i in 0 until size) {
        list.add(transform(this[i], other[i]))
    }
    return list
}

```

Returns a list of values built from the elements of `this` array and the [other] array with the same index using the provided [transform] function applied to each pair of elements. The returned list has length of the shortest collection. @sample

```

samples.collections.Iterables.Operations.zipIterableWithTransform

```

```

CharArray.zip(other: Array<out R>, transform: (a: Char, b: R) -> V): List<V> {
    val size = minOf(size,
other.size)
    val list = ArrayList<V>(size)
    for (i in 0 until size) {
        list.add(transform(this[i], other[i]))
    }
    return list
}

```

Returns a list of pairs built from the elements of `this` collection and [other] array with the same index. The returned list has length of the shortest collection. @sample

```

samples.collections.Iterables.Operations.zipIterable

```

```

public infix fun <T, R> Array<out T>.zip(other: Iterable<R>): List<Pair<T, R>> {
    return zip(other) { t1, t2 -> t1 to t2 }
}

```

Returns a list of pairs built from the elements of `this` collection and [other] array with the same index. The returned list has length of the shortest collection. @sample

```

samples.collections.Iterables.Operations.zipIterable

```

```

public infix fun <R> ByteArray.zip(other: Iterable<R>):
List<Pair<Byte, R>> {
    return zip(other) { t1, t2 -> t1 to t2 }
}

```

Returns a list of pairs built from the elements of `this` collection and [other] array with the same index. The returned list has length of the shortest collection. @sample

```

samples.collections.Iterables.Operations.zipIterable

```

```

infix fun <R> ShortArray.zip(other: Iterable<R>): List<Pair<Short, R>> {
    return zip(other) { t1, t2 -> t1 to t2 }
}
}

Returns a list of pairs built from the elements of `this` collection and [other] array with the same index.

The returned list has length of the shortest collection.

@sample
samples.collections.Iterables.Operations.zipIterable

public infix fun <R> IntArray.zip(other: Iterable<R>): List<Pair<Int, R>> {
    return zip(other) { t1, t2 -> t1 to t2 }
}

Returns a list of pairs built from the elements of `this` collection and [other] array with the same index.

The returned list has length of the shortest collection.

@sample
samples.collections.Iterables.Operations.zipIterable

public infix fun <R> LongArray.zip(other: Iterable<R>): List<Pair<Long, R>> {
    return zip(other) { t1, t2 -> t1 to t2 }
}

Returns a list of pairs built from the elements of `this` collection and [other] array with the same index.

The returned list has length of the shortest collection.

@sample
samples.collections.Iterables.Operations.zipIterable

public infix fun <R> FloatArray.zip(other: Iterable<R>): List<Pair<Float, R>> {
    return zip(other) { t1, t2 -> t1 to t2 }
}

Returns a list of pairs built from the elements of `this` collection and [other] array with the same index.

The returned list has length of the shortest collection.

@sample
samples.collections.Iterables.Operations.zipIterable

public infix fun <R> DoubleArray.zip(other: Iterable<R>): List<Pair<Double, R>> {
    return zip(other) { t1, t2 -> t1 to t2 }
}

Returns a list of pairs built from the elements of `this` collection and [other] array with the same index.

The returned list has length of the shortest collection.

@sample
samples.collections.Iterables.Operations.zipIterable

public infix fun <R> BooleanArray.zip(other: Iterable<R>): List<Pair<Boolean, R>> {
    return zip(other) { t1, t2 -> t1 to t2 }
}

Returns a list of pairs built from the elements of `this` collection and [other] array with the same index.

The returned list has length of the shortest collection.

@sample
samples.collections.Iterables.Operations.zipIterable

public infix fun <R> CharArray.zip(other: Iterable<R>): List<Pair<Char, R>> {
    return zip(other) { t1, t2 -> t1 to t2 }
}

Returns a list of values built from the elements of `this` array and the [other] collection with the same index using the provided [transform] function applied to each pair of elements.

The returned list has length of the shortest collection.

@sample
samples.collections.Iterables.Operations.zipIterableWithTransform

public inline fun <T, R, V> Array<out T>.zip(other: Iterable<R>, transform: (a: T, b: R) -> V): List<V> {
    val arraySize = size
    val list = ArrayList<V>(minOf(other.collectionSizeOrDefault(10), arraySize))
    var i = 0
    for (element in other) {
        if (i >= arraySize) break
        list.add(transform(this[i++], element))
    }
    return list
}

Returns a list of values built from the elements of `this` array and the [other] collection with the same index using the provided [transform] function applied to each pair of elements.

The returned list has length of the shortest collection.

@sample
samples.collections.Iterables.Operations.zipIterableWithTransform

public inline fun <R, V> ByteArray.zip(other: Iterable<R>, transform: (a: Byte, b: R) -> V): List<V> {
    val arraySize = size
    val list = ArrayList<V>(minOf(other.collectionSizeOrDefault(10), arraySize))
    var i = 0
    for (element in other) {
        if (i >= arraySize) break
        list.add(transform(this[i++], element))
    }
    return list
}

Returns a list of values built from the elements of `this` array and the [other] collection with the same index using the provided [transform] function applied to each pair of elements.

The returned list has length of the shortest collection.

@sample
samples.collections.Iterables.Operations.zipIterableWithTransform

public inline fun <R, V> ShortArray.zip(other: Iterable<R>, transform: (a: Short, b: R) -> V): List<V> {
    val arraySize = size
    val list = ArrayList<V>(minOf(other.collectionSizeOrDefault(10), arraySize))
    var i = 0
    for (element in other) {
        if (i >= arraySize) break
        list.add(transform(this[i++], element))
    }
    return list
}

Returns a list of values built from the elements of `this` array and the [other] collection with the same index using the provided [transform] function applied to each pair of elements.

The returned list has length of the shortest collection.

@sample
samples.collections.Iterables.Operations.zipIterableWithTransform

public inline fun <R, V> IntArray.zip(other: Iterable<R>, transform:

```

```

(a: Int, b: R) -> V): List<V> {\n  val arraySize = size\n  val list =
ArrayList<V>(minOf(other.collectionSizeOrDefault(10), arraySize))\n  var i = 0\n  for (element in other) {\n
if (i >= arraySize) break\n    list.add(transform(this[i++], element))\n  }\n  return list\n}\n\n/**\n * Returns a
list of values built from the elements of `this` array and the [other] collection with the same index\n * using the
provided [transform] function applied to each pair of elements.\n * The returned list has length of the shortest
collection.\n * \n * @sample samples.collections.Iterables.Operations.zipIterableWithTransform\n */\npublic inline
fun <R, V> LongArray.zip(other: Iterable<R>, transform: (a: Long, b: R) -> V): List<V> {\n  val arraySize =
size\n  val list = ArrayList<V>(minOf(other.collectionSizeOrDefault(10), arraySize))\n  var i = 0\n  for (element
in other) {\n    if (i >= arraySize) break\n    list.add(transform(this[i++], element))\n  }\n  return list\n}\n\n/**\n * Returns a list of values built from the elements of `this` array and the [other]
collection with the same index\n * using the provided [transform] function applied to each pair of elements.\n * The
returned list has length of the shortest collection.\n * \n * @sample
samples.collections.Iterables.Operations.zipIterableWithTransform\n */\npublic inline fun <R, V>
FloatArray.zip(other: Iterable<R>, transform: (a: Float, b: R) -> V): List<V> {\n  val arraySize = size\n  val list =
ArrayList<V>(minOf(other.collectionSizeOrDefault(10), arraySize))\n  var i = 0\n  for (element in other) {\n
if (i >= arraySize) break\n    list.add(transform(this[i++], element))\n  }\n  return list\n}\n\n/**\n * Returns a
list of values built from the elements of `this` array and the [other] collection with the same index\n * using the
provided [transform] function applied to each pair of elements.\n * The returned list has length of the shortest
collection.\n * \n * @sample samples.collections.Iterables.Operations.zipIterableWithTransform\n */\npublic inline fun <R, V>
DoubleArray.zip(other: Iterable<R>, transform: (a: Double, b: R) -> V): List<V> {\n  val arraySize = size\n  val
list = ArrayList<V>(minOf(other.collectionSizeOrDefault(10), arraySize))\n  var i = 0\n  for (element in other)
{\n    if (i >= arraySize) break\n    list.add(transform(this[i++], element))\n  }\n  return list\n}\n\n/**\n *
Returns a list of values built from the elements of `this` array and the [other] collection with the same index\n *
using the provided [transform] function applied to each pair of elements.\n * The returned list has length of the
shortest collection.\n * \n * @sample samples.collections.Iterables.Operations.zipIterableWithTransform\n */\npublic inline fun <R, V>
BooleanArray.zip(other: Iterable<R>, transform: (a: Boolean, b: R) -> V): List<V> {\n  val arraySize = size\n  val
list = ArrayList<V>(minOf(other.collectionSizeOrDefault(10), arraySize))\n  var i = 0\n  for (element in other) {\n
if (i >= arraySize) break\n    list.add(transform(this[i++], element))\n  }\n  return list\n}\n\n/**\n * Returns a
list of values built from the elements of `this` array and the [other] collection with the same index\n * using the
provided [transform] function applied to each pair of elements.\n * The returned list has length of the shortest
collection.\n * \n * @sample samples.collections.Iterables.Operations.zipIterable\n */\npublic infix fun
ByteArray.zip(other: ByteArray): List<Pair<Byte, Byte>> {\n  return zip(other) { t1, t2 -> t1 to t2 }\n}\n\n/**\n * Returns a list of pairs built from
the elements of `this` array and the [other] array with the same index.\n * The returned list has length of the
shortest collection.\n * \n * @sample samples.collections.Iterables.Operations.zipIterable\n */\npublic infix fun
CharArray.zip(other: Iterable<R>, transform: (a: Char, b: R) -> V): List<V> {\n  val arraySize = size\n  val list =
ArrayList<V>(minOf(other.collectionSizeOrDefault(10), arraySize))\n  var i = 0\n  for (element in other) {\n
if (i >= arraySize) break\n    list.add(transform(this[i++], element))\n  }\n  return list\n}\n\n/**\n * Returns a
list of pairs built from the elements of `this` array and the [other] array
with the same index.\n * The returned list has length of the shortest collection.\n * \n * @sample
samples.collections.Iterables.Operations.zipIterable\n */\npublic infix fun
ByteArray.zip(other: ByteArray): List<Pair<Byte, Byte>> {\n  return zip(other) { t1, t2 -> t1 to t2 }\n}\n\n/**\n * Returns a list of pairs built from
the elements of `this` array and the [other] array with the same index.\n * The returned list has length of the
shortest collection.\n * \n * @sample samples.collections.Iterables.Operations.zipIterable\n */\npublic infix fun
ShortArray.zip(other: ShortArray): List<Pair<Short, Short>> {\n  return zip(other) { t1, t2 -> t1 to t2 }\n}\n\n/**\n * Returns a list of pairs built from
the elements of `this` array and the [other] array with the same index.\n * The returned list has length of the
shortest collection.\n * \n * @sample
samples.collections.Iterables.Operations.zipIterable\n */\npublic infix fun
IntArray.zip(other: IntArray): List<Pair<Int, Int>> {\n

```

```
return zip(other) { t1, t2 -> t1 to t2 }  
Returns a list of pairs built from the elements of `this` array and  
the [other] array with the same index.  
The returned list has length of the shortest collection.  
@sample  
samples.collections.Iterables.Operations.zipIterable  
public infix fun LongArray.zip(other: LongArray):  
List<Pair<Long, Long>> {  
return zip(other) { t1, t2 -> t1 to t2 }  
Returns a list of pairs built from  
the elements of `this` array and the [other] array with the same index.  
The returned list has length of the shortest  
collection.  
@sample  
samples.collections.Iterables.Operations.zipIterable  
public infix fun  
FloatArray.zip(other: FloatArray): List<Pair<Float, Float>> {  
return zip(other) { t1, t2 -> t1 to t2 }  
Returns a list of pairs built from the elements of `this` array and the [other] array with the same index.  
The  
returned list has length of the shortest collection.  
@sample  
samples.collections.Iterables.Operations.zipIterable  
public infix fun DoubleArray.zip(other: DoubleArray):  
List<Pair<Double, Double>> {  
return zip(other) { t1, t2 -> t1 to t2 }  
Returns a list of pairs built  
from the elements of `this` array and the [other] array with the same index.  
The returned list has length of the  
shortest collection.  
@sample  
samples.collections.Iterables.Operations.zipIterable  
public infix fun  
BooleanArray.zip(other: BooleanArray): List<Pair<Boolean, Boolean>> {  
return zip(other) { t1, t2 -> t1 to t2  
Returns a list of pairs built from the elements of `this` array and the [other] array with the same  
index.  
The returned list has length of the shortest collection.  
@sample  
samples.collections.Iterables.Operations.zipIterable  
public infix fun CharArray.zip(other: CharArray):  
List<Pair<Char, Char>> {  
return zip(other) { t1, t2 -> t1 to t2 }  
Returns a list of values built  
from the elements of `this` array and the [other] array with the same index  
using the provided [transform]  
function applied to each pair of elements.  
The returned list has length of the shortest array.  
@sample  
samples.collections.Iterables.Operations.zipIterableWithTransform  
public inline fun <V> ByteArray.zip(other:  
ByteArray, transform: (a: Byte, b: Byte) -> V): List<V> {  
val size = minOf(size, other.size)  
val list = ArrayList<V>(size)  
for (i in 0 until size) {  
list.add(transform(this[i], other[i]))  
}  
return  
list  
Returns a list of values built from the elements of `this` array and the [other] array with the same  
index  
using the provided [transform] function applied to each pair of elements.  
The returned list has length  
of the shortest array.  
@sample  
samples.collections.Iterables.Operations.zipIterableWithTransform  
public inline fun <V> ShortArray.zip(other: ShortArray, transform: (a: Short,  
b: Short) -> V): List<V> {  
val size = minOf(size, other.size)  
val list = ArrayList<V>(size)  
for (i in 0  
until size) {  
list.add(transform(this[i], other[i]))  
}  
return list  
Returns a list of values built  
from the elements of `this` array and the [other] array with the same index  
using the provided [transform]  
function applied to each pair of elements.  
The returned list has length of the shortest array.  
@sample  
samples.collections.Iterables.Operations.zipIterableWithTransform  
public inline fun <V>  
LongArray.zip(other: LongArray, transform: (a: Long, b: Long) -> V): List<V> {  
val size = minOf(size,  
other.size)  
val list = ArrayList<V>(size)  
for (i in 0 until size) {  
list.add(transform(this[i], other[i]))  
}  
return list  
Returns a list of values built from the elements of `this` array and the [other] array  
with the same index  
using the provided [transform] function applied to each pair of elements.  
The returned  
list has length of the shortest array.  
@sample  
samples.collections.Iterables.Operations.zipIterableWithTransform  
public inline fun <V>  
FloatArray.zip(other: FloatArray, transform: (a: Float, b: Float) -> V): List<V> {  
val size = minOf(size,  
other.size)  
val list = ArrayList<V>(size)  
for (i in 0 until size)  
{  
list.add(transform(this[i], other[i]))  
}  
return list  
Returns a list of values built from the  
elements of `this` array and the [other] array with the same index  
using the provided [transform] function
```

```

applied to each pair of elements.\n * The returned list has length of the shortest array.\n * \n * @sample
samples.collections.Iterables.Operations.zipIterableWithTransform\n *\npublic inline fun <V>
DoubleArray.zip(other: DoubleArray, transform: (a: Double, b: Double) -> V): List<V> {\n    val size = minOf(size,
other.size)\n    val list = ArrayList<V>(size)\n    for (i in 0 until size) {\n        list.add(transform(this[i], other[i]))\n
}\n    return list\n}\n\n/**\n * Returns a list of values built from the elements of `this` array and the [other] array
with the same index\n * using the provided [transform] function applied to each pair of elements.\n * The returned
list has length of the shortest array.\n * \n * @sample
samples.collections.Iterables.Operations.zipIterableWithTransform\n
*\npublic inline fun <V> BooleanArray.zip(other: BooleanArray, transform: (a: Boolean, b: Boolean) -> V):
List<V> {\n    val size = minOf(size, other.size)\n    val list = ArrayList<V>(size)\n    for (i in 0 until size) {\n
list.add(transform(this[i], other[i]))\n    }\n    return list\n}\n\n/**\n * Returns a list of values built from the elements
of `this` array and the [other] array with the same index\n * using the provided [transform] function applied to each
pair of elements.\n * The returned list has length of the shortest array.\n * \n * @sample
samples.collections.Iterables.Operations.zipIterableWithTransform\n *\npublic inline fun <V>
CharArray.zip(other: CharArray, transform: (a: Char, b: Char) -> V): List<V> {\n    val size = minOf(size,
other.size)\n    val list = ArrayList<V>(size)\n    for (i in 0 until size) {\n        list.add(transform(this[i], other[i]))\n
}\n    return list\n}\n\n/**\n * Appends the string
from all the elements separated using [separator] and using the given [prefix] and [postfix] if supplied.\n * \n * If
the collection could be huge, you can specify a non-negative value of [limit], in which case only the first [limit]\n *
elements will be appended, followed by the [truncated] string (which defaults to `"...`").\n * \n * @sample
samples.collections.Collections.Transformations.joinTo\n *\npublic fun <T, A : Appendable> Array<out
T>.joinTo(buffer: A, separator: CharSequence = ``, ``, prefix: CharSequence = ``, postfix: CharSequence = ``,
limit: Int = -1, truncated: CharSequence = `"...`, transform: ((T) -> CharSequence)? = null): A {\n
buffer.append(prefix)\n    var count = 0\n    for (element in this) {\n        if (++count > 1) buffer.append(separator)\n
        if (limit < 0 || count <= limit) {\n            buffer.appendElement(element, transform)\n        } else break\n    }\n    if
(limit >= 0 && count > limit) buffer.append(truncated)\n    buffer.append(postfix)\n
return buffer\n}\n\n/**\n * Appends the string from all the elements separated using [separator] and using the
given [prefix] and [postfix] if supplied.\n * \n * If the collection could be huge, you can specify a non-negative value
of [limit], in which case only the first [limit]\n * elements will be appended, followed by the [truncated] string
(which defaults to `"...`").\n * \n * @sample samples.collections.Collections.Transformations.joinTo\n *\npublic fun
<A : Appendable> ByteArray.joinTo(buffer: A, separator: CharSequence = ``, ``, prefix: CharSequence = ``,
postfix: CharSequence = ``, limit: Int = -1, truncated: CharSequence = `"...`, transform: ((Byte) ->
CharSequence)? = null): A {\n    buffer.append(prefix)\n    var count = 0\n    for (element in this) {\n        if (++count
> 1) buffer.append(separator)\n        if (limit < 0 || count <= limit) {\n            if (transform != null)\n                buffer.append(transform(element))\n            else\n                buffer.append(element.toString())\n        } else break\n    }\n    if (limit >= 0 && count > limit)
buffer.append(truncated)\n    buffer.append(postfix)\n    return buffer\n}\n\n/**\n * Appends the string from all the
elements separated using [separator] and using the given [prefix] and [postfix] if supplied.\n * \n * If the collection
could be huge, you can specify a non-negative value of [limit], in which case only the first [limit]\n * elements will
be appended, followed by the [truncated] string (which defaults to `"...`").\n * \n * @sample
samples.collections.Collections.Transformations.joinTo\n *\npublic fun <A : Appendable>
ShortArray.joinTo(buffer: A, separator: CharSequence = ``, ``, prefix: CharSequence = ``, postfix: CharSequence
= ``, limit: Int = -1, truncated: CharSequence = `"...`, transform: ((Short) -> CharSequence)? = null): A {\n
buffer.append(prefix)\n    var count = 0\n    for (element in this) {\n        if (++count > 1) buffer.append(separator)\n
        if (limit < 0 || count <= limit) {\n            if (transform != null)\n                buffer.append(transform(element))\n            else\n                buffer.append(element.toString())\n        } else break\n    }\n    if (limit >= 0 && count > limit)
buffer.append(truncated)\n    buffer.append(postfix)\n    return buffer\n}\n\n/**\n * Appends the string from all the
elements separated using [separator] and using the given [prefix] and [postfix] if supplied.\n * \n * If the collection

```

could be huge, you can specify a non-negative value of [limit], in which case only the first [limit]\n \* elements will be appended, followed by the [truncated] string (which defaults to \"...\").\n \* \n \* @sample

```

samples.collections.Collections.Transformations.joinTo\n *\npublic fun <A : Appendable> IntArray.joinTo(buffer: A, separator: CharSequence = "\", \"\", prefix: CharSequence = \"\\\", postfix: CharSequence = \"\\\", limit: Int = -1, truncated: CharSequence = \"...\", transform: ((Int) -> CharSequence)? = null): A {\n    buffer.append(prefix)\n    var count = 0\n    for (element in this) {\n        if (++count > 1) buffer.append(separator)\n        if (limit < 0 || count <= limit) {\n            if (transform != null)\n                buffer.append(transform(element))\n            else\n                buffer.append(element.toString())\n        } else break\n    }\n    if (limit >= 0 && count > limit) buffer.append(truncated)\n    buffer.append(postfix)\n    return buffer\n}\n\n/**\n * Appends the string from all the elements separated using [separator] and using the given [prefix] and [postfix] if supplied.\n * \n * If the collection could be huge, you can specify a non-negative value of [limit], in which case only the first [limit]\n * elements will be appended, followed by the [truncated] string (which defaults to \"...\").\n * \n * @sample samples.collections.Collections.Transformations.joinTo\n *\npublic fun <A : Appendable> LongArray.joinTo(buffer: A, separator: CharSequence = "\", \"\", prefix: CharSequence = \"\\\", postfix: CharSequence = \"\\\", limit: Int = -1, truncated: CharSequence = \"...\", transform: ((Long) -> CharSequence)? = null): A {\n    buffer.append(prefix)\n    var count = 0\n    for (element in this) {\n        if (++count > 1) buffer.append(separator)\n        if (limit < 0 || count <= limit) {\n            if (transform != null)\n                buffer.append(transform(element))\n            else\n                buffer.append(element.toString())\n        } else break\n    }\n    if (limit >= 0 && count > limit)\n        buffer.append(truncated)\n    buffer.append(postfix)\n    return buffer\n}\n\n/**\n * Appends the string from all the elements separated using [separator] and using the given [prefix] and [postfix] if supplied.\n * \n * If the collection could be huge, you can specify a non-negative value of [limit], in which case only the first [limit]\n * elements will be appended, followed by the [truncated] string (which defaults to \"...\").\n * \n * @sample samples.collections.Collections.Transformations.joinTo\n *\npublic fun <A : Appendable> FloatArray.joinTo(buffer: A, separator: CharSequence = "\", \"\", prefix: CharSequence = \"\\\", postfix: CharSequence = \"\\\", limit: Int = -1, truncated: CharSequence = \"...\", transform: ((Float) -> CharSequence)? = null): A {\n    buffer.append(prefix)\n    var count = 0\n    for (element in this) {\n        if (++count > 1)\n            buffer.append(separator)\n        if (limit < 0 || count <= limit) {\n            if (transform != null)\n                buffer.append(transform(element))\n            else\n                buffer.append(element.toString())\n        } else break\n    }\n    if (limit >= 0 && count > limit)\n        buffer.append(truncated)\n    buffer.append(postfix)\n    return buffer\n}\n\n/**\n * Appends the string from all the elements separated using [separator] and using the given [prefix] and [postfix] if supplied.\n * \n * If the collection could be huge, you can specify a non-negative value of [limit], in which case only the first [limit]\n * elements will be appended, followed by the [truncated] string (which defaults to \"...\").\n * \n * @sample samples.collections.Collections.Transformations.joinTo\n *\npublic fun <A : Appendable> DoubleArray.joinTo(buffer: A, separator: CharSequence = "\", \"\", prefix: CharSequence = \"\\\", postfix: CharSequence = \"\\\", limit: Int = -1, truncated: CharSequence = \"...\", transform: ((Double) -> CharSequence)? = null): A {\n    buffer.append(prefix)\n    var count = 0\n    for (element in this) {\n        if (++count > 1)\n            buffer.append(separator)\n        if (limit < 0 || count <= limit) {\n            if (transform != null)\n                buffer.append(transform(element))\n            else\n                buffer.append(element.toString())\n        } else break\n    }\n    if (limit >= 0 && count > limit)\n        buffer.append(truncated)\n    buffer.append(postfix)\n    return buffer\n}\n\n/**\n * Appends the string from all the elements separated using [separator] and using the given [prefix] and [postfix] if supplied.\n * \n * If the collection could be huge, you can specify a non-negative value of [limit], in which case only the first [limit]\n * elements will be appended, followed by the [truncated] string (which defaults to \"...\").\n * \n * @sample samples.collections.Collections.Transformations.joinTo\n *\npublic fun <A : Appendable> BooleanArray.joinTo(buffer: A, separator: CharSequence = "\", \"\", prefix: CharSequence = \"\\\", postfix: CharSequence = \"\\\", limit: Int = -1, truncated: CharSequence = \"...\", transform: ((Boolean) -> CharSequence)? =

```



```

null): A {
    buffer.append(prefix)
    var count = 0
    for (element in this) {
        if (++count > 1)
            buffer.append(separator)
        if (limit < 0 || count <= limit) {
            if (transform != null)
                buffer.append(transform(element))
            else
                buffer.append(element.toString())
        }
        else break
    }
    if (limit >= 0 && count > limit) buffer.append(truncated)
    buffer.append(postfix)
    return buffer
}

Appendable * Appends the string from all the elements separated using [separator] and using the given
[prefix] and [postfix] if supplied.
* If the collection could be huge, you can specify a non-negative value of
[limit], in which case only the first [limit] elements will be appended, followed by the [truncated] string (which
defaults to "...").
@sample samples.collections.Collections.Transformations.joinTo

public fun <A :
Appendable> CharArray.joinTo(buffer: A, separator: CharSequence = "\", \", prefix: CharSequence = "\", postfix:
CharSequence = "\", limit: Int = -1, truncated: CharSequence = "...", transform: ((Char) -> CharSequence)? =
null): A {
    buffer.append(prefix)
    var count = 0
    for (element in this) {
        if (++count > 1)
            buffer.append(separator)
        if (limit < 0 || count <= limit) {
            if (transform != null)
                buffer.append(transform(element))
            else
                buffer.append(element)
        }
        else break
    }
    if (limit >= 0 && count > limit) buffer.append(truncated)
    buffer.append(postfix)
    return buffer
}

Creates a string from all the elements separated using
[separator] and using the given [prefix] and [postfix] if supplied.
* If the collection could be huge, you can
specify a non-negative value of [limit], in which case only the first [limit] elements will be appended, followed
by the [truncated] string (which defaults to "...").
@sample
samples.collections.Collections.Transformations.joinToString

public fun <T> Array<out
T>.joinToString(separator: CharSequence = "\", \", prefix: CharSequence = "\", postfix: CharSequence = "\", limit:
Int = -1, truncated: CharSequence = "...", transform: ((T) -> CharSequence)? = null): String {
    return
    joinTo(StringBuilder(), separator,
    prefix, postfix, limit, truncated, transform).toString()
}

Creates a string from all the elements separated
using [separator] and using the given [prefix] and [postfix] if supplied.
* If the collection could be huge, you
can specify a non-negative value of [limit], in which case only the first [limit] elements will be appended,
followed by the [truncated] string (which defaults to "...").
@sample
samples.collections.Collections.Transformations.joinToString

public fun ByteArray.joinToString(separator:
CharSequence = "\", \", prefix: CharSequence = "\", postfix: CharSequence = "\", limit: Int = -1, truncated:
CharSequence = "...", transform: ((Byte) -> CharSequence)? = null): String {
    return joinTo(StringBuilder(),
    separator, prefix, postfix, limit, truncated, transform).toString()
}

Creates a string from all the elements
separated using [separator] and using the given [prefix] and [postfix] if supplied.
* If the collection
could be huge, you can specify a non-negative value of [limit], in which case only the first [limit] elements will
be appended, followed by the [truncated] string (which defaults to "...").
@sample
samples.collections.Collections.Transformations.joinToString

public fun ShortArray.joinToString(separator:
CharSequence = "\", \", prefix: CharSequence = "\", postfix: CharSequence = "\", limit: Int = -1, truncated:
CharSequence = "...", transform: ((Short) -> CharSequence)? = null): String {
    return joinTo(StringBuilder(),
    separator, prefix, postfix, limit, truncated, transform).toString()
}

Creates a string from all the elements
separated using [separator] and using the given [prefix] and [postfix] if supplied.
* If the collection could be
huge, you can specify a non-negative value of [limit], in which case only the first [limit] elements will be
appended, followed by the [truncated] string (which defaults to "...").
@sample
samples.collections.Collections.Transformations.joinToString

public fun IntArray.joinToString(separator:
CharSequence = "\", \", prefix: CharSequence = "\", postfix: CharSequence = "\", limit: Int = -1, truncated:
CharSequence = "...", transform: ((Int) -> CharSequence)? = null): String {
    return joinTo(StringBuilder(),
    separator, prefix, postfix, limit, truncated, transform).toString()
}

Creates a string from all the elements
separated using [separator] and using the given [prefix] and [postfix] if supplied.
* If the collection could be
huge, you can specify a non-negative value of [limit], in which case only the first [limit] elements will be
appended, followed by the [truncated] string (which defaults to "...").
@sample
samples.collections.Collections.Transformations.joinToString

public fun LongArray.joinToString(separator:

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CharSequence = "\", \"", prefix: CharSequence = "\", postfix: CharSequence = "\", limit: Int = -1, truncated:
CharSequence = \"...\", transform: ((Long) -> CharSequence)? = null): String { \n  return joinTo(StringBuilder(),
separator, prefix, postfix, limit, truncated, transform).toString()\n}\n\n/** \n * Creates a string from all the elements
separated using [separator] and using the given [prefix] and [postfix] if supplied.\n * \n * If the collection could be
huge, you can specify a non-negative value of [limit], in which case only the first [limit]\n * elements will be
appended, followed by the [truncated] string (which defaults to \"...\").\n * \n * @sample
samples.collections.Collections.Transformations.joinToString\n */\npublic fun FloatArray.joinToString(separator:
CharSequence = "\", \"", prefix: CharSequence = "\", postfix: CharSequence = "\", limit: Int = -1, truncated:
CharSequence = \"...\", transform: ((Float) -> CharSequence)? = null): String { \n  return joinTo(StringBuilder(),
separator, prefix, postfix, limit, truncated, transform).toString()\n}\n\n/** \n * Creates a string
from all the elements separated using [separator] and using the given [prefix] and [postfix] if supplied.\n * \n * If
the collection could be huge, you can specify a non-negative value of [limit], in which case only the first [limit]\n *
elements will be appended, followed by the [truncated] string (which defaults to \"...\").\n * \n * @sample
samples.collections.Collections.Transformations.joinToString\n */\npublic fun DoubleArray.joinToString(separator:
CharSequence = "\", \"", prefix: CharSequence = "\", postfix: CharSequence = "\", limit: Int = -1, truncated:
CharSequence = \"...\", transform: ((Double) -> CharSequence)? = null): String { \n  return joinTo(StringBuilder(),
separator, prefix, postfix, limit, truncated, transform).toString()\n}\n\n/** \n * Creates a string from all the elements
separated using [separator] and using the given [prefix] and [postfix] if supplied.\n * \n * If the collection could be
huge, you can specify a non-negative value of [limit], in which case
only the first [limit]\n * elements will be appended, followed by the [truncated] string (which defaults to \"...\").\n *
\n * @sample samples.collections.Collections.Transformations.joinToString\n */\npublic fun
BooleanArray.joinToString(separator: CharSequence = "\", \"", prefix: CharSequence = "\", postfix: CharSequence =
\"", limit: Int = -1, truncated: CharSequence = \"...\", transform: ((Boolean) -> CharSequence)? = null): String { \n
return joinTo(StringBuilder(), separator, prefix, postfix, limit, truncated, transform).toString()\n}\n\n/** \n * Creates
a string from all the elements separated using [separator] and using the given [prefix] and [postfix] if supplied.\n * \n
* If the collection could be huge, you can specify a non-negative value of [limit], in which case only the first
[limit]\n * elements will be appended, followed by the [truncated] string (which defaults to \"...\").\n * \n * @sample
samples.collections.Collections.Transformations.joinToString\n */\npublic fun
CharArray.joinToString(separator: CharSequence = "\", \"", prefix: CharSequence = "\", postfix: CharSequence =
\"", limit: Int = -1, truncated: CharSequence = \"...\", transform: ((Char) -> CharSequence)? = null): String { \n
return joinTo(StringBuilder(), separator, prefix, postfix, limit, truncated, transform).toString()\n}\n\n/** \n * Creates
an [Iterable] instance that wraps the original array returning its elements when being iterated.\n */\npublic fun <T>
Array<out T>.asIterable(): Iterable<T> { \n  if (isEmpty()) return emptyList()\n  return Iterable { this.iterator()
}\n}\n\n/** \n * Creates an [Iterable] instance that wraps the original array returning its elements when being
iterated.\n */\npublic fun ByteArray.asIterable(): Iterable<Byte> { \n  if (isEmpty()) return emptyList()\n  return
Iterable { this.iterator() }\n}\n\n/** \n * Creates an [Iterable] instance that wraps the original array returning its
elements when being iterated.\n */\npublic fun ShortArray.asIterable():
Iterable<Short> { \n  if (isEmpty()) return emptyList()\n  return Iterable { this.iterator() }\n}\n\n/** \n * Creates an
[Iterable] instance that wraps the original array returning its elements when being iterated.\n */\npublic fun
IntArray.asIterable(): Iterable<Int> { \n  if (isEmpty()) return emptyList()\n  return Iterable { this.iterator()
}\n}\n\n/** \n * Creates an [Iterable] instance that wraps the original array returning its elements when being
iterated.\n */\npublic fun LongArray.asIterable(): Iterable<Long> { \n  if (isEmpty()) return emptyList()\n  return
Iterable { this.iterator() }\n}\n\n/** \n * Creates an [Iterable] instance that wraps the original array returning its
elements when being iterated.\n */\npublic fun FloatArray.asIterable(): Iterable<Float> { \n  if (isEmpty()) return
emptyList()\n  return Iterable { this.iterator() }\n}\n\n/** \n * Creates an [Iterable] instance that wraps the original
array returning its elements when being iterated.\n */\npublic
fun DoubleArray.asIterable(): Iterable<Double> { \n  if (isEmpty()) return emptyList()\n  return Iterable {
this.iterator() }\n}\n\n/** \n * Creates an [Iterable] instance that wraps the original array returning its elements when

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being iterated.\n *\npublic fun BooleanArray.asIterable(): Iterable<Boolean> {\n  if (isEmpty()) return
emptyList()\n  return Iterable { this.iterator() }\n}\n\n/**\n * Creates an [Iterable] instance that wraps the original
array returning its elements when being iterated.\n *\npublic fun CharArray.asIterable(): Iterable<Char> {\n  if
(isEmpty()) return emptyList()\n  return Iterable { this.iterator() }\n}\n\n/**\n * Creates a [Sequence] instance that
wraps the original array returning its elements when being iterated.\n *\n * @sample
samples.collections.Sequences.Building.sequenceFromArray\n *\npublic fun <T> Array<out T>.asSequence():
Sequence<T> {\n  if (isEmpty()) return emptySequence()\n  return Sequence { this.iterator() }\n}\n\n/**\n
 * Creates a [Sequence] instance that wraps the original array returning its elements when being iterated.\n *\n *
@sample samples.collections.Sequences.Building.sequenceFromArray\n *\npublic fun ByteArray.asSequence():
Sequence<Byte> {\n  if (isEmpty()) return emptySequence()\n  return Sequence { this.iterator() }\n}\n\n/**\n
 * Creates a [Sequence] instance that wraps the original array returning its elements when being iterated.\n *\n *
@sample samples.collections.Sequences.Building.sequenceFromArray\n *\npublic fun ShortArray.asSequence():
Sequence<Short> {\n  if (isEmpty()) return emptySequence()\n  return Sequence { this.iterator() }\n}\n\n/**\n
 * Creates a [Sequence] instance that wraps the original array returning its elements when being iterated.\n *\n *
@sample samples.collections.Sequences.Building.sequenceFromArray\n *\npublic fun IntArray.asSequence():
Sequence<Int> {\n  if (isEmpty()) return emptySequence()\n  return Sequence { this.iterator() }\n}\n\n/**\n
 * Creates a [Sequence] instance that wraps the original array returning its elements when being iterated.\n *\n *
@sample samples.collections.Sequences.Building.sequenceFromArray\n *\npublic fun LongArray.asSequence():
Sequence<Long> {\n  if (isEmpty()) return emptySequence()\n  return Sequence { this.iterator() }\n}\n\n/**\n
 * Creates a [Sequence] instance that wraps the original array returning its elements when being iterated.\n *\n *
@sample samples.collections.Sequences.Building.sequenceFromArray\n *\npublic fun FloatArray.asSequence():
Sequence<Float> {\n  if (isEmpty()) return emptySequence()\n  return Sequence { this.iterator() }\n}\n\n/**\n
 * Creates a [Sequence] instance that wraps the original array returning its elements when being iterated.\n *\n *
@sample samples.collections.Sequences.Building.sequenceFromArray\n *\npublic fun DoubleArray.asSequence():
Sequence<Double> {\n  if (isEmpty()) return emptySequence()\n  return Sequence { this.iterator()
}\n}\n\n/**\n * Creates a [Sequence] instance that wraps the original array returning its elements when being
iterated.\n *\n * @sample samples.collections.Sequences.Building.sequenceFromArray\n *\npublic fun
BooleanArray.asSequence(): Sequence<Boolean> {\n  if (isEmpty()) return emptySequence()\n  return Sequence
{ this.iterator() }\n}\n\n/**\n * Creates a [Sequence] instance that wraps the original array returning its elements
when being iterated.\n *\n * @sample samples.collections.Sequences.Building.sequenceFromArray\n *\npublic
fun CharArray.asSequence(): Sequence<Char> {\n  if (isEmpty()) return emptySequence()\n  return Sequence {
this.iterator() }\n}\n\n/**\n * Returns an average value of elements in the array.\n
*\n *@kotlin.jvm.JvmName("averageOfByte")\npublic fun Array<out Byte>.average(): Double {\n  var sum:
Double = 0.0\n  var count: Int = 0\n  for (element in this) {\n    sum += element\n    ++count\n  }\n  return
if (count == 0) Double.NaN
else sum / count\n}\n\n/**\n * Returns an average value of elements in the array.\n
*\n *@kotlin.jvm.JvmName("averageOfShort")\npublic fun Array<out Short>.average(): Double {\n  var sum:
Double = 0.0\n  var count: Int = 0\n  for (element in this) {\n    sum += element\n    ++count\n  }\n  return
if (count == 0) Double.NaN else sum / count\n}\n\n/**\n * Returns an average value of elements in the array.\n
*\n *@kotlin.jvm.JvmName("averageOfInt")\npublic fun Array<out Int>.average(): Double {\n  var sum: Double
= 0.0\n  var count: Int = 0\n  for (element in this) {\n    sum += element\n    ++count\n  }\n  return if (count
== 0) Double.NaN else sum / count\n}\n\n/**\n * Returns an average value of elements in the array.\n
*\n *@kotlin.jvm.JvmName("averageOfLong")\npublic fun Array<out Long>.average(): Double {\n  var sum:
Double = 0.0\n  var count: Int = 0\n  for (element in this) {\n    sum += element\n    ++count\n  }\n  return
if (count == 0) Double.NaN else sum / count\n}\n\n/**\n * Returns an average value of elements in the array.\n
*\n *@kotlin.jvm.JvmName("averageOfFloat")\npublic fun Array<out Float>.average(): Double {\n  var sum:
Double = 0.0\n  var count: Int = 0\n  for (element in this) {\n    sum += element\n    ++count\n  }\n  return
if (count == 0) Double.NaN else sum / count\n}\n\n/**\n * Returns an average value of elements in the array.\n

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*^@kotlin.jvm.JvmName("averageOfDouble")\npublic fun Array<out Double>.average(): Double {\n    var sum:
Double = 0.0\n    var count: Int = 0\n    for (element in this) {\n        sum += element\n        ++count\n    }\n    return
if (count == 0) Double.NaN else sum / count\n}\n\n/**\n * Returns an average value of elements in the array.\n
*^public fun ByteArray.average(): Double {\n    var sum: Double = 0.0\n    var count: Int = 0\n    for (element in
this) {\n        sum += element\n        ++count\n    }\n    return if (count ==
0) Double.NaN else sum / count\n}\n\n/**\n * Returns an average value of elements in the array.\n
*^public fun ShortArray.average(): Double {\n    var sum: Double = 0.0\n    var count: Int = 0\n    for (element in this) {\n
sum += element\n        ++count\n    }\n    return if (count == 0) Double.NaN else sum / count\n}\n\n/**\n * Returns
an average value of elements in the array.\n
*^public fun IntArray.average(): Double {\n    var sum: Double = 0.0\n    var count: Int = 0\n    for (element in this) {\n
sum += element\n        ++count\n    }\n    return if (count == 0)
Double.NaN else sum / count\n}\n\n/**\n * Returns an average value of elements in the array.\n
*^public fun LongArray.average(): Double {\n    var sum: Double = 0.0\n    var count: Int = 0\n    for (element in this) {\n
sum += element\n        ++count\n    }\n    return if (count == 0) Double.NaN else sum / count\n}\n\n/**\n * Returns
an average value of elements in the array.\n
*^public fun FloatArray.average(): Double {\n    var sum: Double = 0.0\n    var count: Int = 0\n    for (element in this) {\n
sum += element\n        ++count\n    }\n    return if (count == 0) Double.NaN else sum / count\n}\n\n/**\n * Returns
an average value of elements in the array.\n
*^public fun DoubleArray.average(): Double {\n    var sum: Double =
0.0\n    var count: Int = 0\n    for (element in this) {\n        sum += element\n        ++count\n    }\n    return if (count
== 0) Double.NaN else sum / count\n}\n\n/**\n * Returns the sum of all elements in the array.\n
*^@kotlin.jvm.JvmName("sumOfByte")\npublic fun Array<out Byte>.sum(): Int {\n    var sum: Int = 0\n    for
(element in this) {\n        sum += element\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all elements in the
array.\n
*^@kotlin.jvm.JvmName("sumOfShort")\npublic fun Array<out Short>.sum(): Int {\n    var sum: Int =
0\n    for (element in this) {\n        sum += element\n    }\n    return sum\n}\n\n/**\n
* Returns the sum of all elements in the array.\n
*^@kotlin.jvm.JvmName("sumOfInt")\npublic fun Array<out
Int>.sum(): Int {\n    var sum: Int = 0\n    for (element in this) {\n        sum += element\n    }\n    return
sum\n}\n\n/**\n * Returns the sum of all elements in the array.\n
*^@kotlin.jvm.JvmName("sumOfLong")\npublic fun Array<out Long>.sum(): Long {\n    var sum: Long = 0L\n
for (element in this) {\n        sum += element\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all elements in
the array.\n
*^@kotlin.jvm.JvmName("sumOfFloat")\npublic fun Array<out Float>.sum(): Float {\n    var sum:
Float = 0.0f\n    for (element in this) {\n        sum += element\n    }\n    return sum\n}\n\n/**\n * Returns the sum of
all elements in the array.\n
*^@kotlin.jvm.JvmName("sumOfDouble")\npublic fun Array<out Double>.sum():
Double {\n    var sum: Double = 0.0\n    for (element in this) {\n        sum += element\n    }\n    return
sum\n}\n\n/**\n * Returns
the sum of all elements in the array.\n
*^public fun ByteArray.sum(): Int {\n    var sum: Int = 0\n    for (element in
this) {\n        sum += element\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all elements in the array.\n
*^public fun ShortArray.sum(): Int {\n    var sum: Int = 0\n    for (element in this) {\n        sum += element\n    }\n
return sum\n}\n\n/**\n * Returns the sum of all elements in the array.\n
*^public fun IntArray.sum(): Int {\n    var
sum: Int = 0\n    for (element in this) {\n        sum += element\n    }\n    return sum\n}\n\n/**\n * Returns the sum of
all elements in the array.\n
*^public fun LongArray.sum(): Long {\n    var sum: Long = 0L\n    for (element in this)
{\n        sum += element\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all elements in the array.\n
*^public fun FloatArray.sum(): Float {\n    var sum: Float = 0.0f\n    for (element in this) {\n        sum += element\n    }\n
return sum\n}\n\n/**\n * Returns
the sum of all elements in the array.\n
*^public fun DoubleArray.sum(): Double {\n    var sum: Double = 0.0\n
for (element in this) {\n        sum += element\n    }\n    return sum\n}\n\n"/*\n * Copyright 2010-2022 JetBrains
s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0
license that can be found in the license/LICENSE.txt file.\n
*^@file:kotlin.jvm.JvmMultifileClass\n@file:kotlin.jvm.JvmName("RangesKt")\n\npackage
kotlin.ranges\n\n/\n// NOTE: THIS FILE IS AUTO-GENERATED by the GenerateStandardLib.kt\n// See:

```

<https://github.com/JetBrains/kotlin/tree/master/libraries/stdlib>\n\nimport kotlin.random.\*\n\n \* Returns the first element.\n \* \n \* @throws NoSuchElementException if the progression is empty.\n\n \* \n @SinceKotlin("1.7")\npublic fun IntProgression.first(): Int {\n if (isEmpty())\n throw NoSuchElementException("Progression \$this is empty.")\n return this.first\n}\n\n \* Returns the first element.\n \* \n \* @throws NoSuchElementException if the progression is empty.\n\n \* \n @SinceKotlin("1.7")\npublic fun LongProgression.first(): Long {\n if (isEmpty())\n throw NoSuchElementException("Progression \$this is empty.")\n return this.first\n}\n\n \* Returns the first element.\n \* \n \* @throws NoSuchElementException if the progression is empty.\n\n \* \n @SinceKotlin("1.7")\npublic fun CharProgression.first(): Char {\n if (isEmpty())\n throw NoSuchElementException("Progression \$this is empty.")\n return this.first\n}\n\n \* Returns the first element, or `null` if the progression is empty.\n \* \n @SinceKotlin("1.7")\npublic fun IntProgression.firstOrNull(): Int? {\n return if (isEmpty()) null else this.first\n}\n\n \* Returns the first element, or `null` if the progression is empty.\n \* \n @SinceKotlin("1.7")\npublic fun LongProgression.firstOrNull(): Long? {\n return if (isEmpty()) null else this.first\n}\n\n \* Returns the first element, or `null` if the progression is empty.\n \* \n @SinceKotlin("1.7")\npublic fun CharProgression.firstOrNull(): Char? {\n return if (isEmpty()) null else this.first\n}\n\n \* Returns the last element.\n \* \n \* @throws NoSuchElementException if the progression is empty.\n \* \n \* @sample samples.collections.Collections.Elements.last\n \* \n @SinceKotlin("1.7")\npublic fun IntProgression.last(): Int {\n if (isEmpty())\n throw NoSuchElementException("Progression \$this is empty.")\n return this.last\n}\n\n \* Returns the last element.\n \* \n \* @throws NoSuchElementException if the progression is empty.\n \* \n \* @sample samples.collections.Collections.Elements.last\n \* \n @SinceKotlin("1.7")\npublic fun LongProgression.last(): Long {\n if (isEmpty())\n throw NoSuchElementException("Progression \$this is empty.")\n return this.last\n}\n\n \* Returns the last element.\n \* \n \* @throws NoSuchElementException if the progression is empty.\n \* \n \* @sample samples.collections.Collections.Elements.last\n \* \n @SinceKotlin("1.7")\npublic fun CharProgression.last(): Char {\n if (isEmpty())\n throw NoSuchElementException("Progression \$this is empty.")\n return this.last\n}\n\n \* Returns the last element, or `null` if the progression is empty.\n \* \n \* @sample samples.collections.Collections.Elements.last\n \* \n @SinceKotlin("1.7")\npublic fun IntProgression.lastOrNull(): Int? {\n return if (isEmpty()) null else this.last\n}\n\n \* Returns the last element, or `null` if the progression is empty.\n \* \n \* @sample samples.collections.Collections.Elements.last\n \* \n @SinceKotlin("1.7")\npublic fun LongProgression.lastOrNull(): Long? {\n return if (isEmpty()) null else this.last\n}\n\n \* Returns the last element, or `null` if the progression is empty.\n \* \n \* @sample samples.collections.Collections.Elements.last\n \* \n @SinceKotlin("1.7")\npublic fun CharProgression.lastOrNull(): Char? {\n return if (isEmpty()) null else this.last\n}\n\n \* Returns a random element from this range.\n \* \n \* @throws IllegalArgumentException if this range is empty.\n\n \* \n @SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\npublic inline fun IntRange.random(): Int {\n return random(Random)\n}\n\n \* Returns a random element from this range.\n \* \n \* @throws IllegalArgumentException if this range is empty.\n \* \n @SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\npublic inline fun LongRange.random(): Long {\n return random(Random)\n}\n\n \* Returns a random element from this range.\n \* \n \* @throws IllegalArgumentException if this range is empty.\n\n \* \n @SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\npublic inline fun CharRange.random(): Char {\n return random(Random)\n}\n\n \* Returns a random element from this range using the specified source of randomness.\n \* \n \* @throws IllegalArgumentException if this range is empty.\n\n \* \n @SinceKotlin("1.3")\npublic fun IntRange.random(random: Random): Int {\n try {\n return random.nextInt(this)\n } catch (e: IllegalArgumentException) {\n throw NoSuchElementException(e.message)\n }\n}\n\n \* Returns a random element from this range using the specified source of randomness.\n \* \n \* @throws

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IllegalArgumentException if this range is empty.\n *\n@SinceKotlin("1.3")\npublic fun
LongRange.random(random: Random): Long {\n try {\n return random.nextLong(this)\n } catch(e:
IllegalArgumentException) {\n throw NoSuchElementException(e.message)\n }\n}\n\n/**\n * Returns a
random element from this range using the specified source of randomness.\n * \n * @throws
IllegalArgumentException if this range is empty.\n *\n@SinceKotlin("1.3")\npublic fun
CharRange.random(random: Random): Char {\n try {\n return random.nextInt(first.code, last.code +
1).toChar()\n } catch(e: IllegalArgumentException) {\n throw NoSuchElementException(e.message)\n
}\n}\n\n/**\n * Returns a random element from this range, or `null` if this range is empty.\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npubli
c inline fun IntRange.randomOrNull(): Int? {\n return randomOrNull(Random)\n}\n\n/**\n * Returns a random
element from this range, or `null` if this range is empty.\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npubli
c inline fun LongRange.randomOrNull(): Long? {\n return randomOrNull(Random)\n}\n\n/**\n * Returns a
random element from this range, or `null` if this range is empty.\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npubli
c inline fun CharRange.randomOrNull(): Char? {\n return randomOrNull(Random)\n}\n\n/**\n * Returns a
random element from this range using the specified source of randomness, or `null` if this range is empty.\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic
fun IntRange.randomOrNull(random: Random): Int? {\n if (isEmpty())\n return null\n return
random.nextInt(this)\n}\n\n/**\n * Returns a random element from this range using the specified source of
randomness, or `null` if this range is empty.\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic fun
LongRange.randomOrNull(random: Random): Long? {\n if (isEmpty())\n return null\n return
random.nextLong(this)\n}\n\n/**\n * Returns a random element from this range using the specified source of
randomness, or `null` if this range is empty.\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic fun
CharRange.randomOrNull(random: Random): Char? {\n if (isEmpty())\n return null\n return
random.nextInt(first.code, last.code + 1).toChar()\n}\n\n/**\n * Returns `true` if this range contains the specified
[element].\n * \n * Always
returns `false` if the [element] is `null`.\n *\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\npublic inline
operator fun IntRange.contains(element: Int?): Boolean {\n return element != null &&
contains(element)\n}\n\n/**\n * Returns `true` if this range contains the specified [element].\n * \n * Always returns
`false` if the [element] is `null`.\n *\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\npublic inline operator
fun LongRange.contains(element: Long?): Boolean {\n return element != null && contains(element)\n}\n\n/**\n *
Returns `true` if this range contains the specified [element].\n * \n * Always returns `false` if the [element] is
`null`.\n *\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\npublic inline operator fun
CharRange.contains(element: Char?): Boolean {\n return element != null && contains(element)\n}\n\n/**\n *
Checks if the specified [value] belongs to this range.\n *\n@kotlin.jvm.JvmName("intRangeContains")\npublic
operator fun ClosedRange<Int>.contains(value:
Byte): Boolean {\n return contains(value.toInt())\n}\n\n/**\n * Checks if the specified [value] belongs to this
range.\n *\n@kotlin.jvm.JvmName("longRangeContains")\npublic operator fun
ClosedRange<Long>.contains(value: Byte): Boolean {\n return contains(value.toLong())\n}\n\n/**\n * Checks if
the specified [value] belongs to this range.\n *\n@kotlin.jvm.JvmName("shortRangeContains")\npublic operator
fun ClosedRange<Short>.contains(value: Byte): Boolean {\n return contains(value.toShort())\n}\n\n/**\n *
Checks if the specified [value] belongs to this range.\n *\n@Deprecated("This `contains` operation mixing integer
and floating point arguments has ambiguous semantics and is going to be
removed.")\n@DeprecatedSinceKotlin(warningSince = "1.3", errorSince = "1.4", hiddenSince =
"1.5")\n@kotlin.jvm.JvmName("doubleRangeContains")\npublic operator fun

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ClosedRange<Double>.contains(value: Byte): Boolean {
    return contains(value.toDouble())
}

* Checks if the specified [value] belongs to this range.
* \n@Deprecated("This `contains` operation mixing integer and floating point arguments has ambiguous semantics and is going to be removed.")
* \n@DeprecatedSinceKotlin(warningSince = "1.3", errorSince = "1.4", hiddenSince = "1.5")
* \n@kotlin.jvm.JvmName("floatRangeContains")
* \npublic operator fun ClosedRange<Float>.contains(value: Byte): Boolean {
    return contains(value.toFloat())
}

* Checks if the specified [value] belongs to this range.
* \n
* \n@kotlin.jvm.JvmName("intRangeContains")
* \n@SinceKotlin("1.7")
* \n@ExperimentalStdlibApi
* \npublic operator fun OpenEndRange<Int>.contains(value: Byte): Boolean {
    return contains(value.toInt())
}

* Checks if the specified [value] belongs to this range.
* \n
* \n@kotlin.jvm.JvmName("longRangeContains")
* \n@SinceKotlin("1.7")
* \n@ExperimentalStdlibApi
* \npublic operator fun OpenEndRange<Long>.contains(value: Byte): Boolean {
    return contains(value.toLong())
}

* Checks if the specified [value] belongs to this range.
* \n
* \n@kotlin.jvm.JvmName("shortRangeContains")
* \n@SinceKotlin("1.7")
* \n@ExperimentalStdlibApi
* \npublic operator fun OpenEndRange<Short>.contains(value: Byte): Boolean {
    return contains(value.toShort())
}

* Checks if the specified [value] belongs to this range.
* \n
* \n@kotlin.internal.InlineOnly
* \npublic inline operator fun IntRange.contains(value: Byte): Boolean {
    return (this as ClosedRange<Int>).contains(value)
}

* Checks if the specified [value] belongs to this range.
* \n
* \n@kotlin.internal.InlineOnly
* \npublic inline operator fun LongRange.contains(value: Byte): Boolean {
    return (this as ClosedRange<Long>).contains(value)
}

* Checks if the specified [value] belongs to this range.
* \n
* \n@Deprecated("This `contains` operation mixing integer and floating point arguments has ambiguous semantics and is going to be removed.")
* \n@DeprecatedSinceKotlin(warningSince = "1.3", errorSince = "1.4", hiddenSince = "1.5")
* \n@kotlin.jvm.JvmName("intRangeContains")
* \npublic operator fun ClosedRange<Int>.contains(value: Double): Boolean {
    return value.toIntExactOrNull().let { if (it != null) contains(it) else false }
}

* Checks if the specified [value] belongs to this range.
* \n
* \n@Deprecated("This `contains` operation mixing integer and floating point arguments has ambiguous semantics and is going to be removed.")
* \n@DeprecatedSinceKotlin(warningSince = "1.3", errorSince = "1.4", hiddenSince = "1.5")
* \n@kotlin.jvm.JvmName("longRangeContains")
* \npublic operator fun ClosedRange<Long>.contains(value: Double): Boolean {
    return value.toLongExactOrNull().let { if (it != null) contains(it) else false }
}

* Checks if the specified [value] belongs to this range.
* \n
* \n@Deprecated("This `contains` operation mixing integer and floating point arguments has ambiguous semantics and is going to be removed.")
* \n@DeprecatedSinceKotlin(warningSince = "1.3", errorSince = "1.4", hiddenSince = "1.5")
* \n@kotlin.jvm.JvmName("byteRangeContains")
* \npublic operator fun ClosedRange<Byte>.contains(value: Double): Boolean {
    return value.toByteExactOrNull().let { if (it != null) contains(it) else false }
}

* Checks if the specified [value] belongs to this range.
* \n
* \n@Deprecated("This `contains` operation mixing integer and floating point arguments has ambiguous semantics and is going to be removed.")
* \n@DeprecatedSinceKotlin(warningSince = "1.3", errorSince = "1.4", hiddenSince = "1.5")
* \n@kotlin.jvm.JvmName("shortRangeContains")
* \npublic operator fun ClosedRange<Short>.contains(value: Double): Boolean {
    return value.toShortExactOrNull().let { if (it != null) contains(it) else false }
}

* Checks if the specified [value] belongs to this range.
* \n
* \n@kotlin.jvm.JvmName("floatRangeContains")
* \npublic operator fun ClosedRange<Float>.contains(value: Double): Boolean {
    return contains(value.toFloat())
}

* Checks if the specified [value] belongs to this range.
* \n
* \n@Deprecated("This `contains` operation mixing integer and floating point arguments has ambiguous semantics and is going to be removed.")
* \n@DeprecatedSinceKotlin(warningSince = "1.3", errorSince = "1.4", hiddenSince = "1.5")
* \n@kotlin.jvm.JvmName("intRangeContains")
* \npublic operator fun ClosedRange<Int>.contains(value: Float): Boolean {
    return value.toIntExactOrNull().let { if (it != null) contains(it) else false }
}

* Checks if the specified [value] belongs to this range.

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Checks if the specified [value] belongs to this range.\n *^n@Deprecated(\`This `contains` operation mixing integer
and floating point arguments has ambiguous semantics and is going to be
removed.\`)\n@DeprecatedSinceKotlin(warningSince = `1.3`, errorSince = `1.4`, hiddenSince =
`1.5`)\n@kotlin.jvm.JvmName(`longRangeContains`)\npublic operator fun ClosedRange<Long>.contains(value:
Float): Boolean {\n    return value.toLongExactOrNull().let
    { if (it != null) contains(it) else false } }\n\n/**\n * Checks if the specified [value] belongs to this range.\n
*^n@Deprecated(\`This `contains` operation mixing integer and floating point arguments has ambiguous semantics
and is going to be removed.\`)\n@DeprecatedSinceKotlin(warningSince = `1.3`, errorSince = `1.4`, hiddenSince
= `1.5`)\n@kotlin.jvm.JvmName(`byteRangeContains`)\npublic operator fun
ClosedRange<Byte>.contains(value: Float): Boolean {\n    return value.toByteExactOrNull().let { if (it != null)
contains(it) else false } }\n\n/**\n * Checks if the specified [value] belongs to this range.\n
*^n@Deprecated(\`This `contains` operation mixing integer and floating point arguments has ambiguous semantics
and is going to be removed.\`)\n@DeprecatedSinceKotlin(warningSince = `1.3`, errorSince = `1.4`, hiddenSince
= `1.5`)\n@kotlin.jvm.JvmName(`shortRangeContains`)\npublic operator fun
ClosedRange<Short>.contains(value: Float): Boolean {\n    return value.toShortExactOrNull().let
    { if (it != null) contains(it) else false } }\n\n/**\n * Checks if the specified [value] belongs to this range.\n
*^n@kotlin.jvm.JvmName(`doubleRangeContains`)\npublic operator fun ClosedRange<Double>.contains(value:
Float): Boolean {\n    return contains(value.toDouble()) }\n\n/**\n * Checks if the specified [value] belongs to this
range.\n
*^n@kotlin.jvm.JvmName(`doubleRangeContains`)\n@SinceKotlin(`1.7`)\n@ExperimentalStdlibApi\npublic
operator fun OpenEndRange<Double>.contains(value: Float): Boolean {\n    return
contains(value.toDouble()) }\n\n/**\n * Checks if the specified [value] belongs to this range.\n
*^n@kotlin.jvm.JvmName(`longRangeContains`)\npublic operator fun ClosedRange<Long>.contains(value: Int):
Boolean {\n    return contains(value.toLong()) }\n\n/**\n * Checks if the specified [value] belongs to this range.\n
*^n@kotlin.jvm.JvmName(`byteRangeContains`)\npublic operator fun ClosedRange<Byte>.contains(value: Int):
Boolean {\n
    return value.toByteExactOrNull().let { if (it != null) contains(it) else false } }\n\n/**\n * Checks if the specified
[value] belongs to this range.\n
*^n@kotlin.jvm.JvmName(`shortRangeContains`)\npublic operator fun
ClosedRange<Short>.contains(value: Int): Boolean {\n    return value.toShortExactOrNull().let { if (it != null)
contains(it) else false } }\n\n/**\n * Checks if the specified [value] belongs to this range.\n
*^n@Deprecated(\`This `contains` operation mixing integer and floating point arguments has ambiguous semantics
and is going to be removed.\`)\n@DeprecatedSinceKotlin(warningSince = `1.3`, errorSince = `1.4`, hiddenSince
= `1.5`)\n@kotlin.jvm.JvmName(`doubleRangeContains`)\npublic operator fun
ClosedRange<Double>.contains(value: Int): Boolean {\n    return contains(value.toDouble()) }\n\n/**\n * Checks
if the specified [value] belongs to this range.\n
*^n@Deprecated(\`This `contains` operation mixing integer and
floating point arguments has ambiguous
semantics and is going to be removed.\`)\n@DeprecatedSinceKotlin(warningSince = `1.3`, errorSince = `1.4`,
hiddenSince = `1.5`)\n@kotlin.jvm.JvmName(`floatRangeContains`)\npublic operator fun
ClosedRange<Float>.contains(value: Int): Boolean {\n    return contains(value.toFloat()) }\n\n/**\n * Checks if the
specified [value] belongs to this range.\n
*^n@kotlin.jvm.JvmName(`longRangeContains`)\n@SinceKotlin(`1.7`)\n@ExperimentalStdlibApi\npublic
operator fun OpenEndRange<Long>.contains(value: Int): Boolean {\n    return contains(value.toLong()) }\n\n/**\n
* Checks if the specified [value] belongs to this range.\n
*^n@kotlin.jvm.JvmName(`byteRangeContains`)\n@SinceKotlin(`1.7`)\n@ExperimentalStdlibApi\npublic
operator fun OpenEndRange<Byte>.contains(value: Int): Boolean {\n    return value.toByteExactOrNull().let { if (it
!= null) contains(it) else false } }\n\n/**\n * Checks if the specified [value] belongs to this range.\n
*^n@kotlin.jvm.JvmName(`shortRangeContains`)\n@SinceKotlin(`1.7`)\n@ExperimentalStdlibApi\npublic

```



```

operator fun OpenEndRange<Short>.contains(value: Int): Boolean {
    return value.toShortExactOrNull().let { if (it != null) contains(it) else false }
}

* Checks if the specified [value] belongs to this range.

* Kotlin internal
@kotlin.internal.InlineOnly
public inline operator fun LongRange.contains(value: Int): Boolean {
    return (this as ClosedRange<Long>).contains(value)
}

* Checks if the specified [value] belongs to this range.

* Kotlin JVM
@kotlin.jvm.JvmName("intRangeContains")
public operator fun ClosedRange<Int>.contains(value: Long): Boolean {
    return value.toIntExactOrNull().let { if (it != null) contains(it) else false }
}

* Checks if the specified [value] belongs to this range.

* Kotlin JVM
@kotlin.jvm.JvmName("byteRangeContains")
public operator fun ClosedRange<Byte>.contains(value: Long): Boolean {
    return value.toByteExactOrNull().let { if (it != null) contains(it) else false }
}

* Checks if the specified [value] belongs to this range.

* Kotlin JVM
@kotlin.jvm.JvmName("shortRangeContains")
public operator fun ClosedRange<Short>.contains(value: Long): Boolean {
    return value.toShortExactOrNull().let { if (it != null) contains(it) else false }
}

* Checks if the specified [value] belongs to this range.

* Kotlin deprecated
@kotlin.Deprecated("This `contains` operation mixing integer and floating point arguments has ambiguous semantics and is going to be removed.")
@kotlin.DeprecatedSinceKotlin(warningSince = "1.3", errorSince = "1.4", hiddenSince = "1.5")
@kotlin.jvm.JvmName("doubleRangeContains")
public operator fun ClosedRange<Double>.contains(value: Long): Boolean {
    return contains(value.toDouble())
}

* Checks if the specified [value] belongs to this range.

* Kotlin deprecated
@kotlin.Deprecated("This `contains` operation mixing integer and floating point arguments has ambiguous semantics and is going to be removed.")
@kotlin.DeprecatedSinceKotlin(warningSince = "1.3", errorSince = "1.4", hiddenSince = "1.5")
@kotlin.jvm.JvmName("floatRangeContains")
public operator fun ClosedRange<Float>.contains(value: Long): Boolean {
    return contains(value.toFloat())
}

* Checks if the specified [value] belongs to this range.

* Kotlin JVM
@kotlin.jvm.JvmName("intRangeContains")
@kotlin.SinceKotlin("1.7")
@kotlin.ExperimentalStdlibApi
public operator fun OpenEndRange<Int>.contains(value: Long): Boolean {
    return value.toIntExactOrNull().let { if (it != null) contains(it) else false }
}

* Checks if the specified [value] belongs to this range.

* Kotlin JVM
@kotlin.jvm.JvmName("byteRangeContains")
@kotlin.SinceKotlin("1.7")
@kotlin.ExperimentalStdlibApi
public operator fun OpenEndRange<Byte>.contains(value: Long): Boolean {
    return value.toByteExactOrNull().let { if (it != null) contains(it) else false }
}

* Checks if the specified [value] belongs to this range.

* Kotlin JVM
@kotlin.jvm.JvmName("shortRangeContains")
@kotlin.SinceKotlin("1.7")
@kotlin.ExperimentalStdlibApi
public operator fun OpenEndRange<Short>.contains(value: Long): Boolean {
    return value.toShortExactOrNull().let { if (it != null) contains(it) else false }
}

* Checks if the specified [value] belongs to this range.

* Kotlin internal
@kotlin.internal.InlineOnly
public inline operator fun IntRange.contains(value: Long): Boolean {
    return (this as ClosedRange<Int>).contains(value)
}

* Checks if the specified [value] belongs to this range.

* Kotlin JVM
@kotlin.jvm.JvmName("intRangeContains")
public operator fun ClosedRange<Int>.contains(value: Short): Boolean {
    return contains(value.toInt())
}

* Checks if the specified [value] belongs to this range.

* Kotlin JVM
@kotlin.jvm.JvmName("longRangeContains")
public operator fun ClosedRange<Long>.contains(value: Short): Boolean {
    return contains(value.toLong())
}

* Checks if the specified [value] belongs to this range.

* Kotlin JVM
@kotlin.jvm.JvmName("byteRangeContains")
public operator fun ClosedRange<Byte>.contains(value: Short): Boolean {
    return value.toByteExactOrNull().let { if (it != null) contains(it) else false }
}

* Checks if the specified [value] belongs to this range.

* Kotlin deprecated
@kotlin.Deprecated("This `contains` operation mixing integer and floating point arguments has ambiguous semantics and is going to be removed.")
@kotlin.DeprecatedSinceKotlin(warningSince = "1.3", errorSince = "1.4", hiddenSince = "1.5")
@kotlin.jvm.JvmName("doubleRangeContains")
public operator fun ClosedRange<Double>.contains(value: Short): Boolean {
    return contains(value.toDouble())
}

* Checks if the specified [value] belongs to this range.

* Kotlin deprecated
@kotlin.Deprecated("This `contains` operation mixing integer and floating point arguments has ambiguous semantics and is going to be removed.")
@kotlin.DeprecatedSinceKotlin(warningSince = "1.3", errorSince = "1.4", hiddenSince = "1.5")
@kotlin.jvm.JvmName("floatRangeContains")
public operator fun ClosedRange<Float>.contains(value: Short): Boolean {
    return contains(value.toFloat())
}

* Checks if the specified [value] belongs to this range.

```

```

removed.\n)\n@DeprecatedSinceKotlin(warningSince = \"1.3\", errorSince = \"1.4\", hiddenSince =
\"1.5\")\n@kotlin.jvm.JvmName(\"floatRangeContains\")\npublic operator fun ClosedRange<Float>.contains(value:
Short): Boolean {\n    return contains(value.toFloat())\n}\n\n/**\n * Checks if the specified [value] belongs to this
range.\n
*/\n@kotlin.jvm.JvmName(\"intRangeContains\")\n@SinceKotlin(\"1.7\")\n@ExperimentalStdlibApi\npublic
operator fun OpenEndRange<Int>.contains(value: Short): Boolean {\n    return contains(value.toInt())\n}\n\n/**\n *
Checks if the specified [value] belongs to this range.\n
*/\n@kotlin.jvm.JvmName(\"longRangeContains\")\n@SinceKotlin(\"1.7\")\n@ExperimentalStdlibApi\npublic
operator fun OpenEndRange<Long>.contains(value: Short): Boolean {\n    return
contains(value.toLong())\n}\n\n/**\n * Checks if the specified [value] belongs to this range.\n
*/\n@kotlin.jvm.JvmName(\"byteRangeContains\")\n@SinceKotlin(\"1.7\")\n@ExperimentalStdlibApi\npublic
operator fun OpenEndRange<Byte>.contains(value: Short): Boolean {\n    return value.toByteExactOrNull().let { if
(it != null) contains(it) else false }\n}\n\n/**\n * Checks if the specified [value] belongs to this range.\n
*/\n@kotlin.internal.InlineOnly\npublic inline operator fun IntRange.contains(value: Short): Boolean {\n    return
(this as ClosedRange<Int>).contains(value)\n}\n\n/**\n * Checks if the specified [value] belongs to this range.\n
*/\n@kotlin.internal.InlineOnly\npublic inline operator fun LongRange.contains(value: Short): Boolean {\n    return
(this as ClosedRange<Long>).contains(value)\n}\n\n/**\n * Returns a progression from this value down to the
specified [to] value with the step -1.\n * \n * The [to] value should be less than or equal to `this` value.\n * If the [to]
value is greater than `this` value the returned progression is empty.\n
*/\npublic infix fun Int.downTo(to: Byte):
IntProgression {\n    return IntProgression.fromClosedRange(this, to.toInt(), -1)\n}\n\n/**\n * Returns a progression
from this value down to the specified [to] value with the step -1.\n * \n * The [to] value should be less than or equal
to `this` value.\n * If the [to] value is greater than `this` value
the returned progression is empty.\n
*/\npublic infix fun Long.downTo(to: Byte): LongProgression {\n    return
LongProgression.fromClosedRange(this, to.toLong(), -1L)\n}\n\n/**\n * Returns a progression from this value
down to the specified [to] value with the step -1.\n * \n * The [to] value should be less than or equal to `this`
value.\n * If the [to] value is greater than `this` value the returned progression is empty.\n
*/\npublic infix fun Byte.downTo(to: Byte): IntProgression {\n    return
IntProgression.fromClosedRange(this.toInt(), to.toInt(), -1)\n}\n\n/**\n * Returns a progression from this value
down to the specified [to] value with the step -1.\n * \n * The [to] value should be less than or equal to `this`
value.\n * If the [to] value is greater than `this` value the returned
progression is empty.\n
*/\npublic infix fun Short.downTo(to: Byte): IntProgression {\n    return
IntProgression.fromClosedRange(this.toInt(), to.toInt(), -1)\n}\n\n/**\n * Returns a progression from
this value down to the specified [to] value with the step -1.\n * \n * The [to] value should be less than or equal to
`this` value.\n * If the [to] value is greater than `this` value the returned
progression is empty.\n
*/\npublic infix fun Char.downTo(to: Char): CharProgression {\n    return
CharProgression.fromClosedRange(this, to, -1)\n}\n\n/**\n * Returns a progression from this value down to the
specified [to] value with the step -1.\n * \n * The [to] value should
be less than or equal to `this` value.\n * If the [to] value is greater than `this` value the returned progression is
empty.\n
*/\npublic infix fun Int.downTo(to: Int): IntProgression {\n    return
IntProgression.fromClosedRange(this, to, -1)\n}\n\n/**\n * Returns a progression from this value down to the
specified [to] value with the step -1.\n * \n * The [to] value should be less than or equal to `this` value.\n * If the
[to] value is greater than `this` value the returned progression is empty.\n
*/\npublic infix fun Long.downTo(to: Int): LongProgression {\n    return
LongProgression.fromClosedRange(this, to.toLong(), -1L)\n}\n\n/**\n * Returns a progression from this value down to
the specified [to] value with the step -1.\n * \n * The [to] value should be less than or equal to `this` value.\n *
If the [to] value is greater than `this` value the returned progression is empty.\n
*/\npublic infix fun Byte.downTo(to: Int): IntProgression {\n    return
IntProgression.fromClosedRange(this.toInt(), to, -1)\n}\n\n/**\n * Returns a progression from this value down to the
specified [to] value with the step -1.\n * \n * The [to] value should be less than or equal to `this` value.\n * If the
[to] value is greater than `this` value the returned progression is empty.\n
*/\npublic infix fun Short.downTo(to: Int):
IntProgression {\n    return IntProgression.fromClosedRange(this.toInt(), to, -1)\n}\n\n/**\n * Returns a progression

```

from this value down to the specified [to] value with the step -1. The [to] value should be less than or equal to this value. If the [to] value is greater than this value the returned progression is empty.

```

public infix fun Int.downTo(to: Long): LongProgression {
    return LongProgression.fromClosedRange(this.toLong(), to, -1L)
}

```

Returns a progression from this value down to the specified [to] value with the step -1. The [to] value should be less than or equal to this value. If the [to] value is greater than this value the returned progression is empty.

```

public infix fun Long.downTo(to: Long): LongProgression {
    return LongProgression.fromClosedRange(this, to, -1L)
}

```

Returns a progression from this value down to the specified [to] value with the step -1. The [to] value should be less than or equal to this value. If the [to] value is greater than this value the returned progression is empty.

```

public infix fun Byte.downTo(to: Long): LongProgression {
    return LongProgression.fromClosedRange(this.toLong(), to, -1L)
}

```

Returns a progression from this value down to the specified [to] value with the step -1. The [to] value should be less than or equal to this value. If the [to] value is greater than this value the returned progression is empty.

```

public infix fun Short.downTo(to: Long): LongProgression {
    return LongProgression.fromClosedRange(this.toLong(), to, -1L)
}

```

Returns a progression from this value down to the specified [to] value with the step -1. The [to] value should be less than or equal to this value. If the [to] value is greater than this value the returned progression is empty.

```

public infix fun Int.downTo(to: Short): IntProgression {
    return IntProgression.fromClosedRange(this, to.toInt(), -1)
}

```

Returns a progression from this value down to the specified [to] value with the step -1. The [to] value should be less than or equal to this value. If the [to] value is greater than this value the returned progression is empty.

```

public infix fun Byte.downTo(to: Short): IntProgression {
    return IntProgression.fromClosedRange(this.toInt(), to.toInt(), -1)
}

```

Returns a progression from this value down to the specified [to] value with the step -1. The [to] value should be less than or equal to this value. If the [to] value is greater than this value the returned progression is empty.

```

public infix fun Short.downTo(to: Short): IntProgression {
    return IntProgression.fromClosedRange(this.toInt(), to.toInt(), -1)
}

```

Returns a progression that goes over the same range in the opposite direction with the same step.

```

public fun IntProgression.reversed(): IntProgression {
    return IntProgression.fromClosedRange(last, first, -step)
}

```

Returns a progression that goes over the same range in the opposite direction with the same step.

```

public fun LongProgression.reversed(): LongProgression {
    return LongProgression.fromClosedRange(last, first, -step)
}

```

Returns a progression that goes over the same range in the opposite direction with the same step.

```

public fun CharProgression.reversed(): CharProgression {
    return CharProgression.fromClosedRange(last, first, -step)
}

```

Returns a progression that goes over the same range with the given step.

```

public infix fun IntProgression.step(step: Int): IntProgression {
    checkStepIsPositive(step > 0, step)
    return IntProgression.fromClosedRange(first, last, if (this.step > 0) step else -step)
}

```

Returns a progression that goes over the same range with the given step.

```

public infix fun LongProgression.step(step: Long): LongProgression {
    checkStepIsPositive(step > 0, step)
    return LongProgression.fromClosedRange(first, last, if (this.step > 0) step else -step)
}

```

Returns a progression that goes over the same range with the given step.

```

public infix fun CharProgression.step(step: Int): CharProgression {
    checkStepIsPositive(step > 0, step)
    return CharProgression.fromClosedRange(first, last, if (this.step > 0) step else -step)
}

```

internal fun Int.toByteExactOrNull(): Byte? {
 return if (this in Byte.MIN\_VALUE.toInt()..Byte.MAX\_VALUE.toInt()) this.toByte() else null
}

internal fun Long.toByteExactOrNull(): Byte? {
 return if (this in Byte.MIN\_VALUE.toLong()..Byte.MAX\_VALUE.toLong()) this.toByte() else null
}

internal fun Short.toByteExactOrNull(): Byte? {
 return if (this in

```

Byte.MIN_VALUE.toShort()..Byte.MAX_VALUE.toShort()
  this.toByte() else null\n}\n\ninternal fun Double.toByteExactOrNull(): Byte? {\n  return if (this in
Byte.MIN_VALUE.toDouble()..Byte.MAX_VALUE.toDouble()) this.toInt().toByte() else null\n}\n\ninternal fun
Float.toByteExactOrNull(): Byte? {\n  return if (this in
Byte.MIN_VALUE.toFloat()..Byte.MAX_VALUE.toFloat()) this.toInt().toByte() else null\n}\n\ninternal fun
Long.toIntExactOrNull(): Int? {\n  return if (this in Int.MIN_VALUE.toLong()..Int.MAX_VALUE.toLong())
this.toInt() else null\n}\n\ninternal fun Double.toIntExactOrNull(): Int? {\n  return if (this in
Int.MIN_VALUE.toDouble()..Int.MAX_VALUE.toDouble()) this.toInt() else null\n}\n\ninternal fun
Float.toIntExactOrNull(): Int? {\n  return if (this in Int.MIN_VALUE.toFloat()..Int.MAX_VALUE.toFloat())
this.toInt() else null\n}\n\ninternal fun Double.toLongExactOrNull(): Long? {\n  return if (this in
Long.MIN_VALUE.toDouble()..Long.MAX_VALUE.toDouble()) this.toLong() else null\n}\n\ninternal
fun Float.toLongExactOrNull(): Long? {\n  return if (this in
Long.MIN_VALUE.toFloat()..Long.MAX_VALUE.toFloat()) this.toLong() else null\n}\n\ninternal fun
Int.toShortExactOrNull(): Short? {\n  return if (this in Short.MIN_VALUE.toInt()..Short.MAX_VALUE.toInt())
this.toShort() else null\n}\n\ninternal fun Long.toShortExactOrNull(): Short? {\n  return if (this in
Short.MIN_VALUE.toLong()..Short.MAX_VALUE.toLong()) this.toShort() else null\n}\n\ninternal fun
Double.toShortExactOrNull(): Short? {\n  return if (this in
Short.MIN_VALUE.toDouble()..Short.MAX_VALUE.toDouble()) this.toInt().toShort() else null\n}\n\ninternal fun
Float.toShortExactOrNull(): Short? {\n  return if (this in
Short.MIN_VALUE.toFloat()..Short.MAX_VALUE.toFloat()) this.toInt().toShort() else null\n}\n\n**\n * Returns
a range from this value up to but excluding the specified [to] value.\n * \n * If the [to] value is less than or equal to
`this` value, then the returned range is empty.\n */\npublic infix
fun Int.until(to: Byte): IntRange {\n  return this .. (to.toInt() - 1).toInt()\n}\n\n**\n * Returns a range from this
value up to but excluding the specified [to] value.\n * \n * If the [to] value is less than or equal to `this` value, then
the returned range is empty.\n */\npublic infix fun Long.until(to: Byte): LongRange {\n  return this .. (to.toLong() -
1).toLong()\n}\n\n**\n * Returns a range from this value up to but excluding the specified [to] value.\n * \n * If
the [to] value is less than or equal to `this` value, then the returned range is empty.\n */\npublic infix fun Byte.until(to:
Byte): IntRange {\n  return this.toInt() .. (to.toInt() - 1).toInt()\n}\n\n**\n * Returns a range from this value up to
but excluding the specified [to] value.\n * \n * If the [to] value is less than or equal to `this` value, then the returned
range is empty.\n */\npublic infix fun Short.until(to: Byte): IntRange {\n  return this.toInt() .. (to.toInt() -
1).toInt()\n}\n\n**\n * Returns
a range from this value up to but excluding the specified [to] value.\n * \n * If the [to] value is less than or equal to
`this` value, then the returned range is empty.\n */\npublic infix fun Char.until(to: Char): CharRange {\n  if (to <=
'\u0000') return CharRange.EMPTY\n  return this .. (to - 1).toChar()\n}\n\n**\n * Returns a range from this value
up to but excluding the specified [to] value.\n * \n * If the [to] value is less than or equal to `this` value, then the
returned range is empty.\n */\npublic infix fun Int.until(to: Int): IntRange {\n  if (to <= Int.MIN_VALUE) return
IntRange.EMPTY\n  return this .. (to - 1).toInt()\n}\n\n**\n * Returns a range from this value up to but excluding
the specified [to] value.\n * \n * If the [to] value is less than or equal to `this` value, then the returned range is
empty.\n */\npublic infix fun Long.until(to: Int): LongRange {\n  return this .. (to.toLong() -
1).toLong()\n}\n\n**\n * Returns a range from this value up to
but excluding the specified [to] value.\n * \n * If the [to] value is less than or equal to `this` value, then the returned
range is empty.\n */\npublic infix fun Byte.until(to: Int): IntRange {\n  if (to <= Int.MIN_VALUE) return
IntRange.EMPTY\n  return this.toInt() .. (to - 1).toInt()\n}\n\n**\n * Returns a range from this value up to but
excluding the specified [to] value.\n * \n * If the [to] value is less than or equal to `this` value, then the returned
range is empty.\n */\npublic infix fun Short.until(to: Int): IntRange {\n  if (to <= Int.MIN_VALUE) return
IntRange.EMPTY\n  return this.toInt() .. (to - 1).toInt()\n}\n\n**\n * Returns a range from this value up to but
excluding the specified [to] value.\n * \n * If the [to] value is less than or equal to `this` value, then the returned
range is empty.\n */\npublic infix fun Int.until(to: Long): LongRange {\n  if (to <= Long.MIN_VALUE) return

```

LongRange.EMPTY\n return this.toLong() .. (to - 1).toLong()\n\n/\*\*\n \* Returns a range from this value up to but excluding the specified [to] value.\n \* \n \* If the [to] value is less than or equal to `this` value, then the returned range is empty.\n \*/\npublic infix fun Long.until(to: Long): LongRange {\n if (to <= Long.MIN\_VALUE) return LongRange.EMPTY\n return this .. (to - 1).toLong()\n}\n\n/\*\*\n \* Returns a range from this value up to but excluding the specified [to] value.\n \* \n \* If the [to] value is less than or equal to `this` value, then the returned range is empty.\n \*/\npublic infix fun Byte.until(to: Long): LongRange {\n if (to <= Long.MIN\_VALUE) return LongRange.EMPTY\n return this.toLong() .. (to - 1).toLong()\n}\n\n/\*\*\n \* Returns a range from this value up to but excluding the specified [to] value.\n \* \n \* If the [to] value is less than or equal to `this` value, then the returned range is empty.\n \*/\npublic infix fun Short.until(to: Long): LongRange {\n if (to <= Long.MIN\_VALUE) return LongRange.EMPTY\n return this.toLong() .. (to - 1).toLong()\n}\n\n/\*\*\n \* Returns a range from this value up to but excluding the specified [to] value.\n \* \n \* If the [to] value is less than or equal to `this` value, then the returned range is empty.\n \*/\npublic infix fun Int.until(to: Short): IntRange {\n return this .. (to.toInt() - 1).toInt()\n}\n\n/\*\*\n \* Returns a range from this value up to but excluding the specified [to] value.\n \* \n \* If the [to] value is less than or equal to `this` value, then the returned range is empty.\n \*/\npublic infix fun Long.until(to: Short): LongRange {\n return this .. (to.toLong() - 1).toLong()\n}\n\n/\*\*\n \* Returns a range from this value up to but excluding the specified [to] value.\n \* \n \* If the [to] value is less than or equal to `this` value, then the returned range is empty.\n \*/\npublic infix fun Byte.until(to: Short): IntRange {\n return this.toInt() .. (to.toInt() - 1).toInt()\n}\n\n/\*\*\n \* Returns a range from this value up to but excluding the specified [to] value.\n \* \n \* If the [to] value is less than or equal to `this` value, then the returned range is empty.\n \*/\npublic infix fun Short.until(to: Short): IntRange {\n return this.toInt() .. (to.toInt() - 1).toInt()\n}\n\n/\*\*\n \* Ensures that this value is not less than the specified [minimumValue].\n \* \n \* @return this value if it's greater than or equal to the [minimumValue] or the [minimumValue] otherwise.\n \* \n \* @sample samples.comparisons.ComparableOps.coerceAtLeastComparable\n \*/\npublic fun <T : Comparable<T>> T.coerceAtLeast(minimumValue: T): T {\n return if (this < minimumValue) minimumValue else this\n}\n\n/\*\*\n \* Ensures that this value is not less than the specified [minimumValue].\n \* \n \* @return this value if it's greater than or equal to the [minimumValue] or the [minimumValue] otherwise.\n \* \n \* @sample samples.comparisons.ComparableOps.coerceAtLeast\n \*/\npublic fun Byte.coerceAtLeast(minimumValue: Byte): Byte {\n return if (this < minimumValue) minimumValue else this\n}\n\n/\*\*\n \* Ensures that this value is not less than the specified [minimumValue].\n \* \n \* @return this value if it's greater than or equal to the [minimumValue] or the [minimumValue] otherwise.\n \* \n \* @sample samples.comparisons.ComparableOps.coerceAtLeast\n \*/\npublic fun Short.coerceAtLeast(minimumValue: Short): Short {\n return if (this < minimumValue) minimumValue else this\n}\n\n/\*\*\n \* Ensures that this value is not less than the specified [minimumValue].\n \* \n \* @return this value if it's greater than or equal to the [minimumValue] or the [minimumValue] otherwise.\n \* \n \* @sample samples.comparisons.ComparableOps.coerceAtLeast\n \*/\npublic fun Int.coerceAtLeast(minimumValue: Int): Int {\n return if (this < minimumValue) minimumValue else this\n}\n\n/\*\*\n \* Ensures that this value is not less than the specified [minimumValue].\n \* \n \* @return this value if it's greater than or equal to the [minimumValue] or the [minimumValue] otherwise.\n \* \n \* @sample samples.comparisons.ComparableOps.coerceAtLeast\n \*/\npublic fun Long.coerceAtLeast(minimumValue: Long): Long {\n return if (this < minimumValue) minimumValue else this\n}\n\n/\*\*\n \* Ensures that this value is not less than the specified [minimumValue].\n \* \n \* @return this value if it's greater than or equal to the [minimumValue] or the [minimumValue] otherwise.\n \* \n \* @sample samples.comparisons.ComparableOps.coerceAtLeast\n \*/\npublic fun Float.coerceAtLeast(minimumValue: Float): Float {\n return if (this < minimumValue) minimumValue else this\n}\n\n/\*\*\n \* Ensures that this value is not less than the specified [minimumValue].\n \* \n \* @return this value if it's greater than or equal to the [minimumValue] or the [minimumValue] otherwise.\n \* \n \* @sample samples.comparisons.ComparableOps.coerceAtLeast\n \*/\npublic fun Double.coerceAtLeast(minimumValue: Double): Double {\n return if (this < minimumValue) minimumValue else this\n}\n\n/\*\*\n \* Ensures that this value

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is not greater than the specified [maximumValue].\n * \n * @return this value if it's less than or equal to the
[maximumValue] or the [maximumValue] otherwise.\n * \n * @sample
samples.comparisons.ComparableOps.coerceAtMostComparable\n * \n\npublic fun <T : Comparable<T>>
T.coerceAtMost(maximumValue: T): T {\n    return if (this > maximumValue) maximumValue else this\n}\n\n/**\n * Ensures that this value is not greater than the specified [maximumValue].\n * \n * @return this value if it's less
than or equal to the [maximumValue] or the [maximumValue] otherwise.\n * \n * @sample
samples.comparisons.ComparableOps.coerceAtMost\n * \n\npublic fun Byte.coerceAtMost(maximumValue: Byte):
Byte {\n    return if (this > maximumValue) maximumValue else this\n}\n\n/**\n * Ensures that this value is not
greater than the specified [maximumValue].\n * \n * @return this value if it's less than or equal to the
[maximumValue] or the [maximumValue] otherwise.\n * \n * @sample
samples.comparisons.ComparableOps.coerceAtMost\n * \n\npublic fun Short.coerceAtMost(maximumValue: Short): Short {\n    return if (this > maximumValue)
maximumValue else this\n}\n\n/**\n * Ensures that this value is not greater than the specified [maximumValue].\n *
\n * @return this value if it's less than or equal to the [maximumValue] or the [maximumValue] otherwise.\n * \n *
\n * @sample samples.comparisons.ComparableOps.coerceAtMost\n * \n\npublic fun Int.coerceAtMost(maximumValue:
Int): Int {\n    return if (this > maximumValue) maximumValue else this\n}\n\n/**\n * Ensures that this value is not
greater than the specified [maximumValue].\n * \n * @return this value if it's less than or equal to the
[maximumValue] or the [maximumValue] otherwise.\n * \n * @sample
samples.comparisons.ComparableOps.coerceAtMost\n * \n\npublic fun Long.coerceAtMost(maximumValue: Long):
Long {\n    return if (this > maximumValue) maximumValue else this\n}\n\n/**\n * Ensures that this value is not
greater than the specified [maximumValue].\n *
\n * @return this value if it's less than or equal to the [maximumValue] or the [maximumValue] otherwise.\n * \n *
\n * @sample samples.comparisons.ComparableOps.coerceAtMost\n * \n\npublic fun
Float.coerceAtMost(maximumValue: Float): Float {\n    return if (this > maximumValue) maximumValue else
this\n}\n\n/**\n * Ensures that this value is not greater than the specified [maximumValue].\n * \n * @return this
value if it's less than or equal to the [maximumValue] or the [maximumValue] otherwise.\n * \n * @sample
samples.comparisons.ComparableOps.coerceAtMost\n * \n\npublic fun Double.coerceAtMost(maximumValue:
Double): Double {\n    return if (this > maximumValue) maximumValue else this\n}\n\n/**\n * Ensures that this
value lies in the specified range [minimumValue]..[maximumValue].\n * \n * @return this value if it's in the range,
or [minimumValue] if this value is less than [minimumValue], or [maximumValue] if this value is greater than
[maximumValue].\n * \n * @sample samples.comparisons.ComparableOps.coerceInComparable\n * \n\npublic fun <T : Comparable<T>> T.coerceIn(minimumValue: T?, maximumValue: T?): T {\n    if
(minimumValue != null && maximumValue != null) {\n        if (minimumValue > maximumValue) throw
IllegalArgumentException("Cannot coerce value to an empty range: maximum $maximumValue is less than
minimum $minimumValue.")\n        if (this < minimumValue) return minimumValue\n        if (this >
maximumValue) return maximumValue\n    }\n    else {\n        if (minimumValue != null && this <
minimumValue) return minimumValue\n        if (maximumValue != null && this > maximumValue) return
maximumValue\n    }\n    return this\n}\n\n/**\n * Ensures that this value lies in the specified range
[minimumValue]..[maximumValue].\n * \n * @return this value if it's in the range, or [minimumValue] if this value
is less than [minimumValue], or [maximumValue] if this value is greater than [maximumValue].\n * \n * @sample
samples.comparisons.ComparableOps.coerceIn\n * \n\npublic
fun Byte.coerceIn(minimumValue: Byte, maximumValue: Byte): Byte {\n    if (minimumValue > maximumValue)
throw IllegalArgumentException("Cannot coerce value to an empty range: maximum $maximumValue is less than
minimum $minimumValue.")\n    if (this < minimumValue) return minimumValue\n    if (this > maximumValue)
return maximumValue\n    return this\n}\n\n/**\n * Ensures that this value lies in the specified range
[minimumValue]..[maximumValue].\n * \n * @return this value if it's in the range, or [minimumValue] if this value
is less than [minimumValue], or [maximumValue] if this value is greater than [maximumValue].\n * \n * @sample
samples.comparisons.ComparableOps.coerceIn\n * \n\npublic fun Short.coerceIn(minimumValue: Short,

```

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maximumValue: Short): Short {
    if (minimumValue > maximumValue) throw
IllegalArgumentException("Cannot coerce value to an empty range: maximum $maximumValue is less than
minimum $minimumValue.")
    if (this < minimumValue) return minimumValue
    if (this > maximumValue) return maximumValue
    return this
}

Ensures that this value lies in the specified range [minimumValue]..[maximumValue].
@return this value if it's in the range, or [minimumValue] if this value is less than [minimumValue], or [maximumValue] if this value is greater than [maximumValue].
@sample samples.comparisons.ComparableOps.coerceIn
^/npublic fun
Int.coerceIn(minimumValue: Int, maximumValue: Int): Int {
    if (minimumValue > maximumValue) throw
IllegalArgumentException("Cannot coerce value to an empty range: maximum $maximumValue is less than
minimum $minimumValue.")
    if (this < minimumValue) return minimumValue
    if (this > maximumValue)
return maximumValue
    return this
}

Ensures that this value lies in the specified range [minimumValue]..[maximumValue].
@return this value if it's in the range, or [minimumValue] if this value is less than [minimumValue], or [maximumValue] if this value is greater than [maximumValue].
@sample samples.comparisons.ComparableOps.coerceIn
^/npublic fun
Long.coerceIn(minimumValue: Long, maximumValue: Long): Long {
    if (minimumValue > maximumValue)
throw IllegalArgumentException("Cannot coerce value to an empty range: maximum $maximumValue is less than
minimum $minimumValue.")
    if (this < minimumValue) return minimumValue
    if (this > maximumValue)
return maximumValue
    return this
}

Ensures that this value lies in the specified range [minimumValue]..[maximumValue].
@return this value if it's in the range, or [minimumValue] if this value is less than [minimumValue], or [maximumValue] if this value is greater than [maximumValue].
@sample
samples.comparisons.ComparableOps.coerceIn
^/npublic fun
Float.coerceIn(minimumValue: Float,
maximumValue: Float): Float {
    if (minimumValue > maximumValue) throw
IllegalArgumentException("Cannot coerce value to an empty range: maximum $maximumValue
is less than minimum $minimumValue.")
    if (this < minimumValue) return minimumValue
    if (this >
maximumValue) return maximumValue
    return this
}

Ensures that this value lies in the specified range [minimumValue]..[maximumValue].
@return this value if it's in the range, or [minimumValue] if this value is less than [minimumValue], or [maximumValue] if this value is greater than [maximumValue].
@sample samples.comparisons.ComparableOps.coerceIn
^/npublic fun
Double.coerceIn(minimumValue:
Double, maximumValue: Double): Double {
    if (minimumValue > maximumValue) throw
IllegalArgumentException("Cannot coerce value to an empty range: maximum $maximumValue is less than
minimum $minimumValue.")
    if (this < minimumValue) return minimumValue
    if (this > maximumValue)
return maximumValue
    return this
}

Ensures that this value lies in the specified [range].
@return this value if it's in the [range], or `range.start` if this value is less than `range.start`, or `range.endInclusive` if this value is greater than `range.endInclusive`.
@sample samples.comparisons.ComparableOps.coerceInFloatingPointRange
^/n@SinceKotlin("1.1")
npublic fun
<T : Comparable<T>> T.coerceIn(range: ClosedFloatingPointRange<T>): T {
    if (range.isEmpty()) throw
IllegalArgumentException("Cannot coerce value to an empty range: $range.")
    return when {
        // this < start equiv to this <= start && !(this >= start)
        range.lessThanOrEqualTo(this, range.start) &&
!range.lessThanOrEqualTo(range.start, this) -> range.start
        // this > end equiv to this >= end && !(this <= end)
        range.lessThanOrEqualTo(range.endInclusive, this) && !range.lessThanOrEqualTo(this, range.endInclusive) ->
range.endInclusive
        else -> this
    }
}

Ensures that this value lies in the specified [range].
@return this value if it's in the [range], or `range.start` if this value is less than `range.start`, or `range.endInclusive` if this value is greater than `range.endInclusive`.
@sample
samples.comparisons.ComparableOps.coerceInComparable
^/npublic fun
<T : Comparable<T>>
T.coerceIn(range: ClosedRange<T>): T {
    if (range is ClosedFloatingPointRange) {
        return
this.coerceIn<T>(range)
    }
    if (range.isEmpty()) throw IllegalArgumentException("Cannot coerce value to an
empty range: $range.")
    return when {
        this < range.start -> range.start
        this > range.endInclusive ->
range.endInclusive
        else -> this
    }
}

Ensures that this value lies in the specified [range].

```

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@return this value if it's in the [range], or `range.start` if this value is less than `range.start`, or `range.endInclusive`
if this value is greater than `range.endInclusive`.
 * @sample samples.comparisons.ComparableOps.coerceIn
 */
public fun Int.coerceIn(range: ClosedRange<Int>): Int {
    if (range is
        ClosedFloatingPointRange) {
        return this.coerceIn<Int>(range)
    }
    if (range.isEmpty()) throw
        IllegalArgumentException("Cannot coerce value to an empty range: $range.")
    return when {
        this < range.start -> range.start
        this > range.endInclusive -> range.endInclusive
        else -> this
    }
}
 * Ensures that this value lies in the specified [range].
 * @return this value if it's in the [range], or `range.start` if
this value is less than `range.start`, or `range.endInclusive` if this value is greater than `range.endInclusive`.
 * @sample samples.comparisons.ComparableOps.coerceIn
 */
public fun Long.coerceIn(range:
    ClosedRange<Long>): Long {
    if (range is ClosedFloatingPointRange) {
        return
            this.coerceIn<Long>(range)
    }
    if (range.isEmpty()) throw IllegalArgumentException("Cannot coerce value
        to an empty range: $range.")
    return when {
        this < range.start -> range.start
        this >
            range.endInclusive
        else -> this
    }
}
 * Copyright 2010-2022 JetBrains s.r.o. and Kotlin
Programming Language contributors.
 * Use of this source code is governed by the Apache 2.0 license that can be
found in the license/LICENSE.txt file.
 * Auto-generated file. DO NOT EDIT!
package kotlin
import
kotlin.experimental
import
kotlin.jvm
@SinceKotlin("1.5")
@WasExperimental(ExperimentalUnsignedTypes::class)
@JvmInline
public value class UByte @kotlin.internal.IntrinsicConstEvaluation @PublishedApi internal
    constructor(@PublishedApi internal val data: Byte) : Comparable<UByte> {
    companion object {
        /**
         * A constant holding the minimum value an instance of UByte can have.
         */
        public const val
            MIN_VALUE: UByte = UByte(0)
        /**
         * A constant holding the maximum value an instance of
            UByte can have.
         */
        public const val
            MAX_VALUE: UByte = UByte(-1)
        /**
         * The number of bytes used to represent an instance of UByte in a binary form.
         */
        public const val
            SIZE_BYTES: Int = 1
        /**
         * The number of bits used to represent an instance of
            UByte in a binary form.
         */
        public const val
            SIZE_BITS: Int = 8
    }
    /**
     * Compares this
        value with the specified value for order.
     * Returns zero if this value is equal to the specified other value, a
        negative number if it's less than other,
     * or a positive number if it's greater than other.
     */
    @kotlin.internal.InlineOnly
    @Suppress("OVERRIDE_BY_INLINE")
    public override inline operator fun
        compareTo(other: UByte): Int = this.toInt().compareTo(other.toInt())
    /**
     * Compares this value with the
        specified value for order.
     * Returns zero if this value is equal to the specified other value, a negative number if
        it's less than other,
     * or a positive number if it's
        greater than other.
     */
    @kotlin.internal.InlineOnly
    public inline operator fun compareTo(other: UShort):
        Int = this.toInt().compareTo(other.toInt())
    /**
     * Compares this value with the specified value for order.
     * Returns zero if this value is equal to the specified other value, a negative number if
        it's less than other,
     * or a positive number if it's greater than other.
     */
    @kotlin.internal.InlineOnly
    public inline operator fun compareTo(other: UInt): Int = this.toUInt().compareTo(other)
    /**
     * Compares this value with the
        specified value for order.
     * Returns zero if this value is equal to the specified other value, a negative number if
        it's less than other,
     * or a positive number if it's greater than other.
     */
    @kotlin.internal.InlineOnly
    public inline operator fun compareTo(other: ULong): Int = this.toULong().compareTo(other)
    /**
     * Adds the
        other value to this value.
     */
    @kotlin.internal.InlineOnly
    public inline operator fun plus(other: UByte): UInt = this.toUInt().plus(other.toUInt())
    /**
     * Adds the other
        value to this value.
     */
    @kotlin.internal.InlineOnly
    public inline operator fun plus(other: UShort): UInt =
        this.toUInt().plus(other.toUInt())
    /**
     * Adds the other value to this
        value.
     */
    @kotlin.internal.InlineOnly
    public inline operator fun plus(other: UInt): UInt = this.toUInt().plus(other)
    /**
     * Adds the other value to this
        value.
     */
    @kotlin.internal.InlineOnly
    public inline operator fun plus(other: ULong): ULong =
        this.toULong().plus(other)
    /**
     * Subtracts the other value from this value.
     */
    @kotlin.internal.InlineOnly
    public inline operator fun minus(other: UByte): UInt = this.toUInt().minus(other.toUInt())
    /**
     * Subtracts the

```



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other value from this value. */n @kotlin.internal.InlineOnly\n public inline operator fun minus(other: UShort):
UInt = this.toUInt().minus(other.toUInt())n /**
Subtracts the other value from this value. */n @kotlin.internal.InlineOnly\n public inline operator fun
minus(other: UInt): UInt = this.toUInt().minus(other)n /** Subtracts the other value from this value. */n
@kotlin.internal.InlineOnly\n public inline operator fun minus(other: ULong): ULong =
this.toULong().minus(other)n\n /** Multiplies this value by the other value. */n @kotlin.internal.InlineOnly\n
public inline operator fun times(other: UByte): UInt = this.toUInt().times(other.toUInt())n /** Multiplies this
value by the other value. */n @kotlin.internal.InlineOnly\n public inline operator fun times(other: UShort): UInt
= this.toUInt().times(other.toUInt())n /** Multiplies this value by the other value. */n
@kotlin.internal.InlineOnly\n public inline operator fun times(other: UInt): UInt = this.toUInt().times(other)n
/** Multiplies this value by the other value. */n @kotlin.internal.InlineOnly\n public inline operator
fun times(other: ULong): ULong = this.toULong().times(other)n\n /** Divides this value by the other value,
truncating the result to an integer that is closer to zero. */n @kotlin.internal.InlineOnly\n public inline operator
fun div(other: UByte): UInt = this.toUInt().div(other.toUInt())n /** Divides this value by the other value,
truncating the result to an integer that is closer to zero. */n @kotlin.internal.InlineOnly\n public inline operator
fun div(other: UShort): UInt = this.toUInt().div(other.toUInt())n /** Divides this value by the other value,
truncating the result to an integer that is closer to zero. */n @kotlin.internal.InlineOnly\n public inline operator
fun div(other: UInt): UInt = this.toUInt().div(other)n /** Divides this value by the other value, truncating the
result to an integer that is closer to zero. */n @kotlin.internal.InlineOnly\n public inline operator fun div(other:
ULong): ULong = this.toULong().div(other)n\n /**n
* Calculates the remainder of truncating division of this value by the other value.n * \n * The result is
always less than the divisor.n */n @kotlin.internal.InlineOnly\n public inline operator fun rem(other:
UByte): UInt = this.toUInt().rem(other.toUInt())n /**n * Calculates the remainder of truncating division of
this value by the other value.n * \n * The result is always less than the divisor.n */n
@kotlin.internal.InlineOnly\n public inline operator fun rem(other: UShort): UInt =
this.toUInt().rem(other.toUInt())n /**n * Calculates the remainder of truncating division of this value by the
other value.n * \n * The result is always less than the divisor.n */n @kotlin.internal.InlineOnly\n public
inline operator fun rem(other: UInt): UInt = this.toUInt().rem(other)n /**n * Calculates the remainder of
truncating division of this value by the other value.n * \n * The result is always
less than the divisor.n */n @kotlin.internal.InlineOnly\n public inline operator fun rem(other: ULong):
ULong = this.toULong().rem(other)n\n /**n * Divides this value by the other value, flooring the result to an
integer that is closer to negative infinity.n * \n * For unsigned types, the results of flooring division and
truncating division are the same.n */n @kotlin.internal.InlineOnly\n public inline fun floorDiv(other:
UByte): UInt = this.toUInt().floorDiv(other.toUInt())n /**n * Divides this value by the other value, flooring
the result to an integer that is closer to negative infinity.n * \n * For unsigned types, the results of flooring
division and truncating division are the same.n */n @kotlin.internal.InlineOnly\n public inline fun
floorDiv(other: UShort): UInt = this.toUInt().floorDiv(other.toUInt())n /**n * Divides this value by the other
value, flooring the result to an integer that is closer
to negative infinity.n * \n * For unsigned types, the results of flooring division and truncating division are the
same.n */n @kotlin.internal.InlineOnly\n public inline fun floorDiv(other: UInt): UInt =
this.toUInt().floorDiv(other)n /**n * Divides this value by the other value, flooring the result to an integer that
is closer to negative infinity.n * \n * For unsigned types, the results of flooring division and truncating division
are the same.n */n @kotlin.internal.InlineOnly\n public inline fun floorDiv(other: ULong): ULong =
this.toULong().floorDiv(other)n\n /**n * Calculates the remainder of flooring division of this value by the
other value.n * \n * The result is always less than the divisor.n * \n * For unsigned types, the remainders
of flooring division and truncating division are the same.n */n @kotlin.internal.InlineOnly\n public inline
fun mod(other: UByte): UByte = this.toUInt().mod(other.toUInt()).toUByte()n

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/**\n * Calculates the remainder of flooring division of this value by the other value.\n * \n * The result is
always less than the divisor.\n * \n * For unsigned types, the remainders of flooring division and truncating
division are the same.\n * \n @kotlin.internal.InlineOnly\n public inline fun mod(other: UShort): UShort =
this.toUInt().mod(other.toUInt()).toUShort()\n /**\n * Calculates the remainder of flooring division of this
value by the other value.\n * \n * The result is always less than the divisor.\n * \n * For unsigned types, the
remainders of flooring division and truncating division are the same.\n * \n @kotlin.internal.InlineOnly\n
public inline fun mod(other: UInt): UInt = this.toUInt().mod(other)\n /**\n * Calculates the remainder of
flooring division of this value by the other value.\n * \n * The result is always less than the divisor.\n * \n
* For unsigned
types, the remainders of flooring division and truncating division are the same.\n * \n
@kotlin.internal.InlineOnly\n public inline fun mod(other: ULong): ULong = this.toULong().mod(other)\n\n
/**\n * Returns this value incremented by one.\n * \n * @sample samples.misc.Builtins.inc\n * \n
@kotlin.internal.InlineOnly\n public inline operator fun inc(): UByte = UByte(data.inc())\n\n /**\n * Returns
this value decremented by one.\n * \n * @sample samples.misc.Builtins.dec\n * \n
@kotlin.internal.InlineOnly\n public inline operator fun dec(): UByte = UByte(data.dec())\n\n /** Creates a
range from this value to the specified [other] value. * \n @kotlin.internal.InlineOnly\n public inline operator fun
rangeTo(other: UByte): UIntRange = UIntRange(this.toUInt(), other.toUInt())\n\n /**\n * Creates a range from
this value up to but excluding the specified [other] value.\n * \n * If the [other] value is less
than or equal to `this` value, then the returned range is empty.\n * \n @SinceKotlin("1.7")\n
@ExperimentalStdlibApi\n @kotlin.internal.InlineOnly\n public inline operator fun rangeUntil(other: UByte):
UIntRange = this.toUInt() until other.toUInt()\n\n /** Performs a bitwise AND operation between the two values.
* \n @kotlin.internal.InlineOnly\n public inline infix fun and(other: UByte): UByte = UByte(this.data and
other.data)\n\n /** Performs a bitwise OR operation between the two values. * \n @kotlin.internal.InlineOnly\n
public inline infix fun or(other: UByte): UByte = UByte(this.data or other.data)\n\n /** Performs a bitwise XOR
operation between the two values. * \n @kotlin.internal.InlineOnly\n public inline infix fun xor(other: UByte):
UByte = UByte(this.data xor other.data)\n\n /** Inverts the bits in this value. * \n @kotlin.internal.InlineOnly\n
public inline fun inv(): UByte = UByte(data.inv())\n\n /**\n * Converts this
[UByte] value to [Byte].\n * \n * If this value is less than or equals to [Byte.MAX_VALUE], the resulting
`Byte` value represents\n * the same numerical value as this `UByte`. Otherwise the result is negative.\n * \n
* The resulting `Byte` value has the same binary representation as this `UByte` value.\n * \n
@kotlin.internal.InlineOnly\n public inline fun toByte(): Byte = data\n\n /**\n * Converts this [UByte] value to
[Short].\n * \n * The resulting `Short` value represents the same numerical value as this `UByte`.\n * \n *
The least significant 8 bits of the resulting `Short` value are the same as the bits of this `UByte` value,\n *
whereas the most significant 8 bits are filled with zeros.\n * \n @kotlin.internal.InlineOnly\n public inline fun
toShort(): Short = data.toShort() and 0xFF\n\n /**\n * Converts this [UByte] value to [Int].\n * \n * The
resulting `Int` value represents the same numerical value as
this `UByte`.\n * \n * The least significant 8 bits of the resulting `Int` value are the same as the bits of this
`UByte` value,\n * whereas the most significant 24 bits are filled with zeros.\n * \n
@kotlin.internal.InlineOnly\n public inline fun toInt(): Int = data.toInt() and 0xFF\n\n /**\n * Converts this
[UByte] value to [Long].\n * \n * The resulting `Long` value represents the same numerical value as this
`UByte`.\n * \n * The least significant 8 bits of the resulting `Long` value are the same as the bits of this
`UByte` value,\n * whereas the most significant 56 bits are filled with zeros.\n * \n
@kotlin.internal.InlineOnly\n public inline fun toLong(): Long = data.toLong() and 0xFF\n\n /** Returns this
value. * \n @kotlin.internal.InlineOnly\n public inline fun toUByte(): UByte = this\n\n /**\n * Converts this
[UByte] value to [UShort].\n * \n * The resulting `UShort` value represents the same numerical
value as this `UByte`.\n * \n * The least significant 8 bits of the resulting `UShort` value are the same as the
bits of this `UByte` value,\n * whereas the most significant 8 bits are filled with zeros.\n * \n
@kotlin.internal.InlineOnly\n public inline fun toUShort(): UShort = UShort(data.toShort() and 0xFF)\n\n /**\n

```

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* Converts this [UByte] value to [UInt].\n    *\n    * The resulting `UInt` value represents the same numerical value
as this `UByte`.\n    *\n    * The least significant 8 bits of the resulting `UInt` value are the same as the bits of this
`UByte` value,\n    * whereas the most significant 24 bits are filled with zeros.\n    */\n
@kotlin.internal.InlineOnly\n    public inline fun toUInt(): UInt = UInt(data.toInt() and 0xFF)\n    /**\n    *
Converts this [UByte] value to [ULong].\n    *\n    * The resulting `ULong` value represents the same numerical
value as this `UByte`.\n    *\n    * The least significant 8 bits of the resulting
`ULong` value are the same as the bits of this `UByte` value,\n    * whereas the most significant 56 bits are filled
with zeros.\n    */\n    @kotlin.internal.InlineOnly\n    public inline fun toULong(): ULong = ULong(data.toLong()
and 0xFF)\n    /**\n    * Converts this [UByte] value to [Float].\n    *\n    * The resulting `Float` value represents
the same numerical value as this `UByte`.\n    */\n    @kotlin.internal.InlineOnly\n    public inline fun toFloat():
Float = this.toInt().toFloat()\n    /**\n    * Converts this [UByte] value to [Double].\n    *\n    * The resulting
`Double` value represents the same numerical value as this `UByte`.\n    */\n    @kotlin.internal.InlineOnly\n
public inline fun toDouble(): Double = this.toInt().toDouble()\n    public override fun toString(): String =
toInt().toString()\n    }\n    /**\n    * Converts this [Byte] value to [UByte].\n    *\n    * If this value is positive, the resulting
`UByte` value represents the same numerical value as
this `Byte`.\n    *\n    * The resulting `UByte` value has the same binary representation as this `Byte` value.\n
*/\n    @SinceKotlin("1.5")\n    @WasExperimental(ExperimentalUnsignedTypes::class)\n    @kotlin.internal.InlineOnly\n
public inline fun Byte.toUByte(): UByte = UByte(this)\n    /**\n    * Converts this [Short] value to [UByte].\n    *\n    * If
this value is positive and less than or equals to [UByte.MAX_VALUE], the resulting `UByte` value represents\n    *
the same numerical value as this `Short`.\n    *\n    * The resulting `UByte` value is represented by the least significant 8
bits of this `Short` value.\n
*/\n    @SinceKotlin("1.5")\n    @WasExperimental(ExperimentalUnsignedTypes::class)\n    @kotlin.internal.InlineOnly\n
public inline fun Short.toUByte(): UByte = UByte(this.toByte())\n    /**\n    * Converts this [Int] value to [UByte].\n
*\n    * If this value is positive and less than or equals to [UByte.MAX_VALUE], the resulting `UByte` value
represents\n    * the same numerical value as this `Int`.\n    *\n    * The resulting `UByte`
value is represented by the least significant 8 bits of this `Int` value.\n
*/\n    @SinceKotlin("1.5")\n    @WasExperimental(ExperimentalUnsignedTypes::class)\n    @kotlin.internal.InlineOnly\n
public inline fun Int.toUByte(): UByte = UByte(this.toByte())\n    /**\n    * Converts this [Long] value to [UByte].\n
*\n    * If this value is positive and less than or equals to [UByte.MAX_VALUE], the resulting `UByte` value
represents\n    * the same numerical value as this `Long`.\n    *\n    * The resulting `UByte` value is represented by the
least significant 8 bits of this `Long` value.\n
*/\n    @SinceKotlin("1.5")\n    @WasExperimental(ExperimentalUnsignedTypes::class)\n    @kotlin.internal.InlineOnly\n
public inline fun Long.toUByte(): UByte = UByte(this.toByte())\n    ,"/*\n    * Copyright 2010-2022 JetBrains s.r.o.
and Kotlin Programming Language contributors.\n    * Use of this source code is governed by the Apache 2.0 license
that can be found in the license/LICENSE.txt file.\n    */\n    // Auto-generated file. DO NOT EDIT!\n    \n    package
kotlin\n    \n    import kotlin.experimental.*\n    import
kotlin.jvm.*\n    \n    @SinceKotlin("1.5")\n    @WasExperimental(ExperimentalUnsignedTypes::class)\n    @JvmInline\n    pu
blic value class UInt @kotlin.internal.IntrinsicConstEvaluation @PublishedApi internal constructor(@PublishedApi
internal val data: Int) : Comparable<UInt> {\n    \n    companion object {\n    \n    /**\n    * A constant holding the
minimum value an instance of UInt can have.\n    */\n    public const val MIN_VALUE: UInt = UInt(0)\n    \n
/**\n    * A constant holding the maximum value an instance of UInt can have.\n    */\n    public const val
MAX_VALUE: UInt = UInt(-1)\n    \n    /**\n    * The number of bytes used to represent an instance of UInt in a
binary form.\n    */\n    public const val SIZE_BYTES: Int = 4\n    \n    /**\n    * The number of bits used to
represent an instance of UInt in a binary form.\n    */\n    public const val SIZE_BITS: Int = 32\n    }\n    \n
/**\n    *
Compares this value with the specified value for order.\n    * Returns zero if this value is equal to the specified
other value, a negative number if it's less than other,\n    * or a positive number if it's greater than other.\n    */\n
    @kotlin.internal.InlineOnly\n    public inline operator fun compareTo(other: UByte): Int =

```

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this.compareTo(other.toUInt())\n\n /**\n * Compares this value with the specified value for order.\n * Returns zero if this value is equal to the specified other value, a negative number if it's less than other,\n * or a positive number if it's greater than other.\n */\n @kotlin.internal.InlineOnly\n public inline operator fun
compareTo(other: UShort): Int = this.compareTo(other.toUInt())\n\n /**\n * Compares this value with the
specified value for order.\n * Returns zero if this value is equal to the specified other value, a negative number if
it's less than other,\n * or a positive number if it's greater than
other.\n */\n @kotlin.internal.InlineOnly\n @Suppress(\"OVERRIDE_BY_INLINE\")\n public override
inline operator fun compareTo(other: UInt): Int = uintCompare(this.data, other.data)\n\n /**\n * Compares this
value with the specified value for order.\n * Returns zero if this value is equal to the specified other value, a
negative number if it's less than other,\n * or a positive number if it's greater than other.\n */\n
@kotlin.internal.InlineOnly\n public inline operator fun compareTo(other: ULong): Int =
this.toULong().compareTo(other)\n\n /** Adds the other value to this value. */\n @kotlin.internal.InlineOnly\n
public inline operator fun plus(other: UByte): UInt = this.plus(other.toUInt())\n\n /** Adds the other value to this
value. */\n @kotlin.internal.InlineOnly\n public inline operator fun plus(other: UShort): UInt =
this.plus(other.toUInt())\n\n /** Adds the other value to this value. */\n @kotlin.internal.InlineOnly\n
public inline operator fun plus(other: UInt): UInt = UInt(this.data.plus(other.data))\n\n /** Adds the other value to
this value. */\n @kotlin.internal.InlineOnly\n public inline operator fun plus(other: ULong): ULong =
this.toULong().plus(other)\n\n /** Subtracts the other value from this value. */\n @kotlin.internal.InlineOnly\n
public inline operator fun minus(other: UByte): UInt = this.minus(other.toUInt())\n\n /** Subtracts the other value
from this value. */\n @kotlin.internal.InlineOnly\n public inline operator fun minus(other: UShort): UInt =
this.minus(other.toUInt())\n\n /** Subtracts the other value from this value. */\n @kotlin.internal.InlineOnly\n
public inline operator fun minus(other: UInt): UInt = UInt(this.data.minus(other.data))\n\n /** Subtracts the other
value from this value. */\n @kotlin.internal.InlineOnly\n public inline operator fun minus(other: ULong): ULong
= this.toULong().minus(other)\n\n /** Multiplies this value
by the other value. */\n @kotlin.internal.InlineOnly\n public inline operator fun times(other: UByte): UInt =
this.times(other.toUInt())\n\n /** Multiplies this value by the other value. */\n @kotlin.internal.InlineOnly\n
public inline operator fun times(other: UShort): UInt = this.times(other.toUInt())\n\n /** Multiplies this value by the
other value. */\n @kotlin.internal.InlineOnly\n public inline operator fun times(other: UInt): UInt =
UInt(this.data.times(other.data))\n\n /** Multiplies this value by the other value. */\n
@kotlin.internal.InlineOnly\n public inline operator fun times(other: ULong): ULong =
this.toULong().times(other)\n\n /** Divides this value by the other value, truncating the result to an integer that is
closer to zero. */\n @kotlin.internal.InlineOnly\n public inline operator fun div(other: UByte): UInt =
this.div(other.toUInt())\n\n /** Divides this value by the other value, truncating the result to an integer that is closer
to zero. */\n @kotlin.internal.InlineOnly\n public inline operator fun div(other: UShort): UInt =
this.div(other.toUInt())\n\n /** Divides this value by the other value, truncating the result to an integer that is closer
to zero. */\n @kotlin.internal.InlineOnly\n public inline operator fun div(other: UInt): UInt = uintDivide(this,
other)\n\n /** Divides this value by the other value, truncating the result to an integer that is closer to zero. */\n
@kotlin.internal.InlineOnly\n public inline operator fun div(other: ULong): ULong =
this.toULong().div(other)\n\n /**\n * Calculates the remainder of truncating division of this value by the other
value.\n * \n * The result is always less than the divisor.\n */\n @kotlin.internal.InlineOnly\n public
inline operator fun rem(other: UByte): UInt = this.rem(other.toUInt())\n\n /**\n * Calculates the remainder of
truncating division of this value by the other value.\n * \n * The result
is always less than the divisor.\n */\n @kotlin.internal.InlineOnly\n public inline operator fun rem(other:
UShort): UInt = this.rem(other.toUInt())\n\n /**\n * Calculates the remainder of truncating division of this value
by the other value.\n * \n * The result is always less than the divisor.\n */\n @kotlin.internal.InlineOnly\n
public inline operator fun rem(other: UInt): UInt = uintRemainder(this, other)\n\n /**\n * Calculates the
remainder of truncating division of this value by the other value.\n * \n * The result is always less than the
divisor.\n */\n @kotlin.internal.InlineOnly\n public inline operator fun rem(other: ULong): ULong =

```

this.toULong().rem(other)\n\n /\*\*\n \* Divides this value by the other value, flooring the result to an integer that is closer to negative infinity.\n \* \n \* For unsigned types, the results of flooring division and truncating division are the same.\n \*/\n @kotlin.internal.InlineOnly\n

public inline fun floorDiv(other: UByte): UInt = this.floorDiv(other.toUInt())\n /\*\*\n \* Divides this value by the other value, flooring the result to an integer that is closer to negative infinity.\n \* \n \* For unsigned types, the results of flooring division and truncating division are the same.\n \*/\n @kotlin.internal.InlineOnly\n

public inline fun floorDiv(other: UShort): UInt = this.floorDiv(other.toUInt())\n /\*\*\n \* Divides this value by the other value, flooring the result to an integer that is closer to negative infinity.\n \* \n \* For unsigned types, the results of flooring division and truncating division are the same.\n \*/\n @kotlin.internal.InlineOnly\n

public inline fun floorDiv(other: UInt): UInt = div(other)\n /\*\*\n \* Divides this value by the other value, flooring the result to an integer that is closer to negative infinity.\n \* \n \* For unsigned types, the results of flooring division and

truncating division are the same.\n \*/\n @kotlin.internal.InlineOnly\n public inline fun floorDiv(other: ULong): ULong = this.toULong().floorDiv(other)\n\n /\*\*\n \* Calculates the remainder of flooring division of this value by the other value.\n \* \n \* The result is always less than the divisor.\n \* \n \* For unsigned types, the remainders of flooring division and truncating division are the same.\n \*/\n

@kotlin.internal.InlineOnly\n public inline fun mod(other: UByte): UByte = this.mod(other.toUInt()).toUByte()\n /\*\*\n \* Calculates the remainder of flooring division of this value by the other value.\n \* \n \* The result is always less than the divisor.\n \* \n \* For unsigned types, the remainders of flooring division and truncating

division are the same.\n \*/\n @kotlin.internal.InlineOnly\n public inline fun mod(other: UShort): UShort = this.mod(other.toUInt()).toUShort()\n /\*\*\n \* Calculates the remainder of flooring division of this value by the other value.\n \* \n \* The result is always less than the divisor.\n \* \n \* For unsigned types, the remainders of flooring division and truncating division are the same.\n \*/\n

@kotlin.internal.InlineOnly\n public inline fun mod(other: UInt): UInt = rem(other)\n /\*\*\n \* Calculates the remainder of flooring division of this value by the other value.\n \* \n \* The result is always less than the divisor.\n \* \n \* For unsigned types, the remainders of flooring division and truncating division are the same.\n \*/\n

@kotlin.internal.InlineOnly\n public inline fun mod(other: ULong): ULong = this.toULong().mod(other)\n\n /\*\*\n \* Returns this value incremented by one.\n \* \n \* @sample

samples.misc.Builtins.inc\n \*/\n @kotlin.internal.InlineOnly\n public inline operator fun inc(): UInt = UInt(data.inc())\n\n /\*\*\n \* Returns this value decremented by one.\n \* \n \* @sample

samples.misc.Builtins.dec\n \*/\n @kotlin.internal.InlineOnly\n public inline operator fun dec(): UInt = UInt(data.dec())\n\n /\*\*\n \* Creates a range from this value to the specified [other] value.\n \*/\n

@kotlin.internal.InlineOnly\n public inline operator fun rangeTo(other: UInt): UIntRange = UIntRange(this, other)\n\n /\*\*\n \* Creates a range from this value up to but excluding the specified [other] value.\n \* \n \* If the [other] value is less than or equal to `this` value, then the returned range is empty.\n \*/\n

@SinceKotlin("1.7")\n @ExperimentalStdlibApi\n @kotlin.internal.InlineOnly\n public inline operator fun rangeUntil(other: UInt): UIntRange = this until other\n\n /\*\*\n \* Shifts this value left by the [bitCount] number of bits.\n \* \n \* Note that only the five lowest-order bits of the [bitCount] are used as the shift distance.\n \* \n \* The shift distance actually used is therefore always in the range `0..31`.\n \*/\n

@kotlin.internal.InlineOnly\n public inline infix fun shl(bitCount: Int): UInt = UInt(data shl bitCount)\n\n /\*\*\n \* Shifts this value right by the [bitCount] number of bits, filling the leftmost bits with zeros.\n \* \n \* Note that only the five lowest-order bits of the [bitCount] are used as the shift distance.\n \* \n \* The shift distance actually used is therefore always in the range `0..31`.\n \*/\n @kotlin.internal.InlineOnly\n

public inline infix fun shr(bitCount: Int): UInt = UInt(data ushr bitCount)\n\n /\*\*\n \* Performs a bitwise AND operation between the two values.\n \*/\n @kotlin.internal.InlineOnly\n public inline infix fun and(other: UInt):

UInt = UInt(this.data and other.data)\n\n /\*\*\n \* Performs a bitwise OR operation between the two values.\n \*/\n @kotlin.internal.InlineOnly\n public inline infix fun or(other: UInt): UInt = UInt(this.data or other.data)\n\n /\*\*\n

Performs a bitwise XOR operation between the two values.\n \*/\n

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@kotlin.internal.InlineOnly\n public inline infix fun xor(other: UInt): UInt = UInt(this.data xor other.data)\n /**
Inverts the bits in this value. */\n @kotlin.internal.InlineOnly\n public inline fun inv(): UInt =
UInt(data.inv())\n\n /**\n * Converts this [UInt] value to [Byte].\n * \n * If this value is less than or equals
to [Byte.MAX_VALUE], the resulting `Byte` value represents\n * the same numerical value as this `UInt`.\n
*\n * The resulting `Byte` value is represented by the least significant 8 bits of this `UInt` value.\n * Note that
the resulting `Byte` value may be negative.\n */\n @kotlin.internal.InlineOnly\n public inline fun toByte():
Byte = data.toByte()\n /**\n * Converts this [UInt] value to [Short].\n * \n * If this value is less than or
equals to [Short.MAX_VALUE], the resulting `Short` value represents\n * the same numerical value as this
`UInt`.\n * \n * The resulting `Short` value is represented
by the least significant 16 bits of this `UInt` value.\n * Note that the resulting `Short` value may be negative.\n
*/\n @kotlin.internal.InlineOnly\n public inline fun toShort(): Short = data.toShort()\n /**\n * Converts this
[UInt] value to [Int].\n * \n * If this value is less than or equals to [Int.MAX_VALUE], the resulting `Int` value
represents\n * the same numerical value as this `UInt`. Otherwise the result is negative.\n * \n * The resulting
`Int` value has the same binary representation as this `UInt` value.\n */\n @kotlin.internal.InlineOnly\n public
inline fun toInt(): Int = data\n /**\n * Converts this [UInt] value to [Long].\n * \n * The resulting `Long`
value represents the same numerical value as this `UInt`.\n * \n * The least significant 32 bits of the resulting
`Long` value are the same as the bits of this `UInt` value,\n * whereas the most significant 32 bits are filled with
zeros.\n\n */\n @kotlin.internal.InlineOnly\n public inline fun toLong(): Long = data.toLong() and 0xFFFF_FFFF\n\n
/**\n * Converts this [UInt] value to [UByte].\n * \n * If this value is less than or equals to
[UByte.MAX_VALUE], the resulting `UByte` value represents\n * the same numerical value as this `UInt`.\n
*\n * The resulting `UByte` value is represented by the least significant 8 bits of this `UInt` value.\n */\n
@kotlin.internal.InlineOnly\n public inline fun toUByte(): UByte = data.toUByte()\n /**\n * Converts this
[UInt] value to [UShort].\n * \n * If this value is less than or equals to [UShort.MAX_VALUE], the resulting
`UShort` value represents\n * the same numerical value as this `UInt`.\n * \n * The resulting `UShort` value is
represented by the least significant 16 bits of this `UInt` value.\n */\n @kotlin.internal.InlineOnly\n public
inline fun toUShort(): UShort = data.toUShort()\n /** Returns
this value. */\n @kotlin.internal.InlineOnly\n public inline fun toUInt(): UInt = this\n /**\n * Converts this
[UInt] value to [ULong].\n * \n * The resulting `ULong` value represents the same numerical value as this
`UInt`.\n * \n * The least significant 32 bits of the resulting `ULong` value are the same as the bits of this `UInt`
value,\n * whereas the most significant 32 bits are filled with zeros.\n */\n @kotlin.internal.InlineOnly\n
public inline fun toULong(): ULong = ULong(data.toLong() and 0xFFFF_FFFF)\n\n /**\n * Converts this
[UInt] value to [Float].\n * \n * The resulting value is the closest `Float` to this `UInt` value.\n * In case when
this `UInt` value is exactly between two `Float`s,\n * the one with zero at least significant bit of mantissa is
selected.\n */\n @kotlin.internal.InlineOnly\n public inline fun toFloat(): Float = this.toDouble().toFloat()\n\n
/**\n * Converts this [UInt] value to
[Double].\n * \n * The resulting `Double` value represents the same numerical value as this `UInt`.\n */\n
@kotlin.internal.InlineOnly\n public inline fun toDouble(): Double = uintToDouble(data)\n\n public override
fun toString(): String = toLong().toString()\n\n\n /**\n * Converts this [Byte] value to [UInt].\n * \n * If this value
is positive, the resulting `UInt` value represents the same numerical value as this `Byte`.\n * \n * The least significant
8 bits of the resulting `UInt` value are the same as the bits of this `Byte` value,\n * whereas the most significant 24
bits are filled with the sign bit of this value.\n\n */\n @SinceKotlin("1.5")\n @WasExperimental(ExperimentalUnsignedTypes::class)\n @kotlin.internal.InlineOnly\n
public inline fun Byte.toUInt(): UInt = UInt(this.toInt())\n\n /**\n * Converts this [Short] value to [UInt].\n * \n * If
this value is positive, the resulting `UInt` value represents the same numerical value as this `Short`.\n * \n * The least
significant
16 bits of the resulting `UInt` value are the same as the bits of this `Short` value,\n * whereas the most significant
16 bits are filled with the sign bit of this value.\n

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*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\npublic inline fun Short.toUInt(): UInt = UInt(this.toInt())\n/**\n * Converts this [Int] value to [UInt].\n *\n * If this value is positive, the resulting `UInt` value represents the same numerical value as this `Int`. \n *\n * The resulting `UInt` value has the same binary representation as this `Int` value.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\npublic inline fun Int.toUInt(): UInt = UInt(this)\n/**\n * Converts this [Long] value to [UInt].\n *\n * If this value is positive and less than or equals to [UInt.MAX_VALUE], the resulting `UInt` value represents\n * the same numerical value as this `Long`. \n *\n * The resulting `UInt` value is represented by the least significant 32 bits of this `Long` value.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\npublic inline fun Long.toUInt(): UInt = UInt(this.toInt())\n/**\n * Converts this [Float] value to [UInt].\n *\n * The fractional part, if any, is rounded down towards zero.\n * Returns zero if this `Float` value is negative or `NaN`, [UInt.MAX_VALUE] if it's bigger than `UInt.MAX_VALUE`. \n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\npublic inline fun Float.toUInt(): UInt = doubleToUInt(this.toDouble())\n/**\n * Converts this [Double] value to [UInt].\n *\n * The fractional part, if any, is rounded down towards zero.\n * Returns zero if this `Double` value is negative or `NaN`, [UInt.MAX_VALUE] if it's bigger than `UInt.MAX_VALUE`. \n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\npublic\ninline fun Double.toUInt(): UInt = doubleToUInt(this)\n"/*\n * Copyright 2010-2022 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n// Auto-generated file. DO NOT EDIT!\n\npackage kotlin\n\nimport kotlin.experimental.*\nimport kotlin.jvm.*\n\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@JvmInline\npublic value class UInt @kotlin.internal.IntrinsicConstEvaluation @PublishedApi internal constructor(@PublishedApi internal val data: Short) : Comparable<UInt> {\n\n    companion object {\n\n        /**\n         * A constant holding the minimum value an instance of UInt can have.\n         */\n        public const val MIN_VALUE: UInt = UInt(0)\n\n        /**\n         * A constant holding the maximum value an instance of UInt can have.\n         */\n        public const val MAX_VALUE: UInt = UInt(-1)\n\n        /**\n         * The number of bytes used to represent an instance of UInt in a binary form.\n         */\n        public const val SIZE_BYTES: Int = 2\n\n        /**\n         * The number of bits used to represent an instance of UInt in a binary form.\n         */\n        public const val SIZE_BITS: Int = 16\n    }\n\n    /**\n     * Compares this value with the specified value for order.\n     * Returns zero if this value is equal to the specified other value, a negative number if it's less than other,\n     * or a positive number if it's greater than other.\n     */\n    @kotlin.internal.InlineOnly\n    public inline operator fun compareTo(other: UInt): Int = this.toInt().compareTo(other.toInt())\n\n    /**\n     * Compares this value with the specified value for order.\n     * Returns zero if this value is equal to the specified other value, a negative number if it's less than other,\n     * or a positive number if it's greater than other.\n     */\n    @kotlin.internal.InlineOnly\n    public override inline operator fun compareTo(other: UInt): Int = this.toInt().compareTo(other.toInt())\n\n    /**\n     * Compares this value with the specified value for order.\n     * Returns zero if this value is equal to the specified other value, a negative number if it's less than other,\n     * or a positive number if it's greater than other.\n     */\n    @kotlin.internal.InlineOnly\n    public inline operator fun compareTo(other: UInt): Int = this.toUInt().compareTo(other)\n\n    /**\n     * Compares this value with the specified value for order.\n     * Returns zero if this value is equal to the specified other value, a negative number if it's less than other,\n     * or a positive number if it's greater than other.\n     */\n    @kotlin.internal.InlineOnly\n    public inline operator fun compareTo(other: UIntLong): Int = this.toUIntLong().compareTo(other)\n\n    /**\n     * Adds the other value to this value.\n     */\n    @kotlin.internal.InlineOnly\n
```

```

    public inline operator fun plus(other: UByte): UInt = this.toUInt().plus(other.toUInt())\n    /** Adds the other
value to this value. */\n    @kotlin.internal.InlineOnly\n    public inline operator fun plus(other: UShort): UInt =
this.toUInt().plus(other.toUInt())\n    /** Adds the other value to this value. */\n    @kotlin.internal.InlineOnly\n
public inline operator fun plus(other: UInt): UInt = this.toUInt().plus(other)\n    /** Adds the other value to this
value. */\n    @kotlin.internal.InlineOnly\n    public inline operator fun plus(other: ULong): ULong =
this.toULong().plus(other)\n\n    /** Subtracts the other value from this value. */\n    @kotlin.internal.InlineOnly\n
public inline operator fun minus(other: UByte): UInt = this.toUInt().minus(other.toUInt())\n    /** Subtracts the
other value from this value. */\n    @kotlin.internal.InlineOnly\n    public inline operator fun minus(other: UShort):
UInt = this.toUInt().minus(other.toUInt())\n
    /** Subtracts the other value from this value. */\n    @kotlin.internal.InlineOnly\n    public inline operator fun
minus(other: UInt): UInt = this.toUInt().minus(other)\n    /** Subtracts the other value from this value. */\n
    @kotlin.internal.InlineOnly\n    public inline operator fun minus(other: ULong): ULong =
this.toULong().minus(other)\n\n    /** Multiplies this value by the other value. */\n    @kotlin.internal.InlineOnly\n
public inline operator fun times(other: UByte): UInt = this.toUInt().times(other.toUInt())\n    /** Multiplies this
value by the other value. */\n    @kotlin.internal.InlineOnly\n    public inline operator fun times(other: UShort): UInt
= this.toUInt().times(other.toUInt())\n    /** Multiplies this value by the other value. */\n
    @kotlin.internal.InlineOnly\n    public inline operator fun times(other: UInt): UInt = this.toUInt().times(other)\n
    /** Multiplies this value by the other value. */\n    @kotlin.internal.InlineOnly\n    public inline operator
fun times(other: ULong): ULong = this.toULong().times(other)\n\n    /** Divides this value by the other value,
truncating the result to an integer that is closer to zero. */\n    @kotlin.internal.InlineOnly\n    public inline operator
fun div(other: UByte): UInt = this.toUInt().div(other.toUInt())\n    /** Divides this value by the other value,
truncating the result to an integer that is closer to zero. */\n    @kotlin.internal.InlineOnly\n    public inline operator
fun div(other: UShort): UInt = this.toUInt().div(other.toUInt())\n    /** Divides this value by the other value,
truncating the result to an integer that is closer to zero. */\n    @kotlin.internal.InlineOnly\n    public inline operator
fun div(other: UInt): UInt = this.toUInt().div(other)\n    /** Divides this value by the other value, truncating the
result to an integer that is closer to zero. */\n    @kotlin.internal.InlineOnly\n    public inline operator fun div(other:
ULong): ULong = this.toULong().div(other)\n\n    /**\n     * Calculates the remainder of truncating division of this value by the other value.\n     * \n     * The result is
always less than the divisor.\n     */\n    @kotlin.internal.InlineOnly\n    public inline operator fun rem(other:
UByte): UInt = this.toUInt().rem(other.toUInt())\n    /**\n     * Calculates the remainder of truncating division of
this value by the other value.\n     * \n     * The result is always less than the divisor.\n     */\n
    @kotlin.internal.InlineOnly\n    public inline operator fun rem(other: UShort): UInt =
this.toUInt().rem(other.toUInt())\n    /**\n     * Calculates the remainder of truncating division of this value by the
other value.\n     * \n     * The result is always less than the divisor.\n     */\n    @kotlin.internal.InlineOnly\n
public inline operator fun rem(other: UInt): UInt = this.toUInt().rem(other)\n    /**\n     * Calculates the remainder of
truncating division of this value by the other value.\n     * \n     * The result is always
less than the divisor.\n     */\n    @kotlin.internal.InlineOnly\n    public inline operator fun rem(other: ULong):
ULong = this.toULong().rem(other)\n\n    /**\n     * Divides this value by the other value, flooring the result to an
integer that is closer to negative infinity.\n     * \n     * For unsigned types, the results of flooring division and
truncating division are the same.\n     */\n    @kotlin.internal.InlineOnly\n    public inline fun floorDiv(other:
UByte): UInt = this.toUInt().floorDiv(other.toUInt())\n    /**\n     * Divides this value by the other value, flooring
the result to an integer that is closer to negative infinity.\n     * \n     * For unsigned types, the results of flooring
division and truncating division are the same.\n     */\n    @kotlin.internal.InlineOnly\n    public inline fun
floorDiv(other: UShort): UInt = this.toUInt().floorDiv(other.toUInt())\n    /**\n     * Divides this value by the other
value, flooring the result to an integer that is closer
to negative infinity.\n     * \n     * For unsigned types, the results of flooring division and truncating division are the
same.\n     */\n    @kotlin.internal.InlineOnly\n    public inline fun floorDiv(other: UInt): UInt =
this.toUInt().floorDiv(other)\n    /**\n     * Divides this value by the other value, flooring the result to an integer that

```



is closer to negative infinity.\n \* \n \* For unsigned types, the results of flooring division and truncating division are the same.\n \*/\n @kotlin.internal.InlineOnly\n public inline fun floorDiv(other: ULong): ULong = this.toULong().floorDiv(other)\n\n /\*\*\n \* Calculates the remainder of flooring division of this value by the other value.\n \* \n \* The result is always less than the divisor.\n \* \n \* For unsigned types, the remainders of flooring division and truncating division are the same.\n \*/\n @kotlin.internal.InlineOnly\n public inline fun mod(other: UByte): UByte = this.toUInt().mod(other.toUInt()).toUByte()\n\n /\*\*\n \* Calculates the remainder of flooring division of this value by the other value.\n \* \n \* The result is always less than the divisor.\n \* \n \* For unsigned types, the remainders of flooring division and truncating division are the same.\n \*/\n @kotlin.internal.InlineOnly\n public inline fun mod(other: UShort): UShort = this.toUInt().mod(other.toUInt()).toUShort()\n\n /\*\*\n \* Calculates the remainder of flooring division of this value by the other value.\n \* \n \* The result is always less than the divisor.\n \* \n \* For unsigned types, the remainders of flooring division and truncating division are the same.\n \*/\n @kotlin.internal.InlineOnly\n public inline fun mod(other: UInt): UInt = this.toUInt().mod(other)\n\n /\*\*\n \* Calculates the remainder of flooring division of this value by the other value.\n \* \n \* The result is always less than the divisor.\n \* \n \* For unsigned types, the remainders of flooring division and truncating division are the same.\n \*/\n @kotlin.internal.InlineOnly\n public inline fun mod(other: ULong): ULong = this.toULong().mod(other)\n\n /\*\*\n \* Returns this value incremented by one.\n \* \n \* @sample samples.misc.Builtins.inc\n \*/\n @kotlin.internal.InlineOnly\n public inline operator fun inc(): UShort = UShort(data.inc())\n\n /\*\*\n \* Returns this value decremented by one.\n \* \n \* @sample samples.misc.Builtins.dec\n \*/\n @kotlin.internal.InlineOnly\n public inline operator fun dec(): UShort = UShort(data.dec())\n\n /\*\* Creates a range from this value to the specified [other] value. \*/\n @kotlin.internal.InlineOnly\n public inline operator fun rangeTo(other: UShort): UIntRange = UIntRange(this.toUInt(), other.toUInt())\n\n /\*\* Creates a range from this value up to but excluding the specified [other] value. \n \* \n \* If the [other] value is less than or equal to `this` value, then the returned range is empty.\n \*/\n @SinceKotlin("1.7")\n @ExperimentalStdlibApi\n @kotlin.internal.InlineOnly\n public inline operator fun rangeUntil(other: UShort): UIntRange = this.toUInt() until other.toUInt()\n\n /\*\* Performs a bitwise AND operation between the two values. \*/\n @kotlin.internal.InlineOnly\n public inline infix fun and(other: UShort): UShort = UShort(this.data and other.data)\n\n /\*\* Performs a bitwise OR operation between the two values. \*/\n @kotlin.internal.InlineOnly\n public inline infix fun or(other: UShort): UShort = UShort(this.data or other.data)\n\n /\*\* Performs a bitwise XOR operation between the two values. \*/\n @kotlin.internal.InlineOnly\n public inline infix fun xor(other: UShort): UShort = UShort(this.data xor other.data)\n\n /\*\* Inverts the bits in this value. \*/\n @kotlin.internal.InlineOnly\n public inline fun inv(): UShort = UShort(data.inv())\n\n /\*\* Converts this [UShort] value to [Byte]. \n \* \n \* If this value is less than or equals to [Byte.MAX\_VALUE], the resulting `Byte` value represents the same numerical value as this `UShort`. \n \* \n \* The resulting `Byte` value is represented by the least significant 8 bits of this `UShort` value. \n \* \n \* Note that the resulting `Byte` value may be negative.\n \*/\n @kotlin.internal.InlineOnly\n public inline fun toByte(): Byte = data.toByte()\n\n /\*\* Converts this [UShort] value to [Short]. \n \* \n \* If this value is less than or equals to [Short.MAX\_VALUE], the resulting `Short` value represents the same numerical value as this `UShort`. \n \* \n \* Otherwise the result is negative. \n \* \n \* The resulting `Short` value has the same binary representation as this `UShort` value.\n \*/\n @kotlin.internal.InlineOnly\n public inline fun toShort(): Short = data\n\n /\*\* Converts this [UShort] value to [Int]. \n \* \n \* The resulting `Int` value represents the same numerical value as this `UShort`. \n \* \n \* The least significant 16 bits of the resulting `Int` value are the same as the bits of this `UShort` value, \n \* \n \* whereas the most significant 16 bits are filled with zeros.\n \*/\n @kotlin.internal.InlineOnly\n public inline fun toInt(): Int = data.toInt()\n\n /\*\* Converts this [UShort] value to [Long]. \n \* \n \* The resulting `Long` value represents the same numerical value as this `UShort`. \n \* \n \* The least significant 16 bits of the resulting `Long` value are the same as the bits of this `UShort` value, \n \* \n \* whereas the most significant 48 bits are filled

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with zeros.\n    */\n    @kotlin.internal.InlineOnly\n    public inline fun toLong(): Long = data.toLong() and
0xFFFF\n\n    /**\n    * Converts this [UShort] value to [UByte].\n    * If this value is less than or equals to
[UByte.MAX_VALUE], the resulting `UByte` value represents\n
    * the same numerical value as this `UShort`.\n    * The resulting `UByte` value is represented by the least
significant 8 bits of this `UShort` value.\n    */\n    @kotlin.internal.InlineOnly\n    public inline fun toUByte():
UByte = data.toUByte()\n    /** Returns this value. */\n    @kotlin.internal.InlineOnly\n    public inline fun
toUShort(): UShort = this\n    /**\n    * Converts this [UShort] value to [UInt].\n    * The resulting `UInt`
value represents the same numerical value as this `UShort`.\n    * The least significant 16 bits of the resulting
`UInt` value are the same as the bits of this `UShort` value,\n    * whereas the most significant 16 bits are filled with
zeros.\n    */\n    @kotlin.internal.InlineOnly\n    public inline fun toUInt(): UInt = UInt(data.toInt() and 0xFFFF)\n
    /**\n    * Converts this [UShort] value to [ULong].\n    * The resulting `ULong` value represents the same
numerical value as this `UShort`.\n
    * The least significant 16 bits of the resulting `ULong` value are the same as the bits of this `UShort`
value,\n    * whereas the most significant 48 bits are filled with zeros.\n    */\n    @kotlin.internal.InlineOnly\n
public inline fun toULong(): ULong = ULong(data.toLong() and 0xFFFF)\n\n    /**\n    * Converts this [UShort]
value to [Float].\n    * The resulting `Float` value represents the same numerical value as this `UShort`.\n
    */\n    @kotlin.internal.InlineOnly\n    public inline fun toFloat(): Float = this.toInt().toFloat()\n\n    *
Converts this [UShort] value to [Double].\n    * The resulting `Double` value represents the same numerical
value as this `UShort`.\n    */\n    @kotlin.internal.InlineOnly\n    public inline fun toDouble(): Double =
this.toInt().toDouble()\n\n    public override fun toString(): String = toInt().toString()\n\n}

/**\n * Converts this
[Byte] value to [UShort].\n * If this value is positive,
the resulting `UShort` value represents the same numerical value as this `Byte`.\n * The least significant 8 bits
of the resulting `UShort` value are the same as the bits of this `Byte` value,\n * whereas the most significant 8 bits
are filled with the sign bit of this value.\n
*/\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\n
public inline fun Byte.toUShort(): UShort = UShort(this.toShort())\n\n/**\n * Converts this [Short] value to
[UShort].\n * If this value is positive, the resulting `UShort` value represents the same numerical value as this
`Short`.\n * The resulting `UShort` value has the same binary representation as this `Short` value.\n
*/\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\n
public inline fun Short.toUShort(): UShort = UShort(this)\n\n/**\n * Converts this [Int] value to [UShort].\n * If
this value is positive and less than or equals to [UShort.MAX_VALUE],
the resulting `UShort` value represents\n * the same numerical value as this `Int`.\n * The resulting `UShort`
value is represented by the least significant 16 bits of this `Int` value.\n
*/\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\n
public inline fun Int.toUShort(): UShort = UShort(this.toShort())\n\n/**\n * Converts this [Long] value to
[UShort].\n * If this value is positive and less than or equals to [UShort.MAX_VALUE], the resulting `UShort`
value represents\n * the same numerical value as this `Long`.\n * The resulting `UShort` value is represented by
the least significant 16 bits of this `Long` value.\n
*/\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\n
public inline fun Long.toUShort(): UShort = UShort(this.toShort())\n", "/*\n * Copyright 2010-2021 JetBrains s.r.o.
and Kotlin Programming Language contributors.\n * Use of this source
code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*/\n\n@file:kotlin.jvm.JvmMultifileClass\n@file:kotlin.jvm.JvmName("CollectionsKt")\n@file:OptIn(kotlin.exper
imental.ExperimentalTypeInference::class)\n\npackage kotlin.collections\n\nimport kotlin.contracts.*\nimport
kotlin.random.Random\n\ninternal object EmptyIterator : ListIterator<Nothing> {\n    override fun hasNext():
Boolean = false\n    override fun hasPrevious(): Boolean = false\n    override fun nextIndex(): Int = 0\n    override
fun previousIndex(): Int = -1\n    override fun next(): Nothing = throw NoSuchElementException()\n    override fun
previous(): Nothing = throw NoSuchElementException()\n}\n\ninternal object EmptyList : List<Nothing>,

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Serializable, RandomAccess {
    private const val serialVersionUID: Long = -7390468764508069838L
    override fun equals(other: Any?): Boolean = other is List<*> && other.isEmpty()
    override fun hashCode(): Int = 1
    override fun toString(): String = ""
    override val size: Int get() = 0
    override fun isEmpty(): Boolean = true
    override fun contains(element: Nothing): Boolean = false
    override fun containsAll(elements: Collection<Nothing>): Boolean = elements.isEmpty()
    override fun get(index: Int): Nothing = throw IndexOutOfBoundsException("Empty list doesn't contain element at index $index.")
    override fun indexOf(element: Nothing): Int = -1
    override fun lastIndexOf(element: Nothing): Int = -1
    override fun iterator(): Iterator<Nothing> = EmptyIterator
    override fun listIterator(): ListIterator<Nothing> = EmptyIterator
    override fun listIterator(index: Int): ListIterator<Nothing> {
        if (index != 0) throw IndexOutOfBoundsException("Index: $index")
        return EmptyIterator
    }
    override fun subList(fromIndex: Int, toIndex: Int): List<Nothing> {
        if (fromIndex == 0 && toIndex == 0) return this
        throw IndexOutOfBoundsException("fromIndex: $fromIndex, toIndex: $toIndex")
    }
    private fun readResolve(): Any = EmptyList
}

internal fun <T> Array<out T>.asCollection(): Collection<T> = ArrayAsCollection(this, isVarargs = false)

private class ArrayAsCollection<T>(val values: Array<out T>, val isVarargs: Boolean) : Collection<T> {
    override val size: Int get() = values.size
    override fun isEmpty(): Boolean = values.isEmpty()
    override fun contains(element: T): Boolean = values.contains(element)
    override fun containsAll(elements: Collection<T>): Boolean = elements.all { contains(it) }
    override fun iterator(): Iterator<T> = values.iterator()
    // override hidden toArray implementation to prevent copying of values array
    public fun toArray(): Array<out Any?> = values.copyOfToArrayOfAny(isVarargs)

    /**
     * Returns an empty read-only list. The returned list is serializable (JVM).
     */
    @sample samples.collections.Collections.Lists.emptyReadOnlyList
    public fun <T> emptyList(): List<T> = EmptyList

    /**
     * Returns a new read-only list of given elements. The returned list is serializable (JVM).
     */
    @sample samples.collections.Collections.Lists.readOnlyList
    public fun <T> listOf(vararg elements: T): List<T> = if (elements.size > 0) elements.asList() else emptyList()

    /**
     * Returns an empty read-only list. The returned list is serializable (JVM).
     */
    @sample samples.collections.Collections.Lists.emptyReadOnlyList
    public inline fun <T> listOf(): List<T> = emptyList()

    /**
     * Returns an empty new [MutableList].
     */
    @sample samples.collections.Collections.Lists.emptyMutableList
    public inline fun <T> mutableListOf(): MutableList<T> = ArrayList()

    /**
     * Returns an empty new [ArrayList].
     */
    @sample samples.collections.Collections.Lists.emptyArrayList
    public inline fun <T> arrayListOf(): ArrayList<T> = ArrayList()

    /**
     * Returns a new [MutableList] with the given elements.
     */
    @sample samples.collections.Collections.Lists.mutableList
    public fun <T> mutableListOf(vararg elements: T): MutableList<T> = if (elements.size == 0) ArrayList() else ArrayList(ArrayAsCollection(elements, isVarargs = true))

    /**
     * Returns a new [ArrayList] with the given elements.
     */
    @sample samples.collections.Collections.Lists.arrayList
    public fun <T> arrayListOf(vararg elements: T): ArrayList<T> = if (elements.size == 0) ArrayList() else ArrayList(ArrayAsCollection(elements, isVarargs = true))

    /**
     * Returns a new read-only list either of single given element, if it is not null, or empty list if the element is null. The returned list is serializable (JVM).
     */
    @sample samples.collections.Collections.Lists.listOfNotNull
    public fun <T : Any> listOfNotNull(element: T?): List<T> = if (element != null) listOf(element) else emptyList()

    /**
     * Returns a new read-only list only of those given elements, that are not null. The returned list is serializable (JVM).
     */
    @sample samples.collections.Collections.Lists.listOfNotNull
    public fun <T : Any> listOfNotNull(vararg elements: T?): List<T> = elements.filterNotNull()

    /**
     * Creates a new read-only list with the specified [size], where each element is calculated by calling the specified [init] function.
     */
    @sample samples.collections.Collections.Lists.listOf
    public fun <T> listOf(size: Int, init: () -> T): List<T> = List(size, init)
}

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index.\n *\n * @sample samples.collections.Collections.Lists.readOnlyListFromInitializer\n
*\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic inline fun <T> List(size: Int, init: (index: Int) -> T):
List<T> = MutableList(size, init)\n\n/**\n * Creates a new mutable list with the specified [size], where each element
is calculated by calling the specified\n * [init] function.\n *\n * The function [init]
is called for each list element sequentially starting from the first one.\n * It should return the value for a list element
given its index.\n *\n * @sample samples.collections.Collections.Lists.mutableListFromInitializer\n
*\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic inline fun <T> MutableList(size: Int, init: (index:
Int) -> T): MutableList<T> {\n    val list = ArrayList<T>(size)\n    repeat(size) { index -> list.add(init(index)) }\n
return list}\n\n/**\n * Builds a new read-only [List] by populating a [MutableList] using the given
[builderAction]\n * and returning a read-only list with the same elements.\n *\n * The list passed as a receiver to the
[builderAction] is valid only inside that function.\n * Using it outside of the function produces an unspecified
behavior.\n *\n * The returned list is serializable (JVM).\n *\n * @sample
samples.collections.Builders.Lists.buildListSample\n
*\n@SinceKotlin("1.6")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\n@Su
ppress("DEPRECATION")\npublic
inline fun <E> buildList(@BuilderInference builderAction: MutableList<E>().-> Unit): List<E> {\n    contract {
callsInPlace(builderAction, InvocationKind.EXACTLY_ONCE) }\n    return
buildListInternal(builderAction)\n}\n\n@PublishedApi\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\ninter
nal expect inline fun <E> buildListInternal(builderAction: MutableList<E>().-> Unit): List<E>\n\n/**\n * Builds a
new read-only [List] by populating a [MutableList] using the given [builderAction]\n * and returning a read-only list
with the same elements.\n *\n * The list passed as a receiver to the [builderAction] is valid only inside that
function.\n * Using it outside of the function produces an unspecified behavior.\n *\n * The returned list is
serializable (JVM).\n *\n * [capacity] is used to hint the expected number of elements added in the
[builderAction].\n *\n * @throws IllegalArgumentException if the given [capacity] is negative.\n
*\n * @sample samples.collections.Builders.Lists.buildListSampleWithCapacity\n
*\n@SinceKotlin("1.6")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\n@Su
ppress("DEPRECATION")\npublic inline fun <E> buildList(capacity: Int, @BuilderInference builderAction:
MutableList<E>().-> Unit): List<E> {\n    contract { callsInPlace(builderAction,
InvocationKind.EXACTLY_ONCE) }\n    return buildListInternal(capacity,
builderAction)\n}\n\n@PublishedApi\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\ninternal expect inline
fun <E> buildListInternal(capacity: Int, builderAction: MutableList<E>().-> Unit): List<E>\n\n/**\n * Returns an
[IntRange] of the valid indices for this collection.\n *\n * @sample
samples.collections.Collections.Collections.indicesOfCollection\n *\npublic val Collection<*>.indices: IntRange\n
get() = 0..size - 1\n\n/**\n * Returns the index of the last item in the list or -1 if the list is empty.\n *\n * @sample
samples.collections.Collections.Lists.lastIndexOfList\n
*\npublic val <T> List<T>.lastIndex: Int\n    get() = this.size - 1\n\n/**\n * Returns `true` if the collection is not
empty.\n *\n * @sample samples.collections.Collections.Collections.collectionIsNotEmpty\n
*\n@kotlin.internal.InlineOnly\npublic inline fun <T> Collection<T>.isEmpty(): Boolean =
!isEmpty()\n\n/**\n * Returns `true` if this nullable collection is either null or empty.\n *\n * @sample
samples.collections.Collections.Collections.collectionIsNullOrEmpty\n
*\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\npublic inline fun <T> Collection<T>?.isNullOrEmpty():
Boolean {\n    contract {\n        returns(false) implies (this@isNullOrEmpty != null)\n    }\n    return this == null ||
this.isEmpty()\n}\n\n/**\n * Returns this Collection if it's not `null` and the empty list otherwise.\n *\n * @sample
samples.collections.Collections.Collections.collectionOrEmpty\n *\n@kotlin.internal.InlineOnly\npublic inline fun
<T> Collection<T>?.orEmpty():
Collection<T> = this ?: emptyList()\n\n/**\n * Returns this List if it's not `null` and the empty list otherwise.\n *\n
* @sample samples.collections.Collections.Lists.listOrEmpty\n *\n@kotlin.internal.InlineOnly\npublic inline fun
<T> List<T>?.orEmpty(): List<T> = this ?: emptyList()\n\n/**\n * Returns this collection if it's not empty\n * or the

```

```

result of calling [defaultValue] function if the collection is empty.\n *\n * @sample
samples.collections.Collections.Collections.collectionIsEmpty\n
*/\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\npublic inline fun <C, R> C.isEmpty(defaultValue: () ->
R): R where C : Collection<*>, C : R =\n    if (isEmpty()) defaultValue() else this\n\n\n/**\n * Checks if all
elements in the specified collection are contained in this collection.\n *\n * Allows to overcome type-safety
restriction of `containsAll` that requires to pass a collection of type `Collection<E>`.\n *\n * @sample
samples.collections.Collections.Collections.collectionContainsAll\n
*/\n@Suppress("EXTENSION_SHADOWED_BY_MEMBER") // false warning, extension takes precedence in
some cases\n@kotlin.internal.InlineOnly\npublic inline fun <@kotlin.internal.OnlyInputTypes T>
Collection<T>.containsAll(elements: Collection<T>): Boolean = this.containsAll(elements)\n\n\n/**\n * Returns a
new list with the elements of this list randomly shuffled\n * using the specified [random] instance as the source of
randomness.\n *\n */\n@SinceKotlin("1.3")\npublic fun <T> Iterable<T>.shuffled(random: Random): List<T> =
toMutableList().apply { shuffle(random) }\n\n\ninternal fun <T> List<T>.optimizeReadOnlyList() = when (size) {\n
    0 -> emptyList()\n    1 -> listOf(this[0])\n    else -> this\n}\n\n\n/**\n * Searches this list or its range for the provided
[element] using the binary search algorithm.\n * The list is expected to be sorted into ascending order according to
the Comparable natural ordering of its elements,\n * otherwise the result is undefined.\n *\n * If the list contains
multiple
elements equal to the specified [element], there is no guarantee which one will be found.\n *\n * `null` value is
considered to be less than any non-null value.\n *\n * @return the index of the element, if it is contained in the list
within the specified range;\n * otherwise, the inverted insertion point `(-insertion point - 1)`.\n * The insertion point
is defined as the index at which the element should be inserted,\n * so that the list (or the specified subrange of list)
still remains sorted.\n *\n * @sample samples.collections.Collections.Lists.binarySearchOnComparable\n * @sample
samples.collections.Collections.Lists.binarySearchWithBoundaries\n *\n */\npublic fun <T : Comparable<T>>
List<T?>.binarySearch(element: T?, fromIndex: Int = 0, toIndex: Int = size): Int {\n    rangeCheck(size, fromIndex,
toIndex)\n\n    var low = fromIndex\n    var high = toIndex - 1\n\n    while (low <= high) {\n        val mid = (low +
high).ushr(1) // safe from overflows\n        val midVal = get(mid)\n\n        val cmp = compareValues(midVal, element)\n\n        if (cmp < 0)\n            low = mid + 1\n        else if (cmp >
0)\n            high = mid - 1\n        else\n            return mid // key found\n    }\n    return -(low + 1) // key not
found\n}\n\n\n/**\n * Searches this list or its range for the provided [element] using the binary search algorithm.\n *
The list is expected to be sorted into ascending order according to the specified [comparator],\n * otherwise the
result is undefined.\n *\n * If the list contains multiple elements equal to the specified [element], there is no
guarantee which one will be found.\n *\n * `null` value is considered to be less than any non-null value.\n *\n *
@return the index of the element, if it is contained in the list within the specified range;\n * otherwise, the inverted
insertion point `(-insertion point - 1)`.\n * The insertion point is defined as the index at which the element should be
inserted,\n * so that the list (or the specified
subrange of list) still remains sorted according to the specified [comparator].\n *\n * @sample
samples.collections.Collections.Lists.binarySearchWithComparator\n *\n */\npublic fun <T>
List<T>.binarySearch(element: T, comparator: Comparator<in T>, fromIndex: Int = 0, toIndex: Int = size): Int {\n
    rangeCheck(size, fromIndex, toIndex)\n\n    var low = fromIndex\n    var high = toIndex - 1\n\n    while (low <=
high) {\n        val mid = (low + high).ushr(1) // safe from overflows\n        val midVal = get(mid)\n        val cmp =
comparator.compare(midVal, element)\n\n        if (cmp < 0)\n            low = mid + 1\n        else if (cmp > 0)\n
            high = mid - 1\n        else\n            return mid // key found\n    }\n    return -(low + 1) // key not found\n}\n\n\n/**\n * Searches this list or its range for an element having the key returned by the specified [selector] function\n * equal to
the provided [key] value using the binary search algorithm.\n * The list is expected to be sorted
into ascending order according to the Comparable natural ordering of keys of its elements.\n * otherwise the result
is undefined.\n *\n * If the list contains multiple elements with the specified [key], there is no guarantee which one
will be found.\n *\n * `null` value is considered to be less than any non-null value.\n *\n * @return the index of the
element with the specified [key], if it is contained in the list within the specified range;\n * otherwise, the inverted

```

```

insertion point `(-insertion point - 1)`.n * The insertion point is defined as the index at which the element should be
inserted,n * so that the list (or the specified subrange of list) still remains sorted.n * @sample
samples.collections.Collections.Lists.binarySearchByKey\n *^\npublic inline fun <T, K : Comparable<K>>
List<T>.binarySearchBy(\n key: K?,\n fromIndex: Int = 0,\n toIndex: Int = size,\n crossinline selector: (T) ->
K?)\n): Int =\n    binarySearch(fromIndex, toIndex) { compareValues(selector(it),
key) }\n\n// do not introduce this overload --- too rare\n//public fun <T, K> List<T>.binarySearchBy(key: K,
comparator: Comparator<K>, fromIndex: Int = 0, toIndex: Int = size(), selector: (T) -> K): Int =\n\n//
binarySearch(fromIndex, toIndex) { comparator.compare(selector(it), key) }\n\n\n/**\n * Searches this list or its
range for an element for which the given [comparison] function returns zero using the binary search algorithm.\n *\n * The list is expected to be sorted so that the signs of the [comparison] function's return values ascend on the list
elements,\n * i.e. negative values come before zero and zeroes come before positive values.\n * Otherwise, the result
is undefined.\n *\n * If the list contains multiple elements for which [comparison] returns zero, there is no guarantee
which one will be found.\n *\n * @param comparison function that returns zero when called on the list element
being searched.\n * On the elements coming before the target element, the function
must return negative values;\n * on the elements coming after the target element, the function must return positive
values.\n *\n * @return the index of the found element, if it is contained in the list within the specified range;\n *
otherwise, the inverted insertion point `(-insertion point - 1)`.n * The insertion point is defined as the index at which
the element should be inserted,\n * so that the list (or the specified subrange of list) still remains sorted.\n *
@sample samples.collections.Collections.Lists.binarySearchWithComparisonFunction\n *^\npublic fun <T>
List<T>.binarySearch(fromIndex: Int = 0, toIndex: Int = size, comparison: (T) -> Int): Int {\n    rangeCheck(size,
fromIndex, toIndex)\n\n    var low = fromIndex\n    var high = toIndex - 1\n\n    while (low <= high) {\n        val mid
= (low + high).ushr(1) // safe from overflows\n        val midVal = get(mid)\n        val cmp = comparison(midVal)\n\n        if (cmp < 0)\n            low = mid + 1\n        else if (cmp
> 0)\n            high = mid - 1\n        else\n            return mid // key found\n    }\n    return -(low + 1) // key not
found\n}\n\n\n/**\n * Checks that `from` and `to` are in\n * the range of [0..size] and throws an appropriate exception,
if they aren't.\n *^\nprivate fun rangeCheck(size: Int, fromIndex: Int, toIndex: Int) {\n    when {\n        fromIndex >
toIndex -> throw IllegalArgumentException("\nfromIndex ($fromIndex) is greater than toIndex ($toIndex).")\n        fromIndex < 0 -> throw IndexOutOfBoundsException("\nfromIndex ($fromIndex) is less than zero.")\n        toIndex
> size -> throw IndexOutOfBoundsException("\ntoIndex ($toIndex) is greater than size ($size).")\n    }\n}\n\n\n@PublishedApi\n@SinceKotlin("1.3")\ninternal expect fun checkIndexOverflow(index: Int):
Int\n\n@PublishedApi\n@SinceKotlin("1.3")\ninternal expect fun checkCountOverflow(count: Int):
Int\n\n@PublishedApi\n@SinceKotlin("1.3")\ninternal fun throwIndexOverflow() { throw
ArithmeticException("\nIndex
overflow has happened.") }\n\n@PublishedApi\n@SinceKotlin("1.3")\ninternal fun throwCountOverflow() {
throw ArithmeticException("\nCount overflow has happened.") }\n\n\n"/*\n * Copyright 2010-2021 JetBrains s.r.o.
and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license
that can be found in the license/LICENSE.txt file.\n
*\n\n@file:kotlin.jvm.JvmMultifileClass\n@file:kotlin.jvm.JvmName("MapsKt")\n@file:OptIn(kotlin.experimental.
ExperimentalTypeInference::class)\n\npackage kotlin.collections\n\nimport kotlin.contracts.*\n\nprivate object
EmptyMap : Map<Any?, Nothing>, Serializable {\n    private const val serialVersionUID: Long =
8246714829545688274\n\n    override fun equals(other: Any?): Boolean = other is Map<*, *> &&
other.isEmpty()\n    override fun hashCode(): Int = 0\n    override fun toString(): String = "{}"\n\n    override val
size: Int get() = 0\n    override fun isEmpty(): Boolean = true\n\n    override
fun containsKey(key: Any?): Boolean = false\n    override fun containsValue(value: Nothing): Boolean = false\n\n    override fun get(key: Any?): Nothing? = null\n    override val entries: Set<Map.Entry<Any?, Nothing>> get() =
EmptySet\n    override val keys: Set<Any?> get() = EmptySet\n    override val values: Collection<Nothing> get() =
EmptyList\n\n    private fun readResolve(): Any = EmptyMap\n}\n\n\n/**\n * Returns an empty read-only map of
specified type.\n *\n * The returned map is serializable (JVM).\n * @sample

```

```

samples.collections.Maps.Instantiation.emptyReadOnlyMap\n *\npublic fun <K, V> emptyMap(): Map<K, V> =
@Suppress(\\"UNCHECKED_CAST\\") (EmptyMap as Map<K, V>)\n\n/**\n * Returns a new read-only map with
the specified contents, given as a list of pairs\n * where the first value is the key and the second is the value.\n *\n * If multiple pairs have the same key, the resulting map will contain the value from the last of those pairs.\n *\n * Entries of the map are iterated in
the order they were specified.\n *\n * The returned map is serializable (JVM).\n *\n * @sample
samples.collections.Maps.Instantiation.mapFromPairs\n *\npublic fun <K, V> mapOf(vararg pairs: Pair<K, V>):
Map<K, V> =\n if (pairs.size > 0) pairs.toMap(LinkedHashMap(mapCapacity(pairs.size))) else
emptyMap()\n\n/**\n * Returns an empty read-only map.\n *\n * The returned map is serializable (JVM).\n *\n * @sample
samples.collections.Maps.Instantiation.emptyReadOnlyMap\n *\n@kotlin.internal.InlineOnly\npublic
inline fun <K, V> mapOf(): Map<K, V> = emptyMap()\n\n/**\n * Returns an empty new [MutableMap].\n *\n * The returned map preserves the entry iteration order.\n *\n * @sample
samples.collections.Maps.Instantiation.emptyMutableMap\n
*\n@SinceKotlin(\\"1.1\\")\n@kotlin.internal.InlineOnly\npublic inline fun <K, V> mutableMapOf():
MutableMap<K, V> = LinkedHashMap()\n\n/**\n * Returns a new [MutableMap] with the specified contents, given
as a list of pairs\n * where the first component is the key
and the second is the value.\n *\n * If multiple pairs have the same key, the resulting map will contain the value
from the last of those pairs.\n *\n * Entries of the map are iterated in the order they were specified.\n *\n * @sample
samples.collections.Maps.Instantiation.mutableMapFromPairs\n * @sample
samples.collections.Maps.Instantiation.emptyMutableMap\n *\npublic fun <K, V> mutableMapOf(vararg pairs:
Pair<K, V>): MutableMap<K, V> =\n LinkedHashMap<K, V>(mapCapacity(pairs.size)).apply { putAll(pairs)
}\n\n/**\n * Returns an empty new [HashMap].\n *\n * @sample
samples.collections.Maps.Instantiation.emptyHashMap\n
*\n@SinceKotlin(\\"1.1\\")\n@kotlin.internal.InlineOnly\npublic inline fun <K, V> hashMapOf(): HashMap<K, V>
= HashMap<K, V>()\n\n/**\n * Returns a new [HashMap] with the specified contents, given as a list of pairs\n *
where the first component is the key and the second is the value.\n *\n * @sample
samples.collections.Maps.Instantiation.hashMapFromPairs\n *\npublic
fun <K, V> hashMapOf(vararg pairs: Pair<K, V>): HashMap<K, V> = HashMap<K,
V>(mapCapacity(pairs.size)).apply { putAll(pairs) }\n\n/**\n * Returns an empty new [LinkedHashMap].\n
*\n *\n * @sample
samples.collections.Maps.Instantiation.linkedMapFromPairs\n *\n@kotlin.internal.InlineOnly\npublic inline fun <K, V> linkedMapOf():
LinkedHashMap<K, V> = LinkedHashMap<K, V>()\n\n/**\n * Returns a new [LinkedHashMap] with the specified
contents, given as a list of pairs\n * where the first component is the key and the second is the value.\n *\n * If
multiple pairs have the same key, the resulting map will contain the value from the last of those pairs.\n *\n * Entries of the map are iterated in the order they were specified.\n *\n * @sample
samples.collections.Maps.Instantiation.linkedMapFromPairs\n *\npublic fun <K, V> linkedMapOf(vararg pairs:
Pair<K, V>): LinkedHashMap<K, V> = pairs.toMap(LinkedHashMap(mapCapacity(pairs.size)))\n\n/**\n * Builds
a new read-only [Map] by populating a [MutableMap] using the given [builderAction]\n * and returning
a read-only map with the same key-value pairs.\n *\n * The map passed as a receiver to the [builderAction] is valid
only inside that function.\n * Using it outside of the function produces an unspecified behavior.\n *\n * Entries of
the map are iterated in the order they were added by the [builderAction].\n *\n * The returned map is serializable
(JVM).\n *\n * @sample
samples.collections.Builders.Maps.buildMapSample\n
*\n@SinceKotlin(\\"1.6\\")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\n@Su
ppress(\\"DEPRECATION\\")\npublic inline fun <K, V> buildMap(@BuilderInference builderAction:
MutableMap<K, V>().->Unit): Map<K, V> {\n contract { callsInPlace(builderAction,
InvocationKind.EXACTLY_ONCE) }\n return
buildMapInternal(builderAction)\n}\n\n@PublishedApi\n@SinceKotlin(\\"1.3\\")\n@kotlin.internal.InlineOnly\ninter
nal expect inline fun <K, V> buildMapInternal(builderAction: MutableMap<K, V>().->Unit): Map<K,
V>{\n\n/**\n * Builds a new read-only

```

[Map] by populating a [MutableMap] using the given [builderAction] and returning a read-only map with the same key-value pairs. The map passed as a receiver to the [builderAction] is valid only inside that function. Using it outside of the function produces an unspecified behavior. [capacity] is used to hint the expected number of pairs added in the [builderAction]. Entries of the map are iterated in the order they were added by the [builderAction]. The returned map is serializable (JVM). @throws IllegalArgumentException if the given [capacity] is negative. @sample

```

samples.collections.Builders.Maps.buildMapSample
*/
@SinceKotlin("1.6")
@WasExperimental(ExperimentalStdlibApi::class)
@kotlin.internal.InlineOnly
@Suppress("DEPRECATION")
public inline fun <K, V> buildMap(capacity: Int, @BuilderInference builderAction:
MutableMap<K, V>().->Unit): Map<K, V> {
    contract { callsInPlace(builderAction,
InvocationKind.EXACTLY_ONCE)
    }
    return buildMapInternal(capacity,
builderAction)
}
@PublishedApi
@SinceKotlin("1.3")
@kotlin.internal.InlineOnly
internal expect inline
fun <K, V> buildMapInternal(capacity: Int, builderAction: MutableMap<K, V>().->Unit): Map<K, V>
Calculate the initial capacity of a map.
@PublishedApi
internal expect fun mapCapacity(expectedSize: Int):
Int
Returns `true` if this map is not empty. @sample
samples.collections.Maps.Usage.mapIsNotEmpty
*/
@kotlin.internal.InlineOnly
public inline fun <K, V>
Map<out K, V>.isEmpty(): Boolean = !isEmpty()
Returns `true` if this nullable map is either null or
empty. @sample
samples.collections.Maps.Usage.mapIsNullOrEmpty
*/
@SinceKotlin("1.3")
@kotlin.internal.InlineOnly
public inline fun <K, V> Map<out K,
V>?.isEmpty(): Boolean {
    contract {
        returns(false) implies (this@isEmpty != null)
    }
    return this == null || isEmpty()
}
Returns the [Map] if its not `null`, or the empty [Map] otherwise. @sample
samples.collections.Maps.Usage.mapOrEmpty
*/
@kotlin.internal.InlineOnly
public inline fun <K, V> Map<K,
V>?.orEmpty(): Map<K, V> = this ?: emptyMap()
Returns this map if it's not empty or the result of
calling [defaultValue] function if the map is empty. @sample
samples.collections.Maps.Usage.mapIfEmpty
*/
@SinceKotlin("1.3")
@kotlin.internal.InlineOnly
public
inline fun <M, R> M.ifEmpty(defaultValue: () -> R): R where M : Map<*, *>, M : R =
    if (isEmpty())
    defaultValue() else this
Checks if the map contains the given key. This method allows to use the
`x in map` syntax for checking whether an object is contained in the map. @sample
samples.collections.Maps.Usage.containsKey
*/
@kotlin.internal.InlineOnly
public inline operator fun
<@kotlin.internal.OnlyInputTypes K, V> Map<out K, V>.contains(key: K): Boolean =
containsKey(key)
Returns the value corresponding to the given [key], or `null` if such a key is not present in the map.
*/
@kotlin.internal.InlineOnly
public inline operator fun <@kotlin.internal.OnlyInputTypes K, V> Map<out K,
V>.get(key: K): V? =
    @Suppress("UNCHECKED_CAST") (this as Map<K, V>).get(key)
Allows to use the index operator for storing values in a mutable map.
*/
@kotlin.internal.InlineOnly
public inline
operator fun <K, V> MutableMap<K, V>.set(key: K, value: V): Unit {
    put(key, value)
}
Returns `true` if the map contains the specified [key]. Allows to overcome type-safety restriction of `containsKey`
that requires to pass a key of type `K`.
*/
@kotlin.internal.InlineOnly
public inline fun
<@kotlin.internal.OnlyInputTypes K> Map<out K, *>.containsKey(key: K): Boolean =
@Suppress("UNCHECKED_CAST") (this as Map<K, *>).containsKey(key)
Returns `true` if the map
maps one or more keys to the specified [value].
*/
Allows to overcome type-safety restriction of `containsValue` that requires to pass a value of type `V`.
@sample
samples.collections.Maps.Usage.containsValue
*/
@Suppress("EXTENSION_SHADOWED_BY_MEMBER") // false warning, extension takes precedence in
some cases
@kotlin.internal.InlineOnly
public inline fun <K, @kotlin.internal.OnlyInputTypes V> Map<K,
V>.containsValue(value: V): Boolean = this.containsValue(value)
Removes the specified key and its
corresponding value from this map. @return the previous value associated with the key, or `null` if the key

```



was not present in the map.

\* Allows to overcome type-safety restriction of `remove` that requires to pass a key of type `K`.

```

@kotlin.internal.InlineOnly
public inline fun <@kotlin.internal.OnlyInputTypes K, V>
MutableMap<out K, V>.remove(key: K): V? =
    @Suppress("UNCHECKED_CAST") (this as MutableMap<K, V>).remove(key)

```

\* Returns the key component of the map entry.

\* This method allows to use destructuring declarations when working with maps, for example:

```

for ((key, value) in map) {
    // do something with the key and the value
}

```

\* Returns the value component of the map entry.

\* This method allows to use destructuring declarations when working with maps, for example:

```

for ((key, value) in map) {
    // do something with the key and the value
}

```

\* Returns the value component of the map entry.

\* Converts entry to [Pair] with key being first component and value being second.

```

@kotlin.internal.InlineOnly
public inline fun <K, V> Map.Entry<K, V>.toPair(): Pair<K, V> = Pair(key, value)

```

\* Returns the value for the given [key] if the value is present and not `null`. Otherwise, returns the result of the [defaultValue] function.

\* @sample samples.collections.Maps.Usage.getOrElse

```

@kotlin.internal.InlineOnly
public inline fun <K, V> Map<K, V>.getOrElse(key: K, defaultValue: () -> V): V =
    get(key) ?: defaultValue()

```

internal inline fun <K, V> Map<K, V>.getOrElseNullable(key: K, defaultValue: () -> V): V {

```

    val value = get(key)
    if (value == null && !containsKey(key)) {
        return defaultValue()
    }
    else {
        @Suppress("UNCHECKED_CAST")
        return value as V
    }
}

```

\* Returns the value for the given [key] or throws an exception if there is no such key in the map.

\* If the map was created by [withDefault], resorts to its `defaultValue` provider function instead of throwing an exception.

\* @throws NoSuchElementException when the map doesn't contain a value for the specified key and no implicit default value was provided for that map.

```

@SinceKotlin("1.1")
public fun <K, V> Map<K, V>.getValue(key: K): V =
    getOrImplicitDefault(key)

```

\* Returns the value for the given [key] if the value is present and not `null`. Otherwise, calls the [defaultValue] function, puts its result into the map under the given key and returns the call result.

\* Note that the operation is not guaranteed to be atomic if the map is being modified concurrently.

\* @sample samples.collections.Maps.Usage.getOrPut

```

@kotlin.internal.InlineOnly
public inline fun <K, V> MutableMap<K, V>.getOrPut(key: K, defaultValue: () -> V): V {
    val value = get(key)
    return if (value == null) {
        val answer = defaultValue()
        put(key, answer)
        answer
    } else {
        value
    }
}

```

\* Returns an [Iterator] over the entries in the [Map].

\* @sample samples.collections.Maps.Usage.forOverEntries

```

@kotlin.internal.InlineOnly
public inline operator fun <K, V> Map<out K, V>.iterator(): Iterator<Map.Entry<K, V>> =
    entries.iterator()

```

\* Returns a [MutableIterator] over the mutable entries in the [MutableMap].

```

@kotlin.jvm.JvmName("mutableIterator")
@kotlin.internal.InlineOnly
public inline operator fun <K, V> MutableMap<K, V>.iterator(): MutableIterator<MutableMap.MutableEntry<K, V>> =
    entries.iterator()

```

\* Populates the given [destination] map with entries having the keys of this map and the values obtained by applying the [transform] function to each entry in this [Map].

```

@kotlin.internal.InlineOnly
public inline fun <K, V, R, M : MutableMap<in K, in R>> Map<out K, V>.mapValuesTo(destination: M, transform: (Map.Entry<K, V>) -> R): M {
    return entries.associateByTo(destination, { it.key }, transform)
}

```

\* Populates the given [destination] map with entries having the keys obtained by applying the [transform] function to each entry in this [Map] and the values of this map.

\* In case if any two entries are mapped to the equal keys, the value of the latter one will overwrite the value associated with the former one.

```

@kotlin.internal.InlineOnly
public inline fun <K, V, R, M : MutableMap<in R, in V>> Map<out K, V>.mapKeysTo(destination: M, transform: (Map.Entry<K, V>) -> R): M {
    return entries.associateByTo(destination, transform, { it.value })
}

```

\* Puts all the given [pairs] into this [MutableMap] with the first component in the pair being the key and the second the value.

```

@kotlin.internal.InlineOnly
public fun <K, V> MutableMap<in K, in V>.putAll(pairs: Array<out Pair<K, V>>): Unit {
    for ((key, value) in pairs) {
        put(key, value)
    }
}

```

\* Puts all the elements of the given collection into

```

this [MutableMap] with the first component in the pair being the key and the second the value.\n *\npublic fun <K,
V> MutableMap<in K, in V>.putAll(pairs: Iterable<Pair<K, V>>): Unit {\n  for ((key, value) in pairs) {\n
put(key, value)\n  }\n}\n\n/**\n * Puts all the elements of the given sequence into this [MutableMap] with the first
component in the pair being the key and the second the value.\n *\npublic fun <K, V> MutableMap<in
K, in V>.putAll(pairs: Sequence<Pair<K, V>>): Unit {\n  for ((key, value) in pairs) {\n    put(key, value)\n
}\n}\n\n/**\n * Returns a new map with entries having the keys of this map and the values obtained by applying the
[transform]\n * function to each entry in this [Map].\n *\n * The returned map preserves the entry iteration order of
the original map.\n *\n * @sample samples.collections.Maps.Transformations.mapValues\n *\npublic inline fun
<K, V, R> Map<out K, V>.mapValues(transform: (Map.Entry<K, V>) -> R): Map<K, R> {\n  return
mapValuesTo(LinkedHashMap<K, R>(mapCapacity(size)), transform) // .optimizeReadOnlyMap()\n}\n}\n\n/**\n * Returns a new Map with entries having the keys obtained by applying the [transform] function to each entry in this\n * [Map] and the values of this map.\n *\n * In case if any two entries are mapped to the equal keys, the value of the
latter one will overwrite\n * the value associated with the former one.\n *\n * The returned map
preserves the entry iteration order of the original map.\n *\n * @sample
samples.collections.Maps.Transformations.mapKeys\n *\npublic inline fun <K, V, R> Map<out K,
V>.mapKeys(transform: (Map.Entry<K, V>) -> R): Map<R, V> {\n  return mapKeysTo(LinkedHashMap<R,
V>(mapCapacity(size)), transform) // .optimizeReadOnlyMap()\n}\n}\n\n/**\n * Returns a map containing all key-
value pairs with keys matching the given [predicate].\n *\n * The returned map preserves the entry iteration order of
the original map.\n *\n * @sample samples.collections.Maps.Filtering.filterKeys\n *\npublic inline fun <K, V>
Map<out K, V>.filterKeys(predicate: (K) -> Boolean): Map<K, V> {\n  val result = LinkedHashMap<K, V>()\n
for (entry in this) {\n    if (predicate(entry.key)) {\n        result.put(entry.key, entry.value)\n    }\n  }\n
return result\n}\n}\n\n/**\n * Returns a map containing all key-value pairs with values matching the given
[predicate].\n *\n * The returned map preserves the entry
iteration order of the original map.\n *\n * @sample samples.collections.Maps.Filtering.filterValues\n *\npublic inline
fun <K, V> Map<out K, V>.filterValues(predicate: (V) -> Boolean): Map<K, V> {\n  val result =
LinkedHashMap<K, V>()\n  for (entry in this) {\n    if (predicate(entry.value)) {\n        result.put(entry.key,
entry.value)\n    }\n  }\n  return result\n}\n}\n\n/**\n * Appends all entries matching the given [predicate] into
the mutable map given as [destination] parameter.\n *\n * @return the destination map.\n *\n * @sample
samples.collections.Maps.Filtering.filterTo\n *\npublic inline fun <K, V, M : MutableMap<in K, in V>> Map<out
K, V>.filterTo(destination: M, predicate: (Map.Entry<K, V>) -> Boolean): M {\n  for (element in this) {\n    if
(predicate(element)) {\n        destination.put(element.key, element.value)\n    }\n  }\n  return
destination\n}\n}\n\n/**\n * Returns a new map containing all key-value pairs matching the given [predicate].\n
*\n * The returned map preserves the entry iteration order of the original map.\n *\n * @sample
samples.collections.Maps.Filtering.filter\n *\npublic inline fun <K, V> Map<out K, V>.filter(predicate:
(Map.Entry<K, V>) -> Boolean): Map<K, V> {\n  return filterTo(LinkedHashMap<K, V>(),
predicate)\n}\n}\n\n/**\n * Appends all entries not matching the given [predicate] into the given [destination].\n
*\n * @return the destination map.\n *\n * @sample samples.collections.Maps.Filtering.filterNotTo\n *\npublic inline fun
<K, V, M : MutableMap<in K, in V>> Map<out K, V>.filterNotTo(destination: M, predicate: (Map.Entry<K, V>) -
> Boolean): M {\n  for (element in this) {\n    if (!predicate(element)) {\n        destination.put(element.key,
element.value)\n    }\n  }\n  return destination\n}\n}\n\n/**\n * Returns a new map containing all key-value pairs
not matching the given [predicate].\n *\n * The returned map preserves the entry iteration order of the original
map.\n *\n * @sample
samples.collections.Maps.Filtering.filterNot\n *\npublic inline fun <K, V> Map<out K, V>.filterNot(predicate:
(Map.Entry<K, V>) -> Boolean): Map<K, V> {\n  return filterNotTo(LinkedHashMap<K, V>(),
predicate)\n}\n}\n\n/**\n * Returns a new map containing all key-value pairs from the given collection of pairs.\n
*\n * The returned map preserves the entry iteration order of the original collection.\n *\n * If any of two pairs would have the
same key the last one gets added to the map.\n *\npublic fun <K, V> Iterable<Pair<K, V>>.toMap(): Map<K, V>
{\n  if (this is Collection) {\n    return when (size) {\n        0 -> emptyMap()\n        1 -> mapOf(if (this is

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List) this[0] else iterator().next())\n        else -> toMap(LinkedHashMap<K, V>(mapCapacity(size)))\n    }\n}\n return toMap(LinkedHashMap<K, V>()).optimizeReadOnlyMap()\n}\n\n/**\n * Populates and returns the [destination] mutable map with key-value pairs from the given collection of pairs.\n */\npublic fun\n<K, V, M : MutableMap<in K, in V>> Iterable<Pair<K, V>>.toMap(destination: M): M =\n    destination.apply { putAll(this@toMap) }\n}\n\n/**\n * Returns a new map containing all key-value pairs from the given array of pairs.\n */\n * The returned map preserves the entry iteration order of the original array.\n */\n * If any of two pairs would have the same key the last one gets added to the map.\n */\npublic fun <K, V> Array<out Pair<K, V>>.toMap(): Map<K, V> = when (size) {\n    0 -> emptyMap()\n    1 -> mapOf(this[0])\n    else -> toMap(LinkedHashMap<K, V>(mapCapacity(size)))\n}\n\n/**\n * Populates and returns the [destination] mutable map with key-value pairs from the given array of pairs.\n */\npublic fun <K, V, M : MutableMap<in K, in V>> Array<out Pair<K, V>>.toMap(destination: M): M =\n    destination.apply { putAll(this@toMap) }\n}\n\n/**\n * Returns a new map containing all key-value pairs from the given sequence of pairs.\n */\n * The returned map preserves the entry iteration order of the original sequence.\n */\n * If any of two pairs would have the same key the last one gets added to the map.\n */\npublic fun <K, V> Sequence<Pair<K, V>>.toMap(): Map<K, V> = toMap(LinkedHashMap<K, V>()).optimizeReadOnlyMap()\n}\n\n/**\n * Populates and returns the [destination] mutable map with key-value pairs from the given sequence of pairs.\n */\npublic fun <K, V, M : MutableMap<in K, in V>> Sequence<Pair<K, V>>.toMap(destination: M): M =\n    destination.apply { putAll(this@toMap) }\n}\n\n/**\n * Returns a new read-only map containing all key-value pairs from the original map.\n */\n * The returned map preserves the entry iteration order of the original map.\n */\n@SinceKotlin("1.1")\npublic fun <K, V> Map<out K, V>.toMap(): Map<K, V> = when (size) {\n    0 -> emptyMap()\n    1 -> toSingletonMap()\n    else -> toMutableMap()\n}\n\n/**\n * Returns a new mutable map containing all key-value pairs from the original map.\n */\n * The returned map preserves the entry iteration order of the original map.\n */\n@SinceKotlin("1.1")\npublic fun <K, V> Map<out K, V>.toMutableMap(): MutableMap<K, V> = LinkedHashMap(this)\n}\n\n/**\n * Populates and returns the [destination] mutable map with key-value pairs from the given map.\n */\n@SinceKotlin("1.1")\npublic fun <K, V, M : MutableMap<in K, in V>> Map<out K, V>.toMap(destination: M): M =\n    destination.apply { putAll(this@toMap) }\n}\n\n/**\n * Creates a new read-only map by replacing or adding an entry to this map from a given key-value [pair].\n */\n * The returned map preserves the entry iteration order of the original map.\n */\n * The [pair] is iterated in the end if it has a unique key.\n */\npublic operator fun <K, V> Map<out K, V>.plus(pair: Pair<K, V>): Map<K, V> =\n    if (this.isEmpty()) mapOf(pair) else LinkedHashMap(this).apply { put(pair.first, pair.second) }\n}\n\n/**\n * Creates a new read-only map by replacing or adding entries to this map from a given collection of key-value [pairs].\n */\n * The returned map preserves the entry iteration order of the original map.\n */\n * Those [pairs] with unique keys are iterated in the end in the order of [pairs] collection.\n */\npublic operator fun <K, V> Map<out K, V>.plus(pairs: Iterable<Pair<K, V>>): Map<K, V> =\n    if (this.isEmpty()) pairs.toMap() else LinkedHashMap(this).apply { putAll(pairs) }\n}\n\n/**\n * Creates a new read-only map by replacing or adding entries to this map from a given array of key-value [pairs].\n */\n * The returned map preserves the entry iteration order of the original map.\n */\n * Those [pairs] with unique keys are iterated in the end in the order of [pairs] array.\n */\npublic operator fun <K, V> Map<out K, V>.plus(pairs: Array<out Pair<K, V>>): Map<K, V> =\n    if (this.isEmpty()) pairs.toMap() else LinkedHashMap(this).apply { putAll(pairs) }\n}\n\n/**\n * Creates a new read-only map by replacing or adding entries to this map from a given sequence of key-value [pairs].\n */\n * The returned map preserves the entry iteration order of the original map.\n */\n * Those [pairs] with unique keys are iterated in the end in the order of [pairs] sequence.\n */\npublic operator fun <K, V> Map<out K, V>.plus(pairs: Sequence<Pair<K, V>>): Map<K, V> =\n    LinkedHashMap(this).apply { putAll(pairs) }.optimizeReadOnlyMap()\n}\n\n/**\n * Creates a new read-only map by replacing or adding entries to this map from another [map].\n */\n * The returned map preserves the entry iteration order of the original map.\n */\n * Those entries of another [map] that are missing in this map are iterated in the end in the order of that [map].\n */\npublic operator fun <K, V> Map<out K, V>.plus(map: Map<out K, V>): Map<K, V> =\n    LinkedHashMap(this).apply { putAll(map) }\n}\n\n/**\n * Appends or replaces the given [pair] in this mutable

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map.\n *\n@kotlin.internal.InlineOnly\npublic inline operator fun <K, V> MutableMap<in K, in
V>.plusAssign(pair: Pair<K, V>) {\n  put(pair.first, pair.second)\n}\n\n/**\n * Appends or replaces all pairs from
the given collection of
[pairs] in this mutable map.\n *\n@kotlin.internal.InlineOnly\npublic inline operator fun <K, V> MutableMap<in
K, in V>.plusAssign(pairs: Iterable<Pair<K, V>>) {\n  putAll(pairs)\n}\n\n/**\n * Appends or replaces all pairs
from the given array of [pairs] in this mutable map.\n *\n@kotlin.internal.InlineOnly\npublic inline operator fun
<K, V> MutableMap<in K, in V>.plusAssign(pairs: Array<out Pair<K, V>>) {\n  putAll(pairs)\n}\n\n/**\n *
Appends or replaces all pairs from the given sequence of [pairs] in this mutable map.\n
*\n@kotlin.internal.InlineOnly\npublic inline operator fun <K, V> MutableMap<in K, in V>.plusAssign(pairs:
Sequence<Pair<K, V>>) {\n  putAll(pairs)\n}\n\n/**\n * Appends or replaces all entries from the given [map] in
this mutable map.\n *\n@kotlin.internal.InlineOnly\npublic inline operator fun <K, V> MutableMap<in K, in
V>.plusAssign(map: Map<K, V>) {\n  putAll(map)\n}\n\n/**\n * Returns a map containing all entries of the
original map except the entry
with the given [key].\n *\n * The returned map preserves the entry iteration order of the original map.\n
*\n@SinceKotlin("1.1")\npublic operator fun <K, V> Map<out K, V>.minus(key: K): Map<K, V> =\n
this.toMutableMap().apply { minusAssign(key) }.optimizeReadOnlyMap()\n\n/**\n * Returns a map containing all
entries of the original map except those entries\n * the keys of which are contained in the given [keys] collection.\n
*\n * The returned map preserves the entry iteration order of the original map.\n *\n@SinceKotlin("1.1")\npublic
operator fun <K, V> Map<out K, V>.minus(keys: Iterable<K>): Map<K, V> =\n  this.toMutableMap().apply {
minusAssign(keys) }.optimizeReadOnlyMap()\n\n/**\n * Returns a map containing all entries of the original map
except those entries\n * the keys of which are contained in the given [keys] array.\n *\n * The returned map
preserves the entry iteration order of the original map.\n *\n@SinceKotlin("1.1")\npublic operator fun <K, V>
Map<out K, V>.minus(keys:
Array<out K>): Map<K, V> =\n  this.toMutableMap().apply { minusAssign(keys)
}.optimizeReadOnlyMap()\n\n/**\n * Returns a map containing all entries of the original map except those entries\n
* the keys of which are contained in the given [keys] sequence.\n *\n * The returned map preserves the entry
iteration order of the original map.\n *\n@SinceKotlin("1.1")\npublic operator fun <K, V> Map<out K,
V>.minus(keys: Sequence<K>): Map<K, V> =\n  this.toMutableMap().apply { minusAssign(keys)
}.optimizeReadOnlyMap()\n\n/**\n * Removes the entry with the given [key] from this mutable map.\n
*\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic inline operator fun <K, V> MutableMap<K,
V>.minusAssign(key: K) {\n  remove(key)\n}\n\n/**\n * Removes all entries the keys of which are contained in
the given [keys] collection from this mutable map.\n
*\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic inline operator fun <K, V> MutableMap<K,
V>.minusAssign(keys:
Iterable<K>) {\n  this.keys.removeAll(keys)\n}\n\n/**\n * Removes all entries the keys of which are contained in
the given [keys] array from this mutable map.\n *\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic
inline operator fun <K, V> MutableMap<K, V>.minusAssign(keys: Array<out K>) {\n
this.keys.removeAll(keys)\n}\n\n/**\n * Removes all entries from the keys of which are contained in the given
[keys] sequence from this mutable map.\n *\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic inline
operator fun <K, V> MutableMap<K, V>.minusAssign(keys: Sequence<K>) {\n
this.keys.removeAll(keys)\n}\n\n// do not expose for now @PublishedApi\ninternal fun <K, V> Map<K,
V>.optimizeReadOnlyMap() = when (size) {\n  0 -> emptyMap()\n  1 -> toSingletonMapOrSelf()\n  else ->
this\n}\n\n"/*\n * Copyright 2010-2021 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of
this source code is governed by the Apache 2.0 license that can be found
in the license/LICENSE.txt file.\n
*\n\n@file:kotlin.jvm.JvmMultifileClass\n@file:kotlin.jvm.JvmName("SetsKt")\n@file:OptIn(kotlin.experimenta
l.ExperimentalTypeInference::class)\n\npackage kotlin.collections\n\nimport kotlin.contracts.*\n\ninternal object
EmptySet : Set<Nothing>, Serializable {\n  private const val serialVersionUID: Long =

```

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3406603774387020532\n\n override fun equals(other: Any?): Boolean = other is Set<*> && other.isEmpty()\n
override fun hashCode(): Int = 0\n override fun toString(): String = \"[]\"\n override val size: Int get() = 0\n
override fun isEmpty(): Boolean = true\n override fun contains(element: Nothing): Boolean = false\n override
fun containsAll(elements: Collection<Nothing>): Boolean = elements.isEmpty()\n override fun iterator():
Iterator<Nothing> = EmptyIterator\n\n private fun readResolve(): Any = EmptySet\n}\n\n/**\n * Returns an
empty read-only set. The returned set is serializable (JVM).\n * @sample
samples.collections.Collections.Sets.emptyReadOnlySet\n
*/\npublic fun <T> emptySet(): Set<T> = EmptySet\n\n/**\n * Returns a new read-only set with the given
elements.\n * Elements of the set are iterated in the order they were specified.\n * The returned set is serializable
(JVM).\n * @sample samples.collections.Collections.Sets.readOnlySet\n */\npublic fun <T> setOf(vararg elements:
T): Set<T> = if (elements.size > 0) elements.toSet() else emptySet()\n\n/**\n * Returns an empty read-only set. The
returned set is serializable (JVM).\n * @sample samples.collections.Collections.Sets.emptyReadOnlySet\n
*/\n@kotlin.internal.InlineOnly\npublic inline fun <T> setOf(): Set<T> = emptySet()\n\n/**\n * Returns an empty
new [MutableSet].\n * The returned set preserves the element iteration order.\n * @sample
samples.collections.Collections.Sets.emptyMutableSet\n
*/\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic inline fun <T> mutableSetOf(): MutableSet<T> =
LinkedHashSet()\n\n/**\n * Returns a new [MutableSet] with the given elements.\n * Elements of the set are iterated in the order they were
specified.\n * @sample samples.collections.Collections.Sets.mutableSet\n */\npublic fun <T> mutableSetOf(vararg
elements: T): MutableSet<T> = elements.toCollection(LinkedHashSet(mapCapacity(elements.size)))\n\n/** Returns
an empty new [HashSet]. */\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic inline fun <T>
hashSetOf(): HashSet<T> = HashSet()\n\n/** Returns a new [HashSet] with the given elements. */\npublic fun <T>
hashSetOf(vararg elements: T): HashSet<T> =
elements.toCollection(HashSet(mapCapacity(elements.size)))\n\n/** Returns an empty new [LinkedHashSet].\n
* @sample samples.collections.Collections.Sets.emptyLinkedHashSet\n
*/\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic inline fun <T> linkedSetOf(): LinkedHashSet<T>
= LinkedHashSet()\n\n/** Returns a new [LinkedHashSet] with the given elements.\n * Elements of the set are
iterated
in the order they were specified.\n * @sample samples.collections.Collections.Sets.linkedHashSet\n */\npublic fun
<T> linkedSetOf(vararg elements: T): LinkedHashSet<T> =
elements.toCollection(LinkedHashSet(mapCapacity(elements.size)))\n\n/** Returns a new read-only set either
with single given element, if it is not null, or empty set if the element is null.\n * The returned set is serializable
(JVM).\n * @sample samples.collections.Collections.Sets.setOfNotNull\n */\n@SinceKotlin("1.4")\npublic fun <T
: Any> setOfNotNull(element: T?): Set<T> = if (element != null) setOf(element) else emptySet()\n\n/** Returns
a new read-only set only with those given elements, that are not null.\n * Elements of the set are iterated in the order
they were specified.\n * The returned set is serializable (JVM).\n * @sample
samples.collections.Collections.Sets.setOfNotNull\n */\n@SinceKotlin("1.4")\npublic fun <T : Any>
setOfNotNull(vararg elements: T?): Set<T> {\n return elements.filterNotNullTo(LinkedHashSet())\n}\n\n/**
Builds a new read-only [Set] by populating a [MutableSet] using the given [builderAction]\n * and returning a
read-only set with the same elements.\n * The set passed as a receiver to the [builderAction] is valid only inside
that function.\n * Using it outside of the function produces an unspecified behavior.\n * Elements of the set are
iterated in the order they were added by the [builderAction].\n * The returned set is serializable (JVM).\n *
@sample samples.collections.Builders.Sets.buildSetSample\n
*/\n@SinceKotlin("1.6")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\n@Su
ppress("DEPRECATION")\npublic inline fun <E> buildSet(@BuilderInference builderAction: MutableSet<E>().()
> Unit): Set<E> {\n contract { callsInPlace(builderAction, InvocationKind.EXACTLY_ONCE) }\n return
buildSetInternal(builderAction)\n}\n\n@PublishedApi\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\ninternal
expect

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inline fun <E> buildSetInternal(builderAction: MutableSet<E>().->Unit): Set<E> {
    Builds a new read-only [Set] by populating a [MutableSet] using the given [builderAction] and returning a read-only set with the same elements. The set passed as a receiver to the [builderAction] is valid only inside that function. Using it outside of the function produces an unspecified behavior. [capacity] is used to hint the expected number of elements added in the [builderAction]. Elements of the set are iterated in the order they were added by the [builderAction]. The returned set is serializable (JVM). @throws
    IllegalArgumentException if the given [capacity] is negative. @sample
    samples.collections.Builders.Sets.buildSetSample
}

@SinceKotlin("1.6")@WasExperimental(ExperimentalStdlibApi::class)@kotlin.internal.InlineOnly@Suppress("DEPRECATION")public inline fun <E> buildSet(capacity: Int, @BuilderInference builderAction:
    MutableSet<E>().->Unit): Set<E> {
    contract { callsInPlace(builderAction,
    InvocationKind.EXACTLY_ONCE) }
    return buildSetInternal(capacity,
    builderAction)
}

@PublishedApi@SinceKotlin("1.3")@kotlin.internal.InlineOnlyinternal expect inline
fun <E> buildSetInternal(capacity: Int, builderAction: MutableSet<E>().->Unit): Set<E> {
    Returns this Set if it's not `null` and the empty set otherwise.
}

@kotlin.internal.InlineOnlypublic inline fun <T>
Set<T>?.orEmpty(): Set<T> = this ?: emptySet()

internal fun <T> Set<T>.optimizeReadOnlySet() = when (size) {
    0 -> emptySet()
    1 -> setOf(iterator().next())
    else -> this
}

/* Copyright 2010-2022 JetBrains s.r.o. and Kotlin Programming Language contributors.
Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.
Auto-generated file. DO NOT EDIT!
package kotlin.ranges {
    * A range of values of type `Char`.
}

@OptIn(ExperimentalStdlibApi::class)public class CharRange(start: Char, endInclusive: Char) :
    CharProgression(start, endInclusive, 1), ClosedRange<Char>, OpenEndRange<Char> {
    override val start: Char get() = first
    override val endInclusive: Char get() = last
    @Deprecated("Can throw an exception when it's impossible to represent the value with Char type, for example, when the range includes MAX_VALUE. It's recommended to use 'endInclusive' property that doesn't throw.")
    @SinceKotlin("1.7")
    @ExperimentalStdlibApi
    override val endExclusive: Char get() {
        if (last == Char.MAX_VALUE)
            error("Cannot return the exclusive upper bound of a range that includes MAX_VALUE.")
        return last + 1
    }
    override fun contains(value: Char): Boolean = first <= value && value <= last
    /** Checks whether the range is empty.
    * The range is empty if its start value is greater than the end value.
    */
    override
    fun isEmpty(): Boolean = first > last
    override fun equals(other: Any?): Boolean =
        other is CharRange && (isEmpty() && other.isEmpty() || first == other.first && last == other.last)
    override fun hashCode(): Int =
        if (isEmpty()) -1 else (31 * first.code + last.code)
    override fun toString(): String =
        "$first..$last"
    companion object {
        /** An empty range of values of type Char.
        */
        public val EMPTY: CharRange = CharRange(1.toChar(), 0.toChar())
    }
}

/* A range of values of type `Int`.
*/
@OptIn(ExperimentalStdlibApi::class)public class IntRange(start: Int, endInclusive: Int) :
    IntProgression(start, endInclusive, 1), ClosedRange<Int>, OpenEndRange<Int> {
    override val start: Int get() = first
    override val endInclusive: Int get() = last
    @Deprecated("Can throw an exception when it's impossible to represent the value with Int type, for example, when the range includes MAX_VALUE. It's recommended to use 'endInclusive' property that doesn't throw.")
    @SinceKotlin("1.7")
    @ExperimentalStdlibApi
    override val endExclusive: Int get() {
        if (last == Int.MAX_VALUE)
            error("Cannot return the exclusive upper bound of a range that includes MAX_VALUE.")
        return last + 1
    }
    override fun contains(value: Int): Boolean = first <= value && value <= last
    /** Checks whether the range is empty.
    * The range is empty if its start value is greater than the end value.
    */
    override
    fun isEmpty(): Boolean = first > last
    override fun equals(other: Any?): Boolean =
        other is IntRange && (isEmpty() && other.isEmpty() || first == other.first && last == other.last)
    override fun hashCode(): Int =
        if (isEmpty()) -1 else (31 * first + last)
    override fun toString(): String =
        "$first..$last"
    companion object {
        /** An empty range of values of type

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Int. */n    public val EMPTY: IntRange = IntRange(1, 0)\n    }\n}\n\n/**\n * A range of values of type `Long`.\n */\n@OptIn(ExperimentalStdlibApi::class)\npublic class LongRange(start: Long, endInclusive: Long) :
LongProgression(start, endInclusive, 1), ClosedRange<Long>, OpenEndRange<Long> {\n    override val start:
Long get() = first\n    override val endInclusive: Long get() = last\n    \n    @Deprecated("Can throw an exception
when it's impossible to represent the value with Long type, for example, when the range includes MAX_VALUE.
It's recommended to use 'endInclusive' property that doesn't throw.")\n    @SinceKotlin("1.7")\n    @ExperimentalStdlibApi\n    override val endExclusive: Long get() {\n        if (last == Long.MAX_VALUE)
error("Cannot return the exclusive upper bound of a range that includes MAX_VALUE.")\n        return last + 1\n    }\n    override fun contains(value: Long): Boolean = first <= value && value <= last\n    /**\n     * Checks
whether the
range is empty.\n     *\n     * The range is empty if its start value is greater than the end value.\n     */\n    override
fun isEmpty(): Boolean = first > last\n    override fun equals(other: Any?): Boolean =\n        other is LongRange
&& (isEmpty() && other.isEmpty()) ||\n        first == other.first && last == other.last\n    override fun hashCode():
Int =\n        if (isEmpty()) -1 else (31 * (first xor (first ushr 32)) + (last xor (last ushr 32))).toInt()\n    override fun
toString(): String = "$first..$last"\n    companion object {\n        /** An empty range of values of type Long. */\n        public val EMPTY: LongRange = LongRange(1, 0)\n    }\n}\n\n"/*\n * Copyright 2010-2018 JetBrains s.r.o.
and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license
that can be found in the license/LICENSE.txt file.\n */\n\n@file:kotlin.jvm.JvmMultifileClass\n@file:kotlin.jvm.JvmName("StringsKt")\n@file:Suppress("PLATFORM_CLASS_MAPPED_TO_KOTLIN")\n\npackage
kotlin.text\n\n/**\n * Parses the string as a signed [Byte] number and returns the result\n * or `null` if the string is
not a valid representation of a number.\n */\n@SinceKotlin("1.1")\npublic fun String.toByteArrayOrNull(): Byte? =
toByteOrNull(radix = 10)\n\n/**\n * Parses the string as a signed [Byte] number and returns the result\n * or `null`
if the string is not a valid representation of a number.\n * @throws IllegalArgumentException when [radix] is
not a valid radix for string to number conversion.\n */\n@SinceKotlin("1.1")\npublic fun
String.toByteArrayOrNull(radix: Int): Byte? {\n    val int = this.toIntOrNull(radix) ?: return null\n    if (int <
Byte.MIN_VALUE || int > Byte.MAX_VALUE) return null\n    return int.toByte()\n}\n\n/**\n * Parses the string as
a [Short] number and returns the result\n * or `null` if the string is not a valid representation of a number.\n */\n@SinceKotlin("1.1")\npublic fun String.toShortOrNull(): Short? = toShortOrNull(radix
= 10)\n\n/**\n * Parses the string as a [Short] number and returns the result\n * or `null` if the string is not a valid
representation of a number.\n * @throws IllegalArgumentException when [radix] is not a valid radix for string
to number conversion.\n */\n@SinceKotlin("1.1")\npublic fun String.toShortOrNull(radix: Int): Short? {\n    val int
= this.toIntOrNull(radix) ?: return null\n    if (int < Short.MIN_VALUE || int > Short.MAX_VALUE) return null\n
return int.toShort()\n}\n\n/**\n * Parses the string as an [Int] number and returns the result\n * or `null` if the string
is not a valid representation of a number.\n */\n@SinceKotlin("1.1")\npublic fun String.toIntOrNull(): Int? =
toIntOrNull(radix = 10)\n\n/**\n * Parses the string as an [Int] number and returns the result\n * or `null` if the
string is not a valid representation of a number.\n * @throws IllegalArgumentException when [radix] is not a
valid radix for string to number conversion.\n */\n@SinceKotlin("1.1")\npublic
fun String.toIntOrNull(radix: Int): Int? {\n    checkRadix(radix)\n    val length = this.length\n    if (length == 0)
return null\n    val start: Int\n    val isNegative: Boolean\n    val limit: Int\n    val firstChar = this[0]\n    if
(firstChar < '0') { // Possible leading sign\n        if (length == 1) return null // non-digit (possible sign) only, no
digits after\n        start = 1\n        if (firstChar == '-') {\n            isNegative = true\n            limit =
Int.MIN_VALUE\n        } else if (firstChar == '+') {\n            isNegative = false\n            limit = -
Int.MAX_VALUE\n        } else\n            return null\n    } else {\n        start = 0\n        isNegative = false\n        limit
= -Int.MAX_VALUE\n    }\n    val limitForMaxRadix = (-Int.MAX_VALUE) / 36\n    var limitBeforeMul =
limitForMaxRadix\n    var result = 0\n    for (i in start until length) {\n        val digit = digitOf(this[i], radix)\n        if (digit

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< 0) return null\n        if (result < limitBeforeMul) {\n            if (limitBeforeMul == limitForMaxRadix) {\n                limitBeforeMul = limit / radix\n                if (result < limitBeforeMul) {\n                    return null\n                }\n            } else {\n                return null\n            }\n        }\n        result *= radix\n        if (result < limit + digit) return\n        null\n        result -= digit\n    }\n    return if (isNegative) result else -result\n}\n\n/**\n * Parses the string as a\n [Long] number and returns the result\n * or `null` if the string is not a valid representation of a number.\n *\n @SinceKotlin("1.1")\n public fun String.toLongOrNull(): Long? = toLongOrNull(radix = 10)\n\n/**\n * Parses\n the string as a [Long] number and returns the result\n * or `null` if the string is not a valid representation of a\n number.\n *\n * @throws IllegalArgumentException when [radix] is not a valid radix for string to number\n conversion.\n *\n @SinceKotlin("1.1")\n public\n fun String.toLongOrNull(radix: Int): Long? {\n    checkRadix(radix)\n\n    val length = this.length\n    if (length ==\n 0) return null\n\n    val start: Int\n    val isNegative: Boolean\n    val limit: Long\n\n    val firstChar = this[0]\n    if\n  (firstChar < '0') {\n        // Possible leading sign\n        if (length == 1) return null // non-digit (possible sign) only, no\n  digits after\n\n        start = 1\n        if (firstChar == '-') {\n            isNegative = true\n            limit =\n  Long.MIN_VALUE\n        } else if (firstChar == '+') {\n            isNegative = false\n            limit = -\n  Long.MAX_VALUE\n        } else {\n            return null\n        } else {\n            start = 0\n            isNegative = false\n            limit = -Long.MAX_VALUE\n        }\n\n        val limitForMaxRadix = (-Long.MAX_VALUE) / 36\n        var\n  limitBeforeMul = limitForMaxRadix\n        var result = 0L\n        for (i in start until length) {\n            val digit =\n  digitOf(this[i], radix)\n\n            if\n  (digit < 0) return null\n                if (result < limitBeforeMul) {\n                    if (limitBeforeMul == limitForMaxRadix) {\n                        limitBeforeMul = limit / radix\n                        if (result < limitBeforeMul) {\n                            return null\n                        }\n                    } else {\n                        return null\n                    }\n                }\n                result *= radix\n                if (result < limit + digit)\n  return null\n                result -= digit\n            }\n            return if (isNegative) result else -result\n        }\n\n    internal fun\n  numberFormatError(input: String): Nothing = throw NumberFormatException("Invalid number format:\n  '$input')\n\n    /**\n     * Copyright 2010-2021 JetBrains s.r.o. and Kotlin Programming Language contributors.\n     * Use\n     of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n     *\n     @package kotlin.time\n     import kotlin.contracts.*\n     import kotlin.jvm.JvmInline\n     import kotlin.math.*\n     *\n     * Represents the amount of time\n     one instant of time is away from another instant.\n     *\n     * A negative duration is possible in a situation when the\n     second instant is earlier than the first one.\n     *\n     * The type can store duration values up to 1146 years with\n     nanosecond precision,\n     * and up to 1146 million years with millisecond precision.\n     *\n     * If a duration-returning\n     operation provided in `kotlin.time` produces a duration value that doesn't fit into the above range,\n     * the returned\n     `Duration` is infinite.\n     *\n     * An infinite duration value [Duration.INFINITE] can be used to represent infinite\n     timeouts.\n     *\n     * To construct a duration use either the extension function [toDuration],\n     * or the extension\n     properties [hours], [minutes], [seconds], and so on,\n     * available on [Int], [Long], and [Double] numeric types.\n     *\n     * To get the value of this duration expressed in a particular [duration units][DurationUnit]\n     * use the functions\n     [toInt], [toLong], and [toDouble]\n     * or the properties [inWholeHours], [inWholeMinutes],\n     [inWholeSeconds], [inWholeNanoseconds], and so on.\n     *\n     @SinceKotlin("1.6")\n     @WasExperimental(ExperimentalTime::class)\n     @JvmInline\n     public value class\n  Duration internal constructor(private val rawValue: Long) : Comparable<Duration> {\n        private val value: Long\n  get() = rawValue shr 1\n        private inline val unitDiscriminator: Int\n  get() = rawValue.toInt() and 1\n        private fun\n  isInNanos() = unitDiscriminator == 0\n        private fun\n  isInMillis() = unitDiscriminator == 1\n        private val\n  storageUnit\n  get() = if (isInNanos()) DurationUnit.NANOSECONDS else DurationUnit.MILLISECONDS\n\n        init\n  {\n            if (durationAssertionsEnabled) {\n                if (isInNanos()) {\n                    if (value !in -\n  MAX_NANOS..MAX_NANOS) throw AssertionError("$value ns is out of nanoseconds range")\n                } else\n  {\n                    if (value !in -MAX_MILLIS..MAX_MILLIS) throw AssertionError("$value ms is out of milliseconds\n  range")\n                    if (value in -MAX_NANOS_IN_MILLIS..MAX_NANOS_IN_MILLIS)\n  throw AssertionError("$value ms is denormalized")\n                }\n            }\n        }\n\n        companion object {\n            /**\n             * The duration equal to exactly 0 seconds.\n             *\n             * public val ZERO: Duration = Duration(0L)\n             *\n             * /** The

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duration whose value is positive infinity. It is useful for representing timeouts that should never expire. */
public val INFINITE: Duration = durationOfMillis(MAX_MILLIS)\n    internal val NEG_INFINITE: Duration =
durationOfMillis(-MAX_MILLIS)\n\n    /** Converts the given time duration [value] expressed in the specified
[sourceUnit] into the specified [targetUnit]. */\n    @ExperimentalTime\n    public fun convert(value: Double,
sourceUnit: DurationUnit, targetUnit: DurationUnit): Double =\n        convertDurationUnit(value, sourceUnit,
targetUnit)\n\n    // Duration construction extension properties in Duration companion scope\n\n    /** Returns a
[Duration] equal to this [Int] number of nanoseconds.
*/\n    @kotlin.internal.InlineOnly\n    public inline val Int.nanoseconds get() =
toDuration(DurationUnit.NANOSECONDS)\n\n    /** Returns a [Duration] equal to this [Long] number of
nanoseconds. */\n    @kotlin.internal.InlineOnly\n    public inline val Long.nanoseconds get() =
toDuration(DurationUnit.NANOSECONDS)\n\n    /**\n    * Returns a [Duration] equal to this [Double]
number of nanoseconds.\n    *\n    * Depending on its magnitude, the value is rounded to an integer number of
nanoseconds or milliseconds.\n    *\n    * @throws IllegalArgumentException if this [Double] value is
`NaN`.\n    */\n    @kotlin.internal.InlineOnly\n    public inline val Double.nanoseconds get() =
toDuration(DurationUnit.NANOSECONDS)\n\n    /** Returns a [Duration] equal to this [Int] number of
microseconds. */\n    @kotlin.internal.InlineOnly\n    public inline val Int.microseconds get() =
toDuration(DurationUnit.MICROSECONDS)\n\n    /** Returns a [Duration] equal to this [Long] number of microseconds. */\n    @kotlin.internal.InlineOnly\n    public inline val Long.microseconds get() = toDuration(DurationUnit.MICROSECONDS)\n\n    /**\n    * Returns a [Duration] equal to this [Double] number of microseconds.\n    *\n    * Depending on its magnitude,
the value is rounded to an integer number of nanoseconds or milliseconds.\n    *\n    * @throws
IllegalArgumentException if this [Double] value is `NaN`.\n    */\n    @kotlin.internal.InlineOnly\n    public
inline val Double.microseconds get() = toDuration(DurationUnit.MICROSECONDS)\n\n    /** Returns a
[Duration] equal to this [Int] number of milliseconds. */\n    @kotlin.internal.InlineOnly\n    public inline val
Int.milliseconds get() = toDuration(DurationUnit.MILLISECONDS)\n\n    /** Returns a [Duration] equal to this
[Long] number of milliseconds. */\n    @kotlin.internal.InlineOnly\n    public inline val Long.milliseconds get() = toDuration(DurationUnit.MILLISECONDS)\n\n    /**\n    * Returns a [Duration] equal to this [Double] number of milliseconds.\n    *\n    * Depending on its magnitude,
the value is rounded to an integer number of nanoseconds or milliseconds.\n    *\n    * @throws
IllegalArgumentException if this [Double] value is `NaN`.\n    */\n    @kotlin.internal.InlineOnly\n    public
inline val Double.milliseconds get() = toDuration(DurationUnit.MILLISECONDS)\n\n    /** Returns a
[Duration] equal to this [Int] number of seconds. */\n    @kotlin.internal.InlineOnly\n    public inline val
Int.seconds get() = toDuration(DurationUnit.SECONDS)\n\n    /** Returns a [Duration] equal to this [Long]
number of seconds. */\n    @kotlin.internal.InlineOnly\n    public inline val Long.seconds get() =
toDuration(DurationUnit.SECONDS)\n\n    /**\n    * Returns a [Duration] equal
to this [Double] number of seconds.\n    *\n    * Depending on its magnitude, the value is rounded to an
integer number of nanoseconds or milliseconds.\n    *\n    * @throws IllegalArgumentException if this
[Double] value is `NaN`.\n    */\n    @kotlin.internal.InlineOnly\n    public inline val Double.seconds get() =
toDuration(DurationUnit.SECONDS)\n\n    /** Returns a [Duration] equal to this [Int] number of minutes. */\n    @kotlin.internal.InlineOnly\n    public inline val Int.minutes get() = toDuration(DurationUnit.MINUTES)\n\n    /** Returns a [Duration] equal to this [Long] number of minutes. */\n    @kotlin.internal.InlineOnly\n    public inline val Long.minutes get() = toDuration(DurationUnit.MINUTES)\n\n    /**\n    * Returns a [Duration] equal to this [Double] number of minutes.\n    *\n    * Depending on its magnitude, the value is
rounded to an integer number of nanoseconds or milliseconds.\n    *\n    * @throws
IllegalArgumentException if this [Double] value is `NaN`.\n    */\n    @kotlin.internal.InlineOnly\n    public inline val Double.minutes get() =
toDuration(DurationUnit.MINUTES)\n\n    /** Returns a [Duration] equal to this [Int] number of hours. */\n    @kotlin.internal.InlineOnly\n    public inline val Int.hours get() = toDuration(DurationUnit.HOURS)\n\n    /**

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Returns a [Duration] equal to this [Long] number of hours. */\n    @kotlin.internal.InlineOnly\n    public inline
val Long.hours get() = toDuration(DurationUnit.HOURS)\n\n    /**\n    * Returns a [Duration] equal to this
[Double] number of hours.\n    *\n    * Depending on its magnitude, the value is rounded to an integer number
of nanoseconds or milliseconds.\n    *\n    * @throws IllegalArgumentException if this [Double] value is
`NaN`.\n    */\n    @kotlin.internal.InlineOnly\n    public inline val Double.hours get()
= toDuration(DurationUnit.HOURS)\n\n    /** Returns a [Duration] equal to this [Int] number of days. */\n
    @kotlin.internal.InlineOnly\n    public inline val Int.days get() = toDuration(DurationUnit.DAYS)\n\n    /**
Returns a [Duration] equal to this [Long] number of days. */\n    @kotlin.internal.InlineOnly\n    public inline
val Long.days get() = toDuration(DurationUnit.DAYS)\n\n    /**\n    * Returns a [Duration] equal to this
[Double] number of days.\n    *\n    * Depending on its magnitude, the value is rounded to an integer number
of nanoseconds or milliseconds.\n    *\n    * @throws IllegalArgumentException if this [Double] value is
`NaN`.\n    */\n    @kotlin.internal.InlineOnly\n    public inline val Double.days get() =
toDuration(DurationUnit.DAYS)\n\n    // deprecated static factory functions\n\n    /** Returns a [Duration]
representing the specified [value] number of nanoseconds. */\n    @SinceKotlin("1.5")\n    @ExperimentalTime\n    @Deprecated("Use 'Int.nanoseconds' extension property from
Duration.Companion instead.", ReplaceWith("value.nanoseconds"),
"\kotlin.time.Duration.Companion.nanoseconds"))\n    @DeprecatedSinceKotlin(warningSince = "1.6",
errorSince = "1.8")\n    public fun nanoseconds(value: Int): Duration =
value.toDuration(DurationUnit.NANOSECONDS)\n\n    /** Returns a [Duration] representing the specified
[value] number of nanoseconds. */\n    @SinceKotlin("1.5")\n    @ExperimentalTime\n    @Deprecated("Use 'Long.nanoseconds' extension property from Duration.Companion instead.",
ReplaceWith("value.nanoseconds", "\kotlin.time.Duration.Companion.nanoseconds"))\n    @DeprecatedSinceKotlin(warningSince = "1.6", errorSince = "1.8")\n    public fun nanoseconds(value: Long):
Duration = value.toDuration(DurationUnit.NANOSECONDS)\n\n    /**\n    * Returns a [Duration]
representing the specified
[value] number of nanoseconds.\n    *\n    * @throws IllegalArgumentException if the provided `Double`
[value] is `NaN`.\n    */\n    @SinceKotlin("1.5")\n    @ExperimentalTime\n    @Deprecated("Use
'Double.nanoseconds' extension property from Duration.Companion instead.", ReplaceWith("value.nanoseconds",
"\kotlin.time.Duration.Companion.nanoseconds"))\n    @DeprecatedSinceKotlin(warningSince = "1.6",
errorSince = "1.8")\n    public fun nanoseconds(value: Double): Duration =
value.toDuration(DurationUnit.NANOSECONDS)\n\n    /** Returns a [Duration] representing the specified
[value] number of microseconds. */\n    @SinceKotlin("1.5")\n    @ExperimentalTime\n    @Deprecated("Use 'Int.microseconds' extension property from Duration.Companion instead.",
ReplaceWith("value.microseconds", "\kotlin.time.Duration.Companion.microseconds"))\n    @DeprecatedSinceKotlin(warningSince = "1.6", errorSince = "1.8")\n
    public fun microseconds(value: Int): Duration = value.toDuration(DurationUnit.MICROSECONDS)\n\n    /**
Returns a [Duration] representing the specified [value] number of microseconds. */\n    @SinceKotlin("1.5")\n
    @ExperimentalTime\n    @Deprecated("Use 'Long.microseconds' extension property from
Duration.Companion instead.", ReplaceWith("value.microseconds",
"\kotlin.time.Duration.Companion.microseconds"))\n    @DeprecatedSinceKotlin(warningSince = "1.6",
errorSince = "1.8")\n    public fun microseconds(value: Long): Duration =
value.toDuration(DurationUnit.MICROSECONDS)\n\n    /**\n    * Returns a [Duration] representing the
specified [value] number of microseconds.\n    *\n    * @throws IllegalArgumentException if the provided
`Double` [value] is `NaN`.\n    */\n    @SinceKotlin("1.5")\n    @ExperimentalTime\n    @Deprecated("Use 'Double.microseconds' extension property from Duration.Companion instead.",
ReplaceWith("value.microseconds", "\kotlin.time.Duration.Companion.microseconds"))\n    @DeprecatedSinceKotlin(warningSince = "1.6", errorSince = "1.8")\n    public fun microseconds(value:
Double): Duration = value.toDuration(DurationUnit.MICROSECONDS)\n\n    /** Returns a [Duration]

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representing the specified [value] number of milliseconds. */n    @SinceKotlin("1.5")n
@ExperimentalTime\n    @Deprecated("Use 'Int.milliseconds' extension property from Duration.Companion
instead.", ReplaceWith("value.milliseconds", "kotlin.time.Duration.Companion.milliseconds"))n
@DeprecatedSinceKotlin(warningSince = "1.6", errorSince = "1.8")n    public fun milliseconds(value: Int):
Duration = value.toDuration(DurationUnit.MILLISECONDS)n\n    /** Returns a [Duration] representing the
specified [value] number of milliseconds. */n    @SinceKotlin("1.5")n    @ExperimentalTime\n
@Deprecated("Use 'Long.milliseconds' extension
property from Duration.Companion instead.", ReplaceWith("value.milliseconds",
"kotlin.time.Duration.Companion.milliseconds"))n    @DeprecatedSinceKotlin(warningSince = "1.6",
errorSince = "1.8")n    public fun milliseconds(value: Long): Duration =
value.toDuration(DurationUnit.MILLISECONDS)n\n    /**\n    * Returns a [Duration] representing the
specified [value] number of milliseconds.\n    *\n    * @throws IllegalArgumentException if the provided
`Double` [value] is `NaN`.\n    */n    @SinceKotlin("1.5")n    @ExperimentalTime\n
@Deprecated("Use 'Double.milliseconds' extension property from Duration.Companion instead.",
ReplaceWith("value.milliseconds", "kotlin.time.Duration.Companion.milliseconds"))n
@DeprecatedSinceKotlin(warningSince = "1.6", errorSince = "1.8")n    public fun milliseconds(value:
Double): Duration = value.toDuration(DurationUnit.MILLISECONDS)n\n\n    /** Returns a [Duration]
representing the specified [value] number of seconds. */n    @SinceKotlin("1.5")n    @ExperimentalTime\n
    @Deprecated("Use 'Int.seconds' extension property from Duration.Companion instead.",
ReplaceWith("value.seconds", "kotlin.time.Duration.Companion.seconds"))n
@DeprecatedSinceKotlin(warningSince = "1.6", errorSince = "1.8")n    public fun seconds(value: Int):
Duration = value.toDuration(DurationUnit.SECONDS)n\n    /** Returns a [Duration] representing the specified
[value] number of seconds. */n    @SinceKotlin("1.5")n    @ExperimentalTime\n    @Deprecated("Use
'Long.seconds' extension property from Duration.Companion instead.", ReplaceWith("value.seconds",
"kotlin.time.Duration.Companion.seconds"))n    @DeprecatedSinceKotlin(warningSince = "1.6", errorSince =
"1.8")n    public fun seconds(value: Long): Duration = value.toDuration(DurationUnit.SECONDS)n\n
/**\n    * Returns a [Duration]
representing the specified [value] number of seconds.\n    *\n    * @throws IllegalArgumentException if the
provided `Double` [value] is `NaN`.\n    */n    @SinceKotlin("1.5")n    @ExperimentalTime\n
@Deprecated("Use 'Double.seconds' extension property from Duration.Companion instead.",
ReplaceWith("value.seconds", "kotlin.time.Duration.Companion.seconds"))n
@DeprecatedSinceKotlin(warningSince = "1.6", errorSince = "1.8")n    public fun seconds(value: Double):
Duration = value.toDuration(DurationUnit.SECONDS)n\n\n    /** Returns a [Duration] representing the
specified [value] number of minutes. */n    @SinceKotlin("1.5")n    @ExperimentalTime\n
@Deprecated("Use 'Int.minutes' extension property from Duration.Companion instead.",
ReplaceWith("value.minutes", "kotlin.time.Duration.Companion.minutes"))n
@DeprecatedSinceKotlin(warningSince = "1.6", errorSince = "1.8")n    public fun minutes(value:
Int): Duration = value.toDuration(DurationUnit.MINUTES)n\n    /** Returns a [Duration] representing the
specified [value] number of minutes. */n    @SinceKotlin("1.5")n    @ExperimentalTime\n
@Deprecated("Use 'Long.minutes' extension property from Duration.Companion instead.",
ReplaceWith("value.minutes", "kotlin.time.Duration.Companion.minutes"))n
@DeprecatedSinceKotlin(warningSince = "1.6", errorSince = "1.8")n    public fun minutes(value: Long):
Duration = value.toDuration(DurationUnit.MINUTES)n\n    /**\n    * Returns a [Duration] representing the
specified [value] number of minutes.\n    *\n    * @throws IllegalArgumentException if the provided `Double`
[value] is `NaN`.\n    */n    @SinceKotlin("1.5")n    @ExperimentalTime\n    @Deprecated("Use
'Double.minutes' extension property from Duration.Companion instead.", ReplaceWith("value.minutes",
"kotlin.time.Duration.Companion.minutes"))n

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@DeprecatedSinceKotlin(warningSince = \"1.6\", errorSince = \"1.8\")\n    public fun minutes(value:
Double): Duration = value.toDuration(DurationUnit.MINUTES)\n\n    /** Returns a [Duration] representing the
specified [value] number of hours. */\n    @SinceKotlin(\"1.5\")\n    @ExperimentalTime\n    @Deprecated(\"Use 'Int.hours' extension property from Duration.Companion instead.\",
ReplaceWith(\"value.hours\", \"kotlin.time.Duration.Companion.hours\"))\n
@DeprecatedSinceKotlin(warningSince = \"1.6\", errorSince = \"1.8\")\n    public fun hours(value: Int): Duration
= value.toDuration(DurationUnit.HOURS)\n\n    /** Returns a [Duration] representing the specified [value]
number of hours. */\n    @SinceKotlin(\"1.5\")\n    @ExperimentalTime\n    @Deprecated(\"Use
'Long.hours' extension property from Duration.Companion instead.\", ReplaceWith(\"value.hours\",
\"kotlin.time.Duration.Companion.hours\"))\n    @DeprecatedSinceKotlin(warningSince
= \"1.6\", errorSince = \"1.8\")\n    public fun hours(value: Long): Duration =
value.toDuration(DurationUnit.HOURS)\n\n    /**\n    * Returns a [Duration] representing the specified
[value] number of hours.\n    *\n    * @throws IllegalArgumentException if the provided `Double` [value] is
`NaN`.\n    */\n    @SinceKotlin(\"1.5\")\n    @ExperimentalTime\n    @Deprecated(\"Use 'Double.hours'
extension property from Duration.Companion instead.\", ReplaceWith(\"value.hours\",
\"kotlin.time.Duration.Companion.hours\"))\n    @DeprecatedSinceKotlin(warningSince = \"1.6\", errorSince =
\"1.8\")\n    public fun hours(value: Double): Duration = value.toDuration(DurationUnit.HOURS)\n\n    /**
Returns a [Duration] representing the specified [value] number of days. */\n    @SinceKotlin(\"1.5\")\n
@ExperimentalTime\n    @Deprecated(\"Use 'Int.days' extension property from Duration.Companion instead.\",
ReplaceWith(\"value.days\",
\"kotlin.time.Duration.Companion.days\"))\n    @DeprecatedSinceKotlin(warningSince = \"1.6\", errorSince =
\"1.8\")\n    public fun days(value: Int): Duration = value.toDuration(DurationUnit.DAYS)\n\n    /** Returns a
[Duration] representing the specified [value] number of days. */\n    @SinceKotlin(\"1.5\")\n
@ExperimentalTime\n    @Deprecated(\"Use 'Long.days' extension property from Duration.Companion
instead.\", ReplaceWith(\"value.days\", \"kotlin.time.Duration.Companion.days\"))\n
@DeprecatedSinceKotlin(warningSince = \"1.6\", errorSince = \"1.8\")\n    public fun days(value: Long):
Duration = value.toDuration(DurationUnit.DAYS)\n\n    /**\n    * Returns a [Duration] representing the
specified [value] number of days.\n    *\n    * @throws IllegalArgumentException if the provided `Double`
[value] is `NaN`.\n    */\n    @SinceKotlin(\"1.5\")\n    @ExperimentalTime\n    @Deprecated(\"Use
'Double.days' extension property from Duration.Companion instead.\", ReplaceWith(\"value.days\",
\"kotlin.time.Duration.Companion.days\"))\n    @DeprecatedSinceKotlin(warningSince = \"1.6\", errorSince =
\"1.8\")\n    public fun days(value: Double): Duration = value.toDuration(DurationUnit.DAYS)\n\n    /**\n
* Parses a string that represents a duration and returns the parsed [Duration] value.\n    *\n    * The following
formats are accepted:\n    *\n    * - ISO-8601 Duration format, e.g. `P1DT2H3M4.058S`, see [toIsoString] and
[parseIsoString].\n    * - The format of string returned by the default [Duration.toString] and `toString` in a
specific unit,\n    * e.g. `10s`, `1h 30m` or `-(1h 30m)`.\n    *\n    * @throws IllegalArgumentException if
the string doesn't represent a duration in any of the supported formats.\n    * @sample
samples.time.Durations.parse\n    */\n    public fun parse(value: String): Duration
= try {\n    parseDuration(value, strictIso = false)\n    } catch (e: IllegalArgumentException) {\n
throw IllegalArgumentException(\"Invalid duration string format: '$value'.\", e)\n    }\n\n    /**\n    * Parses
a string that represents a duration in a restricted ISO-8601 composite representation\n    * and returns the parsed
[Duration] value.\n    * Composite representation is a relaxed version of ISO-8601 duration format that
supports\n    * negative durations and negative values of individual components.\n    *\n    * The following
restrictions are imposed:\n    *\n    * - The only allowed non-time designator is days (`D`), `Y` (years), `W`
(weeks), and `M` (months) are not supported.\n    * - Day is considered to be exactly 24 hours (24-hour clock
time scale).\n    * - Alternative week-based representation `[\"P\"][number][\"W\"]` is not supported.\n    *\n
* @throws IllegalArgumentException

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if the string doesn't represent a duration in ISO-8601 format.\n      * @sample
samples.time.Durations.parseIsoString\n      *^/\n      public fun parseIsoString(value: String): Duration = try {\n
    parseDuration(value, strictIso = true)\n      } catch (e: IllegalArgumentException) {\n          throw
IllegalArgumentExcep\n      tion(\n          "Invalid ISO duration string format: '$value'.", e)\n      }\n      /**\n      * Parses a
string that represents a duration and returns the parsed [Duration] value,\n      * or `null` if the string doesn't
represent a duration in any of the supported formats.\n      *\n      * The following formats are accepted:\n
*\n      * - Restricted ISO-8601 duration composite representation, e.g. `P1DT2H3M4.058S`, see [toIsoString] and
[parseIsoString].\n      * - The format of string returned by the default [Duration.toString] and `toString` in a
specific unit,\n      * e.g. `10s`, `1h 30m` or `-(1h 30m)`.\n
      *\n      * @sample samples.time.Durations.parse\n      *^/\n      public fun parseOrNull(value: String): Duration? =
try {\n      parseDuration(value, strictIso = false)\n      } catch (e: IllegalArgumentException) {\n      null\n
      }\n      /**\n      * Parses a string that represents a duration in restricted ISO-8601 composite representation\n
      * and returns the parsed [Duration] value or `null` if the string doesn't represent a duration in the format\n
      * acceptable by [parseIsoString].\n      *\n      * @sample samples.time.Durations.parseIsoString\n      *^/\n
public fun parseIsoStringOrNull(value: String): Duration? = try {\n      parseDuration(value, strictIso = true)\n
      } catch (e: IllegalArgumentException) {\n      null\n      }\n      // arithmetic operators\n      /** Returns
the negative of this value. *\n      public operator fun unaryMinus(): Duration = durationOf(-value,
unitDiscriminator)\n      *\n      /**\n      * Returns a duration whose value is the sum of this and [other] duration values.\n
      *\n      * @throws
IllegalArgumentExcep\n      tion if the operation results in an undefined value for the given arguments,\n      * e.g. when
adding infinite durations of different sign.\n      *\n      public operator fun plus(other: Duration): Duration {\n
      when {\n      this.isInfinite() -> {\n      if (other.isFinite() || (this.rawValue xor other.rawValue >= 0))\n
      return this\n      else\n      throw IllegalArgumentExcep\n      tion(\n          "Summing infinite durations of
different signs yields an undefined result.")\n      }\n      other.isInfinite() -> return other\n      }\n      return
when {\n      this.unitDiscriminator == other.unitDiscriminator -> {\n      val result = this.value +
other.value // never overflows long, but can overflow long63\n      when {\n      isInNanos()\n
      ->\n      durationOfNanosNormalized(result)\n      else ->\n
      durationOfMillisNormalized(result)\n      }\n      }\n      this.isInMillis() ->\n
      addValuesMixedRanges(this.value, other.value)\n      else ->\n      addValuesMixedRanges(other.value,
this.value)\n      }\n      }\n      private fun addValuesMixedRanges(thisMillis: Long, otherNanos: Long): Duration
{\n      val otherMillis = nanosToMillis(otherNanos)\n      val resultMillis = thisMillis + otherMillis\n      return
if (resultMillis in -MAX_NANOS_IN_MILLIS..MAX_NANOS_IN_MILLIS) {\n      val otherNanoRemainder =
otherNanos - millisToNanos(otherMillis)\n      durationOfNanos(millisToNanos(resultMillis) +
otherNanoRemainder)\n      } else {\n      durationOfMillis(resultMillis.coerceIn(-MAX_MILLIS,
MAX_MILLIS))\n      }\n      }\n      /**\n      * Returns a duration whose value is the difference
between this and [other] duration values.\n      *\n      * @throws IllegalArgumentExcep\n      tion if the operation
results in an undefined value for the given arguments,\n      * e.g. when subtracting infinite durations of the same sign.\n
      *\n      public operator fun minus(other: Duration): Duration = this + (-other)\n      /**\n      * Returns a
duration whose value is this duration value multiplied by the given [scale] number.\n      *\n      * @throws
IllegalArgumentExcep\n      tion if the operation results in an undefined value for the given arguments,\n      * e.g.
when multiplying an infinite duration by zero.\n      *\n      public operator fun times(scale: Int): Duration {\n
      if (isInfinite()) {\n      return
when {\n      scale == 0 -> throw IllegalArgumentExcep\n      tion(\n          "Multiplying infinite duration by
zero yields an undefined result.")\n      scale > 0 -> this\n      else -> -this\n      }\n      }\n      if (scale == 0)
return ZERO\n      val value = value\n      val result = value * scale\n      return if (isInNanos()) {\n      if (value in
(MAX_NANOS / Int.MIN_VALUE)..(-MAX_NANOS / Int.MIN_VALUE)) {\n      // can't overflow nanos
range for any scale\n      durationOfNanos(result)\n      } else {\n      if (result / scale == value) {\n
      durationOfNanosNormalized(result)\n      } else {\n      val millis = nanosToMillis(value)\n

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        val remNanos = value - millisToNanos(millis)\n        val resultMillis = millis * scale\n    val totalMillis = resultMillis + nanosToMillis(remNanos * scale)\n        if (resultMillis / scale == millis && totalMillis xor resultMillis >= 0) {\n            durationOfMillis(totalMillis.coerceIn(-MAX_MILLIS..MAX_MILLIS))\n        } else {\n            if (value.sign * scale.sign > 0) INFINITE else NEG_INFINITE\n        }\n    }\n    }\n    } else {\n        if (result / scale == value) {\n            durationOfMillis(result.coerceIn(-MAX_MILLIS..MAX_MILLIS))\n        } else {\n            if (value.sign * scale.sign > 0) INFINITE else NEG_INFINITE\n        }\n    }\n}\n\n/**\n * Returns a duration whose value is this duration value multiplied by the given [scale] number.\n * The operation may involve rounding when the result cannot be represented exactly with a [Double] number.\n * @throws\n * IllegalArgumentException if the operation results in an undefined value for the given arguments,\n * e.g. when multiplying an infinite duration by zero.\n */\n public operator fun times(scale: Double): Duration {\n    val intScale = scale.roundToInt()\n    if (intScale.toDouble() == scale) {\n        return times(intScale)\n    }\n    val unit = storageUnit\n    val result = toDouble(unit) * scale\n    return result.toDuration(unit)\n}\n\n/**\n * Returns a duration whose value is this duration value divided by the given [scale] number.\n * @throws\n * IllegalArgumentException if the operation results in an undefined value for the given arguments,\n * e.g. when dividing zero duration by zero.\n */\n public operator fun div(scale: Int): Duration {\n    if (scale == 0) {\n        return when {\n            isPositive() -> INFINITE\n            isNegative() -> NEG_INFINITE\n            else -> throw\n                IllegalArgumentException("Dividing zero duration by zero yields an undefined result.")\n        }\n    }\n    if (isInfinite()) {\n        return this * scale.sign\n    }\n    val result = value / scale\n    if (result in -MAX_NANOS_IN_MILLIS..MAX_NANOS_IN_MILLIS) {\n        val rem = millisToNanos(value - (result * scale)) / scale\n        return durationOfNanos(millisToNanos(result) + rem)\n    }\n    return durationOfMillis(result)\n}\n\n/**\n * Returns a duration whose value is this duration value divided by the given [scale] number.\n * @throws\n * IllegalArgumentException if the operation results in an undefined value for the given arguments,\n * e.g. when dividing an infinite duration by infinity or zero duration by zero.\n */\n public operator fun div(scale: Double): Duration {\n    val intScale = scale.roundToInt()\n    if (intScale.toDouble() == scale && intScale != 0) {\n        return div(intScale)\n    }\n    val unit = storageUnit\n    val result = toDouble(unit) / scale\n    return result.toDuration(unit)\n}\n\n/**\n * Returns a number that is the ratio of this and [other] duration values.\n */\n public operator fun div(other: Duration): Double {\n    {\n        val coarserUnit = maxOf(this.storageUnit, other.storageUnit)\n        return this.toDouble(coarserUnit) / other.toDouble(coarserUnit)\n    }\n\n    /**\n     * Returns true, if the duration value is less than zero.\n     */\n    public fun isNegative(): Boolean = rawValue < 0\n\n    /**\n     * Returns true, if the duration value is greater than zero.\n     */\n    public fun isPositive(): Boolean = rawValue > 0\n\n    /**\n     * Returns true, if the duration value is infinite.\n     */\n    public fun isInfinite(): Boolean = rawValue == INFINITE.rawValue || rawValue == NEG_INFINITE.rawValue\n\n    /**\n     * Returns true, if the duration value is finite.\n     */\n    public fun isFinite(): Boolean = !isInfinite()\n\n    /**\n     * Returns the absolute value of this value. The returned value is always non-negative.\n     */\n    public val absoluteValue: Duration\n\n    get() = if (isNegative()) -this else this\n\n    override fun compareTo(other: Duration): Int {\n        val compareBits = this.rawValue xor other.rawValue\n        if (compareBits < 0 || compareBits.toInt() and 1 == 0) // different signs or same sign/same range\n            return this.rawValue.compareTo(other.rawValue)\n        // same sign/different ranges\n        val r = this.unitDiscriminator - other.unitDiscriminator // compare ranges\n        return if (isNegative()) -r else r\n    }\n}\n\n/**\n * Splits this duration into days, hours, minutes, seconds, and nanoseconds and executes the given [action] with these components.\n * The result of [action] is returned as the result of this function.\n *\n * - `nanoseconds` represents the whole number of nanoseconds in this duration, and its absolute value is less than 1_000_000_000;\n * - `seconds` represents the whole number of seconds in this duration, and its absolute

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value is less than 60;\n * - `minutes` represents the whole number of minutes in this duration, and its absolute
value is less than 60;\n * - `hours` represents the whole number
of hours in this duration, and its absolute value is less than 24;\n * - `days` represents the whole number of days
in this duration.\n * \n * Infinite durations are represented as either [Long.MAX_VALUE] days, or
[Long.MIN_VALUE] days (depending on the sign of infinity),\n * and zeroes in the lower components.\n * \n
public inline fun <T> toComponents(action: (days: Long, hours: Int, minutes: Int, seconds: Int, nanoseconds: Int) -
> T): T {\n    contract { callsInPlace(action, InvocationKind.EXACTLY_ONCE) }\n    return
action(inWholeDays, hoursComponent, minutesComponent, secondsComponent, nanosecondsComponent)\n } \n \n
/** \n * Splits this duration into hours, minutes, seconds, and nanoseconds and executes the given [action] with
these components.\n * The result of [action] is returned as the result of this function.\n * \n * - `nanoseconds`
represents the whole number of nanoseconds in this duration, and its absolute value is less
than 1_000_000_000;\n * - `seconds` represents the whole number of seconds in this duration, and its absolute
value is less than 60;\n * - `minutes` represents the whole number of minutes in this duration, and its absolute
value is less than 60;\n * - `hours` represents the whole number of hours in this duration.\n * \n * Infinite
durations are represented as either [Long.MAX_VALUE] hours, or [Long.MIN_VALUE] hours (depending on the
sign of infinity),\n * and zeroes in the lower components.\n * \n public inline fun <T> toComponents(action:
(hours: Long, minutes: Int, seconds: Int, nanoseconds: Int) -> T): T {\n    contract { callsInPlace(action,
InvocationKind.EXACTLY_ONCE) }\n    return action(inWholeHours, minutesComponent, secondsComponent,
nanosecondsComponent)\n } \n \n /** \n * Splits this duration into minutes, seconds, and nanoseconds and
executes the given [action] with these components.\n * The result of [action] is returned
as the result of this function.\n * \n * - `nanoseconds` represents the whole number of nanoseconds in this
duration, and its absolute value is less than 1_000_000_000;\n * - `seconds` represents the whole number of
seconds in this duration, and its absolute value is less than 60;\n * - `minutes` represents the whole number of
minutes in this duration.\n * \n * Infinite durations are represented as either [Long.MAX_VALUE] minutes, or
[Long.MIN_VALUE] minutes (depending on the sign of infinity),\n * and zeroes in the lower components.\n * \n
public inline fun <T> toComponents(action: (minutes: Long, seconds: Int, nanoseconds: Int) -> T): T {\n
contract { callsInPlace(action, InvocationKind.EXACTLY_ONCE) }\n    return action(inWholeMinutes,
secondsComponent, nanosecondsComponent)\n } \n \n /** \n * Splits this duration into seconds, and
nanoseconds and executes the given [action] with these components.\n * The result of [action]
is returned as the result of this function.\n * \n * - `nanoseconds` represents the whole number of nanoseconds
in this duration, and its absolute value is less than 1_000_000_000;\n * - `seconds` represents the whole number
of seconds in this duration.\n * \n * Infinite durations are represented as either [Long.MAX_VALUE] seconds,
or [Long.MIN_VALUE] seconds (depending on the sign of infinity),\n * and zero nanoseconds.\n * \n
public inline fun <T> toComponents(action: (seconds: Long, nanoseconds: Int) -> T): T {\n    contract {
callsInPlace(action, InvocationKind.EXACTLY_ONCE) }\n    return action(inWholeSeconds,
nanosecondsComponent)\n } \n \n @PublishedApi\n internal val hoursComponent: Int\n    get() = if
(isInfinite()) 0 else (inWholeHours % 24).toInt()\n \n @PublishedApi\n internal val minutesComponent: Int\n
get() = if (isInfinite()) 0 else (inWholeMinutes % 60).toInt()\n \n @PublishedApi\n internal val
secondsComponent:
Int\n    get() = if (isInfinite()) 0 else (inWholeSeconds % 60).toInt()\n \n @PublishedApi\n internal val
nanosecondsComponent: Int\n    get() = when {\n        isInfinite() -> 0\n        isInMillis() ->
millisToNanos(value % 1_000).toInt()\n        else -> (value % 1_000_000_000).toInt()\n    } \n \n //
conversion to units\n \n /** \n * Returns the value of this duration expressed as a [Double] number of the
specified [unit].\n * \n * The operation may involve rounding when the result cannot be represented exactly with
a [Double] number.\n * \n * An infinite duration value is converted either to [Double.POSITIVE_INFINITY] or
[Double.NEGATIVE_INFINITY] depending on its sign.\n * \n public fun toDouble(unit: DurationUnit):
Double {\n    return when (rawValue) {\n        INFINITE.rawValue -> Double.POSITIVE_INFINITY\n
NEG_INFINITE.rawValue -> Double.NEGATIVE_INFINITY\n        else -> {\n

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// TODO: whether it's ok to convert to Double before scaling\n
convertDurationUnit(value.toDouble(), storageUnit, unit)\n    }\n    }\n    }\n    /**\n     * Returns the value
of this duration expressed as a [Long] number of the specified [unit].\n     *\n     * If the result doesn't fit in the range
of [Long] type, it is coerced into that range:\n     * - [Long.MIN_VALUE] is returned if it's less than
`Long.MIN_VALUE`,\n     * - [Long.MAX_VALUE] is returned if it's greater than `Long.MAX_VALUE`.\n     *\n     * An infinite duration value is converted either to [Long.MAX_VALUE] or [Long.MIN_VALUE] depending on
its sign.\n     */\n    public fun toLong(unit: DurationUnit): Long {\n        return when (rawValue) {\n
INFINITE.rawValue -> Long.MAX_VALUE\n        NEG_INFINITE.rawValue -> Long.MIN_VALUE\n
else -> convertDurationUnit(value, storageUnit, unit)\n        }\n    }\n    /**\n     * Returns the value of this
duration
expressed as an [Int] number of the specified [unit].\n     *\n     * If the result doesn't fit in the range of [Int] type, it
is coerced into that range:\n     * - [Int.MIN_VALUE] is returned if it's less than `Int.MIN_VALUE`,\n     * -
[Int.MAX_VALUE] is returned if it's greater than `Int.MAX_VALUE`.\n     *\n     * An infinite duration value is
converted either to [Int.MAX_VALUE] or [Int.MIN_VALUE] depending on its sign.\n     */\n    public fun
toInt(unit: DurationUnit): Int =\n        toLong(unit).coerceIn(Int.MIN_VALUE.toLong(),
Int.MAX_VALUE.toLong()).toInt()\n    /** The value of this duration expressed as a [Double] number of days.
*/\n    @ExperimentalTime\n    @Deprecated("Use inWholeDays property instead or convert toDouble(DAYS) if a
double value is required.", ReplaceWith("toDouble(DurationUnit.DAYS)"))\n
@DeprecatedSinceKotlin(warningSince = "1.5", errorSince = "1.8")\n    public val inDays: Double get() =
toDouble(DurationUnit.DAYS)\n    /** The value of
this duration expressed as a [Double] number of hours. */\n    @ExperimentalTime\n    @Deprecated("Use
inWholeHours property instead or convert toDouble(HOURS) if a double value is required.",
ReplaceWith("toDouble(DurationUnit.HOURS)"))\n    @DeprecatedSinceKotlin(warningSince = "1.5",
errorSince = "1.8")\n    public val inHours: Double get() = toDouble(DurationUnit.HOURS)\n    /** The value of
this duration expressed as a [Double] number of minutes. */\n    @ExperimentalTime\n    @Deprecated("Use
inWholeMinutes property instead or convert toDouble(MINUTES) if a double value is required.",
ReplaceWith("toDouble(DurationUnit.MINUTES)"))\n    @DeprecatedSinceKotlin(warningSince = "1.5",
errorSince = "1.8")\n    public val inMinutes: Double get() = toDouble(DurationUnit.MINUTES)\n    /** The
value of this duration expressed as a [Double] number of seconds. */\n    @ExperimentalTime\n
@Deprecated("Use inWholeSeconds property instead or convert toDouble(SECONDS) if
a double value is required.", ReplaceWith("toDouble(DurationUnit.SECONDS)"))\n
@DeprecatedSinceKotlin(warningSince = "1.5", errorSince = "1.8")\n    public val inSeconds: Double get() =
toDouble(DurationUnit.SECONDS)\n    /** The value of this duration expressed as a [Double] number of
milliseconds. */\n    @ExperimentalTime\n    @Deprecated("Use inWholeMilliseconds property instead or convert
toDouble(MILLISECONDS) if a double value is required.",
ReplaceWith("toDouble(DurationUnit.MILLISECONDS)"))\n    @DeprecatedSinceKotlin(warningSince = "1.5",
errorSince = "1.8")\n    public val inMilliseconds: Double get() = toDouble(DurationUnit.MILLISECONDS)\n
/** The value of this duration expressed as a [Double] number of microseconds. */\n    @ExperimentalTime\n
@Deprecated("Use inWholeMicroseconds property instead or convert toDouble(MICROSECONDS) if a double
value is required.", ReplaceWith("toDouble(DurationUnit.MICROSECONDS)"))\n
@DeprecatedSinceKotlin(warningSince
= "1.5", errorSince = "1.8")\n    public val inMicroseconds: Double get() =
toDouble(DurationUnit.MICROSECONDS)\n    /** The value of this duration expressed as a [Double] number of
nanoseconds. */\n    @ExperimentalTime\n    @Deprecated("Use inWholeNanoseconds property instead or convert
toDouble(NANOSECONDS) if a double value is required.",
ReplaceWith("toDouble(DurationUnit.NANOSECONDS)"))\n    @DeprecatedSinceKotlin(warningSince =
"1.5", errorSince = "1.8")\n    public val inNanoseconds: Double get() =
toDouble(DurationUnit.NANOSECONDS)\n    /**\n     * The value of this duration expressed as a [Long]

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number of days.\n * An infinite duration value is converted either to [Long.MAX_VALUE] or
[Long.MIN_VALUE] depending on its sign.\n */\n public val inWholeDays: Long\n    get() =
toLong(DurationUnit.DAYS)\n\n /**\n * The value of this duration expressed as a [Long] number of hours.\n
*\n * An infinite duration value
is converted either to [Long.MAX_VALUE] or [Long.MIN_VALUE] depending on its sign.\n */\n public val
inWholeHours: Long\n    get() = toLong(DurationUnit.HOURS)\n\n /**\n * The value of this duration
expressed as a [Long] number of minutes.\n * An infinite duration value is converted either to
[Long.MAX_VALUE] or [Long.MIN_VALUE] depending on its sign.\n */\n public val inWholeMinutes:
Long\n    get() = toLong(DurationUnit.MINUTES)\n\n /**\n * The value of this duration expressed as a
[Long] number of seconds.\n * An infinite duration value is converted either to [Long.MAX_VALUE] or
[Long.MIN_VALUE] depending on its sign.\n */\n public val inWholeSeconds: Long\n    get() =
toLong(DurationUnit.SECONDS)\n\n /**\n * The value of this duration expressed as a [Long] number of
milliseconds.\n * An infinite duration value is converted either to [Long.MAX_VALUE] or
[Long.MIN_VALUE] depending on its sign.\n
*/\n public val inWholeMilliseconds: Long\n    get() {\n        return if (isInMillis() && isFinite()) value
else toLong(DurationUnit.MILLISECONDS)\n    }\n\n /**\n * The value of this duration expressed as a
[Long] number of microseconds.\n * If the result doesn't fit in the range of [Long] type, it is coerced into
that range:\n * - [Long.MIN_VALUE] is returned if it's less than `Long.MIN_VALUE`,\n * -
[Long.MAX_VALUE] is returned if it's greater than `Long.MAX_VALUE`.\n * An infinite duration value
is converted either to [Long.MAX_VALUE] or [Long.MIN_VALUE] depending on its sign.\n */\n public val
inWholeMicroseconds: Long\n    get() = toLong(DurationUnit.MICROSECONDS)\n\n /**\n * The value of
this duration expressed as a [Long] number of nanoseconds.\n * If the result doesn't fit in the range of
[Long] type, it is coerced into that range:\n * - [Long.MIN_VALUE] is returned if it's less than
`Long.MIN_VALUE`,\n * - [Long.MAX_VALUE] is returned if it's greater than `Long.MAX_VALUE`.\n
*/\n * An infinite duration value is converted either to [Long.MAX_VALUE] or [Long.MIN_VALUE] depending on
its sign.\n */\n public val inWholeNanoseconds: Long\n    get() {\n        val value = value\n        return
when {\n            isInNanos() -> value\n            value > Long.MAX_VALUE / NANOS_IN_MILLIS ->
Long.MAX_VALUE\n            value < Long.MIN_VALUE / NANOS_IN_MILLIS -> Long.MIN_VALUE\n            else -> millisToNanos(value)\n        }\n    }\n\n // shortcuts\n\n /**\n * Returns the value of this
duration expressed as a [Long] number of nanoseconds.\n * If the value doesn't fit in the range of [Long]
type, it is coerced into that range, see the conversion [Double.toLong] for details.\n * The range of
durations that can be expressed as a `Long` number of nanoseconds is approximately \u00b1292
years.\n */\n @ExperimentalTime\n @Deprecated("Use inWholeNanoseconds property instead.")\n
ReplaceWith("this.inWholeNanoseconds")\n @DeprecatedSinceKotlin(warningSince = "1.5", errorSince =
"1.8")\n public fun toLongNanoseconds(): Long = inWholeNanoseconds\n\n /**\n * Returns the value of
this duration expressed as a [Long] number of milliseconds.\n * The value is coerced to the range of [Long]
type, if it doesn't fit in that range, see the conversion [Double.toLong] for details.\n * The range of
durations that can be expressed as a `Long` number of milliseconds is approximately \u00b1292 million years.\n
*/\n @ExperimentalTime\n @Deprecated("Use inWholeMilliseconds property instead.")\n
ReplaceWith("this.inWholeMilliseconds")\n @DeprecatedSinceKotlin(warningSince = "1.5", errorSince =
"1.8")\n public fun toLongMilliseconds(): Long = inWholeMilliseconds\n\n /**\n * Returns a string
representation of this
duration value\n * expressed as a combination of numeric components, each in its own unit.\n * Each
component is a number followed by the unit abbreviated name: `d`, `h`, `m`, `s`, `5h`, `1d 12h`, `1h 0m
30.340s`.\n * The last component, usually seconds, can be a number with a fractional part.\n * If the
duration is less than a second, it is represented as a single number\n * with one of sub-second units: `ms`
(milliseconds), `us` (microseconds), or `ns` (nanoseconds):\n * `140.884ms`, `500us`, `24ns`.\n * A
negative duration is prefixed with `-` sign and, if it consists of multiple components, surrounded with parentheses:\n

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* `~12m` and `~(1h 30m)`.\n * \n * Special cases:\n * - an infinite duration is formatted as `~Infinity` or
`~-Infinity` without a unit.\n * \n * It's recommended to use [toIsoString] that uses more strict ISO-8601
format instead of this `toString`\n * when you want to
convert a duration to a string in cases of serialization, interchange, etc.\n * \n * @sample
samples.time.Durations.toStringDefault\n * \n override fun toString(): String = when (rawValue) {\n OL ->
`0s`\n INFINITE.rawValue -> `Infinity`\n NEG_INFINITE.rawValue -> `~Infinity`\n else -> {\n
val isNegative = isNegative()\n buildString {\n if (isNegative) append('-')\n
absoluteValue.toComponents { days, hours, minutes, seconds, nanoseconds ->\n val hasDays = days !=
OL\n val hasHours = hours != 0\n val hasMinutes = minutes != 0\n val
hasSeconds = seconds != 0 || nanoseconds != 0\n var components = 0\n if (hasDays) {\n
append(days).append('d')\n components++\n }\n if (hasHours ||
(hasDays && (hasMinutes
|| hasSeconds))) {\n if (components++ > 0) append(' ') \n append(hours).append('h')\n
}\n if (hasMinutes || (hasSeconds && (hasHours || hasDays))) {\n if
(components++ > 0) append(' ') \n append(minutes).append('m')\n }\n if
(hasSeconds) {\n if (components++ > 0) append(' ') \n when {\n
seconds != 0 || hasDays || hasHours || hasMinutes ->\n appendFractional(seconds, nanoseconds, 9,
`s`, isoZeroes = false)\n nanoseconds >= 1_000_000 ->\n
appendFractional(nanoseconds / 1_000_000, nanoseconds % 1_000_000, 6, `ms`, isoZeroes = false)\n
nanoseconds >= 1_000 ->\n appendFractional(nanoseconds / 1_000, nanoseconds
% 1_000, 3, `us`, isoZeroes = false)\n else ->\n
append(nanoseconds).append(`ns`)\n }\n }\n if (isNegative && components
> 1) insert(1, (').append('))\n }\n }\n }\n }\n private fun
StringBuilder.appendFractional(whole: Int, fractional: Int, fractionalSize: Int, unit: String, isoZeroes: Boolean) {\n
append(whole)\n if (fractional != 0) {\n append('.')\n val fracString =
fractional.toString().padStart(fractionalSize, '0')\n val nonZeroDigits = fracString.indexOfLast { it != '0' } +
1\n when {\n !isoZeroes && nonZeroDigits < 3 -> appendRange(fracString, 0, nonZeroDigits)\n
else -> appendRange(fracString, 0, ((nonZeroDigits + 2) / 3) * 3)\n }\n }\n append(unit)\n
}\n\n /**\n * Returns a string representation
of this duration value expressed in the given [unit]\n * and formatted with the specified [decimals] number of
digits after decimal point.\n * \n * Special cases:\n * - an infinite duration is formatted as `~Infinity` or `~-
Infinity` without a unit.\n * \n * @param decimals the number of digits after decimal point to show. The value
must be non-negative.\n * \n * No more than 12 decimals will be shown, even if a larger number is requested.\n * \n
* @return the value of duration in the specified [unit] followed by that unit abbreviated name: `d`, `h`, `m`, `s`,
`ms`, `us`, or `ns`.\n * \n * @throws IllegalArgumentException if [decimals] is less than zero.\n * \n *
@sample samples.time.Durations.toStringDecimals\n * \n public fun toString(unit: DurationUnit, decimals: Int
= 0): String {\n require(decimals >= 0) { `decimals must be not negative, but was $decimals` }\n val
number = toDouble(unit)\n
if (number.isInfinite()) return number.toString()\n return formatToExactDecimals(number,
decimals.coerceAtMost(12)) + unit.shortName()\n }\n\n /**\n * Returns an ISO-8601 based string
representation of this duration.\n * \n * The returned value is presented in the format `PThHmMs.fS`, where `h`,
`m`, `s` are the integer components of this duration (see [toComponents])\n * and `f` is a fractional part of second.
Depending on the roundness of the value the fractional part can be formatted with either\n * 0, 3, 6, or 9 decimal
digits.\n * \n * The infinite duration is represented as `~PT999999999999H` which is larger than any
possible finite duration in Kotlin.\n * \n * Negative durations are indicated with the sign `~` in the beginning of
the returned string, for example, `~-PT5M30S`.\n * \n * @sample samples.time.Durations.toIsoString\n
* \n public fun toIsoString(): String = buildString {\n if (isNegative()) append('-')\n

```

```

        append("PT")\n        this@Duration.absoluteValue.toComponents { hours, minutes, seconds, nanoseconds -
>\n        @Suppress("NAME_SHADOWING")\n        var hours = hours\n        if (isInfinite()) {\n
// use large enough value instead of Long.MAX_VALUE\n        hours = 9_999_999_999_999\n        }\n
        val hasHours = hours != 0L\n        val hasSeconds = seconds != 0 || nanoseconds != 0\n        val hasMinutes =
minutes != 0 || (hasSeconds && hasHours)\n        if (hasHours) {\n        append(hours).append('H')\n
}\n        if (hasMinutes) {\n        append(minutes).append('M')\n        }\n        if (hasSeconds ||
(!hasHours && !hasMinutes)) {\n        appendFractional(seconds, nanoseconds, 9, "S", isoZeroes = true)\n
}\n        }\n        }\n\n// constructing from number of units\n// extension functions\n\n/** Returns a [Duration]
equal to this

```

[Int] number of the specified [unit].

```

*\n@SinceKotlin("1.6")\n@WasExperimental(ExperimentalTime::class)\npublic fun Int.toDuration(unit:
DurationUnit): Duration {\n    return if (unit <= DurationUnit.SECONDS) {\n
durationOfNanos(convertDurationUnitOverflow(this.toLong(), unit, DurationUnit.NANOSECONDS))\n    } else\n
toLong().toDuration(unit)\n}\n\n/** Returns a [Duration] equal to this [Long] number of the specified [unit].

```

```

*\n@SinceKotlin("1.6")\n@WasExperimental(ExperimentalTime::class)\npublic fun Long.toDuration(unit:
DurationUnit): Duration {\n    val maxNsInUnit = convertDurationUnitOverflow(MAX_NANOS,
DurationUnit.NANOSECONDS, unit)\n    if (this in -maxNsInUnit..maxNsInUnit) {\n        return
durationOfNanos(convertDurationUnitOverflow(this, unit, DurationUnit.NANOSECONDS))\n    } else {\n        val
millis = convertDurationUnit(this, unit, DurationUnit.MILLISECONDS)\n        return
durationOfMillis(millis.coerceIn(-MAX_MILLIS, MAX_MILLIS))\n    }\n}\n\n/**\n

```

\* Returns a [Duration] equal to this [Double] number of the specified [unit].\n \* Depending on its magnitude, the value is rounded to an integer number of nanoseconds or milliseconds.\n \* @throws

IllegalArgumentException if this `Double` value is `NaN`.\n

```

*\n@SinceKotlin("1.6")\n@WasExperimental(ExperimentalTime::class)\npublic fun Double.toDuration(unit:
DurationUnit): Duration {\n    val valueInNs = convertDurationUnit(this, unit, DurationUnit.NANOSECONDS)\n
require(!valueInNs.isNaN()) { "Duration value cannot be NaN." }\n    val nanos = valueInNs.roundToLong()\n
return if (nanos in -MAX_NANOS..MAX_NANOS) {\n        durationOfNanos(nanos)\n    } else {\n        val millis =
convertDurationUnit(this, unit, DurationUnit.MILLISECONDS).roundToLong()\n
durationOfMillisNormalized(millis)\n    }\n}\n\n// constructing from number of units\n// deprecated extension
properties\n\n/** Returns a [Duration] equal to this [Int] number of nanoseconds.

```

```

*\n@SinceKotlin("1.3")\n@ExperimentalTime\n@Deprecated("Use
'Int.nanoseconds' extension property from Duration.Companion instead.", ReplaceWith("this.nanoseconds",
"kotlin.time.Duration.Companion.nanoseconds"))\n@DeprecatedSinceKotlin(warningSince = "1.5", errorSince =
"1.8")\npublic val Int.nanoseconds get() = toDuration(DurationUnit.NANOSECONDS)\n\n/** Returns a
[Duration] equal to this [Long] number of nanoseconds.

```

```

*\n@SinceKotlin("1.3")\n@ExperimentalTime\n@Deprecated("Use 'Long.nanoseconds' extension property from
Duration.Companion instead.", ReplaceWith("this.nanoseconds",
"kotlin.time.Duration.Companion.nanoseconds"))\n@DeprecatedSinceKotlin(warningSince = "1.5", errorSince =
"1.8")\npublic val Long.nanoseconds get() = toDuration(DurationUnit.NANOSECONDS)\n\n/**\n * Returns a
[Duration] equal to this [Double] number of nanoseconds.\n * @throws IllegalArgumentException if this
[Double] value is `NaN`.\n *\n@SinceKotlin("1.3")\n@ExperimentalTime\n@Deprecated("Use

```

```

'Double.nanoseconds' extension property from Duration.Companion instead.", ReplaceWith("this.nanoseconds",
"kotlin.time.Duration.Companion.nanoseconds"))\n@DeprecatedSinceKotlin(warningSince = "1.5", errorSince =
"1.8")\npublic val Double.nanoseconds get() = toDuration(DurationUnit.NANOSECONDS)\n\n/** Returns a
[Duration] equal to this [Int] number of microseconds.

```

```

*\n@SinceKotlin("1.3")\n@ExperimentalTime\n@Deprecated("Use 'Int.microseconds' extension property from
Duration.Companion instead.", ReplaceWith("this.microseconds",
"kotlin.time.Duration.Companion.microseconds"))\n@DeprecatedSinceKotlin(warningSince = "1.5", errorSince

```

```

= \"1.8\")\npublic val Int.microseconds get() = toDuration(DurationUnit.MICROSECONDS)\n\n/** Returns a
[Duration] equal to this [Long] number of microseconds.
*\n@SinceKotlin(\"1.3\")\n@ExperimentalTime\n@Deprecated(\"Use 'Long.microseconds' extension property
from Duration.Companion instead.\", ReplaceWith(\"this.microseconds\",
\"kotlin.time.Duration.Companion.microseconds\"))\n@DeprecatedSinceKotlin(warningSince
= \"1.5\", errorSince = \"1.8\")\npublic val Long.microseconds get() =
toDuration(DurationUnit.MICROSECONDS)\n\n/** Returns a [Duration] equal to this [Double] number of
microseconds.\n *\n * @throws IllegalArgumentException if this [Double] value is `NaN`.\n
*\n@SinceKotlin(\"1.3\")\n@ExperimentalTime\n@Deprecated(\"Use 'Double.microseconds' extension property
from Duration.Companion instead.\", ReplaceWith(\"this.microseconds\",
\"kotlin.time.Duration.Companion.microseconds\"))\n@DeprecatedSinceKotlin(warningSince = \"1.5\", errorSince
= \"1.8\")\npublic val Double.microseconds get() = toDuration(DurationUnit.MICROSECONDS)\n\n/** Returns a
[Duration] equal to this [Int] number of milliseconds.
*\n@SinceKotlin(\"1.3\")\n@ExperimentalTime\n@Deprecated(\"Use 'Int.milliseconds' extension property from
Duration.Companion instead.\", ReplaceWith(\"this.milliseconds\",
\"kotlin.time.Duration.Companion.milliseconds\"))\n@DeprecatedSinceKotlin(warningSince
= \"1.5\", errorSince = \"1.8\")\npublic val Int.milliseconds get() =
toDuration(DurationUnit.MILLISECONDS)\n\n/** Returns a [Duration] equal to this [Long] number of
milliseconds. *\n@SinceKotlin(\"1.3\")\n@ExperimentalTime\n@Deprecated(\"Use 'Long.milliseconds' extension
property from Duration.Companion instead.\", ReplaceWith(\"this.milliseconds\",
\"kotlin.time.Duration.Companion.milliseconds\"))\n@DeprecatedSinceKotlin(warningSince = \"1.5\", errorSince =
\"1.8\")\npublic val Long.milliseconds get() = toDuration(DurationUnit.MILLISECONDS)\n\n/** Returns a
[Duration] equal to this [Double] number of milliseconds.\n *\n * @throws IllegalArgumentException if this
[Double] value is `NaN`.\n *\n@SinceKotlin(\"1.3\")\n@ExperimentalTime\n@Deprecated(\"Use
'Double.milliseconds' extension property from Duration.Companion instead.\", ReplaceWith(\"this.milliseconds\",
\"kotlin.time.Duration.Companion.milliseconds\"))\n@DeprecatedSinceKotlin(warningSince
= \"1.5\", errorSince = \"1.8\")\npublic val Double.milliseconds get() =
toDuration(DurationUnit.MILLISECONDS)\n\n/** Returns a [Duration] equal to this [Int] number of seconds.
*\n@SinceKotlin(\"1.3\")\n@ExperimentalTime\n@Deprecated(\"Use 'Int.seconds' extension property from
Duration.Companion instead.\", ReplaceWith(\"this.seconds\",
\"kotlin.time.Duration.Companion.seconds\"))\n@DeprecatedSinceKotlin(warningSince = \"1.5\", errorSince =
\"1.8\")\npublic val Int.seconds get() = toDuration(DurationUnit.SECONDS)\n\n/** Returns a [Duration] equal to
this [Long] number of seconds. *\n@SinceKotlin(\"1.3\")\n@ExperimentalTime\n@Deprecated(\"Use
'Long.seconds' extension property from Duration.Companion instead.\", ReplaceWith(\"this.seconds\",
\"kotlin.time.Duration.Companion.seconds\"))\n@DeprecatedSinceKotlin(warningSince = \"1.5\", errorSince =
\"1.8\")\npublic val Long.seconds get() = toDuration(DurationUnit.SECONDS)\n\n/** Returns a [Duration]
equal to this
[Double] number of seconds.\n *\n * @throws IllegalArgumentException if this [Double] value is `NaN`.\n
*\n@SinceKotlin(\"1.3\")\n@ExperimentalTime\n@Deprecated(\"Use 'Double.seconds' extension property from
Duration.Companion instead.\", ReplaceWith(\"this.seconds\",
\"kotlin.time.Duration.Companion.seconds\"))\n@DeprecatedSinceKotlin(warningSince = \"1.5\", errorSince =
\"1.8\")\npublic val Double.seconds get() = toDuration(DurationUnit.SECONDS)\n\n/** Returns a [Duration]
equal to this [Int] number of minutes. *\n@SinceKotlin(\"1.3\")\n@ExperimentalTime\n@Deprecated(\"Use
'Int.minutes' extension property from Duration.Companion instead.\", ReplaceWith(\"this.minutes\",
\"kotlin.time.Duration.Companion.minutes\"))\n@DeprecatedSinceKotlin(warningSince = \"1.5\", errorSince =
\"1.8\")\npublic val Int.minutes get() = toDuration(DurationUnit.MINUTES)\n\n/** Returns a [Duration] equal to
this [Long] number of minutes. *\n@SinceKotlin(\"1.3\")\n@ExperimentalTime\n@Deprecated(\"Use

```

```

'Long.minutes' extension property from Duration.Companion instead.", ReplaceWith("this.minutes",
"\"kotlin.time.Duration.Companion.minutes\")\n@DeprecatedSinceKotlin(warningSince = \"1.5\", errorSince =
\"1.8\")\npublic val Long.minutes get() = toDuration(DurationUnit.MINUTES)\n\n/** Returns a [Duration]
equal to this [Double] number of minutes.\n * \n * @throws IllegalArgumentException if this [Double] value is
`NaN`.\n * \n * \n@SinceKotlin(\"1.3\")\n@ExperimentalTime\n@Deprecated("Use 'Double.minutes' extension
property from Duration.Companion instead.", ReplaceWith("this.minutes",
"\"kotlin.time.Duration.Companion.minutes\")\n@DeprecatedSinceKotlin(warningSince = \"1.5\", errorSince =
\"1.8\")\npublic val Double.minutes get() = toDuration(DurationUnit.MINUTES)\n\n/** Returns a [Duration]
equal to this [Int] number of hours. * \n@SinceKotlin(\"1.3\")\n@ExperimentalTime\n@Deprecated("Use
'Int.hours' extension property from Duration.Companion instead.", ReplaceWith("this.hours",
"\"kotlin.time.Duration.Companion.hours\")\n@DeprecatedSinceKotlin(warningSince = \"1.5\", errorSince =
\"1.8\")\npublic val Int.hours get() = toDuration(DurationUnit.HOURS)\n\n/** Returns a [Duration] equal to this
[Long] number of hours. * \n@SinceKotlin(\"1.3\")\n@ExperimentalTime\n@Deprecated("Use 'Long.hours'
extension property from Duration.Companion instead.", ReplaceWith("this.hours",
"\"kotlin.time.Duration.Companion.hours\")\n@DeprecatedSinceKotlin(warningSince = \"1.5\", errorSince =
\"1.8\")\npublic val Long.hours get() = toDuration(DurationUnit.HOURS)\n\n/** \n * Returns a [Duration] equal to
this [Double] number of hours.\n * \n * @throws IllegalArgumentException if this [Double] value is `NaN`.\n
* \n * \n@SinceKotlin(\"1.3\")\n@ExperimentalTime\n@Deprecated("Use 'Double.hours' extension property from
Duration.Companion instead.", ReplaceWith("this.hours",
"\"kotlin.time.Duration.Companion.hours\")\n@DeprecatedSinceKotlin(warningSince = \"1.5\", errorSince =
\"1.8\")\npublic
val Double.hours get() = toDuration(DurationUnit.HOURS)\n\n/** Returns a [Duration] equal to this [Int]
number of days. * \n@SinceKotlin(\"1.3\")\n@ExperimentalTime\n@Deprecated("Use 'Int.days' extension
property from Duration.Companion instead.", ReplaceWith("this.days",
"\"kotlin.time.Duration.Companion.days\")\n@DeprecatedSinceKotlin(warningSince = \"1.5\", errorSince =
\"1.8\")\npublic val Int.days get() = toDuration(DurationUnit.DAYS)\n\n/** Returns a [Duration] equal to this
[Long] number of days. * \n@SinceKotlin(\"1.3\")\n@ExperimentalTime\n@Deprecated("Use 'Long.days'
extension property from Duration.Companion instead.", ReplaceWith("this.days",
"\"kotlin.time.Duration.Companion.days\")\n@DeprecatedSinceKotlin(warningSince = \"1.5\", errorSince =
\"1.8\")\npublic val Long.days get() = toDuration(DurationUnit.DAYS)\n\n/** \n * Returns a [Duration] equal to this
[Double] number of days.\n * \n * @throws IllegalArgumentException if this [Double] value is `NaN`.\n
* \n * \n@SinceKotlin(\"1.3\")\n@ExperimentalTime\n@Deprecated("Use 'Double.days' extension property from
Duration.Companion instead.", ReplaceWith("this.days",
"\"kotlin.time.Duration.Companion.days\")\n@DeprecatedSinceKotlin(warningSince = \"1.5\", errorSince =
\"1.8\")\npublic val Double.days get() = toDuration(DurationUnit.DAYS)\n\n/** Returns a duration whose value
is the specified [duration] value multiplied by this number.
* \n@SinceKotlin(\"1.6\")\n@WasExperimental(ExperimentalTime::class)\n@kotlin.internal.InlineOnly\npublic
inline operator fun Int.times(duration: Duration): Duration = duration * this\n\n/** Returns a duration whose
value is the specified [duration] value multiplied by this number.\n * \n * The operation may involve rounding when
the result cannot be represented exactly with a [Double] number.\n * \n * @throws IllegalArgumentException if the
operation results in a `NaN` value.\n
* \n * \n@SinceKotlin(\"1.6\")\n@WasExperimental(ExperimentalTime::class)\n@kotlin.internal.InlineOnly\npublic
inline operator fun Double.times(duration: Duration): Duration = duration * this\n\n\nprivate fun
parseDuration(value: String, strictIso: Boolean): Duration {\n    var length = value.length\n    if (length == 0) throw
IllegalArgumentException("The string is empty")\n    var index = 0\n    var result = Duration.ZERO\n    val
infinityString = "Infinity"\n    when (value[index]) {\n        '+', '-' -> index++\n    }\n    val hasSign = index > 0\n
val isNegative = hasSign && value.startsWith('-')\n    when {\n        length <= index ->\n            throw
IllegalArgumentException("No components")\n        value[index] == 'P' -> {\n            if (++index == length) throw

```

```

IllegalArgumentException()\n        val nonDigitSymbols = \"+-.\n        var isTimeComponent = false\n        var prevUnit: DurationUnit? = null\n        while (index < length) {\n            if (value[index] == 'T') {\n                if (isTimeComponent\n                    || ++index == length) throw IllegalArgumentException()\n                isTimeComponent = true\n            }\n            continue\n        }\n        val component = value.substringWhile(index) { it in '0'..'9' || it in nonDigitSymbols }\n        if (component.isEmpty()) throw IllegalArgumentException()\n        index += component.length\n        val unitChar = value.getOrElse(index) { throw IllegalArgumentException(\"Missing unit for value\n            $component\") }\n        index++\n        val unit = durationUnitByIsoChar(unitChar, isTimeComponent)\n        if (prevUnit != null && prevUnit <= unit) throw IllegalArgumentException(\"Unexpected order of duration\n            components\")\n        prevUnit = unit\n        val dotIndex = component.indexOf('.')\n        if (unit ==\n            DurationUnit.SECONDS && dotIndex > 0) {\n            val whole = component.substring(0, dotIndex)\n            result += parseOverLongIsoComponent(whole).toDuration(unit)\n            result += component.substring(dotIndex).toDouble().toDuration(unit)\n        } else {\n            result += parseOverLongIsoComponent(component).toDuration(unit)\n        }\n        }\n        }\n        strictIso\n        -> throw IllegalArgumentException()\n        value.regionMatches(index, infinityString, 0, length =\n            maxOf(length - index, infinityString.length), ignoreCase = true) -> {\n            result = Duration.INFINITE\n        }\n        else -> {\n            // parse default string format\n            var prevUnit: DurationUnit? = null\n            var\n            afterFirst = false\n            var allowSpaces = !hasSign\n            if (hasSign && value[index] == '(' && value.last()\n                == ')') {\n                allowSpaces = true\n                if (++index == --length) throw IllegalArgumentException(\"No\n                    components\")\n            }\n            while (index < length) {\n                if\n                (afterFirst && allowSpaces) {\n                    index = value.skipWhile(index) { it == ' ' }\n                }\n                afterFirst = true\n                val component = value.substringWhile(index) { it in '0'..'9' || it == ' ' }\n                if\n                (component.isEmpty()) throw IllegalArgumentException()\n                index += component.length\n                val\n                unitName = value.substringWhile(index) { it in 'a'..'z' }\n                index += unitName.length\n                val unit =\n                durationUnitByShortName(unitName)\n                if (prevUnit != null && prevUnit <= unit) throw\n                IllegalArgumentException(\"Unexpected order of duration components\")\n                prevUnit = unit\n                val\n                dotIndex = component.indexOf('.')\n                if (dotIndex > 0) {\n                    val whole = component.substring(0,\n                    dotIndex)\n                    result += whole.toLong().toDuration(unit)\n                    result +=\n                    component.substring(dotIndex).toDouble().toDuration(unit)\n                }\n                if (index < length) throw IllegalArgumentException(\"Fractional component must be last\")\n            }\n        } else {\n            result += component.toLong().toDuration(unit)\n        }\n        }\n        }\n        }\n        return if (isNegative) -result else result\n    }\n    private fun parseOverLongIsoComponent(value: String): Long {\n        val length = value.length\n        var startIndex = 0\n        if (length > 0 && value[0] in \"+-\") startIndex++\n        if ((length\n            - startIndex) > 16 && (startIndex..value.lastIndex).all { value[it] in '0'..'9' }) {\n            // all chars are digits, but more\n            than ceiling(log10(MAX_MILLIS / 1000)) of them\n            return if (value[0] == '-') Long.MIN_VALUE else\n            Long.MAX_VALUE\n        }\n        // TODO: replace with just toLong after min JDK becomes 8\n        return if\n        (value.startsWith(\"+-\")) value.drop(1).toLong() else value.toLong()\n    }\n    private inline fun\n    String.substringWhile(startIndex: Int, predicate:\n        (Char) -> Boolean): String =\n        substring(startIndex, skipWhile(startIndex, predicate))\n    private inline fun\n    String.skipWhile(startIndex: Int, predicate: (Char) -> Boolean): Int {\n        var i = startIndex\n        while (i < length &&\n            predicate(this[i])) i++\n        return i\n    }\n    // The ranges are chosen so that they are:\n    // - symmetric relative to\n    zero: this greatly simplifies operations with sign, e.g. unaryMinus and minus.\n    // - non-overlapping, but adjacent:\n    the first value that doesn't fit in nanos range, can be exactly represented in millis.\n    internal const val\n    NANOS_IN_MILLIS = 1_000_000\n    // maximum number duration can store in nanosecond range\n    internal const\n    val MAX_NANOS = Long.MAX_VALUE / 2 / NANOS_IN_MILLIS * NANOS_IN_MILLIS - 1 // ends in\n    ..._999_999\n    // maximum number duration can store in millisecond range, also encodes an infinite value\n    internal\n    const val MAX_MILLIS = Long.MAX_VALUE / 2\n    // MAX_NANOS expressed in milliseconds\n    private const val\n    MAX_NANOS_IN_MILLIS

```

```

= MAX_NANOS / NANOS_IN_MILLIS\n\nprivate fun nanosToMillis(nanos: Long): Long = nanos /
NANOS_IN_MILLIS\n\nprivate fun millisToNanos(millis: Long): Long = millis * NANOS_IN_MILLIS\n\nprivate
fun durationOfNanos(normalNanos: Long) = Duration(normalNanos shl 1)\n\nprivate fun
durationOfMillis(normalMillis: Long) = Duration((normalMillis shl 1) + 1)\n\nprivate fun durationOf(normalValue:
Long, unitDiscriminator: Int) = Duration((normalValue shl 1) + unitDiscriminator)\n\nprivate fun
durationOfNanosNormalized(nanos: Long) =\n    if (nanos in -MAX_NANOS..MAX_NANOS) {\n
durationOfNanos(nanos)\n    } else {\n        durationOfMillis(nanosToMillis(nanos))\n    }\n\nprivate fun
durationOfMillisNormalized(millis: Long) =\n    if (millis in -
MAX_NANOS_IN_MILLIS..MAX_NANOS_IN_MILLIS) {\n        durationOfNanos(millisToNanos(millis))\n    }
else {\n        durationOfMillis(millis.coerceIn(-MAX_MILLIS, MAX_MILLIS))\n    }\n\ninternal expect val
durationAssertionsEnabled: Boolean\n\ninternal expect
fun formatToExactDecimals(value: Double, decimals: Int): String\n\ninternal expect fun formatUpToDecimals(value:
Double, decimals: Int): String\n", "/*\n * Copyright 2010-2021 JetBrains s.r.o. and Kotlin Programming Language
contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n */\n\n@file:kotlin.jvm.JvmName("UnsignedKt")\n\npackage
kotlin\n\n@PublishedApi\n\ninternal fun uintCompare(v1: Int, v2: Int): Int = (v1 xor
Int.MIN_VALUE).compareTo(v2 xor Int.MIN_VALUE)\n\n@PublishedApi\n\ninternal fun ulongCompare(v1: Long,
v2: Long): Int = (v1 xor Long.MIN_VALUE).compareTo(v2 xor Long.MIN_VALUE)\n\n@PublishedApi\n\ninternal
fun uintDivide(v1: UInt, v2: UInt): UInt = (v1.toLong() / v2.toLong()).toUInt()\n\n@PublishedApi\n\ninternal fun
uintRemainder(v1: UInt, v2: UInt): UInt = (v1.toLong() % v2.toLong()).toUInt()\n\n// Division and remainder are
based on Guava's UnsignedLongs implementation\n\n// Copyright 2011 The Guava
Authors\n\n@PublishedApi\n\ninternal
fun ulongDivide(v1: ULong, v2: ULong): ULong {\n    val dividend = v1.toLong()\n    val divisor = v2.toLong()\n
if (divisor < 0) { // i.e., divisor >= 2^63:\n        return if (v1 < v2) ULong(0) else ULong(1)\n    }\n\n    //
Optimization - use signed division if both dividend and divisor < 2^63\n    if (dividend >= 0) {\n        return
ULong(dividend / divisor)\n    }\n\n    // Otherwise, approximate the quotient, check, and correct if necessary.\n
val quotient = ((dividend ushr 1) / divisor) shl 1\n    val rem = dividend - quotient * divisor\n    return
ULong(quotient + if (ULong(rem) >= ULong(divisor)) 1 else 0)\n\n}\n\n@PublishedApi\n\ninternal fun
ulongRemainder(v1: ULong, v2: ULong): ULong {\n    val dividend = v1.toLong()\n    val divisor = v2.toLong()\n
if (divisor < 0) { // i.e., divisor >= 2^63:\n        return if (v1 < v2) {\n            v1 // dividend < divisor\n        } else {\n
v1 - v2 // dividend >= divisor\n        }\n    }\n\n    // Optimization - use signed modulus if both dividend and divisor < 2^63\n    if (dividend >= 0) {\n        return
ULong(dividend % divisor)\n    }\n\n    // Otherwise, approximate the quotient, check, and correct if necessary.\n
val quotient = ((dividend ushr 1) / divisor) shl 1\n    val rem = dividend - quotient * divisor\n    return ULong(rem -
if (ULong(rem) >= ULong(divisor)) divisor else 0)\n\n}\n\n@PublishedApi\n\ninternal fun doubleToUInt(v: Double):
UInt = when {\n    v.isNaN() -> 0u\n    v <= UInt.MIN_VALUE.toDouble() -> UInt.MIN_VALUE\n    v >=
UInt.MAX_VALUE.toDouble() -> UInt.MAX_VALUE\n    v <= Int.MAX_VALUE -> v.toInt().toUInt()\n    else -
> (v - Int.MAX_VALUE).toInt().toUInt() + Int.MAX_VALUE.toUInt() // Int.MAX_VALUE < v <
UInt.MAX_VALUE\n}\n\n@PublishedApi\n\ninternal fun doubleToULong(v: Double): ULong = when {\n
v.isNaN() -> 0u\n    v <= ULong.MIN_VALUE.toDouble() -> ULong.MIN_VALUE\n    v >=
ULong.MAX_VALUE.toDouble() -> ULong.MAX_VALUE\n    v < Long.MAX_VALUE
-> v.toLong().toULong()\n\n    // Real values from Long.MAX_VALUE to (Long.MAX_VALUE + 1) are not
representable in Double, so don't handle them.\n    else -> (v - 9223372036854775808.0).toLong().toULong() +
9223372036854775808uL // Long.MAX_VALUE + 1 < v <
ULong.MAX_VALUE\n}\n\n\n\n@PublishedApi\n\ninternal fun uintToDouble(v: Int): Double = (v and
Int.MAX_VALUE).toDouble() + (v ushr 31 shl 30).toDouble() * 2\n\n@PublishedApi\n\ninternal fun
ulongToDouble(v: Long): Double = (v ushr 11).toDouble() * 2048 + (v and 2047)\n\n\n\ninternal fun
ulongToString(v: Long): String = ulongToString(v, 10)\n\n\n\ninternal fun ulongToString(v: Long, base: Int): String {\n

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    if (v >= 0) return v.toString(base)\n\n    var quotient = ((v ushr 1) / base) shl 1\n    var rem = v - quotient * base\n    if (rem >= base) {\n        rem -= base\n        quotient += 1\n    }\n    return quotient.toString(base) +
rem.toString(base)\n}\n\n", "/*\n * Copyright 2010-2016 JetBrains s.r.o.\n * \n * Licensed under the
Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n */\n\npackage kotlin.internal\n\n/**\n * Specifies that the corresponding type parameter is not used for
unsafe operations such as casts or 'is' checks\n * That means it's completely safe to use generic types as argument for
such parameter.\n */\n\n@Target(AnnotationTarget.TYPE_PARAMETER)\n@Retention(AnnotationRetention.BINARY)\ninternal
annotation class PureReifiable\n\n/**\n * Specifies that the corresponding built-in method exists depending on
platform.\n */\n\n * Current implementation for JVM looks whether method with same JVM descriptor exists in the module JDK.\n *
For example MutableMap.remove(K, V) available only if corresponding\n * method
'java/util/Map.remove(Ljava/lang/Object;Ljava/lang/Object;)Z' is defined in JDK (i.e. for major versions >= 8)\n
*\n\n@Target(AnnotationTarget.FUNCTION)\n@Retention(AnnotationRetention.BINARY)\ninternal annotation
class PlatformDependent\n\n/**\n * When applied to a function or property, enables a compiler optimization that
evaluates that function or property\n * at compile-time and replaces calls to it with the computed result.\n */\n\n@Target(AnnotationTarget.CONSTRUCTOR, AnnotationTarget.FUNCTION,
AnnotationTarget.PROPERTY)\n@Retention(AnnotationRetention.BINARY)\n@SinceKotlin("1.7")\ninternal
annotation class IntrinsicConstEvaluation\n", "/*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming
Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that
can be found in the license/LICENSE.txt file.\n */\n\n@file:kotlin.jvm.JvmMultifileClass\n@file:kotlin.jvm.JvmName("CollectionsKt")\n\npackage
kotlin.collections\n\n/**\n * Given an [iterator] function constructs an [Iterable] instance that returns values through
the [Iterator]\n * provided by that function.\n * @sample samples.collections.Iterables.Building.iterable\n */\n\n@kotlin.internal.InlineOnly\npublic inline fun <T> Iterable(crossinline iterator: () -> Iterator<T>): Iterable<T>
= object : Iterable<T> {\n    override fun iterator(): Iterator<T> = iterator()\n}\n\n/**\n * A wrapper over another
[Iterable] (or any other object that can produce an [Iterator]) that returns\n * an indexing iterator.\n */\n\ninternal class
IndexingIterable<out T>(private val iteratorFactory: () -> Iterator<T>) : Iterable<IndexedValue<T>> {\n    override
fun iterator(): Iterator<IndexedValue<T>> = IndexingIterator(iteratorFactory())\n}\n\n/**\n * Returns the size of
this iterable if it is known, or
`null` otherwise.\n */\n\n@PublishedApi\ninternal fun <T> Iterable<T>.collectionSizeOrNull(): Int? = if (this is
Collection<*>) this.size else null\n\n/**\n * Returns the size of this iterable if it is known, or the specified [default]
value otherwise.\n */\n\n@PublishedApi\ninternal fun <T> Iterable<T>.collectionSizeOrDefault(default: Int): Int = if
(this is Collection<*>) this.size else default\n\n/**\n * Returns a single list of all elements from all collections in
the given collection.\n * @sample samples.collections.Iterables.Operations.flattenIterable\n */\n\npublic fun <T>
Iterable<Iterable<T>>.flatten(): List<T> {\n    val result = ArrayList<T>()\n    for (element in this) {\n
result.addAll(element)\n    }\n    return result\n}\n\n/**\n * Returns a pair of lists, where\n * *first* list is built from
the first values of each pair from this collection,\n * *second* list is built from the second values of each pair from
this collection.\n * @sample samples.collections.Iterables.Operations.unzipIterable\n */\n\npublic fun <T, R> Iterable<Pair<T, R>>.unzip(): Pair<List<T>, List<R>> {\n    val expectedSize =
collectionSizeOrDefault(10)\n    val listT = ArrayList<T>(expectedSize)\n    val listR =
ArrayList<R>(expectedSize)\n    for (pair in this) {\n        listT.add(pair.first)\n        listR.add(pair.second)\n    }\n    return listT to listR\n}\n\n", "/*\n * Copyright 2010-2020 JetBrains s.r.o. and Kotlin Programming Language
contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the

```



license/LICENSE.txt file.\n

```
*\n\n@file:kotlin.jvm.JvmMultifileClass\n@file:kotlin.jvm.JvmName("\SequencesKt")\n\npackage  
kotlin.sequences\n\nimport kotlin.random.Random\n\n/**\n * Given an [iterator] function constructs a [Sequence]  
that returns values through the [Iterator]\n * provided by that function.\n * The values are evaluated lazily, and the  
sequence is potentially infinite.\n */\n * @sample samples.collections.Sequences.Building.sequenceFromIterator\n *\n@kotlin.internal.InlineOnly\npublic inline fun <T> Sequence(crossinline iterator: () -> Iterator<T>):  
Sequence<T> = object : Sequence<T> {\n    override fun iterator(): Iterator<T> = iterator()\n}\n\n/**\n * Creates a  
sequence that returns all elements from this iterator. The sequence is constrained to be iterated only once.\n */\n * @sample samples.collections.Sequences.Building.sequenceFromIterator\n *\npublic fun <T>  
Iterator<T>.asSequence(): Sequence<T> = Sequence { this }.constrainOnce()\n\n/**\n * Creates a sequence that  
returns the specified values.\n */\n * @sample samples.collections.Sequences.Building.sequenceOfValues\n *\npublic fun <T> sequenceOf(vararg elements: T): Sequence<T> = if (elements.isEmpty()) emptySequence() else  
elements.asSequence()\n\n/**\n * Returns an empty sequence.\n */\n\npublic fun <T> emptySequence():  
Sequence<T> = EmptySequence\n\nprivate object EmptySequence : Sequence<Nothing>,  
DropTakeSequence<Nothing> {\n    override fun iterator():  
Iterator<Nothing> = EmptyIterator\n    override fun drop(n: Int) = EmptySequence\n    override fun take(n: Int) =  
EmptySequence\n}\n\n/**\n * Returns this sequence if it's not `null` and the empty sequence otherwise.\n */\n * @sample samples.collections.Sequences.Usage.sequenceOrEmpty\n *\n\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\npublic inline fun <T> Sequence<T>?.orEmpty():  
Sequence<T> = this ?: emptySequence()\n\n/**\n * Returns a sequence that iterates through the elements either of  
this sequence\n * or, if this sequence turns out to be empty, of the sequence returned by [defaultValue] function.\n */\n * @sample samples.collections.Sequences.Usage.sequenceIfEmpty\n *\n\n@SinceKotlin("1.3")\npublic fun  
<T> Sequence<T>.ifEmpty(defaultValue: () -> Sequence<T>): Sequence<T> = sequence {\n    val iterator =  
this@ifEmpty.iterator()\n    if (iterator.hasNext()) {\n        yieldAll(iterator)\n    } else {\n        yieldAll(defaultValue())\n    }\n}\n\n/**\n * Returns a sequence  
of all elements from all sequences in this sequence.\n */\n * The operation is _intermediate_ and _stateless_.\n */\n * @sample samples.collections.Sequences.Transformations.flattenSequenceOfSequences\n *\npublic fun <T>  
Sequence<Sequence<T>>.flatten(): Sequence<T> = flatten { it.iterator() }\n\n/**\n * Returns a sequence of all  
elements from all iterables in this sequence.\n */\n * The operation is _intermediate_ and _stateless_.\n */\n * @sample samples.collections.Sequences.Transformations.flattenSequenceOfLists\n *\n\n@kotlin.jvm.JvmName("\flattenSequenceOfIterable")\npublic fun <T> Sequence<Iterable<T>>.flatten():  
Sequence<T> = flatten { it.iterator() }\n\nprivate fun <T, R> Sequence<T>.flatten(iterator: (T) -> Iterator<R>):  
Sequence<R> {\n    if (this is TransformingSequence<*, *>) {\n        return (this as TransformingSequence<*,  
T>).flatten(iterator)\n    }\n    return FlatteningSequence(this, { it }, iterator)\n}\n\n/**\n * Returns a pair of lists,  
where\n * *first* list  
is built from the first values of each pair from this sequence,\n * *second* list is built from the second values of  
each pair from this sequence.\n */\n * The operation is _terminal_.\n */\n * @sample  
samples.collections.Sequences.Transformations.unzip\n *\n\npublic fun <T, R> Sequence<Pair<T, R>>.unzip():  
Pair<List<T>, List<R>> {\n    val listT = ArrayList<T>()\n    val listR = ArrayList<R>()\n    for (pair in this) {\n        listT.add(pair.first)\n        listR.add(pair.second)\n    }\n    return listT to listR\n}\n\n/**\n * Returns a sequence that  
yields elements of this sequence randomly shuffled.\n */\n * Note that every iteration of the sequence returns  
elements in a different order.\n */\n * The operation is _intermediate_ and _stateful_.\n *\n\n@SinceKotlin("1.4")\npublic fun <T> Sequence<T>.shuffled(): Sequence<T> = shuffled(Random)\n\n/**\n * Returns a sequence that yields elements of this sequence randomly shuffled\n * using the specified [random]  
instance as the source of randomness.\n *\n * Note that every iteration of the sequence returns elements in a different order.\n */\n * The operation is  
_intermediate_ and _stateful_.\n *\n\n@SinceKotlin("1.4")\npublic fun <T> Sequence<T>.shuffled(random:  
Random): Sequence<T> = sequence<T> {\n    val buffer = toMutableList()\n    while (buffer.isNotEmpty()) {\n
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val j = random.nextInt(buffer.size)\n    val last = buffer.removeLast()\n    val value = if (j < buffer.size)
buffer.set(j, last) else last\n    yield(value)\n } \n } \n\n/**\n * A sequence that returns the values from the
underlying [sequence] that either match or do not match\n * the specified [predicate].\n *\n * @param sendWhen If
`true`, values for which the predicate returns `true` are returned. Otherwise,\n * values for which the predicate
returns `false` are returned\n */\n\ninternal class FilteringSequence<T>(\n    private val sequence: Sequence<T>,\n    private val sendWhen: Boolean = true,\n    private val predicate: (T) -> Boolean)\n
: Sequence<T> {\n\n    override fun iterator(): Iterator<T> = object : Iterator<T> {\n        val iterator =
sequence.iterator()\n        var nextState: Int = -1 // -1 for unknown, 0 for done, 1 for continue\n        var nextItem: T?
= null\n\n        private fun calcNext() {\n            while (iterator.hasNext()) {\n                val item = iterator.next()\n                if (predicate(item) == sendWhen) {\n                    nextItem = item\n                    nextState = 1\n                }\n            }\n            nextState = 0\n        }\n\n        override fun next(): T {\n            if (nextState
== -1)\n                calcNext()\n            if (nextState == 0)\n                throw NoSuchElementException()\n            val
result = nextItem\n            nextItem = null\n            nextState = -1\n            @Suppress("UNCHECKED_CAST")\n            return result as T\n        }\n\n        override fun hasNext(): Boolean {\n            if (nextState == -1)\n                calcNext()\n            return nextState == 1\n        }\n    }\n}\n\n/**\n * A
sequence which returns the results of applying the given [transformer] function to the values\n * in the underlying
[sequence].\n */\n\ninternal class TransformingSequence<T, R>(\n    constructor(private val sequence: Sequence<T>,\n    private val transformer: (T) -> R) : Sequence<R> {\n        override fun iterator(): Iterator<R> = object : Iterator<R> {\n            val iterator = sequence.iterator()\n            override fun next(): R {\n                return transformer(iterator.next())\n            }\n\n            override fun hasNext(): Boolean {\n                return iterator.hasNext()\n            }\n        }\n\n        internal fun <E>
flatten(iterator: (R) -> Iterator<E>): Sequence<E> {\n            return FlatteningSequence<T, R, E>(sequence,
transformer, iterator)\n        }\n    }\n}\n\n/**\n * A sequence which returns the results of applying the given [transformer]
function to the values\n * in the underlying
[sequence], where the transformer function takes the index of the value in the underlying\n * sequence along with
the value itself.\n */\n\ninternal class TransformingIndexedSequence<T, R>(\n    constructor(private val sequence:
Sequence<T>,\n    private val transformer: (Int, T) -> R) : Sequence<R> {\n        override fun iterator(): Iterator<R> =
object : Iterator<R> {\n            val iterator = sequence.iterator()\n            var index = 0\n            override fun next(): R {\n                return transformer(checkIndexOverflow(index++), iterator.next())\n            }\n\n            override fun hasNext():
Boolean {\n                return iterator.hasNext()\n            }\n        }\n    }\n}\n\n/**\n * A sequence which combines values from
the underlying [sequence] with their indices and returns them as\n * [IndexedValue] objects.\n */\n\ninternal class
IndexingSequence<T>(\n    constructor(private val sequence: Sequence<T>) : Sequence<IndexedValue<T>> {\n        override fun iterator(): Iterator<IndexedValue<T>> = object : Iterator<IndexedValue<T>> {\n            {\n                val iterator = sequence.iterator()\n                var index = 0\n                override fun next(): IndexedValue<T> {\n                    return IndexedValue(checkIndexOverflow(index++), iterator.next())\n                }\n\n                override fun hasNext():
Boolean {\n                    return iterator.hasNext()\n                }\n            }\n        }\n    }\n}\n\n/**\n * A sequence which takes the values from
two parallel underlying sequences, passes them to the given\n * [transform] function and returns the values returned
by that function. The sequence stops returning\n * values as soon as one of the underlying sequences stops returning
values.\n */\n\ninternal class MergingSequence<T1, T2, V>(\n    constructor(\n        private val sequence1:
Sequence<T1>,\n        private val sequence2: Sequence<T2>,\n        private val transform: (T1, T2) -> V)\n    ) : Sequence<V> {\n        override fun iterator(): Iterator<V> = object : Iterator<V> {\n            val iterator1 =
sequence1.iterator()\n            val iterator2 = sequence2.iterator()\n            override
fun next(): V {\n                return transform(iterator1.next(), iterator2.next())\n            }\n\n            override fun hasNext():
Boolean {\n                return iterator1.hasNext() && iterator2.hasNext()\n            }\n        }\n    }\n}\n\ninternal class
FlatteningSequence<T, R, E>(\n    constructor(\n        private val sequence: Sequence<T>,\n        private val transformer: (T)
-> R,\n        private val iterator: (R) -> Iterator<E>)\n    ) : Sequence<E> {\n        override fun iterator(): Iterator<E> = object
: Iterator<E> {\n            val iterator = sequence.iterator()\n            var itemIterator: Iterator<E>? = null\n            override
fun next(): E {\n                if (!ensureItemIterator())\n                    throw NoSuchElementException()\n                return
itemIterator!!.next()\n            }\n\n            override fun hasNext(): Boolean {\n                return ensureItemIterator()\n            }\n        }\n    }\n}

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}\n\n    private fun ensureItemIterator(): Boolean {\n        if (itemIterator?.hasNext() == false)\nitemIterator = null\n\n        while (itemIterator == null) {\n            if (!iterator.hasNext()) {\n                return false\n            } else\n\n            {\n                val element = iterator.next()\n                val nextItemIterator = iterator(transformer(element))\n                if (nextItemIterator.hasNext()) {\n                    itemIterator = nextItemIterator\n                    return true\n                }\n            }\n        }\n        return true\n    }\n}\n\ninternal fun <T, C, R>\nflatMapIndexed(source: Sequence<T>, transform: (Int, T) -> C, iterator: (C) -> Iterator<R>): Sequence<R> =\nsequence {\n    var index = 0\n    for (element in source) {\n        val result =\ntransform(checkIndexOverflow(index++), element)\n        yieldAll(iterator(result))\n    }\n}\n\n/**\n * A\nsequence that supports drop(n) and take(n) operations\n */\ninternal interface DropTakeSequence<T> :\nSequence<T> {\n\n    fun drop(n: Int): Sequence<T>\n    fun take(n: Int): Sequence<T>\n}\n\n/**\n * A sequence that skips [startIndex]\nvalues from the underlying [sequence]\n * and stops returning values right before [endIndex], i.e. stops at `endIndex\n- 1`\n */\ninternal class SubSequence<T>(\n    private val sequence: Sequence<T>,\n    private val startIndex: Int,\nprivate val endIndex: Int\n) : Sequence<T>, DropTakeSequence<T> {\n    init {\n        require(startIndex >= 0) {\n            \"startIndex should be non-negative, but is $startIndex\"\n        }\n        require(endIndex >= 0) {\n            \"endIndex should be\nnon-negative, but is $endIndex\"\n        }\n        require(endIndex >= startIndex) {\n            \"endIndex should be not less than\nstartIndex, but was $endIndex < $startIndex\"\n        }\n    }\n    private val count: Int get() = endIndex - startIndex\n\n    override fun drop(n: Int): Sequence<T> = if (n >= count) emptySequence() else SubSequence(sequence, startIndex\n+ n, endIndex)\n\n    override fun take(n: Int): Sequence<T> = if (n >=\ncount) this else SubSequence(sequence, startIndex, startIndex + n)\n\n    override fun iterator() = object :\nIterator<T> {\n        val iterator = sequence.iterator()\n        var position = 0\n        // Shouldn't be called from\nconstructor to avoid premature iteration\n        private fun drop() {\n            while (position < startIndex &&\niterator.hasNext()) {\n                iterator.next()\n                position++\n            }\n        }\n\n        override fun\nhasNext(): Boolean {\n            drop()\n            return (position < endIndex) && iterator.hasNext()\n        }\n\n        override fun next(): T {\n            drop()\n            if (position >= endIndex)\n                throw\nNoSuchElementException()\n            position++\n            return iterator.next()\n        }\n    }\n}\n\n/**\n * A\nsequence that returns at most [count] values from the underlying [sequence], and stops returning values\n * as soon\nas that count is reached.\n */\ninternal class\nTakeSequence<T>(\n    private val sequence: Sequence<T>,\n    private val count: Int\n) : Sequence<T>,\nDropTakeSequence<T> {\n    init {\n        require(count >= 0) {\n            \"count must be non-negative, but was $count.\"\n        }\n    }\n\n    override fun drop(n: Int): Sequence<T> = if (n >= count) emptySequence() else\nSubSequence(sequence, n, count)\n\n    override fun take(n: Int): Sequence<T> = if (n >= count) this else\nTakeSequence(sequence, n)\n\n    override fun iterator(): Iterator<T> = object : Iterator<T> {\n        var left =\ncount\n        val iterator = sequence.iterator()\n        override fun next(): T {\n            if (left == 0)\n                throw\nNoSuchElementException()\n            left--\n            return iterator.next()\n        }\n\n        override fun hasNext():\nBoolean {\n            return left > 0 && iterator.hasNext()\n        }\n    }\n}\n\n/**\n * A sequence that returns values\nfrom the underlying [sequence] while the [predicate] function returns `true`,\nand stops returning values once the function returns `false` for the next element.\n */\ninternal class\nTakeWhileSequence<T>(\n    private val sequence: Sequence<T>,\n    private val predicate: (T) ->\nBoolean\n) : Sequence<T> {\n    override fun iterator(): Iterator<T> = object : Iterator<T> {\n        val iterator =\nsequence.iterator()\n        var nextState: Int = -1 // -1 for unknown, 0 for done, 1 for continue\n        var nextItem: T?\n= null\n\n        private fun calcNext() {\n            if (iterator.hasNext()) {\n                val item = iterator.next()\n                if (predicate(item)) {\n                    nextState = 1\n                    nextItem = item\n                    return\n                }\n                nextState = 0\n            }\n        }\n\n        override fun next(): T {\n            if (nextState == -1)\n                calcNext()\n            // will change nextState\n            if (nextState == 0)\n                throw NoSuchElementException()\n            @SuppressWarnings(\"UNCHECKED_CAST\")\n            val result = nextItem as T\n            // Clean next to avoid\nkeeping reference on yielded instance\n            nextItem = null\n            nextState = -1\n            return result\n        }\n    }\n}

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}\n\n    override fun hasNext(): Boolean {\n        if (nextState == -1)\n            calcNext() // will change\n        nextState\n        return nextState == 1\n    }\n}\n}\n\n/**\n * A sequence that skips the specified number of\n values from the underlying [sequence] and returns\n * all values after that.\n */\n\ninternal class DropSequence<T>(\n    private val sequence: Sequence<T>,\n    private val count: Int\n) : Sequence<T>, DropTakeSequence<T> {\n    init\n    {\n        require(count >= 0) { \"count must be non-negative, but was $count.\" }\n    }\n\n    override fun drop(n:\n Int): Sequence<T> = (count + n).let { n1 -> if (n1 < 0) DropSequence(this, n) else DropSequence(sequence, n1) }\n\n    override fun take(n: Int): Sequence<T>\n = (count + n).let { n1 -> if (n1 < 0) TakeSequence(this, n) else SubSequence(sequence, count, n1) }\n\n    override\n fun iterator(): Iterator<T> = object : Iterator<T> {\n        val iterator = sequence.iterator()\n        var left = count\n\n        // Shouldn't be called from constructor to avoid premature iteration\n        private fun drop() {\n            while (left\n > 0 && iterator.hasNext()) {\n                iterator.next()\n                left--\n            }\n        }\n\n        override fun\n next(): T {\n            drop()\n            return iterator.next()\n        }\n\n        override fun hasNext(): Boolean {\n            drop()\n            return iterator.hasNext()\n        }\n    }\n}\n\n/**\n * A sequence that skips the values from the\n underlying [sequence] while the given [predicate] returns `true` and returns\n * all values after that.\n */\n\ninternal class DropWhileSequence<T>(\n    constructor(\n        private val sequence: Sequence<T>,\n        private val predicate:\n (T) -> Boolean\n) : Sequence<T> {\n\n        override fun iterator(): Iterator<T> = object : Iterator<T> {\n            val\n iterator = sequence.iterator()\n            var dropState: Int = -1 // -1 for not dropping, 1 for nextItem, 0 for normal\n iteration\n            var nextItem: T? = null\n\n            private fun drop() {\n                while (iterator.hasNext()) {\n                    val item = iterator.next()\n                    if (!predicate(item)) {\n                        nextItem = item\n                        dropState =\n 1\n                    }\n                    return\n                }\n                dropState = 0\n            }\n\n            override fun next(): T {\n                if (dropState == -1)\n                    drop()\n                if (dropState == 1)\n                    @Suppress(\"UNCHECKED_CAST\")\n                    val result = nextItem as T\n                    nextItem = null\n                    dropState = 0\n                    return result\n                }\n                return iterator.next()\n            }\n\n            override\n fun hasNext(): Boolean {\n                if (dropState == -1)\n                    drop()\n                return dropState == 1 ||\n iterator.hasNext()\n            }\n        }\n}\n\ninternal class DistinctSequence<T, K>(\n    private val source: Sequence<T>,\n    private val keySelector: (T) -> K\n) : Sequence<T> {\n    override fun iterator(): Iterator<T> =\n DistinctIterator(source.iterator(), keySelector)\n}\n\nprivate class DistinctIterator<T, K>(\n    private val source:\n Iterator<T>,\n    private val keySelector: (T) -> K\n) : AbstractIterator<T>() {\n    private val observed =\n HashSet<K>()\n    override fun computeNext() {\n        while (source.hasNext()) {\n            val next =\n source.next()\n            val key = keySelector(next)\n            if (observed.add(key)) {\n                setNext(next)\n                return\n            }\n        }\n        done()\n    }\n}\n\nprivate class GeneratorSequence<T : Any>(\n    private val\n getInitialValue: () -> T?,\n    private val getNextValue: (T) -> T?\n) : Sequence<T>\n {\n    override fun iterator(): Iterator<T> = object : Iterator<T> {\n        var nextItem: T? = null\n        var nextState:\n Int = -2 // -2 for initial unknown, -1 for next unknown, 0 for done, 1 for continue\n\n        private fun calcNext() {\n            nextItem = if (nextState == -2) getInitialValue() else getNextValue(nextItem!)\n            nextState = if\n (nextItem == null) 0 else 1\n        }\n\n        override fun next(): T {\n            if (nextState < 0)\n                calcNext()\n\n            if (nextState == 0)\n                throw NoSuchElementException()\n            val result =\n nextItem as T\n            // Do not clean nextItem (to avoid keeping reference on yielded instance) -- need to keep\n state for getNextValue\n            nextState = -1\n            return result\n        }\n\n        override fun hasNext():\n Boolean {\n            if (nextState < 0)\n                calcNext()\n            return nextState == 1\n        }\n    }\n}\n\n/**\n * Returns a\n wrapper sequence that provides values of this sequence, but ensures it can be iterated only one time.\n */\n\n/**\n * The\n operation is _intermediate_ and _stateless_.\n */\n\n/**\n * [IllegalStateException] is thrown on iterating the returned\n sequence for the second time and the following times.\n */\n\npublic fun <T> Sequence<T>.constrainOnce():\n Sequence<T> {\n    // as? does not work in js\n    //return this as? ConstrainedOnceSequence<T> ?:\n    ConstrainedOnceSequence(this)\n}\n\nreturn if (this is ConstrainedOnceSequence<T>) this else\n ConstrainedOnceSequence(this)\n}\n\n/**\n * Returns a sequence which invokes the function to calculate the next\n value on each iteration until the function returns `null`.\n */\n\n/**\n * The returned sequence is constrained to be iterated

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only once.\n *\n * @see constrainOnce\n *\n * @see kotlin.sequences.sequence\n *\n * @sample
samples.collections.Sequences.Building.generateSequence\n */\npublic fun <T : Any>
generateSequence(nextFunction: () -> T?): Sequence<T> {\n    return GeneratorSequence(nextFunction,
    { nextFunction() }).constrainOnce()\n}\n\n/**\n * Returns a sequence defined by the starting value [seed] and the
function [nextFunction],\n * which is invoked to calculate the next value based on the previous one on each
iteration.\n *\n * The sequence produces values until it encounters first `null` value.\n * If [seed] is `null`, an empty
sequence is produced.\n *\n * The sequence can be iterated multiple times, each time starting with [seed].\n *\n *
@see kotlin.sequences.sequence\n *\n * @sample
samples.collections.Sequences.Building.generateSequenceWithSeed\n
*/\n@kotlin.internal.LowPriorityInOverloadResolution\npublic fun <T : Any> generateSequence(seed: T?,
nextFunction: (T) -> T?): Sequence<T> =\n    if (seed == null)\n        EmptySequence\n    else\n        GeneratorSequence({ seed }, nextFunction)\n\n/**\n * Returns a sequence defined by the function [seedFunction],
which is invoked to produce the starting value,\n * and the [nextFunction], which
is invoked to calculate the next value based on the previous one on each iteration.\n *\n * The sequence produces
values until it encounters first `null` value.\n * If [seedFunction] returns `null`, an empty sequence is produced.\n *\n
* The sequence can be iterated multiple times.\n *\n * @see kotlin.sequences.sequence\n *\n * @sample
samples.collections.Sequences.Building.generateSequenceWithLazySeed\n */\npublic fun <T : Any>
generateSequence(seedFunction: () -> T?, nextFunction: (T) -> T?): Sequence<T> =\n    GeneratorSequence(seedFunction, nextFunction)\n\n"/\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin
Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be
found in the license/LICENSE.txt file.\n
*/\n\n@file:kotlin.jvm.JvmMultifileClass\n@file:kotlin.jvm.JvmName("PreconditionsKt")\n\npackage
kotlin\n\nimport kotlin.contracts.contract\n\n/**\n * Throws an [IllegalArgumentException] if the [value] is false.\n
*\n * @sample samples.misc.Preconditions.failRequireWithLazyMessage\n
*/\n\n@kotlin.internal.InlineOnly\npublic inline fun require(value: Boolean): Unit {\n    contract {\n        returns()
implies value\n    }\n    require(value) { "Failed requirement." }\n}\n\n/**\n * Throws an
[IllegalArgumentException] with the result of calling [lazyMessage] if the [value] is false.\n *\n * @sample
samples.misc.Preconditions.failRequireWithLazyMessage\n */\n\n@kotlin.internal.InlineOnly\npublic inline fun
require(value: Boolean, lazyMessage: () -> Any): Unit {\n    contract {\n        returns() implies value\n    }\n    if
(!value) {\n        val message = lazyMessage()\n        throw IllegalArgumentException(message.toString())\n    }\n}\n\n/**\n * Throws an [IllegalArgumentException] if the [value] is null. Otherwise returns the not null value.\n
*/\n\n@kotlin.internal.InlineOnly\npublic inline fun <T : Any> requireNotNull(value: T?): T {\n    contract {\n
returns() implies (value != null)\n    }\n    return requireNotNull(value) { "Required value was null." }\n}\n\n/**\n * Throws an
[IllegalArgumentException] with the result of calling [lazyMessage] if the [value] is null. Otherwise\n * returns the
not null value.\n *\n * @sample samples.misc.Preconditions.failRequireNotNullWithLazyMessage\n
*/\n\n@kotlin.internal.InlineOnly\npublic inline fun <T : Any> requireNotNull(value: T?, lazyMessage: () -> Any): T
{\n    contract {\n        returns() implies (value != null)\n    }\n    if (value == null) {\n        val message =
lazyMessage()\n        throw IllegalArgumentException(message.toString())\n    } else {\n        return value\n    }\n}\n\n/**\n * Throws an [IllegalStateException] if the [value] is false.\n *\n * @sample
samples.misc.Preconditions.failCheckWithLazyMessage\n */\n\n@kotlin.internal.InlineOnly\npublic inline fun
check(value: Boolean): Unit {\n    contract {\n        returns() implies value\n    }\n    check(value) { "Check failed." }\n}\n\n/**\n * Throws
an [IllegalStateException] with the result of calling [lazyMessage] if the [value] is false.\n *\n * @sample
samples.misc.Preconditions.failCheckWithLazyMessage\n */\n\n@kotlin.internal.InlineOnly\npublic inline fun
check(value: Boolean, lazyMessage: () -> Any): Unit {\n    contract {\n        returns() implies value\n    }\n    if
(!value) {\n        val message = lazyMessage()\n        throw IllegalStateException(message.toString())\n    }\n}\n\n/**\n * Throws an [IllegalStateException] if the [value] is null. Otherwise\n * returns the not null value.\n

```

```

*\n * @sample samples.misc.Preconditions.failCheckWithLazyMessage\n */\n@kotlin.internal.InlineOnly\npublic
inline fun <T : Any> checkNotNull(value: T?): T {\n    contract {\n        returns() implies (value != null)\n    }\n    return checkNotNull(value) { \"Required value was null.\" }\n}\n\n/**\n * Throws an [IllegalStateException] with
the result of calling [lazyMessage] if the [value] is null. Otherwise\n * returns the not null value.\n
*\n * @sample samples.misc.Preconditions.failCheckWithLazyMessage\n */\n@kotlin.internal.InlineOnly\npublic
inline fun <T : Any> checkNotNull(value: T?, lazyMessage: () -> Any): T {\n    contract {\n        returns() implies
(value != null)\n    }\n    if (value == null) {\n        val message = lazyMessage()\n        throw
IllegalStateException(message.toString())\n    } else {\n        return value\n    }\n}\n\n/**\n * Throws an
[IllegalStateException] with the given [message].\n *\n * @sample samples.misc.Preconditions.failWithError\n
*/\n@kotlin.internal.InlineOnly\npublic inline fun error(message: Any): Nothing = throw
IllegalStateException(message.toString())\n","/*\n * Copyright 2010-2022 JetBrains s.r.o. and Kotlin Programming
Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n */\n\npackage kotlin.collections\n\n/\n\n// NOTE: THIS FILE IS AUTO-GENERATED
by the GenerateStandardLib.kt\n//
See: https://github.com/JetBrains/kotlin/tree/master/libraries/stdlib\n\nimport kotlin.js.*\nimport
primitiveArrayConcat\nimport withType\nimport kotlin.ranges.contains\nimport kotlin.ranges.reversed\n\n/**\n *
Returns an element at the given [index] or throws an [IndexOutOfBoundsException] if the [index] is out of bounds
of this array.\n *\n * @sample samples.collections.Collections.Elements.elementAt\n */\npublic actual fun <T>
Array<out T>.elementAt(index: Int): T {\n    return elementAtOrElse(index) { throw
IndexOutOfBoundsException(\"index: $index, size: $size\") }\n}\n\n/**\n * Returns an element at the given
[index] or throws an [IndexOutOfBoundsException] if the [index] is out of bounds of this array.\n *\n * @sample
samples.collections.Collections.Elements.elementAt\n */\npublic actual fun ByteArray.elementAt(index: Int): Byte
{\n    return elementAtOrElse(index) { throw IndexOutOfBoundsException(\"index: $index, size: $size\") }\n
}\n}\n\n/**\n * Returns an element
at the given [index] or throws an [IndexOutOfBoundsException] if the [index] is out of bounds of this array.\n *\n
*\n * @sample samples.collections.Collections.Elements.elementAt\n */\npublic actual fun
ShortArray.elementAt(index: Int): Short {\n    return elementAtOrElse(index) { throw
IndexOutOfBoundsException(\"index: $index, size: $size\") }\n}\n\n/**\n * Returns an element at the given
[index] or throws an [IndexOutOfBoundsException] if the [index] is out of bounds of this array.\n *\n * @sample
samples.collections.Collections.Elements.elementAt\n */\npublic actual fun IntArray.elementAt(index: Int): Int {\n
return elementAtOrElse(index) { throw IndexOutOfBoundsException(\"index: $index, size: $size\") }\n}\n}\n\n/**\n
* Returns an element at the given [index] or throws an [IndexOutOfBoundsException] if the [index] is out of bounds
of this array.\n *\n * @sample samples.collections.Collections.Elements.elementAt\n */\npublic actual fun
LongArray.elementAt(index: Int): Long {\n
return elementAtOrElse(index) { throw IndexOutOfBoundsException(\"index: $index, size: $size\") }\n
}\n}\n\n/**\n * Returns an element at the given [index] or throws an [IndexOutOfBoundsException] if the [index] is
out of bounds of this array.\n *\n * @sample samples.collections.Collections.Elements.elementAt\n */\npublic
actual fun FloatArray.elementAt(index: Int): Float {\n    return elementAtOrElse(index) { throw
IndexOutOfBoundsException(\"index: $index, size: $size\") }\n}\n}\n\n/**\n * Returns an element at the given
[index] or throws an [IndexOutOfBoundsException] if the [index] is out of bounds of this array.\n *\n * @sample
samples.collections.Collections.Elements.elementAt\n */\npublic actual fun DoubleArray.elementAt(index: Int):
Double {\n    return elementAtOrElse(index) { throw IndexOutOfBoundsException(\"index: $index, size: $size\") }\n
}\n}\n\n/**\n * Returns an element at the given [index] or throws an [IndexOutOfBoundsException] if the [index] is
out of bounds of this
array.\n *\n * @sample samples.collections.Collections.Elements.elementAt\n */\npublic actual fun
BooleanArray.elementAt(index: Int): Boolean {\n    return elementAtOrElse(index) { throw
IndexOutOfBoundsException(\"index: $index, size: $size\") }\n}\n}\n\n/**\n * Returns an element at the given
[index] or throws an [IndexOutOfBoundsException] if the [index] is out of bounds of this array.\n *\n * @sample

```

```

samples.collections.Collections.Elements.elementAt\n *\\npublic actual fun CharArray.elementAt(index: Int): Char
{\\n    return elementAtOrElse(index) { throw IndexOutOfBoundsException("\\index: $index, size: $size")}\\n
}\\n}\\n\\n/**\\n * Returns a [List] that wraps the original array.\\n *\\npublic actual fun <T> Array<out T>.asList():
List<T> {\\n    return ArrayList<T>(this.unsafeCast<Array<Any?>>())\\n}\\n\\n/**\\n * Returns a [List] that wraps the
original array.\\n *\\n@kotlin.internal.InlineOnly\\npublic actual inline fun ByteArray.asList(): List<Byte> {\\n
return this.unsafeCast<Array<Byte>>().asList()}\\n}\\n\\n/**\\n
* Returns a [List] that wraps the original array.\\n *\\n@kotlin.internal.InlineOnly\\npublic actual inline fun
ShortArray.asList(): List<Short> {\\n    return this.unsafeCast<Array<Short>>().asList()}\\n}\\n\\n/**\\n * Returns a
[List] that wraps the original array.\\n *\\n@kotlin.internal.InlineOnly\\npublic actual inline fun IntArray.asList():
List<Int> {\\n    return this.unsafeCast<Array<Int>>().asList()}\\n}\\n\\n/**\\n * Returns a [List] that wraps the original
array.\\n *\\n@kotlin.internal.InlineOnly\\npublic actual inline fun LongArray.asList(): List<Long> {\\n    return
this.unsafeCast<Array<Long>>().asList()}\\n}\\n\\n/**\\n * Returns a [List] that wraps the original array.\\n
*\\n@kotlin.internal.InlineOnly\\npublic actual inline fun FloatArray.asList(): List<Float> {\\n    return
this.unsafeCast<Array<Float>>().asList()}\\n}\\n\\n/**\\n * Returns a [List] that wraps the original array.\\n
*\\n@kotlin.internal.InlineOnly\\npublic actual inline fun DoubleArray.asList(): List<Double>
{\\n    return this.unsafeCast<Array<Double>>().asList()}\\n}\\n\\n/**\\n * Returns a [List] that wraps the original
array.\\n *\\n@kotlin.internal.InlineOnly\\npublic actual inline fun BooleanArray.asList(): List<Boolean> {\\n    return
this.unsafeCast<Array<Boolean>>().asList()}\\n}\\n\\n/**\\n * Returns a [List] that wraps the original array.\\n
*\\npublic actual fun CharArray.asList(): List<Char> {\\n    return object : AbstractList<Char>(), RandomAccess {\\n
        override val size: Int get() = this@asList.size\\n        override fun isEmpty(): Boolean = this@asList.isEmpty()\\n
        override fun contains(element: Char): Boolean = this@asList.contains(element)\\n        override fun get(index: Int):
Char {\\n            AbstractList.checkElementIndex(index, size)\\n            return this@asList[index]\\n        }\\n
        override fun indexOf(element: Char): Int {\\n            @Suppress("\\USELESS_CAST\\")\\n            if ((element as
Any?) !is Char) return -1\\n            return this@asList.indexOf(element)\\n        }\\n        override fun lastIndexOf(element: Char): Int {\\n
            @Suppress("\\USELESS_CAST\\")\\n            if
((element as Any?) !is Char) return -1\\n            return this@asList.lastIndexOf(element)\\n        }\\n    }\\n}\\n}\\n}\\n}\\n}\\n}\\n
Returns `true` if the two specified arrays are *deeply* equal to one another,\\n * i.e. contain the same number of the
same elements in the same order.\\n * \\n * If two corresponding elements are nested arrays, they are also compared
deeply.\\n * If any of arrays contains itself on any nesting level the behavior is undefined.\\n * \\n * The elements of
other types are compared for equality with the [equals][Any.equals] function.\\n * For floating point numbers it
means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`.\\n
*\\n@SinceKotlin("1.1")\\n@kotlin.internal.LowPriorityInOverloadResolution\\npublic actual infix fun <T>
Array<out T>.contentDeepEquals(other: Array<out T>): Boolean {\\n    return
this.contentDeepEquals(other)\\n}\\n}\\n}\\n}\\n}\\n}\\n
* Returns `true` if the two specified arrays are *deeply* equal to one another,\\n * i.e. contain the same number of
the same elements in the same order.\\n * \\n * The specified arrays are also considered deeply equal if both are
`null`.\\n * \\n * If two corresponding elements are nested arrays, they are also compared deeply.\\n * If any of arrays
contains itself on any nesting level the behavior is undefined.\\n * \\n * The elements of other types are compared for
equality with the [equals][Any.equals] function.\\n * For floating point numbers it means that `NaN` is equal to itself
and `-0.0` is not equal to `0.0`.\\n *\\n@SinceKotlin("1.4")\\n@library("\\arrayDeepEquals\\")\\npublic actual infix fun
<T> Array<out T>?.contentDeepEquals(other: Array<out T>?): Boolean {\\n    definedExternally\\n}\\n}\\n}\\n}\\n}\\n
* Returns a hash code based on the contents of this array as if it is [List].\\n * Nested arrays are treated as lists too.\\n *
\\n * If any of arrays contains itself on any nesting
level the behavior is undefined.\\n
*\\n@SinceKotlin("1.1")\\n@kotlin.internal.LowPriorityInOverloadResolution\\npublic actual fun <T> Array<out
T>.contentDeepHashCode(): Int {\\n    return this.contentDeepHashCode()\\n}\\n}\\n}\\n}\\n}\\n
* Returns a hash code based
on the contents of this array as if it is [List].\\n * Nested arrays are treated as lists too.\\n * \\n * If any of arrays
contains itself on any nesting level the behavior is undefined.\\n

```

```

*\n@SinceKotlin("1.4")\n@library("arrayDeepHashCode")\npublic actual fun <T> Array<out
T>?.contentDeepHashCode(): Int {\n  definedExternally\n}\n\n/**\n * Returns a string representation of the
contents of this array as if it is a [List].\n * Nested arrays are treated as lists too.\n * \n * If any of arrays contains
itself on any nesting level that reference\n * is rendered as `[...]` to prevent recursion.\n * \n * @sample
samples.collections.Arrays.ContentOperations.contentDeepToString\n
*\n@SinceKotlin("1.1")\n@kotlin.internal.LowPriorityInOverloadResolution\npublic
actual fun <T> Array<out T>.contentDeepToString(): String {\n  return this.contentDeepToString()\n}\n\n/**\n *
Returns a string representation of the contents of this array as if it is a [List].\n * Nested arrays are treated as lists
too.\n * \n * If any of arrays contains itself on any nesting level that reference\n * is rendered as `[...]` to prevent
recursion.\n * \n * @sample samples.collections.Arrays.ContentOperations.contentDeepToString\n
*\n@SinceKotlin("1.4")\n@library("arrayDeepToString")\npublic actual fun <T> Array<out
T>?.contentDeepToString(): String {\n  definedExternally\n}\n\n/**\n * Returns `true` if the two specified arrays
are *structurally* equal to one another,\n * i.e. contain the same number of the same elements in the same order.\n *
\n * The elements are compared for equality with the [equals][Any.equals] function.\n * For floating point numbers
it means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`.\n
*\n@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation
warning.")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic actual infix fun <T>
Array<out T>.contentEquals(other: Array<out T>): Boolean {\n  return this.contentEquals(other)\n}\n\n/**\n *
Returns `true` if the two specified arrays are *structurally* equal to one another,\n * i.e. contain the same number of
the same elements in the same order.\n * \n * The elements are compared for equality with the [equals][Any.equals]
function.\n * For floating point numbers it means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`.\n
*\n@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation
warning.")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic actual infix fun
ByteArray.contentEquals(other: ByteArray): Boolean {\n  return this.contentEquals(other)\n}\n\n/**\n * Returns
`true` if the two specified arrays are *structurally* equal to one another,\n *
\n * i.e. contain the same number of the same elements in the same order.\n * \n * The elements are compared for
equality with the [equals][Any.equals] function.\n * For floating point numbers it means that `NaN` is equal to itself
and `-0.0` is not equal to `0.0`.\n
*\n@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation
warning.")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic actual infix fun
ShortArray.contentEquals(other: ShortArray): Boolean {\n  return this.contentEquals(other)\n}\n\n/**\n * Returns
`true` if the two specified arrays are *structurally* equal to one another,\n * i.e. contain the same number of the
same elements in the same order.\n * \n * The elements are compared for equality with the [equals][Any.equals]
function.\n * For floating point numbers it means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`.\n
*\n@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation
warning.")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince
= "1.4")\npublic actual infix fun IntArray.contentEquals(other: IntArray): Boolean {\n  return
this.contentEquals(other)\n}\n\n/**\n * Returns `true` if the two specified arrays are *structurally* equal to one
another,\n * i.e. contain the same number of the same elements in the same order.\n * \n * The elements are
compared for equality with the [equals][Any.equals] function.\n * For floating point numbers it means that `NaN` is
equal to itself and `-0.0` is not equal to `0.0`.\n
*\n@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation
warning.")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic actual infix fun
LongArray.contentEquals(other: LongArray): Boolean {\n  return this.contentEquals(other)\n}\n\n/**\n * Returns
`true` if the two specified arrays are *structurally* equal to one another,\n * i.e. contain the same number of the
same elements in the same order.\n * \n * The elements are compared for equality with
the [equals][Any.equals] function.\n * For floating point numbers it means that `NaN` is equal to itself and `-0.0`
is not equal to `0.0`.\n
*\n@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation
warning.")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic actual infix fun
FloatArray.contentEquals(other: FloatArray): Boolean {\n  return this.contentEquals(other)\n}\n\n/**\n * Returns

```



`true` if the two specified arrays are *structurally* equal to one another, i.e. contain the same number of the same elements in the same order. The elements are compared for equality with the `[equals][Any.equals]` function. For floating point numbers it means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`.

```

@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation
warning.")
@SinceKotlin("1.1")
@DeprecatedSinceKotlin(hiddenSince = "1.4")
public actual infix fun
DoubleArray.contentEquals(other: DoubleArray): Boolean {
    return this.contentEquals(other)
}

```

Returns `true` if the two specified arrays are *structurally* equal to one another, i.e. contain the same number of the same elements in the same order. The elements are compared for equality with the `[equals][Any.equals]` function. For floating point numbers it means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`.

```

@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation
warning.")
@SinceKotlin("1.1")
@DeprecatedSinceKotlin(hiddenSince = "1.4")
public actual infix fun
BooleanArray.contentEquals(other: BooleanArray): Boolean {
    return this.contentEquals(other)
}

```

Returns `true` if the two specified arrays are *structurally* equal to one another, i.e. contain the same number of the same elements in the same order. The elements are compared for equality with the `[equals][Any.equals]` function. For floating point numbers it means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`.

```

@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation
warning.")
@SinceKotlin("1.1")
@DeprecatedSinceKotlin(hiddenSince = "1.4")
public actual infix fun
CharArray.contentEquals(other: CharArray): Boolean {
    return this.contentEquals(other)
}

```

Returns `true` if the two specified arrays are *structurally* equal to one another, i.e. contain the same number of the same elements in the same order. The elements are compared for equality with the `[equals][Any.equals]` function. For floating point numbers it means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`.

```

@SinceKotlin("1.4")
@library("arrayEquals")
public actual infix fun <T> Array<out
T>?.contentEquals(other: Array<out T>?): Boolean {
    definedExternally
}

```

Returns `true` if the two specified arrays are *structurally* equal to one another, i.e. contain the same number of the same elements in the same order. The elements are compared for equality with the `[equals][Any.equals]` function. For floating point numbers it means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`.

```

@SinceKotlin("1.4")
@library("arrayEquals")
public actual infix fun ByteArray?.contentEquals(other:
ByteArray?): Boolean {
    definedExternally
}

```

Returns `true` if the two specified arrays are *structurally* equal to one another, i.e. contain the same number of the same elements in the same order. The elements are compared for equality with the `[equals][Any.equals]` function. For floating point numbers it means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`.

```

@SinceKotlin("1.4")
@library("arrayEquals")
public actual infix fun ShortArray?.contentEquals(other:
ShortArray?): Boolean {
    definedExternally
}

```

Returns `true` if the two specified arrays are *structurally* equal to one another, i.e. contain the same number of the same elements in the same order. The elements are compared for equality with the `[equals][Any.equals]` function. For floating point numbers it means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`.

```

@SinceKotlin("1.4")
@library("arrayEquals")
public actual infix fun IntArray?.contentEquals(other:
IntArray?): Boolean {
    definedExternally
}

```

Returns `true` if the two specified arrays are *structurally* equal to one another, i.e. contain the same number of the same elements in the same order. The elements are compared for equality with the `[equals][Any.equals]` function. For floating point numbers it means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`.

```

@SinceKotlin("1.4")
@library("arrayEquals")
public actual infix fun LongArray?.contentEquals(other:
LongArray?): Boolean {
    definedExternally
}

```

Returns `true` if the two specified arrays are *structurally* equal to one another, i.e. contain the same number of the same elements in the same order. The elements are compared for equality with the `[equals][Any.equals]` function. For floating point numbers it means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`.

```

@SinceKotlin("1.4")
@library("arrayEquals")
public actual infix fun

```

FloatArray?.contentEquals(other: FloatArray?): Boolean {  
 definedExternally  
 Returns `true` if the two specified arrays are *structurally* equal to one another, i.e. contain the same number of the same elements in the same order.  
 The elements are compared for equality with the [equals][Any.equals] function.  
 For floating point numbers it means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`.

`@SinceKotlin("1.4")`  
`library("arrayEquals")`  
`public actual infix fun DoubleArray?.contentEquals(other: DoubleArray?): Boolean {  
 definedExternally  
 Returns `true` if the two specified arrays are structurally equal to one another, i.e. contain the same number of the same elements in the same order.  
 The elements are compared for equality with the [equals][Any.equals] function.  
 For floating point numbers it means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`.`

`@SinceKotlin("1.4")`  
`library("arrayEquals")`  
`public actual infix fun BooleanArray?.contentEquals(other: BooleanArray?): Boolean {  
 definedExternally  
 Returns `true` if the two specified arrays are structurally equal to one another, i.e. contain the same number of the same elements in the same order.  
 The elements are compared for equality with the [equals][Any.equals] function.  
 For floating point numbers it means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`.`

`@SinceKotlin("1.4")`  
`library("arrayEquals")`  
`public actual infix fun CharArray?.contentEquals(other: CharArray?): Boolean {  
 definedExternally  
 Returns a hash code based on the contents of this array as if it is [List].  
@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation warning.")  
@SinceKotlin("1.1")  
@DeprecatedSinceKotlin(hiddenSince = "1.4")  
public actual fun <T> Array<out T>.contentHashCode(): Int {  
 return this.contentHashCode()  
 Returns a hash code based on the contents of this array as if it is [List].  
@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation warning.")  
@SinceKotlin("1.1")  
@DeprecatedSinceKotlin(hiddenSince = "1.4")  
public actual fun ByteArray.contentHashCode(): Int {  
 return this.contentHashCode()  
 Returns a hash code based on the contents of this array as if it is [List].  
@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation warning.")  
@SinceKotlin("1.1")  
@DeprecatedSinceKotlin(hiddenSince = "1.4")  
public actual fun ShortArray.contentHashCode(): Int {  
 return this.contentHashCode()  
 Returns a hash code based on the contents of this array as if it is [List].  
@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation warning.")  
@SinceKotlin("1.1")  
@DeprecatedSinceKotlin(hiddenSince = "1.4")  
public actual fun IntArray.contentHashCode(): Int {  
 return this.contentHashCode()  
 Returns a hash code based on the contents of this array as if it is [List].  
@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation warning.")  
@SinceKotlin("1.1")  
@DeprecatedSinceKotlin(hiddenSince = "1.4")  
public actual fun LongArray.contentHashCode(): Int {  
 return this.contentHashCode()  
 Returns a hash code based on the contents of this array as if it is [List].  
@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation warning.")  
@SinceKotlin("1.1")  
@DeprecatedSinceKotlin(hiddenSince = "1.4")  
public actual fun FloatArray.contentHashCode(): Int {  
 return this.contentHashCode()  
 Returns a hash code based on the contents of this array as if it is [List].  
@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation warning.")  
@SinceKotlin("1.1")  
@DeprecatedSinceKotlin(hiddenSince = "1.4")  
public actual fun DoubleArray.contentHashCode(): Int {  
 return this.contentHashCode()  
 Returns a hash code based on the contents of this array as if it is [List].  
@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation warning.")  
@SinceKotlin("1.1")  
@DeprecatedSinceKotlin(hiddenSince = "1.4")  
public actual fun BooleanArray.contentHashCode(): Int {  
 return this.contentHashCode()  
 Returns a hash code based on the contents of this array as if it is [List].  
@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation warning.")  
@SinceKotlin("1.1")  
@DeprecatedSinceKotlin(hiddenSince = "1.4")  
public actual fun CharArray.contentHashCode(): Int {  
 return this.contentHashCode()  
 Returns a hash code based on the contents of this array as if it is [List].  
@SinceKotlin("1.4")  
library("arrayHashCode")  
public actual fun <T> Array<out T>?.contentHashCode(): Int {  
 definedExternally  
 Returns a hash code based on the`

contents of this array as if it is [List].\n \*^n@SinceKotlin("1.4")\n@library("arrayHashCode")\npublic actual fun  
 ByteArray?.contentHashCode(): Int {\n definedExternally\n}\n\n/\*\*\n \* Returns a hash code based on the contents  
 of this array as if it is [List].\n \*^n@SinceKotlin("1.4")\n@library("arrayHashCode")\npublic actual fun  
 ShortArray?.contentHashCode(): Int {\n definedExternally\n}\n\n/\*\*\n \* Returns a hash code based on the  
 contents of this array as if it is [List].\n \*^n@SinceKotlin("1.4")\n@library("arrayHashCode")\npublic actual fun  
 IntArray?.contentHashCode(): Int {\n definedExternally\n}\n\n/\*\*\n \* Returns a hash code based on the contents  
 of this array as if it is [List].\n \*^n@SinceKotlin("1.4")\n@library("arrayHashCode")\npublic  
 actual fun LongArray?.contentHashCode(): Int {\n definedExternally\n}\n\n/\*\*\n \* Returns a hash code based on  
 the contents of this array as if it is [List].\n \*^n@SinceKotlin("1.4")\n@library("arrayHashCode")\npublic actual  
 fun FloatArray?.contentHashCode(): Int {\n definedExternally\n}\n\n/\*\*\n \* Returns a hash code based on the  
 contents of this array as if it is [List].\n \*^n@SinceKotlin("1.4")\n@library("arrayHashCode")\npublic actual fun  
 DoubleArray?.contentHashCode(): Int {\n definedExternally\n}\n\n/\*\*\n \* Returns a hash code based on the  
 contents of this array as if it is [List].\n \*^n@SinceKotlin("1.4")\n@library("arrayHashCode")\npublic actual fun  
 BooleanArray?.contentHashCode(): Int {\n definedExternally\n}\n\n/\*\*\n \* Returns a hash code based on the  
 contents of this array as if it is [List].\n \*^n@SinceKotlin("1.4")\n@library("arrayHashCode")\npublic actual fun  
 CharArray?.contentHashCode(): Int {\n definedExternally\n}\n\n/\*\*\n \* Returns a string representation of the contents of the specified array as if it is [List].\n \* \n \* @sample  
 samples.collections.Arrays.ContentOperations.contentToString\n \*^n@Deprecated("Use Kotlin compiler 1.4 to  
 avoid deprecation warning.")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic  
 actual fun <T> Array<out T>.contentToString(): String {\n return this.contentToString()\n}\n\n/\*\*\n \* Returns a  
 string representation of the contents of the specified array as if it is [List].\n \* \n \* @sample  
 samples.collections.Arrays.ContentOperations.contentToString\n \*^n@Deprecated("Use Kotlin compiler 1.4 to  
 avoid deprecation warning.")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic  
 actual fun ByteArray.contentToString(): String {\n return this.contentToString()\n}\n\n/\*\*\n \* Returns a string  
 representation of the contents of the specified array as if it is [List].\n \* \n \* @sample  
 samples.collections.Arrays.ContentOperations.contentToString\n \*^n@Deprecated("Use Kotlin compiler 1.4 to  
 avoid deprecation  
 warning.")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic actual fun  
 ShortArray.contentToString(): String {\n return this.contentToString()\n}\n\n/\*\*\n \* Returns a string  
 representation of the contents of the specified array as if it is [List].\n \* \n \* @sample  
 samples.collections.Arrays.ContentOperations.contentToString\n \*^n@Deprecated("Use Kotlin compiler 1.4 to  
 avoid deprecation warning.")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic  
 actual fun IntArray.contentToString(): String {\n return this.contentToString()\n}\n\n/\*\*\n \* Returns a string  
 representation of the contents of the specified array as if it is [List].\n \* \n \* @sample  
 samples.collections.Arrays.ContentOperations.contentToString\n \*^n@Deprecated("Use Kotlin compiler 1.4 to  
 avoid deprecation warning.")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince  
 = "1.4")\npublic actual fun LongArray.contentToString(): String {\n return this.contentToString()\n}\n\n/\*\*\n \*  
 Returns a string representation of the contents of the specified array as if it is [List].\n \* \n \* @sample  
 samples.collections.Arrays.ContentOperations.contentToString\n \*^n@Deprecated("Use Kotlin compiler 1.4 to  
 avoid deprecation warning.")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic  
 actual fun FloatArray.contentToString(): String {\n return this.contentToString()\n}\n\n/\*\*\n \* Returns a string  
 representation of the contents of the specified array as if it is [List].\n \* \n \* @sample  
 samples.collections.Arrays.ContentOperations.contentToString\n \*^n@Deprecated("Use Kotlin compiler 1.4 to  
 avoid deprecation warning.")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic  
 actual fun DoubleArray.contentToString(): String {\n return this.contentToString()\n}\n\n/\*\*\n \* Returns a string  
 representation of  
 the contents of the specified array as if it is [List].\n \* \n \* @sample  
 samples.collections.Arrays.ContentOperations.contentToString\n \*^n@Deprecated("Use Kotlin compiler 1.4 to

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avoid deprecation warning.\")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic
actual fun BooleanArray.contentToString(): String {\n    return this.contentToString()\n}\n\n/**\n * Returns a string
representation of the contents of the specified array as if it is [List].\n * \n * @sample
samples.collections.Arrays.ContentOperations.contentToString\n
*/\n@Deprecated("Use Kotlin compiler 1.4 to
avoid deprecation warning.\")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic
actual fun CharArray.contentToString(): String {\n    return this.contentToString()\n}\n\n/**\n * Returns a string
representation of the contents of the specified array as if it is [List].\n * \n * @sample
samples.collections.Arrays.ContentOperations.contentToString\n
*/\n@SinceKotlin("1.4")\n@library("arrayToString")\npublic
actual fun <T> Array<out T>?.contentToString(): String {\n    definedExternally\n}\n\n/**\n * Returns a string
representation of the contents of the specified array as if it is [List].\n * \n * @sample
samples.collections.Arrays.ContentOperations.contentToString\n
*/\n@SinceKotlin("1.4")\n@library("arrayToString")\npublic actual fun ByteArray?.contentToString(): String
{\n    definedExternally\n}\n\n/**\n * Returns a string representation of the contents of the specified array as if it is
[List].\n * \n * @sample samples.collections.Arrays.ContentOperations.contentToString\n
*/\n@SinceKotlin("1.4")\n@library("arrayToString")\npublic actual fun ShortArray?.contentToString(): String
{\n    definedExternally\n}\n\n/**\n * Returns a string representation of the contents of the specified array as if it is
[List].\n * \n * @sample samples.collections.Arrays.ContentOperations.contentToString\n
*/\n@SinceKotlin("1.4")\n@library("arrayToString")\npublic
actual fun IntArray?.contentToString(): String {\n    definedExternally\n}\n\n/**\n * Returns a string representation
of the contents of the specified array as if it is [List].\n * \n * @sample
samples.collections.Arrays.ContentOperations.contentToString\n
*/\n@SinceKotlin("1.4")\n@library("arrayToString")\npublic actual fun LongArray?.contentToString(): String
{\n    definedExternally\n}\n\n/**\n * Returns a string representation of the contents of the specified array as if it is
[List].\n * \n * @sample samples.collections.Arrays.ContentOperations.contentToString\n
*/\n@SinceKotlin("1.4")\n@library("arrayToString")\npublic actual fun FloatArray?.contentToString(): String
{\n    definedExternally\n}\n\n/**\n * Returns a string representation of the contents of the specified array as if it is
[List].\n * \n * @sample samples.collections.Arrays.ContentOperations.contentToString\n
*/\n@SinceKotlin("1.4")\n@library("arrayToString")\npublic actual fun DoubleArray?.contentToString():
String {\n    definedExternally\n}\n\n/**\n * Returns a string representation of the contents of the specified array as
if it is [List].\n * \n * @sample samples.collections.Arrays.ContentOperations.contentToString\n
*/\n@SinceKotlin("1.4")\n@library("arrayToString")\npublic actual fun BooleanArray?.contentToString():
String {\n    definedExternally\n}\n\n/**\n * Returns a string representation of the contents of the specified array as
if it is [List].\n * \n * @sample samples.collections.Arrays.ContentOperations.contentToString\n
*/\n@SinceKotlin("1.4")\n@library("arrayToString")\npublic actual fun CharArray?.contentToString(): String
{\n    definedExternally\n}\n\n/**\n * Copies this array or its subrange into the [destination] array and returns that
array.\n * \n * It's allowed to pass the same array in the [destination] and even specify the subrange so that it
overlaps with the destination range.\n * \n * @param destination the array to copy to.\n *
@param destinationOffset the position in the [destination] array to copy to, 0 by default.\n * @param startIndex the
beginning (inclusive) of the subrange to copy, 0 by default.\n * @param endIndex the end (exclusive) of the
subrange to copy, size of this array by default.\n * \n * @throws IndexOutOfBoundsException or
[IllegalArgumentException] when [startIndex] or [endIndex] is out of range of this array indices or when `startIndex
> endIndex`.\n * @throws IndexOutOfBoundsException when the subrange doesn't fit into the [destination] array
starting at the specified [destinationOffset],\n * or when that index is out of the [destination] array indices range.\n
*\n * @return the [destination] array.\n
*/\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT
_ARGUMENTS")\npublic actual inline fun <T> Array<out T>.copyInto(destination: Array<T>, destinationOffset:
Int = 0, startIndex: Int = 0, endIndex: Int = size): Array<T> {\n    arrayCopy(this,

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destination, destinationOffset, startIndex, endIndex)\n    return destination\n}\n\n/**\n * Copies this array or its
subrange into the [destination] array and returns that array.\n * \n * It's allowed to pass the same array in the
[destination] and even specify the subrange so that it overlaps with the destination range.\n * \n * @param
destination the array to copy to.\n * @param destinationOffset the position in the [destination] array to copy to, 0 by
default.\n * @param startIndex the beginning (inclusive) of the subrange to copy, 0 by default.\n * @param
endIndex the end (exclusive) of the subrange to copy, size of this array by default.\n * \n * @throws
IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of range of this
array indices or when `startIndex > endIndex`.\n * @throws IndexOutOfBoundsException when the subrange
doesn't fit into the [destination] array starting at the specified [destinationOffset],\n * or when that index is out
of the [destination] array indices range.\n * \n * @return the [destination] array.\n
*\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT
_ARGUMENTS")\npublic actual inline fun ByteArray.copyInto(destination: ByteArray, destinationOffset: Int = 0,
startIndex: Int = 0, endIndex: Int = size): ByteArray {\n    arrayCopy(this.unsafeCast<Array<Byte>>(),
destination.unsafeCast<Array<Byte>>(), destinationOffset, startIndex, endIndex)\n    return destination\n}\n\n/**\n
 * Copies this array or its subrange into the [destination] array and returns that array.\n * \n * It's allowed to pass the
same array in the [destination] and even specify the subrange so that it overlaps with the destination range.\n * \n *
@param destination the array to copy to.\n * @param destinationOffset the position in the [destination] array to
copy to, 0 by default.\n * @param startIndex the beginning (inclusive) of the subrange to copy, 0 by default.\n *
@param endIndex the
end (exclusive) of the subrange to copy, size of this array by default.\n * \n * @throws
IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of range of this
array indices or when `startIndex > endIndex`.\n * @throws IndexOutOfBoundsException when the subrange
doesn't fit into the [destination] array starting at the specified [destinationOffset],\n * or when that index is out of the
[destination] array indices range.\n * \n * @return the [destination] array.\n
*\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT
_ARGUMENTS")\npublic actual inline fun ShortArray.copyInto(destination: ShortArray, destinationOffset: Int =
0, startIndex: Int = 0, endIndex: Int = size): ShortArray {\n    arrayCopy(this.unsafeCast<Array<Short>>(),
destination.unsafeCast<Array<Short>>(), destinationOffset, startIndex, endIndex)\n    return destination\n}\n\n/**\n
 * Copies this array or its subrange into the [destination]
array and returns that array.\n * \n * It's allowed to pass the same array in the [destination] and even specify the
subrange so that it overlaps with the destination range.\n * \n * @param destination the array to copy to.\n *
@param destinationOffset the position in the [destination] array to copy to, 0 by default.\n * @param startIndex the
beginning (inclusive) of the subrange to copy, 0 by default.\n * @param endIndex the end (exclusive) of the
subrange to copy, size of this array by default.\n * \n * @throws IndexOutOfBoundsException or
[IllegalArgumentException] when [startIndex] or [endIndex] is out of range of this array indices or when `startIndex
> endIndex`.\n * @throws IndexOutOfBoundsException when the subrange doesn't fit into the [destination] array
starting at the specified [destinationOffset],\n * or when that index is out of the [destination] array indices range.\n
*\n * @return the [destination] array.\n
*\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT
_ARGUMENTS")\npublic
actual inline fun IntArray.copyInto(destination: IntArray, destinationOffset: Int = 0, startIndex: Int = 0, endIndex:
Int = size): IntArray {\n    arrayCopy(this.unsafeCast<Array<Int>>(), destination.unsafeCast<Array<Int>>(),
destinationOffset, startIndex, endIndex)\n    return destination\n}\n\n/**\n * Copies this array or its subrange into
the [destination] array and returns that array.\n * \n * It's allowed to pass the same array in the [destination] and even
specify the subrange so that it overlaps with the destination range.\n * \n * @param destination the array to copy
to.\n * @param destinationOffset the position in the [destination] array to copy to, 0 by default.\n * @param
startIndex the beginning (inclusive) of the subrange to copy, 0 by default.\n * @param endIndex the end (exclusive)
of the subrange to copy, size of this array by default.\n * \n * @throws IndexOutOfBoundsException or

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[IllegalArgumentException] when [startIndex]

or [endIndex] is out of range of this array indices or when `startIndex > endIndex`. \n \* @throws

IndexOutOfBoundsException when the subrange doesn't fit into the [destination] array starting at the specified [destinationOffset], \n \* or when that index is out of the [destination] array indices range. \n \* \n \* @return the [destination] array. \n

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*\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\npublic actual inline fun LongArray.copyInto(destination: LongArray, destinationOffset: Int = 0, startIndex: Int = 0, endIndex: Int = size): LongArray {\n    arrayCopy(this.unsafeCast<Array<Long>>(), destination.unsafeCast<Array<Long>>(), destinationOffset, startIndex, endIndex)\n    return destination\n}\n\n/**\n * Copies this array or its subrange into the [destination] array and returns that array. \n * \n * It's allowed to pass the same array in the [destination] and even specify the subrange so that it overlaps with the destination range. \n * \n * @param destination the array to copy to. \n * @param destinationOffset the position in the [destination] array to copy to, 0 by default. \n * @param startIndex the beginning (inclusive) of the subrange to copy, 0 by default. \n * @param endIndex the end (exclusive) of the subrange to copy, size of this array by default. \n * \n * @throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of range of this array indices or when `startIndex > endIndex`. \n * @throws IndexOutOfBoundsException when the subrange doesn't fit into the [destination] array starting at the specified [destinationOffset], \n * or when that index is out of the [destination] array indices range. \n * \n * @return the [destination] array. \n
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*\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\npublic actual inline fun FloatArray.copyInto(destination: FloatArray, destinationOffset: Int = 0, startIndex:
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Int = 0, endIndex: Int = size): FloatArray {\n    arrayCopy(this.unsafeCast<Array<Float>>(), destination.unsafeCast<Array<Float>>(), destinationOffset, startIndex, endIndex)\n    return destination\n}\n\n/**\n * Copies this array or its subrange into the [destination] array and returns that array. \n * \n * It's allowed to pass the same array in the [destination] and even specify the subrange so that it overlaps with the destination range. \n * \n * @param destination the array to copy to. \n * @param destinationOffset the position in the [destination] array to copy to, 0 by default. \n * @param startIndex the beginning (inclusive) of the subrange to copy, 0 by default. \n * @param endIndex the end (exclusive) of the subrange to copy, size of this array by default. \n * \n * @throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of range of this array indices or when `startIndex > endIndex`. \n * @throws IndexOutOfBoundsException when the subrange doesn't fit into the [destination] array starting at the specified [destinationOffset], \n * or when that index is out of the [destination] array indices range. \n * \n * @return the [destination] array. \n
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*\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\npublic actual inline fun DoubleArray.copyInto(destination: DoubleArray, destinationOffset: Int = 0, startIndex: Int = 0, endIndex: Int = size): DoubleArray {\n    arrayCopy(this.unsafeCast<Array<Double>>(), destination.unsafeCast<Array<Double>>(), destinationOffset, startIndex, endIndex)\n    return destination\n}\n\n/**\n * Copies this array or its subrange into the [destination] array and returns that array. \n * \n * It's allowed to pass the same array in the [destination] and even specify the subrange so that it overlaps with the destination range. \n * \n * @param destination the array to copy to. \n * @param destinationOffset the position in the [destination] array to copy
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```
to, 0 by default. \n * @param startIndex the beginning (inclusive) of the subrange to copy, 0 by default. \n * @param endIndex the end (exclusive) of the subrange to copy, size of this array by default. \n * \n * @throws
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```
IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of range of this array indices or when `startIndex > endIndex`. \n * @throws IndexOutOfBoundsException when the subrange doesn't fit into the [destination] array starting at the specified [destinationOffset], \n * or when that index is out of the [destination] array indices range. \n * \n * @return the [destination] array. \n
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*\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\npublic actual inline fun BooleanArray.copyInto(destination: BooleanArray, destinationOffset:
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Int = 0, startIndex: Int = 0, endIndex: Int = size): BooleanArray {
arrayCopy(this.unsafeCast<Array<Boolean>>(), destination.unsafeCast<Array<Boolean>>(),
destinationOffset, startIndex, endIndex)\n return destination\n}\n\n/**
 * Copies this array or its subrange into
the [destination] array and returns that array.\n * \n * It's allowed to pass the same array in the [destination] and even
specify the subrange so that it overlaps with the destination range.\n * \n * @param destination the array to copy
to.\n * @param destinationOffset the position in the [destination] array to copy to, 0 by default.\n * @param
startIndex the beginning (inclusive) of the subrange to copy, 0 by default.\n * @param endIndex the end (exclusive)
of the subrange to copy, size of this array by default.\n * \n * @throws IndexOutOfBoundsException or
[IllegalArgumentException] when [startIndex] or [endIndex] is out of range of this array indices or when `startIndex
> endIndex`.\n * @throws IndexOutOfBoundsException when the subrange doesn't fit into the [destination] array
starting at the specified [destinationOffset],\n * or when that index is out of the [destination]
array indices range.\n * \n * @return the [destination] array.\n
*\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT
_ARGUMENTS")\npublic actual inline fun CharArray.copyInto(destination: CharArray, destinationOffset: Int = 0,
startIndex: Int = 0, endIndex: Int = size): CharArray {
arrayCopy(this.unsafeCast<Array<Char>>(), destination.unsafeCast<Array<Char>>(), destinationOffset, startIndex, endIndex)\n return destination\n}\n\n/**
 * Returns new array which is a copy of the original array.\n * \n * @sample
samples.collections.Arrays.CopyOfOperations.copyOfOf\n *\n@Suppress("ACTUAL_WITHOUT_EXPECT",
"NOTHING_TO_INLINE")\npublic actual inline fun <T> Array<out T>.copyOf(): Array<T> {
return
this.asDynamic().slice()\n}\n\n/**
 * Returns new array which is a copy of the original array.\n * \n * @sample
samples.collections.Arrays.CopyOfOperations.copyOfOf\n *\n@Suppress("NOTHING_TO_INLINE")\npublic
actual inline fun
ByteArray.copyOfOf(): ByteArray {
return this.asDynamic().slice()\n}\n\n/**
 * Returns new array which is a
copy of the original array.\n * \n * @sample samples.collections.Arrays.CopyOfOperations.copyOfOf\n
*\n@Suppress("NOTHING_TO_INLINE")\npublic actual inline fun ShortArray.copyOfOf(): ShortArray {
return this.asDynamic().slice()\n}\n\n/**
 * Returns new array which is a copy of the original array.\n * \n *
@sample samples.collections.Arrays.CopyOfOperations.copyOfOf\n
*\n@Suppress("NOTHING_TO_INLINE")\npublic actual inline fun IntArray.copyOfOf(): IntArray {
return
this.asDynamic().slice()\n}\n\n/**
 * Returns new array which is a copy of the original array.\n * \n * @sample
samples.collections.Arrays.CopyOfOperations.copyOfOf\n *\npublic actual fun LongArray.copyOfOf(): LongArray {
return withType("LongArray", this.asDynamic().slice())\n}\n\n/**
 * Returns new array which is a copy of the
original array.\n * \n * @sample samples.collections.Arrays.CopyOfOperations.copyOfOf\n
*\n@Suppress("NOTHING_TO_INLINE")\npublic actual inline fun FloatArray.copyOfOf(): FloatArray {
return this.asDynamic().slice()\n}\n\n/**
 * Returns new array which is a copy of the original array.\n * \n *
@sample samples.collections.Arrays.CopyOfOperations.copyOfOf\n
*\n@Suppress("NOTHING_TO_INLINE")\npublic actual inline fun DoubleArray.copyOfOf(): DoubleArray {
return this.asDynamic().slice()\n}\n\n/**
 * Returns new array which is a copy of the original array.\n * \n *
@sample samples.collections.Arrays.CopyOfOperations.copyOfOf\n *\npublic actual fun BooleanArray.copyOfOf():
BooleanArray {
return withType("BooleanArray", this.asDynamic().slice())\n}\n\n/**
 * Returns new array
which is a copy of the original array.\n * \n * @sample samples.collections.Arrays.CopyOfOperations.copyOfOf\n
*\npublic actual fun CharArray.copyOfOf(): CharArray {
return withType("CharArray",
this.asDynamic().slice())\n}\n\n/**
 * Returns new array which is a copy of
the original array, resized to the given [newSize].\n * The copy is either truncated or padded at the end with zero
values if necessary.\n * \n * - If [newSize] is less than the size of the original array, the copy array is truncated to the
[newSize].\n * - If [newSize] is greater than the size of the original array, the extra elements in the copy array are
filled with zero values.\n * \n * @sample samples.collections.Arrays.CopyOfOperations.resizedPrimitiveCopyOf\n
*\npublic actual fun ByteArray.copyOfOf(newSize: Int): ByteArray {
require(newSize >= 0) { "Invalid new array
size: $newSize." }\n return fillFrom(this, ByteArray(newSize))\n}\n\n/**
 * Returns new array which is a copy

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of the original array, resized to the given [newSize].\n \* The copy is either truncated or padded at the end with zero values if necessary.\n \* \n \* - If [newSize] is less than the size of the original array, the copy array is truncated to the [newSize].\n \* - If [newSize] is greater than the size

of the original array, the extra elements in the copy array are filled with zero values.\n \* \n \* @sample samples.collections.Arrays.CopyOfOperations.resizedPrimitiveCopyOf\n \* \n public actual fun ShortArray.copyOf(newSize: Int): ShortArray {\n require(newSize >= 0) { \"Invalid new array size: \$newSize.\" }\n return fillFrom(this, ShortArray(newSize))\n}\n\n/\*\*\n \* Returns new array which is a copy of the original array, resized to the given [newSize].\n \* The copy is either truncated or padded at the end with zero values if necessary.\n \* \n \* - If [newSize] is less than the size of the original array, the copy array is truncated to the [newSize].\n \* - If [newSize] is greater than the size of the original array, the extra elements in the copy array are filled with zero values.\n \* \n \* @sample samples.collections.Arrays.CopyOfOperations.resizedPrimitiveCopyOf\n \* \n public actual fun IntArray.copyOf(newSize: Int): IntArray {\n require(newSize >= 0) { \"Invalid new array size: \$newSize.\" }\n return fillFrom(this, IntArray(newSize))\n}\n\n/\*\*\n \* Returns new array which is a copy of the original array, resized to the given [newSize].\n \* The copy is either truncated or padded at the end with zero values if necessary.\n \* \n \* - If [newSize] is less than the size of the original array, the copy array is truncated to the [newSize].\n \* - If [newSize] is greater than the size of the original array, the extra elements in the copy array are filled with zero values.\n \* \n \* @sample samples.collections.Arrays.CopyOfOperations.resizedPrimitiveCopyOf\n \* \n public actual fun LongArray.copyOf(newSize: Int): LongArray {\n require(newSize >= 0) { \"Invalid new array size: \$newSize.\" }\n return withType(\"LongArray\", arrayCopyResize(this, newSize, 0L))\n}\n\n/\*\*\n \* Returns new array which is a copy of the original array, resized to the given [newSize].\n \* The copy is either truncated or padded at the end with zero values if necessary.\n \* \n \* - If [newSize] is less than the size of the original array, the copy array is truncated to the [newSize].\n \* - If [newSize] is greater than the size of the original array, the extra elements in the copy array are filled with zero values.\n \* \n \* @sample samples.collections.Arrays.CopyOfOperations.resizedPrimitiveCopyOf\n \* \n public actual fun FloatArray.copyOf(newSize: Int): FloatArray {\n require(newSize >= 0) { \"Invalid new array size: \$newSize.\" }\n return fillFrom(this, FloatArray(newSize))\n}\n\n/\*\*\n \* Returns new array which is a copy of the original array, resized to the given [newSize].\n \* The copy is either truncated or padded at the end with zero values if necessary.\n \* \n \* - If [newSize] is less than the size of the original array, the copy array is truncated to the [newSize].\n \* - If [newSize] is greater than the size of the original array, the extra elements in the copy array are filled with zero values.\n \* \n \* @sample samples.collections.Arrays.CopyOfOperations.resizedPrimitiveCopyOf\n \* \n public actual fun DoubleArray.copyOf(newSize: Int): DoubleArray {\n require(newSize >= 0) { \"Invalid new array size: \$newSize.\" }\n return fillFrom(this, DoubleArray(newSize))\n}\n\n/\*\*\n \* Returns new array which is a copy of the original array, resized to the given [newSize].\n \* The copy is either truncated or padded at the end with `false` values if necessary.\n \* \n \* - If [newSize] is less than the size of the original array, the copy array is truncated to the [newSize].\n \* - If [newSize] is greater than the size of the original array, the extra elements in the copy array are filled with `false` values.\n \* \n \* @sample samples.collections.Arrays.CopyOfOperations.resizedPrimitiveCopyOf\n \* \n public actual fun BooleanArray.copyOf(newSize: Int): BooleanArray {\n require(newSize >= 0) { \"Invalid new array size: \$newSize.\" }\n return withType(\"BooleanArray\", arrayCopyResize(this, newSize, false))\n}\n\n/\*\*\n \* Returns new array which is a copy of the original array, resized to the given [newSize].\n \* The copy is either truncated or padded at the end with null char (\\u0000) values if necessary.\n \* \n \* - If [newSize] is less than the size of the original array, the copy array is truncated to the [newSize].\n \* - If [newSize] is greater than the size of the original array, the extra elements in the copy array are filled with null char (\\u0000) values.\n \* \n \* @sample samples.collections.Arrays.CopyOfOperations.resizedPrimitiveCopyOf\n \* \n public actual fun CharArray.copyOf(newSize: Int): CharArray {\n require(newSize >= 0) { \"Invalid new array size: \$newSize.\" }\n return withType(\"CharArray\", fillFrom(this, CharArray(newSize)))\n}\n\n/\*\*\n \* Returns new array which is





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copy.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the
size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n *\npublic
actual fun DoubleArray.copyOfRange(fromIndex: Int, toIndex: Int): DoubleArray {\n
AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n    return this.asDynamic().slice(fromIndex,
toIndex)\n}\n\n/**\n * Returns a new array which is a copy of the specified range of the original array.\n * \n *
@param fromIndex the start of the range (inclusive) to copy.\n * @param toIndex the end of the range (exclusive) to
copy.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the
size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n *\npublic
actual fun BooleanArray.copyOfRange(fromIndex: Int, toIndex: Int): BooleanArray {\n
AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n    return withType("<code>BooleanArray</code>",
this.asDynamic().slice(fromIndex, toIndex))\n}\n\n/**\n * Returns a new array which is a copy of the specified
range of the original array.\n * \n * @param fromIndex the start of the range (inclusive) to copy.\n * @param
toIndex the end of the range (exclusive) to copy.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is
less than zero
or [toIndex] is greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater
than [toIndex].\n *\npublic actual fun CharArray.copyOfRange(fromIndex: Int, toIndex: Int): CharArray {\n
AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n    return withType("<code>CharArray</code>",
this.asDynamic().slice(fromIndex, toIndex))\n}\n\n/**\n * Fills this array or its subrange with the specified
[element] value.\n * \n * @param fromIndex the start of the range (inclusive) to fill, 0 by default.\n * @param
toIndex the end of the range (exclusive) to fill, size of this array by default.\n * \n * @throws
IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n *
@throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n
*\n@SinceKotlin("1.3")\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\npublic
actual fun <T> Array<T>.fill(element: T, fromIndex: Int = 0, toIndex: Int =
size): Unit {\n    AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n    nativeFill(element, fromIndex,
toIndex);\n}\n\n/**\n * Fills this array or its subrange with the specified [element] value.\n * \n * @param
fromIndex the start of the range (inclusive) to fill, 0 by default.\n * @param toIndex the end of the range (exclusive)
to fill, size of this array by default.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero
or [toIndex] is greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater
than [toIndex].\n
*\n@SinceKotlin("1.3")\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\npublic
actual fun ByteArray.fill(element: Byte, fromIndex: Int = 0, toIndex: Int = size): Unit {\n
AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n    nativeFill(element, fromIndex, toIndex);\n}\n\n/**\n
* Fills this array or its subrange with the specified [element] value.\n * \n * @param fromIndex the start of
the range (inclusive) to fill, 0 by default.\n * @param toIndex the end of the range (exclusive) to fill, size of this
array by default.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is
greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n
*\n@SinceKotlin("1.3")\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\npublic
actual fun ShortArray.fill(element: Short, fromIndex: Int = 0, toIndex: Int = size): Unit {\n
AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n    nativeFill(element, fromIndex, toIndex);\n}\n\n/**\n
* Fills this array or its subrange with the specified [element] value.\n * \n * @param fromIndex the start of the range
(inclusive) to fill, 0 by default.\n * @param toIndex the end of the range (exclusive) to fill, size of this array by
default.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than
the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n
*\n@SinceKotlin("1.3")\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\npublic
actual fun IntArray.fill(element: Int, fromIndex: Int = 0, toIndex: Int = size): Unit {\n
AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n    nativeFill(element, fromIndex, toIndex);\n}\n\n/**\n
* Fills this array or its subrange with the specified [element] value.\n * \n * @param fromIndex the start of the range

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(inclusive) to fill, 0 by default.\n \* @param toIndex the end of the range (exclusive) to fill, size of this array by default.\n \* \n \* @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n \* @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n

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*\n@SinceKotlin("1.3")\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\npublic
actual fun LongArray.fill(element: Long, fromIndex:
    Int = 0, toIndex: Int = size): Unit {\n    AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n
    nativeFill(element, fromIndex, toIndex);\n}\n\n/**\n * Fills this array or its subrange with the specified [element]
value.\n * \n * @param fromIndex the start of the range (inclusive) to fill, 0 by default.\n * @param toIndex the end
of the range (exclusive) to fill, size of this array by default.\n * \n * @throws IndexOutOfBoundsException if
[fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n * @throws
    IllegalArgumentException if [fromIndex] is greater than [toIndex].\n
*\n@SinceKotlin("1.3")\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\npublic
actual fun FloatArray.fill(element: Float, fromIndex: Int = 0, toIndex: Int = size): Unit {\n
    AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n    nativeFill(element, fromIndex, toIndex);\n}\n\n/**\n
 * Fills this array or its subrange with the specified [element] value.\n * \n * @param
    fromIndex the start of the range (inclusive) to fill, 0 by default.\n * @param toIndex the end of the range
(exclusive) to fill, size of this array by default.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less
than zero or [toIndex] is greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is
greater than [toIndex].\n
*\n@SinceKotlin("1.3")\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\npublic
actual fun DoubleArray.fill(element: Double, fromIndex: Int = 0, toIndex: Int = size): Unit {\n
    AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n    nativeFill(element, fromIndex, toIndex);\n}\n\n/**\n
 * Fills this array or its subrange with the specified [element] value.\n * \n * @param fromIndex the start of the range
(inclusive) to fill, 0 by default.\n * @param toIndex the end of the range (exclusive) to fill, size of this array by
default.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero
or [toIndex] is greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater
than [toIndex].\n
*\n@SinceKotlin("1.3")\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\npublic
actual fun BooleanArray.fill(element: Boolean, fromIndex: Int = 0, toIndex: Int = size): Unit {\n
    AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n    nativeFill(element, fromIndex, toIndex);\n}\n\n/**\n
 * Fills this array or its subrange with the specified [element] value.\n * \n * @param fromIndex the start of the range
(inclusive) to fill, 0 by default.\n * @param toIndex the end of the range (exclusive) to fill, size of this array by
default.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than
the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n
*\n@SinceKotlin("1.3")\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\npublic
actual fun CharArray.fill(element:
    Char, fromIndex: Int = 0, toIndex: Int = size): Unit {\n    AbstractList.checkRangeIndexes(fromIndex, toIndex,
    size)\n    nativeFill(element, fromIndex, toIndex);\n}\n\n/**\n * Returns an array containing all elements of the
original array and then the given [element].\n * \n *\n@Suppress("ACTUAL_WITHOUT_EXPECT",
    "NOTHING_TO_INLINE")\npublic actual inline operator fun <T> Array<out T>.plus(element: T): Array<T> {\n
    return this.asDynamic().concat(arrayOf(element))\n}\n\n/**\n * Returns an array containing all elements of the
original array and then the given [element].\n * \n *\n@Suppress("NOTHING_TO_INLINE")\npublic actual inline
operator fun ByteArray.plus(element: Byte): ByteArray {\n    return plus(byteArrayOf(element))\n}\n\n/**\n *
Returns an array containing all elements of the original array and then the given [element].\n
*\n@Suppress("NOTHING_TO_INLINE")\npublic actual inline operator fun ShortArray.plus(element: Short):
    ShortArray {\n    return plus(shortArrayOf(element))\n}\n\n/**\n * Returns an array containing all elements of
the original array and then the given [element].\n
*\n@Suppress("NOTHING_TO_INLINE")\npublic actual inline operator fun IntArray.plus(element: Int):

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IntArray { \n return plus(intArrayOf(element)) \n } \n \n /\*\* \n \* Returns an array containing all elements of the original array and then the given [element]. \n \* \n \*/ \n @Suppress("NOTHING\_TO\_INLINE") \n public actual inline operator fun LongArray.plus(element: Long): LongArray { \n return plus(longArrayOf(element)) \n } \n \n /\*\* \n \* Returns an array containing all elements of the original array and then the given [element]. \n \* \n \*/ \n @Suppress("NOTHING\_TO\_INLINE") \n public actual inline operator fun FloatArray.plus(element: Float): FloatArray { \n return plus(floatArrayOf(element)) \n } \n \n /\*\* \n \* Returns an array containing all elements of the original array and then the given [element]. \n \* \n \*/ \n @Suppress("NOTHING\_TO\_INLINE") \n public actual inline operator fun DoubleArray.plus(element: Double): DoubleArray { \n return plus(doubleArrayOf(element)) \n } \n \n /\*\* \n \* Returns an array containing all elements of the original array and then the given [element]. \n \* \n \*/ \n @Suppress("NOTHING\_TO\_INLINE") \n public actual inline operator fun BooleanArray.plus(element: Boolean): BooleanArray { \n return plus(booleanArrayOf(element)) \n } \n \n /\*\* \n \* Returns an array containing all elements of the original array and then the given [element]. \n \* \n \*/ \n @Suppress("NOTHING\_TO\_INLINE") \n public actual inline operator fun CharArray.plus(element: Char): CharArray { \n return plus(charArrayOf(element)) \n } \n \n /\*\* \n \* Returns an array containing all elements of the original array and then all elements of the given [elements] collection. \n \* \n \*/ \n @Suppress("ACTUAL\_WITHOUT\_EXPECT") \n public actual operator fun <T> Array<out T>.plus(elements: Collection<T>): Array<T> { \n return arrayPlusCollection(this, elements) \n } \n \n /\*\* \n \* Returns an array containing all elements of the original array and then all elements of the given [elements] collection. \n \* \n \*/ \n public actual operator fun ByteArray.plus(elements: Collection<Byte>): ByteArray { \n return fillFromCollection(this.copyOf(size + elements.size), this.size, elements) \n } \n \n /\*\* \n \* Returns an array containing all elements of the original array and then all elements of the given [elements] collection. \n \* \n \*/ \n public actual operator fun ShortArray.plus(elements: Collection<Short>): ShortArray { \n return fillFromCollection(this.copyOf(size + elements.size), this.size, elements) \n } \n \n /\*\* \n \* Returns an array containing all elements of the original array and then all elements of the given [elements] collection. \n \* \n \*/ \n public actual operator fun IntArray.plus(elements: Collection<Int>): IntArray { \n return fillFromCollection(this.copyOf(size + elements.size), this.size, elements) \n } \n \n /\*\* \n \* Returns an array containing all elements of the original array and then all elements of the given [elements] collection. \n \* \n \*/ \n public actual operator fun LongArray.plus(elements: Collection<Long>): LongArray { \n return arrayPlusCollection(this, elements) \n } \n \n /\*\* \n \* Returns an array containing all elements of the original array and then all elements of the given [elements] collection. \n \* \n \*/ \n public actual operator fun FloatArray.plus(elements: Collection<Float>): FloatArray { \n return fillFromCollection(this.copyOf(size + elements.size), this.size, elements) \n } \n \n /\*\* \n \* Returns an array containing all elements of the original array and then all elements of the given [elements] collection. \n \* \n \*/ \n public actual operator fun DoubleArray.plus(elements: Collection<Double>): DoubleArray { \n return fillFromCollection(this.copyOf(size + elements.size), this.size, elements) \n } \n \n /\*\* \n \* Returns an array containing all elements of the original array and then all elements of the given [elements] collection. \n \* \n \*/ \n public actual operator fun BooleanArray.plus(elements: Collection<Boolean>): BooleanArray { \n return arrayPlusCollection(this, elements) \n } \n \n /\*\* \n \* Returns an array containing all elements of the original array and then all elements of the given [elements] collection. \n \* \n \*/ \n public actual operator fun CharArray.plus(elements: Collection<Char>): CharArray { \n return fillFromCollection(this.copyOf(size + elements.size), this.size, elements) \n } \n \n /\*\* \n \* Returns an array containing all elements of the original array and then all elements of the given [elements] array. \n \* \n \*/ \n @Suppress("ACTUAL\_WITHOUT\_EXPECT", "NOTHING\_TO\_INLINE") \n public actual inline operator fun <T> Array<out T>.plus(elements: Array<out T>): Array<T> { \n return this.asDynamic().concat(elements) \n } \n \n /\*\* \n \* Returns an array containing all elements of the original array and then all elements of the given [elements] array. \n \* \n \*/ \n @Suppress("NOTHING\_TO\_INLINE") \n public actual inline operator fun ByteArray.plus(elements: ByteArray): ByteArray { \n return primitiveArrayConcat(this, elements) \n } \n \n /\*\* \n \* Returns an array containing all elements of the original array and then all elements of the given [elements] array. \n \* \n \*/ \n @Suppress("NOTHING\_TO\_INLINE") \n public actual inline operator fun ShortArray.plus(elements:

ShortArray): ShortArray { \n return primitiveArrayConcat(this, elements)\n}\n\n/\*\*\n \* Returns an array containing all elements of the original array and then all elements of the given [elements] array.\n

\*\n@Suppress("NOTHING\_TO\_INLINE")\npublic actual inline operator fun IntArray.plus(elements: IntArray): IntArray { \n return primitiveArrayConcat(this, elements)\n}\n\n/\*\*\n \* Returns an array containing all elements of the original array and then all elements of the given [elements] array.\n

\*\n@Suppress("NOTHING\_TO\_INLINE")\npublic actual inline operator fun LongArray.plus(elements: LongArray): LongArray { \n return primitiveArrayConcat(this, elements)\n}\n\n/\*\*\n \* Returns an array containing all elements of the original array and then all elements of the given [elements] array.\n

\*\n@Suppress("NOTHING\_TO\_INLINE")\npublic actual inline operator fun FloatArray.plus(elements: FloatArray): FloatArray { \n return primitiveArrayConcat(this, elements)\n}\n\n/\*\*\n \* Returns an array containing all elements of the original array and then all elements of the given [elements] array.\n

\*\n@Suppress("NOTHING\_TO\_INLINE")\npublic actual inline operator fun DoubleArray.plus(elements: DoubleArray): DoubleArray { \n return primitiveArrayConcat(this, elements)\n}\n\n/\*\*\n \* Returns an array containing all elements of the original array and then all elements of the given [elements] array.\n

\*\n@Suppress("NOTHING\_TO\_INLINE")\npublic actual inline operator fun BooleanArray.plus(elements: BooleanArray): BooleanArray { \n return primitiveArrayConcat(this, elements)\n}\n\n/\*\*\n \* Returns an array containing all elements of the original array and then all elements of the given [elements] array.\n

\*\n@Suppress("NOTHING\_TO\_INLINE")\npublic actual inline operator fun CharArray.plus(elements: CharArray): CharArray { \n return primitiveArrayConcat(this, elements)\n}\n\n/\*\*\n \* Returns an array containing all elements of the original array and then the given [element].\n

\*\n@Suppress("ACTUAL\_WITHOUT\_EXPECT", "NOTHING\_TO\_INLINE")\npublic actual inline fun <T> Array<out T>.plusElement(element: T): Array<T> { \n return this.asDynamic().concat(arrayOf(element))\n}\n\n/\*\*\n \* Sorts the array in-place.\n \* \n \* @sample samples.collections.Arrays.Sorting.sortArray\n

\*\n@library("primitiveArraySort")\npublic actual fun IntArray.sort(): Unit { \n definedExternally\n}\n\n/\*\*\n \* Sorts the array in-place.\n \* \n \* @sample samples.collections.Arrays.Sorting.sortArray\n

\*\npublic actual fun LongArray.sort(): Unit { \n @Suppress("DEPRECATION")\n if (size > 1) sort { a: Long, b: Long -> a.compareTo(b) }\n}\n\n/\*\*\n \* Sorts the array in-place.\n \* \n \* @sample samples.collections.Arrays.Sorting.sortArray\n

\*\n@library("primitiveArraySort")\npublic actual fun ByteArray.sort(): Unit { \n definedExternally\n}\n\n/\*\*\n \* Sorts the array in-place.\n \* \n \* @sample samples.collections.Arrays.Sorting.sortArray\n

\*\n@library("primitiveArraySort")\npublic actual fun ShortArray.sort(): Unit { \n definedExternally\n}\n\n/\*\*\n \* Sorts the array in-place.\n \* \n \* @sample samples.collections.Arrays.Sorting.sortArray\n

\*\n@library("primitiveArraySort")\npublic actual fun DoubleArray.sort(): Unit { \n definedExternally\n}\n\n/\*\*\n \* Sorts the array in-place.\n \* \n \* @sample samples.collections.Arrays.Sorting.sortArray\n

\*\n@library("primitiveArraySort")\npublic actual fun FloatArray.sort(): Unit { \n definedExternally\n}\n\n/\*\*\n \* Sorts the array in-place.\n \* \n \* @sample samples.collections.Arrays.Sorting.sortArray\n

\*\n@library("primitiveArraySort")\npublic actual fun CharArray.sort(): Unit { \n definedExternally\n}\n\n/\*\*\n \* Sorts the array in-place according to the natural order of its elements.\n \* \n \* The sort is `_stable_`. It means that equal elements preserve their order relative to each other after sorting.\n \* \n \* @sample samples.collections.Arrays.Sorting.sortArrayOfComparable\n

\*\npublic actual fun <T : Comparable<T>> Array<out T>.sort(): Unit { \n if (size > 1) sortArray(this)\n}\n\n/\*\*\n \* Sorts the array in-place according to the order specified by the given [comparison] function.\n \* \n \* The sort is `_stable_`. It means that equal elements preserve their order relative to each other after sorting.\n

\*\n@Deprecated("Use sortWith instead", ReplaceWith("this.sortWith(Comparator(comparison))"))\n@DeprecatedSinceKotlin(warningSince = "1.6")\npublic fun <T> Array<out T>.sort(comparison: (a: T, b: T) -> Int): Unit { \n if (size > 1) sortArrayWith(this, comparison)\n}\n\n/\*\*\n \* Sorts a range in the array in-place.\n \* \n \* The sort is `_stable_`. It means that equal elements preserve their order relative to each other after sorting.\n \* \n \* @param

fromIndex the start of the range (inclusive) to sort, 0 by default.\n \* @param toIndex the end of the range (exclusive) to sort, size of this array by default.\n \* \n \* @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n \* @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n \* \n \* @sample samples.collections.Arrays.Sorting.sortRangeOfArrayOfComparable\n

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*\n@SinceKotlin("1.4")\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\npublic
actual fun <T : Comparable<T>> Array<out T>.sort(fromIndex: Int = 0, toIndex: Int = size): Unit {\n
AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n  sortArrayWith(this, fromIndex, toIndex,
naturalOrder())\n}\n\n/**\n * Sorts a range in the array in-place.\n * \n * @param fromIndex the start of the range
(inclusive) to sort, 0 by default.\n * @param toIndex the end of the range (exclusive) to sort, size of this array by
default.\n * \n
* @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this
array.\n * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n * \n * @sample
samples.collections.Arrays.Sorting.sortRangeOfArray\n
*\n@SinceKotlin("1.4")\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\npublic
actual fun ByteArray.sort(fromIndex: Int = 0, toIndex: Int = size): Unit {\n
AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n  val subarray =
this.asDynamic().subarray(fromIndex, toIndex).unsafeCast<ByteArray>()\n  subarray.sort()\n}\n\n/**\n * Sorts a
range in the array in-place.\n * \n * @param fromIndex the start of the range (inclusive) to sort, 0 by default.\n *
@param toIndex the end of the range (exclusive) to sort, size of this array by default.\n * \n * @throws
IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n *
@throws IllegalArgumentException
if [fromIndex] is greater than [toIndex].\n * \n * @sample samples.collections.Arrays.Sorting.sortRangeOfArray\n
*\n@SinceKotlin("1.4")\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\npublic
actual fun ShortArray.sort(fromIndex: Int = 0, toIndex: Int = size): Unit {\n
AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n  val subarray =
this.asDynamic().subarray(fromIndex, toIndex).unsafeCast<ShortArray>()\n  subarray.sort()\n}\n\n/**\n * Sorts a
range in the array in-place.\n * \n * @param fromIndex the start of the range (inclusive) to sort, 0 by default.\n *
@param toIndex the end of the range (exclusive) to sort, size of this array by default.\n * \n * @throws
IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n *
@throws IllegalArgumentException
if [fromIndex] is greater than [toIndex].\n * \n * @sample
samples.collections.Arrays.Sorting.sortRangeOfArray\n
*\n@SinceKotlin("1.4")\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\npublic
actual fun IntArray.sort(fromIndex: Int = 0, toIndex: Int = size): Unit {\n
AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n  val subarray =
this.asDynamic().subarray(fromIndex, toIndex).unsafeCast<IntArray>()\n  subarray.sort()\n}\n\n/**\n * Sorts a
range in the array in-place.\n * \n * @param fromIndex the start of the range (inclusive) to sort, 0 by default.\n *
@param toIndex the end of the range (exclusive) to sort, size of this array by default.\n * \n * @throws
IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n *
@throws IllegalArgumentException
if [fromIndex] is greater than [toIndex].\n * \n * @sample
samples.collections.Arrays.Sorting.sortRangeOfArray\n
*\n@SinceKotlin("1.4")\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\npublic
actual fun LongArray.sort(fromIndex: Int = 0, toIndex: Int = size): Unit {\n
AbstractList.checkRangeIndexes(fromIndex,
toIndex, size)\n  sortArrayWith(this.unsafeCast<Array<Long>>(), fromIndex, toIndex,
naturalOrder())\n}\n\n/**\n * Sorts a range in the array in-place.\n * \n * @param fromIndex the start of the range
(inclusive) to sort, 0 by default.\n * @param toIndex the end of the range (exclusive) to sort, size of this array by
default.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than

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the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n * \n *
@sample samples.collections.Arrays.Sorting.sortRangeOfArray\n
*\n@SinceKotlin("1.4")\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\npublic
actual fun FloatArray.sort(fromIndex: Int = 0, toIndex: Int = size): Unit {\n
AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n    val subarray =
this.asDynamic().subarray(fromIndex, toIndex).unsafeCast<FloatArray>()\n    subarray.sort()\n}\n\n/**\n * Sorts a
range in the array
in-place.\n * \n * @param fromIndex the start of the range (inclusive) to sort, 0 by default.\n * @param toIndex the
end of the range (exclusive) to sort, size of this array by default.\n * \n * @throws IndexOutOfBoundsException if
[fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n * @throws
IllegalArgumentException if [fromIndex] is greater than [toIndex].\n * \n * @sample
samples.collections.Arrays.Sorting.sortRangeOfArray\n
*\n@SinceKotlin("1.4")\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\npublic
actual fun DoubleArray.sort(fromIndex: Int = 0, toIndex: Int = size): Unit {\n
AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n    val subarray =
this.asDynamic().subarray(fromIndex, toIndex).unsafeCast<DoubleArray>()\n    subarray.sort()\n}\n\n/**\n * Sorts
a range in the array in-place.\n * \n * @param fromIndex the start of the range (inclusive) to sort, 0 by default.\n *
@param toIndex the end of the range (exclusive) to sort,
size of this array by default.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or
[toIndex] is greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater than
[toIndex].\n * \n * @sample samples.collections.Arrays.Sorting.sortRangeOfArray\n
*\n@SinceKotlin("1.4")\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\npublic
actual fun CharArray.sort(fromIndex: Int = 0, toIndex: Int = size): Unit {\n
AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n    val subarray =
this.asDynamic().subarray(fromIndex, toIndex).unsafeCast<CharArray>()\n    subarray.sort()\n}\n\n/**\n * Sorts the
array in-place according to the order specified by the given [comparison] function.\n */\n@Deprecated("Use other
sorting functions from the Standard Library")\n@DeprecatedSinceKotlin(warningSince =
"1.6")\n@kotlin.internal.InlineOnly\npublic inline fun ByteArray.sort(noinline comparison: (a: Byte, b: Byte) ->
Int): Unit
{\n    nativeSort(comparison)\n}\n\n/**\n * Sorts the array in-place according to the order specified by the given
[comparison] function.\n */\n@Deprecated("Use other sorting functions from the Standard
Library")\n@DeprecatedSinceKotlin(warningSince = "1.6")\n@kotlin.internal.InlineOnly\npublic inline fun
ShortArray.sort(noinline comparison: (a: Short, b: Short) -> Int): Unit {\n    nativeSort(comparison)\n}\n\n/**\n *
Sorts the array in-place according to the order specified by the given [comparison] function.\n
*\n@Deprecated("Use other sorting functions from the Standard
Library")\n@DeprecatedSinceKotlin(warningSince = "1.6")\n@kotlin.internal.InlineOnly\npublic inline fun
IntArray.sort(noinline comparison: (a: Int, b: Int) -> Int): Unit {\n    nativeSort(comparison)\n}\n\n/**\n * Sorts the
array in-place according to the order specified by the given [comparison] function.\n */\n@Deprecated("Use other
sorting functions from the Standard Library")\n@DeprecatedSinceKotlin(warningSince
= "1.6")\n@kotlin.internal.InlineOnly\npublic inline fun LongArray.sort(noinline comparison: (a: Long, b: Long) -
> Int): Unit {\n    nativeSort(comparison)\n}\n\n/**\n * Sorts the array in-place according to the order specified by
the given [comparison] function.\n */\n@Deprecated("Use other sorting functions from the Standard
Library")\n@DeprecatedSinceKotlin(warningSince = "1.6")\n@kotlin.internal.InlineOnly\npublic inline fun
FloatArray.sort(noinline comparison: (a: Float, b: Float) -> Int): Unit {\n    nativeSort(comparison)\n}\n\n/**\n *
Sorts the array in-place according to the order specified by the given [comparison] function.\n
*\n@Deprecated("Use other sorting functions from the Standard
Library")\n@DeprecatedSinceKotlin(warningSince = "1.6")\n@kotlin.internal.InlineOnly\npublic inline fun
DoubleArray.sort(noinline comparison: (a: Double, b: Double) -> Int): Unit {\n

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nativeSort(comparison)\n}\n\n/**\n * Sorts the array in-place according to the order
 * specified by the given [comparison] function.\n *^\n@Deprecated("\nUse other sorting functions from the Standard
 * Library\n")\n@DeprecatedSinceKotlin(warningSince = `1.6`)\n@kotlin.internal.InlineOnly\npublic inline fun
 * CharArray.sort(noinline comparison: (a: Char, b: Char) -> Int): Unit {\n
 * nativeSort(comparison)\n}\n\n/**\n * Sorts the array in-place according to the order specified by the given [comparator].\n * \n * The sort is _stable_. It
 * means that equal elements preserve their order relative to each other after sorting.\n *^\npublic actual fun <T>
 * Array<out T>.sortWith(comparator: Comparator<in T>): Unit {\n
 * if (size > 1) sortArrayWith(this,
 * comparator)\n}\n\n/**\n * Sorts a range in the array in-place with the given [comparator].\n * \n * The sort is
 * _stable_. It means that equal elements preserve their order relative to each other after sorting.\n * \n * @param
 * fromIndex the start of the range (inclusive) to sort, 0 by default.\n * @param toIndex the end of the range
 * (exclusive)
 * to sort, size of this array by default.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero
 * or [toIndex] is greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater
 * than [toIndex].\n
 *^\n@SinceKotlin(`1.4`)\n@Suppress("\nACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS\n")\npublic
 * actual fun <T> Array<out T>.sortWith(comparator: Comparator<in T>, fromIndex: Int = 0, toIndex: Int = size):
 * Unit {\n
 * AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n
 * sortArrayWith(this, fromIndex, toIndex,
 * comparator)\n}\n\n/**\n * Returns a *typed* object array containing all of the elements of this primitive array.\n
 *^\npublic actual fun ByteArray.toTypedArray(): Array<Byte> {\n
 * return js("\n[]\n").slice.call(this)\n}\n\n/**\n * Returns a *typed* object array containing all of the elements of this primitive array.\n
 *^\npublic actual fun
 * ShortArray.toTypedArray(): Array<Short> {\n
 * return js("\n[]\n").slice.call(this)\n}\n\n/**\n * Returns a *typed* object array containing all of the elements of this primitive array.\n
 *^\npublic actual fun
 * IntArray.toTypedArray(): Array<Int> {\n
 * return js("\n[]\n").slice.call(this)\n}\n\n/**\n * Returns a *typed* object
 * array containing all of the elements of this primitive array.\n *^\npublic actual fun LongArray.toTypedArray():
 * Array<Long> {\n
 * return js("\n[]\n").slice.call(this)\n}\n\n/**\n * Returns a *typed* object array containing all of the
 * elements of this primitive array.\n *^\npublic actual fun FloatArray.toTypedArray(): Array<Float> {\n
 * return
 * js("\n[]\n").slice.call(this)\n}\n\n/**\n * Returns a *typed* object array containing all of the elements of this primitive
 * array.\n *^\npublic actual fun DoubleArray.toTypedArray(): Array<Double> {\n
 * return
 * js("\n[]\n").slice.call(this)\n}\n\n/**\n * Returns a *typed* object array containing all of the elements of this primitive
 * array.\n *^\npublic actual fun BooleanArray.toTypedArray(): Array<Boolean> {\n
 * return
 * js("\n[]\n").slice.call(this)\n}\n\n/**\n * Returns a *typed* object array containing all of the elements of this primitive
 * array.\n *^\npublic actual fun CharArray.toTypedArray(): Array<Char> {\n
 * return Array(size) { index ->
 * this[index] }\n}\n\n", "/*\n * Copyright 2010-2022 JetBrains s.r.o. and Kotlin Programming Language
 * contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
 * license/LICENSE.txt file.\n
 *^\n@file:kotlin.jvm.JvmName("\nComparisonsKt\n")\n@file:kotlin.jvm.JvmMultifileClass\npackage
 * kotlin.comparisons\n\n/**\n * Compares two values using the specified functions [selectors] to calculate the result
 * of the comparison.\n * The functions are called sequentially, receive the given values [a] and [b] and return
 * [Comparable]\n * objects. As soon as the [Comparable] instances returned by a function for [a] and [b] values do
 * not\n * compare as equal, the result of that comparison is returned.\n * \n * @sample
 * samples.comparisons.Comparisons.compareValuesByWithSelectors\n
 *^\npublic fun <T> compareValuesBy(a: T, b: T, vararg selectors: (T) -> Comparable<*>?): Int {\n
 * require(selectors.size > 0)\n
 * return compareValuesByImpl(a, b, selectors)\n}\n\nprivate fun <T>
 * compareValuesByImpl(a: T, b: T, selectors: Array<out (T) -> Comparable<*>?): Int {\n
 * for (fn in selectors) {\n
 * val v1 = fn(a)\n
 * val v2 = fn(b)\n
 * val diff = compareValues(v1, v2)\n
 * if (diff != 0) return diff\n
 * }\n
 * return 0\n}\n\n/**\n * Compares two values using the specified [selector] function to calculate the result of the
 * comparison.\n * The function is applied to the given values [a] and [b] and return [Comparable] objects.\n * The
 * result of comparison of these [Comparable] instances is returned.\n * \n * @sample

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samples.comparisons.Comparisons.compareValuesByWithSingleSelector\n *\n@kotlin.internal.InlineOnly\npublic
inline fun <T> compareValuesBy(a: T, b: T, selector: (T) -> Comparable<*>?): Int {\n
    return compareValues(selector(a), selector(b))\n}\n\n/**\n * Compares two values using the specified [selector]
function to calculate the result of the comparison.\n * The function is applied to the given values [a] and [b] and
return objects of type K which are then being\n * compared with the given [comparator].\n *\n * @sample
samples.comparisons.Comparisons.compareValuesByWithComparator\n *\n@kotlin.internal.InlineOnly\npublic
inline fun <T, K> compareValuesBy(a: T, b: T, comparator: Comparator<in K>, selector: (T) -> K): Int {\n    return
comparator.compare(selector(a), selector(b))\n}\n\n//// Not so useful without type inference for receiver of
expression\n//// compareValuesWith(v1, v2, compareBy { it.prop1 } thenByDescending { it.prop2 })\n////**\n// *
Compares two values using the specified [comparator].\n\n *\n * @Suppress("NOTHING_TO_INLINE")\n//public
inline fun <T> compareValuesWith(a: T, b: T, comparator: Comparator<T>): Int = comparator.compare(a,
b)\n\n/\n\n/**\n * Compares
two nullable [Comparable] values. Null is considered less than any value.\n *\n * @sample
samples.comparisons.Comparisons.compareValues\n *\npublic fun <T : Comparable<*>> compareValues(a: T?, b:
T?): Int {\n    if (a === b) return 0\n    if (a == null) return -1\n    if (b == null) return 1\n\n    @Suppress("UNCHECKED_CAST")\n    return (a as Comparable<Any>).compareTo(b)\n}\n\n/**\n * Creates a
comparator using the sequence of functions to calculate a result of comparison.\n * The functions are called
sequentially, receive the given values `a` and `b` and return [Comparable]\n * objects. As soon as the [Comparable]
instances returned by a function for `a` and `b` values do not\n * compare as equal, the result of that comparison is
returned from the [Comparator].\n *\n * @sample samples.comparisons.Comparisons.compareByWithSelectors\n
*\npublic fun <T> compareBy(vararg selectors: (T) -> Comparable<*>?): Comparator<T> {\n
    require(selectors.size > 0)\n    return Comparator
    { a, b -> compareValuesByImpl(a, b, selectors) }\n}\n\n/**\n * Creates a comparator using the function to
transform value to a [Comparable] instance for comparison.\n *\n * @sample
samples.comparisons.Comparisons.compareByWithSingleSelector\n *\n@kotlin.internal.InlineOnly\npublic inline
fun <T> compareBy(crossinline selector: (T) -> Comparable<*>?): Comparator<T> =\n    Comparator { a, b ->
compareValuesBy(a, b, selector) }\n\n/**\n * Creates a comparator using the [selector] function to transform values
being compared and then applying\n * the specified [comparator] to compare transformed values.\n *\n * @sample
samples.comparisons.Comparisons.compareByWithComparator\n *\n@kotlin.internal.InlineOnly\npublic inline
fun <T, K> compareBy(comparator: Comparator<in K>, crossinline selector: (T) -> K): Comparator<T> =\n    Comparator { a, b -> compareValuesBy(a, b, comparator, selector) }\n\n/**\n * Creates a descending comparator
using the function to transform value to a [Comparable]
instance for comparison.\n *\n * @sample
samples.comparisons.Comparisons.compareByDescendingWithSingleSelector\n
*\n@kotlin.internal.InlineOnly\npublic inline fun <T> compareByDescending(crossinline selector: (T) ->
Comparable<*>?): Comparator<T> =\n    Comparator { a, b -> compareValuesBy(b, a, selector) }\n\n/**\n *
Creates a descending comparator using the [selector] function to transform values being compared and then
applying\n * the specified [comparator] to compare transformed values.\n *\n * Note that an order of [comparator] is
reversed by this wrapper.\n *\n * @sample
samples.comparisons.Comparisons.compareByDescendingWithComparator\n
*\n@kotlin.internal.InlineOnly\npublic inline fun <T, K> compareByDescending(comparator: Comparator<in K>,
crossinline selector: (T) -> K): Comparator<T> =\n    Comparator { a, b -> compareValuesBy(b, a, comparator,
selector) }\n\n/**\n * Creates a comparator comparing values after the primary comparator defined them equal. It
uses\n * the function
to transform value to a [Comparable] instance for comparison.\n *\n * @sample
samples.comparisons.Comparisons.thenBy\n *\n@kotlin.internal.InlineOnly\npublic inline fun <T>
Comparator<T>.thenBy(crossinline selector: (T) -> Comparable<*>?): Comparator<T> =\n    Comparator { a, b -
>\n        val previousCompare = this@thenBy.compare(a, b)\n        if (previousCompare != 0) previousCompare else

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compareValuesBy(a, b, selector)\n    }\n\n/**\n * Creates a comparator comparing values after the primary
comparator defined them equal. It uses\n * the [selector] function to transform values and then compares them with
the given [comparator].\n *\n * @sample samples.comparisons.Comparisons.thenByWithComparator\n
*/\n@kotlin.internal.InlineOnly\npublic inline fun <T, K> Comparator<T>.thenBy(comparator: Comparator<in K>,\n
crossinline selector: (T) -> K): Comparator<T> =\n    Comparator { a, b ->\n        val previousCompare =
this@thenBy.compare(a, b)\n        if (previousCompare != 0) previousCompare
    else compareValuesBy(a, b, comparator, selector)\n    }\n\n/**\n * Creates a descending comparator using the
primary comparator and\n * the function to transform value to a [Comparable] instance for comparison.\n *\n *
@sample samples.comparisons.Comparisons.thenByDescending\n */\n@kotlin.internal.InlineOnly\npublic inline
fun <T> Comparator<T>.thenByDescending(crossinline selector: (T) -> Comparable<*>?): Comparator<T> =\n
Comparator { a, b ->\n    val previousCompare = this@thenByDescending.compare(a, b)\n    if
(previousCompare != 0) previousCompare else compareValuesBy(b, a, selector)\n    }\n\n/**\n * Creates a
descending comparator comparing values after the primary comparator defined them equal. It uses\n * the [selector]
function to transform values and then compares them with the given [comparator].\n *\n * @sample
samples.comparisons.Comparisons.thenByDescendingWithComparator\n */\n@kotlin.internal.InlineOnly\npublic
inline fun <T, K> Comparator<T>.thenByDescending(comparator:
Comparator<in K>, crossinline selector: (T) -> K): Comparator<T> =\n    Comparator { a, b ->\n    val
previousCompare = this@thenByDescending.compare(a, b)\n    if (previousCompare != 0) previousCompare else
compareValuesBy(b, a, comparator, selector)\n    }\n\n/**\n * Creates a comparator using the primary comparator
and function to calculate a result of comparison.\n *\n * @sample
samples.comparisons.Comparisons.thenComparator\n */\n@kotlin.internal.InlineOnly\npublic inline fun <T>
Comparator<T>.thenComparator(crossinline comparison: (a: T, b: T) -> Int): Comparator<T> =\n    Comparator { a,
b ->\n    val previousCompare = this@thenComparator.compare(a, b)\n    if (previousCompare != 0)
previousCompare else comparison(a, b)\n    }\n\n/**\n * Combines this comparator and the given [comparator] such
that the latter is applied only\n * when the former considered values equal.\n *\n * @sample
samples.comparisons.Comparisons.then\n */\npublic infix
fun <T> Comparator<T>.then(comparator: Comparator<in T>): Comparator<T> =\n    Comparator { a, b ->\n
val previousCompare = this@then.compare(a, b)\n    if (previousCompare != 0) previousCompare else
comparator.compare(a, b)\n    }\n\n/**\n * Combines this comparator and the given [comparator] such that the latter
is applied only\n * when the former considered values equal.\n *\n * @sample
samples.comparisons.Comparisons.thenDescending\n */\npublic infix fun <T>
Comparator<T>.thenDescending(comparator: Comparator<in T>): Comparator<T> =\n    Comparator<T> { a, b -
->\n    val previousCompare = this@thenDescending.compare(a, b)\n    if (previousCompare != 0)
previousCompare else comparator.compare(b, a)\n    }\n\n// Not so useful without type inference for receiver of
expression\n\n/**\n * Extends the given [comparator] of non-nullable values to a comparator of nullable values\n *
considering `null` value less than any other value.\n * Non-null values are compared with
the provided [comparator].\n *\n * @sample samples.comparisons.Comparisons.nullsFirstLastWithComparator\n
*/\npublic fun <T : Any> nullsFirst(comparator: Comparator<in T>): Comparator<T?> =\n    Comparator { a, b ->\n
when {\n        a === b -> 0\n        a == null -> -1\n        b == null -> 1\n        else ->
comparator.compare(a, b)\n    }\n    }\n\n/**\n * Provides a comparator of nullable [Comparable] values\n *
considering `null` value less than any other value.\n * Non-null values are compared according to their [natural
order][naturalOrder].\n *\n * @sample samples.comparisons.Comparisons.nullsFirstLastComparator\n
*/\n@kotlin.internal.InlineOnly\npublic inline fun <T : Comparable<T>> nullsFirst(): Comparator<T?> =
nullsFirst(naturalOrder())\n\n/**\n * Extends the given [comparator] of non-nullable values to a comparator of
nullable values\n * considering `null` value greater than any other value.\n * Non-null values are compared with the
provided [comparator].\n *\n * @sample samples.comparisons.Comparisons.nullsFirstLastWithComparator\n */\npublic fun <T : Any>
nullsLast(comparator: Comparator<in T>): Comparator<T?> =\n    Comparator { a, b ->\n    when {\n        a

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=== b -> 0\n      a == null -> 1\n      b == null -> -1\n      else -> comparator.compare(a, b)\n    }\n}\n\n/**\n * Provides a comparator of nullable [Comparable] values\n * considering `null` value greater than any\n * other value.\n * Non-null values are compared according to their [natural order][naturalOrder].\n *\n * @sample\n samples.comparisons.Comparisons.nullsFirstLastComparator\n *\n @kotlin.internal.InlineOnly\n public inline fun\n <T : Comparable<T>> nullsLast(): Comparator<T?> = nullsLast(naturalOrder())\n\n /**\n * Returns a comparator\n * that compares [Comparable] objects in natural order.\n *\n * The natural order of a `Comparable` type here means\n * the order established by its `compareTo` function.\n *\n * @sample\n samples.comparisons.Comparisons.naturalOrderComparator\n\n *\n public fun <T : Comparable<T>> naturalOrder(): Comparator<T> = @Suppress("UNCHECKED_CAST")\n (NaturalOrderComparator as Comparator<T>)\n\n /**\n * Returns a comparator that compares [Comparable] objects\n * in reversed natural order.\n *\n * The natural order of a `Comparable` type here means the order established by its\n * `compareTo` function.\n *\n * @sample\n samples.comparisons.Comparisons.nullsFirstLastWithComparator\n\n *\n public fun <T : Comparable<T>> reverseOrder(): Comparator<T> = @Suppress("UNCHECKED_CAST")\n (ReverseOrderComparator as Comparator<T>)\n\n /**\n * Returns a comparator that imposes the reverse ordering\n * of this comparator.\n *\n * @sample\n samples.comparisons.Comparisons.reversed\n\n *\n @Suppress("EXTENSION_SHADOWED_BY_MEMBER")\n public fun <T> Comparator<T>.reversed():\n Comparator<T> = when (this) {\n is ReversedComparator -> this.comparator\n NaturalOrderComparator ->\n @Suppress("UNCHECKED_CAST") (ReverseOrderComparator\n as Comparator<T>)\n ReverseOrderComparator -> @Suppress("UNCHECKED_CAST")\n (NaturalOrderComparator as Comparator<T>)\n else -> ReversedComparator(this)\n }\n\n private class\n ReversedComparator<T>(public val comparator: Comparator<T>) : Comparator<T> {\n override fun compare(a:\n T, b: T): Int = comparator.compare(b, a)\n @Suppress("VIRTUAL_MEMBER_HIDDEN")\n fun reversed():\n Comparator<T> = comparator\n }\n\n private object NaturalOrderComparator : Comparator<Comparable<Any>> {\n override fun compare(a: Comparable<Any>, b: Comparable<Any>): Int = a.compareTo(b)\n\n @Suppress("VIRTUAL_MEMBER_HIDDEN")\n fun reversed(): Comparator<Comparable<Any>> =\n ReverseOrderComparator\n }\n\n private object ReverseOrderComparator : Comparator<Comparable<Any>> {\n override fun compare(a: Comparable<Any>, b: Comparable<Any>): Int = b.compareTo(a)\n\n @Suppress("VIRTUAL_MEMBER_HIDDEN")\n fun reversed(): Comparator<Comparable<Any>> =\n NaturalOrderComparator\n }\n\n", "/*\n * Copyright\n * 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed\n * by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n\n *\n @file:kotlin.jvm.JvmMultifileClass\n @file:kotlin.jvm.JvmName("StandardKt")\n package kotlin\n\n import\n kotlin.contracts.*\n\n /**\n * An exception is thrown to indicate that a method body remains to be implemented.\n *\n *\n public class NotImplementedError(message: String = "An operation is not implemented.") :\n Error(message)\n\n /**\n * Always throws [NotImplementedError] stating that operation is not implemented.\n\n *\n @kotlin.internal.InlineOnly\n public inline fun TODO(): Nothing = throw NotImplementedError()\n\n /**\n * Always throws [NotImplementedError] stating that operation is not implemented.\n *\n * @param reason a string\n * explaining why the implementation is missing.\n *\n @kotlin.internal.InlineOnly\n public inline fun TODO(reason:\n String): Nothing = throw NotImplementedError("An\n operation is not implemented: $reason")\n\n /**\n * Calls the specified function [block] and returns its result.\n *\n * For detailed usage information see the documentation for [scope\n * functions](https://kotlinlang.org/docs/reference/scope-functions.html#run).\n\n *\n @kotlin.internal.InlineOnly\n public inline fun <R> run(block: () -> R): R {\n contract {\n callsInPlace(block, InvocationKind.EXACTLY_ONCE)\n }\n return block()\n }\n\n /**\n * Calls the specified\n * function [block] with `this` value as its receiver and returns its result.\n *\n * For detailed usage information see the\n * documentation for [scope functions](https://kotlinlang.org/docs/reference/scope-functions.html#run).\n\n *\n @kotlin.internal.InlineOnly\n public inline fun <T, R> T.run(block: T.() -> R): R {\n contract {\n callsInPlace(block, InvocationKind.EXACTLY_ONCE)\n }\n return block()\n }\n\n /**\n * Calls the specified

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function [block] with the given [receiver] as its receiver and returns its result.\n \* For detailed usage information see the documentation for [scope functions](https://kotlinlang.org/docs/reference/scope-functions.html#with).\n

```
*\n@kotlin.internal.InlineOnly\npublic inline fun <T, R> with(receiver: T, block: T.() -> R): R {\n    contract {\n        callsInPlace(block, InvocationKind.EXACTLY_ONCE)\n    }\n    return receiver.block()\n}\n\n/**\n * Calls the specified function [block] with `this` value as its receiver and returns `this` value.\n * For detailed usage information see the documentation for [scope functions](https://kotlinlang.org/docs/reference/scope-functions.html#apply).\n */\n@kotlin.internal.InlineOnly\npublic inline fun <T> T.apply(block: T.() -> Unit): T {\n    contract {\n        callsInPlace(block, InvocationKind.EXACTLY_ONCE)\n    }\n    block()\n    return this\n}\n\n/**\n * Calls the specified function [block] with `this` value as its argument and returns `this` value.\n * For detailed usage information see the documentation for [scope functions](https://kotlinlang.org/docs/reference/scope-functions.html#also).\n */\n@kotlin.internal.InlineOnly\n@SinceKotlin("1.1")\npublic inline fun <T> T.also(block: (T) -> Unit): T {\n    contract {\n        callsInPlace(block, InvocationKind.EXACTLY_ONCE)\n    }\n    block(this)\n    return this\n}\n\n/**\n * Calls the specified function [block] with `this` value as its argument and returns its result.\n * For detailed usage information see the documentation for [scope functions](https://kotlinlang.org/docs/reference/scope-functions.html#let).\n */\n@kotlin.internal.InlineOnly\npublic inline fun <T, R> T.let(block: (T) -> R): R {\n    contract {\n        callsInPlace(block, InvocationKind.EXACTLY_ONCE)\n    }\n    return block(this)\n}\n\n/**\n * Returns `this` value if it satisfies the given [predicate] or `null`, if it doesn't.\n * For detailed usage information see the documentation for [scope functions](https://kotlinlang.org/docs/reference/scope-functions.html#takeif-and-takeunless).\n */\n@kotlin.internal.InlineOnly\n@SinceKotlin("1.1")\npublic inline fun <T> T.takeIf(predicate: (T) -> Boolean): T? {\n    contract {\n        callsInPlace(predicate, InvocationKind.EXACTLY_ONCE)\n    }\n    return if (predicate(this)) this else null\n}\n\n/**\n * Returns `this` value if it _does not_ satisfy the given [predicate] or `null`, if it does.\n * For detailed usage information see the documentation for [scope functions](https://kotlinlang.org/docs/reference/scope-functions.html#takeif-and-takeunless).\n */\n@kotlin.internal.InlineOnly\n@SinceKotlin("1.1")\npublic inline fun <T> T.takeUnless(predicate: (T) -> Boolean): T? {\n    contract {\n        callsInPlace(predicate, InvocationKind.EXACTLY_ONCE)\n    }\n    return if (!predicate(this)) this else null\n}\n\n/**\n * Executes the given function [action] specified number of [times].\n * A zero-based index of current iteration is passed as a parameter to [action].\n */\n@sample samples.misc.ControlFlow.repeat\n@kotlin.internal.InlineOnly\npublic inline fun repeat(times: Int, action: (Int) -> Unit) {\n    contract { callsInPlace(action) }\n    for (index in 0 until times) {\n        action(index)\n    }\n}\n\n/**\n * Copyright 2010-2022 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\npackage kotlin.comparisons\n\n/\n\nNOTE: THIS FILE IS AUTO-GENERATED by the GenerateStandardLib.kt\n\nSee: https://github.com/JetBrains/kotlin/tree/master/libraries/stdlib\n\nimport kotlin.js\n\n/**\n * Returns the greater of two values.\n * If values are equal, returns the first one.\n */\n@SinceKotlin("1.1")\npublic actual fun <T : Comparable<T>> maxOf(a: T, b: T): T {\n    return if (a >= b) a else b\n}\n\n/**\n * Returns the greater of two values.\n */\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic actual inline fun maxOf(a: Byte, b: Byte): Byte {\n    return maxOf(a.toInt(), b.toInt()).unsafeCast<Byte>()\n}\n\n/**\n * Returns the greater of two values.\n */\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic actual inline fun maxOf(a: Short, b: Short): Short {\n    return maxOf(a.toInt(), b.toInt()).unsafeCast<Short>()\n}\n\n/**\n * Returns the greater of two values.\n */\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic actual inline fun maxOf(a: Int, b: Int): Int {\n    return JsMath.max(a, b)\n}\n\n/**\n * Returns the greater of two values.\n */\n@SinceKotlin("1.1")\n@Suppress("NOTHING_TO_INLINE")\npublic actual inline fun maxOf(a: Long, b: Long): Long {\n    return if (a >= b) a else b\n}\n\n/**\n * Returns the greater of two values.\n * If either value

```

```

is `NaN`, returns `NaN`.
 */
@SinceKotlin("1.1")
@kotlin.internal.InlineOnly
public actual inline fun
maxOf(a: Float, b: Float): Float {
    return JsMath.max(a, b)
}
 */
 * Returns the
greater of two values.
 */
 * If either value is `NaN`, returns `NaN`.
 */
@SinceKotlin("1.1")
@kotlin.internal.InlineOnly
public actual inline fun maxOf(a: Double, b: Double):
Double {
    return JsMath.max(a, b)
}
 */
 * Returns the greater of three values.
 */
 * If there are multiple
equal maximal values, returns the first of them.
 */
@SinceKotlin("1.1")
public actual fun <T :
Comparable<T>> maxOf(a: T, b: T, c: T): T {
    return maxOf(a, maxOf(b, c))
}
 */
 * Returns the greater
of three values.
 */
@SinceKotlin("1.1")
@kotlin.internal.InlineOnly
public actual inline fun maxOf(a: Byte,
b: Byte, c: Byte): Byte {
    return JsMath.max(a.toInt(), b.toInt(), c.toInt()).unsafeCast<Byte>()
}
 */
 *
Returns the greater of three values.
 */
@SinceKotlin("1.1")
@kotlin.internal.InlineOnly
public actual inline
fun maxOf(a: Short, b: Short, c: Short): Short {
    return JsMath.max(a.toInt(), b.toInt(),
c.toInt()).unsafeCast<Short>()
}
 */
 *
Returns the greater of three values.
 */
@SinceKotlin("1.1")
@kotlin.internal.InlineOnly
public actual
inline fun maxOf(a: Int, b: Int, c: Int): Int {
    return JsMath.max(a, b, c)
}
 */
 * Returns the greater of three
values.
 */
@SinceKotlin("1.1")
@kotlin.internal.InlineOnly
public actual inline fun maxOf(a: Long, b: Long,
c: Long): Long {
    return maxOf(a, maxOf(b, c))
}
 */
 * Returns the greater of three values.
 */
 * If any
value is `NaN`, returns `NaN`.
 */
@SinceKotlin("1.1")
@kotlin.internal.InlineOnly
public actual inline fun
maxOf(a: Float, b: Float, c: Float): Float {
    return JsMath.max(a, b, c)
}
 */
 * Returns the greater of three
values.
 */
 * If any value is `NaN`, returns `NaN`.
 */
@SinceKotlin("1.1")
@kotlin.internal.InlineOnly
public actual inline fun maxOf(a: Double, b: Double, c:
Double): Double {
    return JsMath.max(a, b, c)
}
 */
 * Returns the greater of the given values.
 */
 * If
there are
multiple equal maximal values, returns the first of them.
 */
@SinceKotlin("1.4")
public actual fun <T :
Comparable<T>> maxOf(a: T, vararg other: T): T {
    var max = a
    for (e in other) max = maxOf(max, e)
    return max
}
 */
 * Returns the greater of the given values.
 */
@SinceKotlin("1.4")
public actual fun
maxOf(a: Byte, vararg other: Byte): Byte {
    var max = a
    for (e in other) max = maxOf(max, e)
    return
max
}
 */
 * Returns the greater of the given values.
 */
@SinceKotlin("1.4")
public actual fun maxOf(a:
Short, vararg other: Short): Short {
    var max = a
    for (e in other) max = maxOf(max, e)
    return
max
}
 */
 * Returns the greater of the given values.
 */
@SinceKotlin("1.4")
public actual fun maxOf(a:
Int, vararg other: Int): Int {
    var max = a
    for (e in other) max = maxOf(max, e)
    return max
}
 */
 *
Returns the greater of the given values.
 */
@SinceKotlin("1.4")
public actual fun maxOf(a:
Long, vararg other: Long): Long {
    var max = a
    for (e in other) max = maxOf(max, e)
    return
max
}
 */
 * Returns the greater of the given values.
 */
 * If any value is `NaN`, returns `NaN`.
 */
@SinceKotlin("1.4")
public actual fun maxOf(a: Float, vararg other: Float): Float {
    var max = a
    for (e in other) max = maxOf(max, e)
    return max
}
 */
 * Returns the greater of the given values.
 */
 * If any
value is `NaN`, returns `NaN`.
 */
@SinceKotlin("1.4")
public actual fun maxOf(a: Double, vararg other:
Double): Double {
    var max = a
    for (e in other) max = maxOf(max, e)
    return max
}
 */
 * Returns
the smaller of two values.
 */
 * If values are equal, returns the first one.
 */
@SinceKotlin("1.1")
public
actual fun <T : Comparable<T>> minOf(a: T, b: T): T {
    return if (a <= b) a else b
}
 */
 * Returns the
smaller of two values.
 */
@SinceKotlin("1.1")
@kotlin.internal.InlineOnly
public actual
inline fun minOf(a: Byte, b: Byte): Byte {
    return minOf(a.toInt(), b.toInt()).unsafeCast<Byte>()
}
 */
 *
Returns the smaller of two values.
 */
@SinceKotlin("1.1")
@kotlin.internal.InlineOnly
public actual inline
fun minOf(a: Short, b: Short): Short {
    return minOf(a.toInt(), b.toInt()).unsafeCast<Short>()
}
 */
 *
Returns the smaller of two values.
 */
@SinceKotlin("1.1")
@kotlin.internal.InlineOnly
public actual inline
fun minOf(a: Int, b: Int): Int {
    return JsMath.min(a, b)
}
 */
 * Returns the smaller of two values.
 */
@SinceKotlin("1.1")
@kotlin.internal.InlineOnly
@Suppress("NOTHING_TO_INLINE")
public actual inline fun minOf(a: Long, b:
Long): Long {
    return if (a <= b) a else b
}
 */
 * Returns the smaller of two values.
 */
 * If either value
is `NaN`, returns `NaN`.
 */
@SinceKotlin("1.1")
@kotlin.internal.InlineOnly
public actual inline fun

```

```

minOf(a: Float, b: Float): Float {\n    return JsMath.min(a, b)\n}\n\n/**\n * Returns the smaller
of two values.\n * \n * If either value is `NaN`, returns `NaN`.\n
*\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic actual inline fun minOf(a: Double, b: Double):
Double {\n    return JsMath.min(a, b)\n}\n\n/**\n * Returns the smaller of three values.\n * \n * If there are multiple
equal minimal values, returns the first of them.\n *\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic actual fun <T :
Comparable<T>> minOf(a: T, b: T, c: T): T {\n    return minOf(a, minOf(b, c))\n}\n\n/**\n * Returns the smaller of
three values.\n *\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic actual inline fun minOf(a: Byte, b:
Byte, c: Byte): Byte {\n    return JsMath.min(a.toInt(), b.toInt(), c.toInt()).unsafeCast<Byte>()\n}\n\n/**\n * Returns
the smaller of three values.\n *\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic actual inline fun
minOf(a: Short, b: Short, c: Short): Short {\n    return JsMath.min(a.toInt(), b.toInt(),
c.toInt()).unsafeCast<Short>()\n}\n\n/**\n *
Returns the smaller of three values.\n *\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic actual inline
fun minOf(a: Int, b: Int, c: Int): Int {\n    return JsMath.min(a, b, c)\n}\n\n/**\n * Returns the smaller of three
values.\n *\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic actual inline fun minOf(a: Long, b: Long,
c: Long): Long {\n    return minOf(a, minOf(b, c))\n}\n\n/**\n * Returns the smaller of three values.\n * \n * If any
value is `NaN`, returns `NaN`.\n *\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic actual inline fun
minOf(a: Float, b: Float, c: Float): Float {\n    return JsMath.min(a, b, c)\n}\n\n/**\n * Returns the smaller of three
values.\n * \n * If any value is `NaN`, returns `NaN`.\n
*\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic actual inline fun minOf(a: Double, b: Double, c:
Double): Double {\n    return JsMath.min(a, b, c)\n}\n\n/**\n * Returns the smaller of the given values.\n * \n * If
there are multiple
equal minimal values, returns the first of them.\n *\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic actual fun <T :
Comparable<T>> minOf(a: T, vararg other: T): T {\n    var min = a\n    for (e in other) min = minOf(min, e)\n    return
min\n}\n\n/**\n * Returns the smaller of the given values.\n *\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic
actual fun minOf(a: Byte, vararg other: Byte): Byte {\n    var min = a\n    for (e in other) min = minOf(min, e)\n    return
min\n}\n\n/**\n * Returns the smaller of the given values.\n *\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic
actual fun minOf(a: Short, vararg other: Short): Short {\n    var min = a\n    for (e in other) min = minOf(min, e)\n    return
min\n}\n\n/**\n * Returns the smaller of the given values.\n *\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic
actual fun minOf(a: Int, vararg other: Int): Int {\n    var min = a\n    for (e in other) min = minOf(min, e)\n    return
min\n}\n\n/**\n * Returns the smaller of the given values.\n *\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic
actual fun minOf(a: Long, vararg other: Long): Long {\n    var min = a\n    for (e in other) min = minOf(min, e)\n    return
min\n}\n\n/**\n * Returns the smaller of the given values.\n * \n * If any value is `NaN`, returns `NaN`.\n
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic actual fun minOf(a: Float, vararg other: Float): Float {\n
    var min = a\n    for (e in other) min = minOf(min, e)\n    return min\n}\n\n/**\n * Returns the smaller of the given
values.\n * \n * If any value is `NaN`, returns `NaN`.\n
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic actual fun minOf(a: Double, vararg other: Double): Double {\n
    var min = a\n    for (e in other) min = minOf(min, e)\n    return min\n}\n\n"/>\n * Copyright
2010-2022 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed
by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n *\n@n// Auto-generated file. DO NOT
EDIT!\n\npackage kotlin\n\nimport kotlin.experimental.*\nimport
kotlin.jvm.*\n\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@JvmInline\npublic
value class ULong @kotlin.internal.IntrinsicConstEvaluation @PublishedApi internal constructor(@PublishedApi
internal val data: Long) : Comparable<ULong> {\n\n    companion object {\n\n        /**\n         * A constant holding
the minimum value an instance of ULong can have.\n         *\n         * public const val MIN_VALUE: ULong =
ULong(0)\n         *\n         * A constant holding the maximum value an instance of ULong can have.\n         *\n         *
public const val MAX_VALUE: ULong = ULong(-1)\n         *\n         * The number of bytes used to represent
an instance of ULong in a binary form.\n         *\n         * public const val SIZE_BYTES: Int = 8\n         *\n         *
The number of bits used to represent an instance of ULong in a binary form.\n         *\n         * public const val

```

```

SIZE_BITS: Int = 64\n } \n\n /**\n * Compares this value with the specified value for order.\n *
Returns zero if this value is equal to the specified other value, a negative number if it's less than other,\n * or a
positive number if it's greater than other.\n */\n @kotlin.internal.InlineOnly\n public inline operator fun
compareTo(other: UByte): Int = this.compareTo(other.toULong())\n\n /**\n * Compares this value with the
specified value for order.\n * Returns zero if this value is equal to the specified other value, a negative number if
it's less than other,\n * or a positive number if it's greater than other.\n */\n @kotlin.internal.InlineOnly\n
public inline operator fun compareTo(other: UShort): Int = this.compareTo(other.toULong())\n\n /**\n *
Compares this value with the specified value for order.\n * Returns zero if this value is equal to the specified other
value, a negative number if it's less than other,\n * or a positive number if it's greater than other.\n */\n
@kotlin.internal.InlineOnly\n public inline
operator fun compareTo(other: UInt): Int = this.compareTo(other.toULong())\n\n /**\n * Compares this value
with the specified value for order.\n * Returns zero if this value is equal to the specified other value, a negative
number if it's less than other,\n * or a positive number if it's greater than other.\n */\n
@kotlin.internal.InlineOnly\n @Suppress("OVERRIDE_BY_INLINE")\n public override inline operator fun
compareTo(other: ULong): Int = ulongCompare(this.data, other.data)\n\n /** Adds the other value to this value.
*/\n @kotlin.internal.InlineOnly\n public inline operator fun plus(other: UByte): ULong =
this.plus(other.toULong())\n\n /** Adds the other value to this value. */\n @kotlin.internal.InlineOnly\n public
inline operator fun plus(other: UShort): ULong = this.plus(other.toULong())\n\n /** Adds the other value to this
value. */\n @kotlin.internal.InlineOnly\n public inline operator fun plus(other: UInt): ULong =
this.plus(other.toULong())\n\n /** Adds the other value to this value. */\n @kotlin.internal.InlineOnly\n public inline operator fun plus(other:
ULong): ULong = ULong(this.data.plus(other.data))\n\n /** Subtracts the other value from this value. */\n
@kotlin.internal.InlineOnly\n public inline operator fun minus(other: UByte): ULong =
this.minus(other.toULong())\n\n /** Subtracts the other value from this value. */\n @kotlin.internal.InlineOnly\n
public inline operator fun minus(other: UShort): ULong = this.minus(other.toULong())\n\n /** Subtracts the other
value from this value. */\n @kotlin.internal.InlineOnly\n public inline operator fun minus(other: UInt): ULong =
this.minus(other.toULong())\n\n /** Subtracts the other value from this value. */\n @kotlin.internal.InlineOnly\n
public inline operator fun minus(other: ULong): ULong = ULong(this.data.minus(other.data))\n\n /** Multiplies
this value by the other value. */\n @kotlin.internal.InlineOnly\n
public inline operator fun times(other: UByte): ULong = this.times(other.toULong())\n\n /** Multiplies this value
by the other value. */\n @kotlin.internal.InlineOnly\n public inline operator fun times(other: UShort): ULong =
this.times(other.toULong())\n\n /** Multiplies this value by the other value. */\n @kotlin.internal.InlineOnly\n
public inline operator fun times(other: UInt): ULong = this.times(other.toULong())\n\n /** Multiplies this value by
the other value. */\n @kotlin.internal.InlineOnly\n public inline operator fun times(other: ULong): ULong =
ULong(this.data.times(other.data))\n\n /** Divides this value by the other value, truncating the result to an integer
that is closer to zero. */\n @kotlin.internal.InlineOnly\n public inline operator fun div(other: UByte): ULong =
this.div(other.toULong())\n\n /** Divides this value by the other value, truncating the result to an integer that is
closer to zero. */\n @kotlin.internal.InlineOnly\n
public inline operator fun div(other: UShort): ULong = this.div(other.toULong())\n\n /** Divides this value by the
other value, truncating the result to an integer that is closer to zero. */\n @kotlin.internal.InlineOnly\n public
inline operator fun div(other: UInt): ULong = this.div(other.toULong())\n\n /** Divides this value by the other
value, truncating the result to an integer that is closer to zero. */\n @kotlin.internal.InlineOnly\n public inline
operator fun div(other: ULong): ULong = ulongDivide(this, other)\n\n /**\n * Calculates the remainder of
truncating division of this value by the other value.\n * \n * The result is always less than the divisor.\n */\n
@kotlin.internal.InlineOnly\n public inline operator fun rem(other: UByte): ULong = this.rem(other.toULong())\n
\n /**\n * Calculates the remainder of truncating division of this value by the other value.\n * \n * The result is
always less than the divisor.\n */\n

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    @kotlin.internal.InlineOnly public inline operator fun rem(other: UShort): ULong =
this.rem(other.toULong()) /**
 * Calculates the remainder of truncating division of this value by the other
value.
 *
 * The result is always less than the divisor.
 */
    @kotlin.internal.InlineOnly public
inline operator fun rem(other: UInt): ULong = this.rem(other.toULong()) /**
 * Calculates the remainder of
truncating division of this value by the other value.
 *
 * The result is always less than the divisor.
 */
    @kotlin.internal.InlineOnly public inline operator fun rem(other: ULong): ULong = ulongRemainder(this,
other) /**
 * Divides this value by the other value, flooring the result to an integer that is closer to negative
infinity.
 *
 * For unsigned types, the results of flooring division and truncating division are the same.
 */
    @kotlin.internal.InlineOnly public inline fun floorDiv(other:
UByte): ULong = this.floorDiv(other.toULong()) /**
 * Divides this value by the other value, flooring the
result to an integer that is closer to negative infinity.
 *
 * For unsigned types, the results of flooring division
and truncating division are the same.
 */
    @kotlin.internal.InlineOnly public inline fun floorDiv(other:
UShort): ULong = this.floorDiv(other.toULong()) /**
 * Divides this value by the other value, flooring the
result to an integer that is closer to negative infinity.
 *
 * For unsigned types, the results of flooring division
and truncating division are the same.
 */
    @kotlin.internal.InlineOnly public inline fun floorDiv(other:
UInt): ULong = this.floorDiv(other.toULong()) /**
 * Divides this value by the other value, flooring the
result to an integer that is closer to negative infinity.
 *
 * For unsigned types, the results of flooring division
and truncating division
are the same.
 */
    @kotlin.internal.InlineOnly public inline fun floorDiv(other: ULong): ULong =
div(other) /**
 * Calculates the remainder of flooring division of this value by the other value.
 *
 * The result is always less than the divisor.
 *
 * For unsigned types, the remainders of flooring division and
truncating division are the same.
 */
    @kotlin.internal.InlineOnly public inline fun mod(other: UByte):
UByte = this.mod(other.toULong()).toUByte() /**
 * Calculates the remainder of flooring division of this
value by the other value.
 *
 * The result is always less than the divisor.
 *
 * For unsigned types, the remainders of flooring division and truncating division are the same.
 */
    @kotlin.internal.InlineOnly public inline fun mod(other: UShort): UShort = this.mod(other.toULong()).toUShort() /**
 * Calculates the
remainder of flooring division of this value
by the other value.
 *
 * The result is always less than the divisor.
 *
 * For unsigned types, the
remainders of flooring division and truncating division are the same.
 */
    @kotlin.internal.InlineOnly public inline fun mod(other: UInt): UInt = this.mod(other.toULong()).toUInt() /**
 * Calculates the
remainder of flooring division of this value by the other value.
 *
 * The result is always less than the
divisor.
 *
 * For unsigned types, the remainders of flooring division and truncating division are the same.
 */
    @kotlin.internal.InlineOnly public inline fun mod(other: ULong): ULong = rem(other) /**
 *
 * Returns this value incremented by one.
 *
 * @sample samples.misc.Builtins.inc
 */
    @kotlin.internal.InlineOnly public inline operator fun inc(): ULong = ULong(data.inc()) /**
 * Returns
this value decremented by one.
 *
 * @sample samples.misc.Builtins.dec
 */
    @kotlin.internal.InlineOnly public inline operator fun dec(): ULong = ULong(data.dec()) /**
 *
 * Creates a range from this value to the specified [other] value.
 */
    @kotlin.internal.InlineOnly public inline
operator fun rangeTo(other: ULong): ULongRange = ULongRange(this, other) /**
 * Creates a range from
this value up to but excluding the specified [other] value.
 *
 * If the [other] value is less than or equal to
`this` value, then the returned range is empty.
 */
    @SinceKotlin("1.7") @ExperimentalStdlibApi
    @kotlin.internal.InlineOnly public inline operator fun rangeUntil(other: ULong): ULongRange = this until
other /**
 * Shifts this value left by the [bitCount] number of bits.
 *
 * Note that only the six
lowest-order bits of the [bitCount] are used as the shift distance.
 *
 * The shift distance actually used is therefore
always in the range `0..63`.
 */
    @kotlin.internal.InlineOnly public inline infix fun shl(bitCount: Int): ULong = ULong(data shl bitCount) /**
 * Shifts this value right by the [bitCount] number of bits, filling the leftmost bits with zeros.
 *
 * Note that only the six lowest-order bits of the [bitCount] are used as the shift distance.
 *
 * The shift distance

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actually used is therefore always in the range `0..63`.
    @kotlin.internal.InlineOnly
    public inline infix fun shr(bitCount: Int): ULong = ULong(data ushr bitCount)
    /** Performs a bitwise AND operation between the two values.
    @kotlin.internal.InlineOnly
    public inline infix fun and(other: ULong): ULong = ULong(this.data and other.data)
    /** Performs a bitwise OR operation between the two values.
    @kotlin.internal.InlineOnly
    public inline infix fun or(other: ULong): ULong = ULong(this.data or other.data)
    /** Performs a bitwise XOR operation between the two values.
    @kotlin.internal.InlineOnly
    public inline infix fun xor(other: ULong): ULong = ULong(this.data xor other.data)
    /** Inverts the bits in this value.
    @kotlin.internal.InlineOnly
    public inline fun inv(): ULong = ULong(data.inv())
    /** Converts this [ULong] value to [Byte].
    * If this value is less than or equals to [Byte.MAX_VALUE], the resulting `Byte` value represents the same numerical value as this `ULong`.
    * The resulting `Byte` value is represented by the least significant 8 bits of this `ULong` value.
    * Note that the resulting `Byte` value may be negative.
    @kotlin.internal.InlineOnly
    public inline fun toByte(): Byte = data.toByte()
    /** Converts this [ULong] value to [Short].
    * If this value is less than or equals to [Short.MAX_VALUE], the resulting `Short` value represents the same numerical value as this `ULong`.
    * The resulting `Short` value is represented by the least significant 16 bits of this `ULong` value.
    * Note that the resulting `Short` value may be negative.
    @kotlin.internal.InlineOnly
    public inline fun toShort(): Short = data.toShort()
    /** Converts this [ULong] value to [Int].
    * If this value is less than or equals to [Int.MAX_VALUE], the resulting `Int` value represents the same numerical value as this `ULong`.
    * The resulting `Int` value is represented by the least significant 32 bits of this `ULong` value.
    * Note that the resulting `Int` value may be negative.
    @kotlin.internal.InlineOnly
    public inline fun toInt(): Int = data.toInt()
    /** Converts this [ULong] value to [Long].
    * If this value is less than or equals to [Long.MAX_VALUE], the resulting `Long` value represents the same numerical value as this `ULong`. Otherwise the result is negative.
    * The resulting `Long` value has the same binary representation as this `ULong` value.
    @kotlin.internal.InlineOnly
    public inline fun toLong(): Long = data
    /** Converts this [ULong] value to [UByte].
    * If this value is less than or equals to [UByte.MAX_VALUE], the resulting `UByte` value represents the same numerical value as this `ULong`.
    * The resulting `UByte` value is represented by the least significant 8 bits of this `ULong` value.
    @kotlin.internal.InlineOnly
    public inline fun toUByte(): UByte = data.toUByte()
    /** Converts this [ULong] value to [UShort].
    * If this value is less than or equals to [UShort.MAX_VALUE], the resulting `UShort` value represents the same numerical value as this `ULong`.
    * The resulting `UShort` value is represented by the least significant 16 bits of this `ULong` value.
    @kotlin.internal.InlineOnly
    public inline fun toUShort(): UShort = data.toUShort()
    /** Converts this [ULong] value to [UInt].
    * If this value is less than or equals to [UInt.MAX_VALUE], the resulting `UInt` value represents the same numerical value as this `ULong`.
    * The resulting `UInt` value is represented by the least significant 32 bits of this `ULong` value.
    @kotlin.internal.InlineOnly
    public inline fun toUInt(): UInt = data.toUInt()
    /** Returns this value.
    @kotlin.internal.InlineOnly
    public inline fun toULong(): ULong = this
    /** Converts this [ULong] value to [Float].
    * The resulting value is the closest `Float` to this `ULong` value.
    * In case when this `ULong` value is exactly between two `Float`s, the one with zero at least significant bit of mantissa is selected.
    @kotlin.internal.InlineOnly
    public inline fun toFloat(): Float = this.toDouble().toFloat()
    /** Converts this [ULong] value to [Double].
    * The resulting value is the closest `Double` to this `ULong` value.
    * In case when this `ULong` value is exactly between two `Double`s, the one with zero at least significant bit of mantissa is selected.
    @kotlin.internal.InlineOnly
    public inline fun toDouble(): Double = ulongToDouble(data)
    public override fun toString(): String = ulongToString(data)
    /** Converts this [Byte] value to [ULong].
    * If this value is positive, the resulting `ULong` value represents the same numerical value as this `Byte`.
    * The least significant 8 bits of the resulting `ULong` value are the same as the

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bits of this `Byte` value,\n * whereas the most significant 56 bits are filled with the sign bit of this value.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\n
public inline fun Byte.toULong(): ULong = ULong(this.toLong())\n/**\n * Converts this
 [Short] value to [ULong].\n *\n * If this value is positive, the resulting `ULong` value represents the same
 numerical value as this `Short`.\n *\n * The least significant 16 bits of the resulting `ULong` value are the same as
 the bits of this `Short` value,\n * whereas the most significant 48 bits are filled with the sign bit of this value.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\n
public inline fun Short.toULong(): ULong = ULong(this.toLong())\n/**\n * Converts this [Int] value to [ULong].\n
*\n * If this value is positive, the resulting `ULong` value represents the same numerical value as this `Int`.\n *\n *
 The least significant 32 bits of the resulting `ULong` value are the same as the bits of this `Int` value,\n * whereas
 the most significant 32 bits are filled with the sign bit of this value.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\n
public inline
 fun Int.toULong(): ULong = ULong(this.toLong())\n/**\n * Converts this [Long] value to [ULong].\n *\n * If this
 value is positive, the resulting `ULong` value represents the same numerical value as this `Long`.\n *\n * The
 resulting `ULong` value has the same binary representation as this `Long` value.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\n
public inline fun Long.toULong(): ULong = ULong(this)\n/**\n * Converts this [Float] value to [ULong].\n *\n *
 The fractional part, if any, is rounded down towards zero.\n * Returns zero if this `Float` value is negative or `NaN`,
 [ULong.MAX_VALUE] if it's bigger than `ULong.MAX_VALUE`.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\n
public inline fun Float.toULong(): ULong = doubleToULong(this.toDouble())\n/**\n * Converts this [Double]
 value to [ULong].\n *\n * The fractional part, if any, is rounded down towards
 zero.\n * Returns zero if this `Double` value is negative or `NaN`, [ULong.MAX_VALUE] if it's bigger than
 `ULong.MAX_VALUE`.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\n
public inline fun Double.toULong(): ULong = doubleToULong(this)\n", "/*\n * Copyright 2010-2022 JetBrains
 s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0
 license that can be found in the license/LICENSE.txt file.\n
*\n\n@file:kotlin.jvm.JvmMultifileClass\n@file:kotlin.jvm.JvmName("CollectionsKt")\n\npackage
 kotlin.collections\n\n/\n// NOTE: THIS FILE IS AUTO-GENERATED by the GenerateStandardLib.kt\n// See:
 https://github.com/JetBrains/kotlin/tree/master/libraries/stdlib\n/\n\nimport kotlin.random.*\nimport
 kotlin.ranges.contains\nimport kotlin.ranges.reversed\n\n/**\n * Returns 1st *element* from the list.\n * \n *
 Throws an [IndexOutOfBoundsException] if the size of this list is less
 than 1.\n *\n@kotlin.internal.InlineOnly\n\npublic inline operator fun <T> List<T>.component1(): T {\n    return
 get(0)\n}\n/**\n * Returns 2nd *element* from the list.\n * \n * Throws an [IndexOutOfBoundsException] if the
 size of this list is less than 2.\n *\n@kotlin.internal.InlineOnly\n\npublic inline operator fun <T>
 List<T>.component2(): T {\n    return get(1)\n}\n/**\n * Returns 3rd *element* from the list.\n * \n * Throws an
 [IndexOutOfBoundsException] if the size of this list is less than 3.\n *\n@kotlin.internal.InlineOnly\n\npublic inline
 operator fun <T> List<T>.component3(): T {\n    return get(2)\n}\n/**\n * Returns 4th *element* from the list.\n
 *\n * Throws an [IndexOutOfBoundsException] if the size of this list is less than 4.\n
*\n@kotlin.internal.InlineOnly\n\npublic inline operator fun <T> List<T>.component4(): T {\n    return
 get(3)\n}\n/**\n * Returns 5th *element* from the list.\n * \n * Throws an [IndexOutOfBoundsException] if the
 size of this list is less
 than 5.\n *\n@kotlin.internal.InlineOnly\n\npublic inline operator fun <T> List<T>.component5(): T {\n    return
 get(4)\n}\n/**\n * Returns `true` if [element] is found in the collection.\n *\n@kotlin.internal.InlineOnly\n\npublic operator fun
 <@kotlin.internal.OnlyInputTypes T> Iterable<T>.contains(element: T): Boolean {\n    if (this is Collection)\n    return contains(element)\n    return indexOf(element) >= 0\n}\n/**\n * Returns an element at the given [index] or

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throws an [IndexOutOfBoundsException] if the [index] is out of bounds of this collection.\n * \n * @sample
samples.collections.Collections.Elements.elementAt\n * \n\npublic fun <T> Iterable<T>.elementAt(index: Int): T {\n
if (this is List)\n     return get(index)\n     return elementAtOrElse(index) { throw
IndexOutOfBoundsException("Collection doesn't contain element at index $index.") }\n}\n\n/**\n * Returns an
element at the given [index] or throws an [IndexOutOfBoundsException] if the [index] is out of bounds of this list.\n
* \n * @sample
samples.collections.Collections.Elements.elementAt\n * \n\n@kotlin.internal.InlineOnly\npublic inline fun <T>
List<T>.elementAt(index: Int): T {\n     return get(index)\n}\n\n/**\n * Returns an element at the given [index] or
the result of calling the [defaultValue] function if the [index] is out of bounds of this collection.\n * \n * @sample
samples.collections.Collections.Elements.elementAtOrElse\n * \n\npublic fun <T>
Iterable<T>.elementAtOrElse(index: Int, defaultValue: (Int) -> T): T {\n     if (this is List)\n         return
this.getOrElse(index, defaultValue)\n         if (index < 0)\n             return defaultValue(index)\n         val iterator = iterator()\n         var count = 0\n         while (iterator.hasNext()) {\n             val element = iterator.next()\n             if (index == count++)\n                 return element\n         }\n         return defaultValue(index)\n}\n\n/**\n * Returns an element at the given [index] or the
result of calling the [defaultValue] function if the [index] is out of bounds of this list.\n * \n * @sample
samples.collections.Collections.Elements.elementAtOrElse\n * \n\n@kotlin.internal.InlineOnly\npublic inline fun <T> List<T>.elementAtOrElse(index: Int, defaultValue: (Int) ->
T): T {\n     return if (index >= 0 && index <= lastIndex) get(index) else defaultValue(index)\n}\n\n/**\n * Returns
an element at the given [index] or `null` if the [index] is out of bounds of this collection.\n * \n * @sample
samples.collections.Collections.Elements.elementAtOrNull\n * \n\npublic fun <T>
Iterable<T>.elementAtOrNull(index: Int): T? {\n     if (this is List)\n         return this.getOrElse(index)\n         if (index <
0)\n             return null\n         val iterator = iterator()\n         var count = 0\n         while (iterator.hasNext()) {\n             val element =
iterator.next()\n             if (index == count++)\n                 return element\n         }\n         return null\n}\n\n/**\n * Returns an
element at the given [index] or `null` if the [index] is out of bounds of this list.\n * \n * @sample
samples.collections.Collections.Elements.elementAtOrNull\n * \n\n@kotlin.internal.InlineOnly\npublic inline fun <T> List<T>.elementAtOrNull(index: Int): T? {\n     return
this.getOrElse(index)\n}\n\n/**\n * Returns the first element matching the given [predicate], or `null` if no such
element was found.\n * \n * @sample samples.collections.Collections.Elements.find\n * \n\n@kotlin.internal.InlineOnly\npublic inline fun <T> Iterable<T>.find(predicate: (T) -> Boolean): T? {\n     return
firstOrNull(predicate)\n}\n\n/**\n * Returns the last element matching the given [predicate], or `null` if no such
element was found.\n * \n * @sample samples.collections.Collections.Elements.find\n * \n\n@kotlin.internal.InlineOnly\npublic inline fun <T> Iterable<T>.findLast(predicate: (T) -> Boolean): T? {\n
return lastOrNull(predicate)\n}\n\n/**\n * Returns the last element matching the given [predicate], or `null` if no
such element was found.\n * \n * @sample samples.collections.Collections.Elements.find\n * \n\n@kotlin.internal.InlineOnly\npublic
inline fun <T> List<T>.findLast(predicate: (T) -> Boolean): T? {\n     return lastOrNull(predicate)\n}\n\n/**\n * Returns the first element.\n * \n * @throws NoSuchElementException if the collection is empty.\n * \n\npublic fun
<T> Iterable<T>.first(): T {\n     when (this) {\n         is List -> return this.first()\n         else -> {\n             val iterator =
iterator()\n             if (!iterator.hasNext())\n                 throw NoSuchElementException("Collection is empty.")\n             return iterator.next()\n         }\n     }\n}\n\n/**\n * Returns the first element.\n * \n * @throws
NoSuchElementException if the list is empty.\n * \n\npublic fun <T> List<T>.first(): T {\n     if (isEmpty())\n         throw NoSuchElementException("List is empty.")\n     return this[0]\n}\n\n/**\n * Returns the first element
matching the given [predicate].\n * @throws [NoSuchElementException] if no such element is found.\n * \n\npublic
inline fun <T> Iterable<T>.first(predicate: (T) -> Boolean):
T {\n     for (element in this) if (predicate(element)) return element\n     throw
NoSuchElementException("Collection contains no element matching the predicate.")\n}\n\n/**\n * Returns the
first non-null value produced by [transform] function being applied to elements of this collection in iteration order,\n
* or throws [NoSuchElementException] if no non-null value was produced.\n * \n * @sample

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samples.collections.Collections.Transformations.firstNotNullOf
*^@SinceKotlin("1.5")@kotlin.internal.InlineOnly\npublic inline fun <T, R : Any>
Iterable<T>.firstNotNullOf(transform: (T) -> R?): R {\n    return firstNotNullOfOrNull(transform) ?: throw
NoSuchElementException("No element of the collection was transformed to a non-null value.")\n}\n\n/**\n *
Returns the first non-null value produced by [transform] function being applied to elements of this collection in
iteration order.\n * or `null` if no non-null value was produced.\n * \n * @sample
samples.collections.Collections.Transformations.firstNotNullOf
*^@SinceKotlin("1.5")@kotlin.internal.InlineOnly\npublic inline fun <T, R : Any>
Iterable<T>.firstNotNullOfOrNull(transform: (T) -> R?): R? {\n    for (element in this) {\n        val result =
transform(element)\n        if (result != null) {\n            return result\n        }\n    }\n    return null\n}\n\n/**\n *
Returns the first element, or `null` if the collection is empty.\n *^@public fun <T> Iterable<T>.firstOrNull(): T? {\n
when (this) {\n    is List -> {\n        if (isEmpty())\n            return null\n        else\n            return this[0]\n    }\n    else -> {\n        val iterator = iterator()\n        if (!iterator.hasNext())\n            return null\n        return iterator.next()\n    }\n}\n}\n\n/**\n * Returns the first element, or `null` if the list is empty.\n *^@public
fun <T> List<T>.firstOrNull(): T? {\n    return if (isEmpty()) null else this[0]\n}\n\n/**\n * Returns
the first element matching the given [predicate], or `null` if element was not found.\n *^@public inline fun <T>
Iterable<T>.firstOrNull(predicate: (T) -> Boolean): T? {\n    for (element in this) if (predicate(element)) return
element\n    return null\n}\n\n/**\n * Returns an element at the given [index] or the result of calling the
[defaultValue] function if the [index] is out of bounds of this list.\n *^@kotlin.internal.InlineOnly\npublic inline
fun <T> List<T>.getOrElse(index: Int, defaultValue: (Int) -> T): T {\n    return if (index >= 0 && index <=
lastIndex) get(index) else defaultValue(index)\n}\n\n/**\n * Returns an element at the given [index] or `null` if the
[index] is out of bounds of this list.\n * \n * @sample samples.collections.Collections.Elements.getOrElse\n *^@public fun <T> List<T>.getOrElse(index: Int): T? {\n    return if (index >= 0 && index <= lastIndex) get(index)
else null\n}\n\n/**\n * Returns first index of [element], or -1 if the collection does
not contain element.\n *^@public fun <@kotlin.internal.OnlyInputTypes T> Iterable<T>.indexOf(element: T): Int
{\n    if (this is List) return this.indexOf(element)\n    var index = 0\n    for (item in this) {\n
checkIndexOverflow(index)\n        if (element == item)\n            return index\n        index++\n    }\n    return -
1\n}\n\n/**\n * Returns first index of [element], or -1 if the list does not contain element.\n *^@Suppress("EXTENSION_SHADOWED_BY_MEMBER") // false warning, extension takes precedence in
some cases\npublic fun <@kotlin.internal.OnlyInputTypes T> List<T>.indexOf(element: T): Int {\n    return
indexOf(element)\n}\n\n/**\n * Returns index of the first element matching the given [predicate], or -1 if the
collection does not contain such element.\n *^@public inline fun <T> Iterable<T>.indexOfFirst(predicate: (T) ->
Boolean): Int {\n    var index = 0\n    for (item in this) {\n        checkIndexOverflow(index)\n        if
(predicate(item))\n            return index\n        index++\n    }\n    return -1\n}\n\n/**\n * Returns index of the last
element matching the given [predicate], or -1 if the collection does not contain such element.\n *^@public inline fun
<T> Iterable<T>.indexOfLast(predicate: (T) -> Boolean): Int {\n    var lastIndex = -1\n    var index = 0\n    for (item
in this) {\n        checkIndexOverflow(index)\n        if (predicate(item))\n            lastIndex = index\n        index++\n    }\n    return lastIndex\n}\n\n/**\n * Returns index of the last element matching the given [predicate], or -1 if the list
does not contain such element.\n *^@public inline fun <T> List<T>.indexOfLast(predicate:
(T) -> Boolean): Int {\n    val iterator = this.listIterator(size)\n    while (iterator.hasPrevious()) {\n        if
(predicate(iterator.previous())) {\n            return iterator.nextIndex()\n        }\n    }\n    return -1\n}\n\n/**\n *
Returns the last element.\n * \n * @throws NoSuchElementException if the collection is empty.\n * \n * @sample
samples.collections.Collections.Elements.last\n *^@public fun <T> Iterable<T>.last(): T {\n    when (this) {\n        is
List -> return this.last()\n        else -> {\n            val iterator = iterator()\n            if (!iterator.hasNext())\n

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throw NoSuchElementException("Collection is empty.")\n        var last = iterator.next()\n        while
(iterator.hasNext())\n            last = iterator.next()\n            return last\n        }\n    }\n\n/**\n * Returns the last
element.\n * \n * @throws NoSuchElementException if the list is empty.\n * \n * @sample
samples.collections.Collections.Elements.last\n
*/\npublic fun <T> List<T>.last(): T {\n    if (isEmpty())\n        throw NoSuchElementException("List is
empty.")\n    return this[lastIndex]\n}\n\n/**\n * Returns the last element matching the given [predicate].\n * \n *
@throws NoSuchElementException if no such element is found.\n * \n * @sample
samples.collections.Collections.Elements.last\n
*/\npublic inline fun <T> Iterable<T>.last(predicate: (T) ->
Boolean): T {\n    var last: T? = null\n    var found = false\n    for (element in this) {\n        if (predicate(element))
{\n            last = element\n            found = true\n        }\n    }\n    if (!found) throw
NoSuchElementException("Collection contains no element matching the predicate.")\n    @Suppress("UNCHECKED_CAST")\n    return last as T\n}\n\n/**\n * Returns the last element matching the
given [predicate].\n * \n * @throws NoSuchElementException if no such element is found.\n * \n * @sample
samples.collections.Collections.Elements.last\n
*/\npublic inline fun <T> List<T>.last(predicate: (T) -> Boolean): T {\n    val iterator = this.listIterator(size)\n    while (iterator.hasPrevious()) {\n        val element = iterator.previous()\n        if (predicate(element)) return
element\n    }\n    throw NoSuchElementException("List contains no element matching the predicate.")\n}\n\n/**\n * Returns last index of [element], or -1 if the collection does not contain element.\n
*/\npublic fun
<@kotlin.internal.OnlyInputTypes T> Iterable<T>.lastIndexOf(element: T): Int {\n    if (this is List) return
this.lastIndexOf(element)\n    var lastIndex = -1\n    var index = 0\n    for (item in this) {\n        checkIndexOverflow(index)\n        if (element == item)\n            lastIndex = index\n            index++\n    }\n    return
lastIndex\n}\n\n/**\n * Returns last index of [element], or -1 if the list does not contain element.\n
*/\n@Suppress("EXTENSION_SHADOWED_BY_MEMBER") // false warning, extension takes precedence in
some cases\npublic
fun <@kotlin.internal.OnlyInputTypes T> List<T>.lastIndexOf(element: T): Int {\n    return
lastIndexOf(element)\n}\n\n/**\n * Returns the last element, or `null` if the collection is empty.\n * \n * @sample
samples.collections.Collections.Elements.last\n
*/\npublic fun <T> Iterable<T>.lastOrNull(): T? {\n    when (this)
{\n        is List -> return if (isEmpty()) null else this[size - 1]\n        else -> {\n            val iterator = iterator()\n            if (!iterator.hasNext())\n                return null\n            var last = iterator.next()\n            while (iterator.hasNext())\n                last = iterator.next()\n            return last\n        }\n    }\n}\n\n/**\n * Returns the last element
matching the given [predicate], or `null`
if no such element was found.\n * \n * @sample samples.collections.Collections.Elements.last\n
*/\npublic inline
fun <T> Iterable<T>.lastOrNull(predicate: (T) -> Boolean): T? {\n    var last: T? = null\n    for (element in this) {\n        if (predicate(element)) {\n            last = element\n        }\n    }\n    return last\n}\n\n/**\n * Returns the last
element matching the given [predicate], or `null` if no such element was found.\n * \n * @sample
samples.collections.Collections.Elements.last\n
*/\npublic inline fun <T> List<T>.lastOrNull(predicate: (T) ->
Boolean): T? {\n    val iterator = this.listIterator(size)\n    while (iterator.hasPrevious()) {\n        val element =
iterator.previous()\n        if (predicate(element)) return element\n    }\n    return null\n}\n\n/**\n * Returns a random
element from this collection.\n * \n * @throws NoSuchElementException if this collection is empty.\n
*/\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\npublic inline fun <T> Collection<T>.random():
T {\n    return random(Random)\n}\n\n/**\n * Returns a random element from this collection using the specified
source of randomness.\n * \n * @throws NoSuchElementException if this collection is empty.\n
*/\n@SinceKotlin("1.3")\npublic fun <T> Collection<T>.random(random: Random): T {\n    if (isEmpty())\n        throw NoSuchElementException("Collection is empty.")\n    return elementAt(random.nextInt(size))\n}\n\n/**\n * Returns a random element from this collection, or `null` if this collection is empty.\n
*/\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic

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c inline fun <T> Collection<T>.randomOrNull(): T? {\n    return randomOrNull(Random)\n}\n\n/**\n * Returns a
random element from this collection using the specified source of randomness, or `null` if this collection is empty.\n
*\n\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic fun <T>
Collection<T>.randomOrNull(random: Random):
T? {\n    if (isEmpty())\n        return null\n    return elementAt(random.nextInt(size))\n}\n\n/**\n * Returns the
single element, or throws an exception if the collection is empty or has more than one element.\n */\npublic fun <T>
Iterable<T>.single(): T {\n    when (this) {\n        is List -> return this.single()\n        else -> {\n            val iterator =
iterator()\n            if (!iterator.hasNext())\n                throw NoSuchElementException("Collection is empty.")\n            val single = iterator.next()\n            if (iterator.hasNext())\n                throw
IllegalArgumentOutOfRangeException("Collection has more than one element.")\n            return single\n        }\n    }\n}\n\n/**\n * Returns the single element, or throws an exception if the list is empty or has more than one
element.\n */\npublic fun <T> List<T>.single(): T {\n    return when (size) {\n        0 -> throw
NoSuchElementException("List is empty.")\n        1 -> this[0]\n        else -> throw
IllegalArgumentOutOfRangeException("List has more than one element.")\n    }\n}\n\n/**\n * Returns the single element
matching the given [predicate], or throws exception if there is no or more than one matching element.\n */\npublic
inline fun <T> Iterable<T>.single(predicate: (T) -> Boolean): T {\n    var single: T? = null\n    var found = false\n    for (element in this) {\n        if (predicate(element)) {\n            if (found) throw
IllegalArgumentOutOfRangeException("Collection contains more than one matching element.")\n            single = element\n            found = true\n        }\n    }\n    if (!found) throw NoSuchElementException("Collection contains no element
matching the predicate.")\n    @SuppressWarnings("UNCHECKED_CAST")\n    return single as T\n}\n\n/**\n * Returns
single element, or `null` if the collection is empty or has more than one element.\n */\npublic fun <T>
Iterable<T>.singleOrNull(): T? {\n    when (this) {\n        is List -> return if (size == 1) this[0] else null\n
        else -> {\n            val iterator = iterator()\n            if (!iterator.hasNext())\n                return null\n            val single
= iterator.next()\n            if (iterator.hasNext())\n                return null\n            return single\n        }\n    }\n}\n\n/**\n * Returns single element, or `null` if the list is empty or has more than one element.\n */\npublic fun
<T> List<T>.singleOrNull(): T? {\n    return if (size == 1) this[0] else null\n}\n\n/**\n * Returns the single element
matching the given [predicate], or `null` if element was not found or more than one element was found.\n */\npublic
inline fun <T> Iterable<T>.singleOrNull(predicate: (T) -> Boolean): T? {\n    var single: T? = null\n    var found =
false\n    for (element in this) {\n        if (predicate(element)) {\n            if (found) return null\n            single =
element\n            found = true\n        }\n    }\n    if (!found) return null\n    return single\n}\n\n/**\n * Returns a list
containing
all elements except first [n] elements.\n * \n * @throws IllegalArgumentException if [n] is negative.\n * \n *
@sample samples.collections.Collections.Transformations.drop\n */\npublic fun <T> Iterable<T>.drop(n: Int):
List<T> {\n    require(n >= 0) {\n        "Requested element count $n is less than zero." }\n    if (n == 0) return toList()\n    val list: ArrayList<T>\n    if (this is Collection<*>) {\n        val resultSize = size - n\n        if (resultSize <= 0)\n            return emptyList()\n        if (resultSize == 1)\n            return listOf(last())\n        list = ArrayList<T>(resultSize)\n        if (this is List<T>) {\n            if (this is RandomAccess) {\n                for (index in n until size)\n                    list.add(this[index])\n            } else {\n                for (item in listIterator(n))\n                    list.add(item)\n            }\n        }\n        return list\n    }\n    } else {\n        list = ArrayList<T>()\n    }\n    var count =
0\n    for (item in this) {\n        if (count >= n) list.add(item) else ++count\n    }\n    return
list.optimizeReadOnlyList()\n}\n\n/**\n * Returns a list containing all elements except last [n] elements.\n * \n *
@throws IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.drop\n */\npublic fun <T> List<T>.dropLast(n: Int): List<T> {\n    require(n >= 0) {\n        "Requested element count $n is less than zero." }\n    return take((size -
n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing all elements except last elements that satisfy the given
[predicate].\n * \n * @sample samples.collections.Collections.Transformations.drop\n */\npublic inline fun <T>
List<T>.dropLastWhile(predicate: (T) -> Boolean): List<T> {\n    if (!isEmpty()) {\n        val iterator =
listIterator(size)\n        while (iterator.hasPrevious()) {\n            if (!predicate(iterator.previous())) {\n                return

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take(iterator.nextIndex() + 1)\n
    }\n    }\n    }\n    return emptyList()\n}\n\n/**\n * Returns a list containing all elements except first
elements that satisfy the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.drop\n * \npublic inline fun <T> Iterable<T>.dropWhile(predicate:
(T) -> Boolean): List<T> {\n    var yielding = false\n    val list = ArrayList<T>()\n    for (item in this)\n        if
(yielding)\n            list.add(item)\n        else if (!predicate(item)) {\n            list.add(item)\n            yielding = true\n
        }\n    return list\n}\n\n/**\n * Returns a list containing only elements matching the given [predicate].\n * \n *
@sample samples.collections.Collections.Filtering.filter\n * \npublic inline fun <T> Iterable<T>.filter(predicate: (T)
-> Boolean): List<T> {\n    return filterTo(ArrayList<T>(), predicate)\n}\n\n/**\n * Returns a list containing only
elements matching the given [predicate].\n * \n * @param [predicate] function that takes the
index of an element and the element itself\n * and returns the result of predicate evaluation on the element.\n * \n *
@sample samples.collections.Collections.Filtering.filterIndexed\n * \npublic inline fun <T>
Iterable<T>.filterIndexed(predicate: (index: Int, T) -> Boolean): List<T> {\n    return
filterIndexedTo(ArrayList<T>(), predicate)\n}\n\n/**\n * Appends all elements matching the given [predicate] to
the given [destination].\n * \n * @param [predicate] function that takes the index of an element and the element itself\n *
and returns the result of predicate evaluation on the element.\n * \n * @sample
samples.collections.Collections.Filtering.filterIndexedTo\n * \npublic inline fun <T, C : MutableCollection<in T>>
Iterable<T>.filterIndexedTo(destination: C, predicate: (index: Int, T) -> Boolean): C {\n    forEachIndexed { index,
element ->\n        if (predicate(index, element)) destination.add(element)\n    }\n    return destination\n}\n\n/**\n *
Returns a list containing all elements
that are instances of specified type parameter R.\n * \n * @sample
samples.collections.Collections.Filtering.filterIsInstance\n * \npublic inline fun <reified R>
Iterable<*>.filterIsInstance(): List<@kotlin.internal.NoInfer R> {\n    return
filterIsInstanceTo(ArrayList<R>())\n}\n\n/**\n * Appends all elements that are instances of specified type
parameter R to the given [destination].\n * \n * @sample
samples.collections.Collections.Filtering.filterIsInstanceTo\n * \npublic inline fun <reified R, C :
MutableCollection<in R>> Iterable<*>.filterIsInstanceTo(destination: C): C {\n    for (element in this) if (element is
R) destination.add(element)\n    return destination\n}\n\n/**\n * Returns a list containing all elements not matching
the given [predicate].\n * \n * @sample samples.collections.Collections.Filtering.filter\n * \npublic inline fun <T>
Iterable<T>.filterNot(predicate: (T) -> Boolean): List<T> {\n    return filterNotTo(ArrayList<T>(),
predicate)\n}\n\n/**\n * Returns a list
containing all elements that are not `null`.\n * \n * @sample
samples.collections.Collections.Filtering.filterNotNull\n * \npublic fun <T : Any> Iterable<T?>.filterNotNull():
List<T> {\n    return filterNotNullTo(ArrayList<T>())\n}\n\n/**\n * Appends all elements that are not `null` to the
given [destination].\n * \n * @sample samples.collections.Collections.Filtering.filterNotNullTo\n * \npublic fun <C
: MutableCollection<in T>, T : Any> Iterable<T?>.filterNotNullTo(destination: C): C {\n    for (element in this) if
(element != null) destination.add(element)\n    return destination\n}\n\n/**\n * Appends all elements not matching
the given [predicate] to the given [destination].\n * \n * @sample samples.collections.Collections.Filtering.filterTo\n *
\npublic inline fun <T, C : MutableCollection<in T>> Iterable<T>.filterNotTo(destination: C, predicate: (T) ->
Boolean): C {\n    for (element in this) if (!predicate(element)) destination.add(element)\n    return
destination\n}\n}\n\n/**\n * Appends all elements matching the given [predicate] to the given [destination].\n * \n *
@sample
samples.collections.Collections.Filtering.filterTo\n * \npublic inline fun <T, C : MutableCollection<in T>>
Iterable<T>.filterTo(destination: C, predicate: (T) -> Boolean): C {\n    for (element in this) if (predicate(element))
destination.add(element)\n    return destination\n}\n}\n\n/**\n * Returns a list containing elements at indices in the
specified [indices] range.\n * \n * \n * \npublic fun <T> List<T>.slice(indices: IntRange): List<T> {\n    if
(indices.isEmpty()) return listOf()\n    return this.subList(indices.start, indices.endInclusive + 1).toList()\n}\n\n/**\n *
Returns a list containing elements at specified [indices].\n * \n * \n * \npublic fun <T> List<T>.slice(indices:

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Iterable<Int>): List<T> {\n    val size = indices.collectionSizeOrDefault(10)\n    if (size == 0) return emptyList()\n    val list = ArrayList<T>(size)\n    for (index in indices) {\n        list.add(get(index))\n    }\n    return list}\n\n/**\n * Returns a list containing first [n] elements.\n * \n * @throws IllegalArgumentException if [n] is negative.\n * \n * @sample samples.collections.Collections.Transformations.take\n */\npublic fun <T>
Iterable<T>.take(n: Int): List<T> {\n    require(n >= 0) { \"Requested element count $n is less than zero.\" }\n    if (n == 0) return emptyList()\n    if (this is Collection<T>) {\n        if (n >= size) return toList()\n        if (n == 1) return listOf(first())\n    }\n    var count = 0\n    val list = ArrayList<T>(n)\n    for (item in this) {\n        list.add(item)\n        if (++count == n)\n            break\n    }\n    return list.optimizeReadOnlyList()\n}\n\n/**\n * Returns a list containing last [n] elements.\n * \n * @throws IllegalArgumentException if [n] is negative.\n * \n * @sample samples.collections.Collections.Transformations.take\n */\npublic fun <T> List<T>.takeLast(n: Int): List<T> {\n    require(n >= 0) { \"Requested element count $n is less than zero.\" }\n    if (n == 0) return emptyList()\n    val size = size\n    if (n >= size) return toList()\n    if (n == 1) return listOf(last())\n    val list = ArrayList<T>(n)\n    if (this is RandomAccess) {\n        for (index in size - n until size)\n            list.add(this[index])\n    } else {\n        for (item in listIterator(size - n))\n            list.add(item)\n    }\n    return list}\n\n/**\n * Returns a list containing last elements satisfying the given [predicate].\n * \n * @sample samples.collections.Collections.Transformations.take\n */\npublic inline fun <T> List<T>.takeLastWhile(predicate: (T) -> Boolean): List<T> {\n    if (isEmpty())\n        return emptyList()\n    val iterator = listIterator(size)\n    while (iterator.hasPrevious()) {\n        if (!predicate(iterator.previous())) {\n            iterator.next()\n            val expectedSize = size - iterator.nextIndex()\n            if (expectedSize == 0) return emptyList()\n            return ArrayList<T>(expectedSize).apply {\n                while (iterator.hasNext())\n                    add(iterator.next())\n            }\n        }\n    }\n    return toList()\n}\n\n/**\n * Returns a list containing first elements satisfying the given [predicate].\n * \n * @sample samples.collections.Collections.Transformations.take\n */\npublic inline fun <T> Iterable<T>.takeWhile(predicate: (T) -> Boolean): List<T> {\n    val list = ArrayList<T>()\n    for (item in this) {\n        if (!predicate(item))\n            break\n        list.add(item)\n    }\n    return list}\n\n/**\n * Reverses elements in the list in-place.\n * \n * @public expect fun <T> MutableList<T>.reverse(): Unit\n */\n/**\n * Returns a list with elements in reversed order.\n * \n * @public fun <T> Iterable<T>.reversed(): List<T> {\n    if (this is Collection && size <= 1) return toList()\n    val list = toMutableList()\n    list.reverse()\n    return list}\n\n/**\n * Randomly shuffles elements in this list in-place using the specified [random] instance as the source of randomness.\n * \n * \n * See: https://en.wikipedia.org/wiki/Fisher%20%80%93Yates\_shuffle#The\_modern\_algorithm\n */\n@SinceKotlin(\"1.3\")\npublic fun <T> MutableList<T>.shuffle(random: Random): Unit {\n    for (i in lastIndex downTo 1) {\n        val j = random.nextInt(i + 1)\n        this[j] = this.set(i, this[j])\n    }\n}\n\n/**\n * Sorts elements in the list in-place according to natural sort order of the value returned by specified [selector] function.\n * \n * \n * The sort is _stable_. It means that equal elements preserve their order relative to each other after sorting.\n * \n * @public inline fun <T, R : Comparable<R>> MutableList<T>.sortBy(crossinline selector: (T) -> R?): Unit {\n    if (size > 1)\n        sortWith(compareBy(selector))\n}\n\n/**\n * Sorts elements in the list in-place descending according to natural sort order of the value returned by specified [selector] function.\n * \n * \n * The sort is _stable_. It means that equal elements preserve their order relative to each other after sorting.\n * \n * @public inline fun <T, R : Comparable<R>> MutableList<T>.sortByDescending(crossinline selector: (T) -> R?): Unit {\n    if (size > 1)\n        sortWith(compareByDescending(selector))\n}\n\n/**\n * Sorts elements in the list in-place descending according to their natural sort order.\n * \n * \n * The sort is _stable_. It means that equal elements preserve their order relative to each other after sorting.\n * \n * @public fun <T : Comparable<T>> MutableList<T>.sortDescending(): Unit {\n    sortWith(reverseOrder())\n}\n\n/**\n * Returns a list of all elements sorted according to their natural sort order.\n * \n * \n * The sort is _stable_. It means that equal elements preserve their order relative to each other after sorting.\n * \n * @public fun <T : Comparable<T>> Iterable<T>.sorted(): List<T> {\n    if (this is Collection) {\n        if (size <= 1)\n            return this.toList()\n        @Suppress(\"UNCHECKED_CAST\")\n        return (toArray<Comparable<T>>())

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as Array<T>).apply {
    sort() }.asList()\n } \n return toMutableList().apply { sort() }\n}\n\n/**\n * Returns a list of all elements sorted
according to natural sort order of the value returned by specified [selector] function.\n * \n * The sort is _stable_. It
means that equal elements preserve their order relative to each other after sorting.\n * \n * @sample
samples.collections.Collections.Sorting.sortedBy\n */\npublic inline fun <T, R : Comparable<R>>
Iterable<T>.sortedBy(crossinline selector: (T) -> R?): List<T> {\n    return
sortedWith(compareBy(selector))\n}\n\n/**\n * Returns a list of all elements sorted descending according to natural
sort order of the value returned by specified [selector] function.\n * \n * The sort is _stable_. It means that equal
elements preserve their order relative to each other after sorting.\n */\npublic inline fun <T, R : Comparable<R>>
Iterable<T>.sortedByDescending(crossinline selector: (T) -> R?): List<T> {\n    return
sortedWith(compareByDescending(selector))\n}\n\n/**\n * Returns a list of all elements sorted descending according to their natural sort order.\n * \n * The sort is _stable_.
It means that equal elements preserve their order relative to each other after sorting.\n */\npublic fun <T :
Comparable<T>> Iterable<T>.sortedDescending(): List<T> {\n    return sortedWith(reverseOrder())\n}\n\n/**\n * Returns a list of all elements sorted according to the specified [comparator].\n * \n * The sort is _stable_. It means
that equal elements preserve their order relative to each other after sorting.\n */\npublic fun <T>
Iterable<T>.sortedWith(comparator: Comparator<in T>): List<T> {\n    if (this is Collection) {\n        if (size <= 1)
return this.toList()\n        @Suppress("UNCHECKED_CAST")\n        return (toTypedArray<Any?>() as
Array<T>).apply { sortWith(comparator) }.asList()\n    } \n    return toMutableList().apply { sortWith(comparator)
}\n}\n\n/**\n * Returns an array of Boolean containing all of the elements of this collection.\n */\npublic
fun Collection<Boolean>.toBooleanArray(): BooleanArray {\n    val result = BooleanArray(size)\n    var index =
0\n    for (element in this)\n        result[index++] = element\n    return result\n}\n\n/**\n * Returns an array of Byte
containing all of the elements of this collection.\n */\npublic fun Collection<Byte>.toByteArray(): ByteArray {\n
val result = ByteArray(size)\n    var index = 0\n    for (element in this)\n        result[index++] = element\n    return
result\n}\n\n/**\n * Returns an array of Char containing all of the elements of this collection.\n */\npublic fun
Collection<Char>.toCharArray(): CharArray {\n    val result = CharArray(size)\n    var index = 0\n    for (element in
this)\n        result[index++] = element\n    return result\n}\n\n/**\n * Returns an array of Double containing all of the
elements of this collection.\n */\npublic fun Collection<Double>.toDoubleArray(): DoubleArray {\n    val result =
DoubleArray(size)\n    var index = 0\n    for (element
in this)\n        result[index++] = element\n    return result\n}\n\n/**\n * Returns an array of Float containing all of
the elements of this collection.\n */\npublic fun Collection<Float>.toFloatArray(): FloatArray {\n    val result =
FloatArray(size)\n    var index = 0\n    for (element in this)\n        result[index++] = element\n    return
result\n}\n\n/**\n * Returns an array of Int containing all of the elements of this collection.\n */\npublic fun
Collection<Int>.toIntArray(): IntArray {\n    val result = IntArray(size)\n    var index = 0\n    for (element in this)\n
        result[index++] = element\n    return result\n}\n\n/**\n * Returns an array of Long containing all of the elements
of this collection.\n */\npublic fun Collection<Long>.toLongArray(): LongArray {\n    val result =
LongArray(size)\n    var index = 0\n    for (element in this)\n        result[index++] = element\n    return
result\n}\n\n/**\n * Returns an array of Short containing all of the elements of this
collection.\n */\npublic fun Collection<Short>.toShortArray(): ShortArray {\n    val result = ShortArray(size)\n
var index = 0\n    for (element in this)\n        result[index++] = element\n    return result\n}\n\n/**\n * Returns a
[Map] containing key-value pairs provided by [transform] function\n * applied to elements of the given collection.\n * \n * If any of two pairs would have the same key the last one gets added to the map.\n * \n * The returned map
preserves the entry iteration order of the original collection.\n * \n * @sample
samples.collections.Collections.Transformations.associate\n */\npublic inline fun <T, K, V>
Iterable<T>.associate(transform: (T) -> Pair<K, V>): Map<K, V> {\n    val capacity =
mapCapacity(collectionSizeOrDefault(10)).coerceAtLeast(16)\n    return associateTo(LinkedHashMap<K,
V>(capacity), transform)\n}\n\n/**\n * Returns a [Map] containing the elements from the given collection indexed
by the key\n * returned from [keySelector] function applied to

```

each element.\n \* \n \* If any two elements would have the same key returned by [keySelector] the last one gets added to the map.\n \* \n \* The returned map preserves the entry iteration order of the original collection.\n \* \n \* @sample samples.collections.Collections.Transformations.associateBy\n \* \n \* public inline fun <T, K> Iterable<T>.associateBy(keySelector: (T) -> K): Map<K, T> {\n val capacity = mapCapacity(collectionSizeOrDefault(10)).coerceAtLeast(16)\n return associateByTo(LinkedHashMap<K, T>(capacity), keySelector)\n }\n \* \n \* Returns a [Map] containing the values provided by [valueTransform] and indexed by [keySelector] functions applied to elements of the given collection.\n \* \n \* If any two elements would have the same key returned by [keySelector] the last one gets added to the map.\n \* \n \* The returned map preserves the entry iteration order of the original collection.\n \* \n \* @sample samples.collections.Collections.Transformations.associateByWithValueTransform\n \* \n \* public inline fun <T, K, V> Iterable<T>.associateBy(keySelector: (T) -> K, valueTransform: (T) -> V): Map<K, V> {\n val capacity = mapCapacity(collectionSizeOrDefault(10)).coerceAtLeast(16)\n return associateByTo(LinkedHashMap<K, V>(capacity), keySelector, valueTransform)\n }\n \* \n \* Populates and returns the [destination] mutable map with key-value pairs,\n \* where key is provided by the [keySelector] function applied to each element of the given collection\n \* and value is the element itself.\n \* \n \* If any two elements would have the same key returned by [keySelector] the last one gets added to the map.\n \* \n \* @sample samples.collections.Collections.Transformations.associateByTo\n \* \n \* public inline fun <T, K, M : MutableMap<in K, in T>> Iterable<T>.associateByTo(destination: M, keySelector: (T) -> K): M {\n for (element in this) {\n destination.put(keySelector(element), element)\n }\n return destination\n }\n \* \n \* Populates and returns the [destination] mutable map with key-value pairs,\n \* where key is provided by the [keySelector] function and\n \* and value is provided by the [valueTransform] function applied to elements of the given collection.\n \* \n \* If any two elements would have the same key returned by [keySelector] the last one gets added to the map.\n \* \n \* @sample samples.collections.Collections.Transformations.associateByToWithValueTransform\n \* \n \* public inline fun <T, K, V, M : MutableMap<in K, in V>> Iterable<T>.associateByTo(destination: M, keySelector: (T) -> K, valueTransform: (T) -> V): M {\n for (element in this) {\n destination.put(keySelector(element), valueTransform(element))\n }\n return destination\n }\n \* \n \* Populates and returns the [destination] mutable map with key-value pairs\n \* provided by [transform] function applied to each element of the given collection.\n \* \n \* If any of two pairs would have the same key the last one gets added to the map.\n \* \n \* @sample samples.collections.Collections.Transformations.associateTo\n \* \n \* public inline fun <T, K, V, M : MutableMap<in K, in V>> Iterable<T>.associateTo(destination: M, transform: (T) -> Pair<K, V>): M {\n for (element in this) {\n destination += transform(element)\n }\n return destination\n }\n \* \n \* Returns a [Map] where keys are elements from the given collection and values are\n \* produced by the [valueSelector] function applied to each element.\n \* \n \* If any two elements are equal, the last one gets added to the map.\n \* \n \* The returned map preserves the entry iteration order of the original collection.\n \* \n \* @sample samples.collections.Collections.Transformations.associateWith\n \* \n \* @SinceKotlin("1.3")\n \* public inline fun <K, V> Iterable<K>.associateWith(valueSelector: (K) -> V): Map<K, V> {\n val result = LinkedHashMap<K, V>(mapCapacity(collectionSizeOrDefault(10)).coerceAtLeast(16))\n return associateWithTo(result, valueSelector)\n }\n \* \n \* Populates and returns the [destination] mutable map with key-value pairs for each element of the given collection,\n \* where key is the element itself and value is provided by the [valueSelector] function applied to that key.\n \* \n \* If any two elements are equal, the last one overwrites the former value in the map.\n \* \n \* @sample samples.collections.Collections.Transformations.associateWithTo\n \* \n \* @SinceKotlin("1.3")\n \* public inline fun <K, V, M : MutableMap<in K, in V>> Iterable<K>.associateWithTo(destination: M, valueSelector: (K) -> V): M {\n for (element in this) {\n destination.put(element, valueSelector(element))\n }\n return destination\n }\n \* \n \* Appends all elements to the given [destination] collection.\n \* \n \* public fun <T, C : MutableCollection<in T>> Iterable<T>.toCollection(destination: C): C {\n for (item in this) {\n destination.add(item)\n }\n return destination\n }\n \* \n \* Returns a new [HashSet] of all elements.\n

```

*^public fun <T> Iterable<T>.toHashSet():
HashSet<T> {\n    return toCollection(HashSet<T>(mapCapacity(collectionSizeOrDefault(12))))\n}\n\n/**\n *
Returns a [List] containing all elements.\n *^public fun <T> Iterable<T>.toList(): List<T> {\n    if (this is
Collection) {\n        return when (size) {\n            0 -> emptyList()\n            1 -> listOf(if (this is List) get(0) else
iterator().next())\n            else -> this.toMutableList()\n        }\n    }\n    return
this.toMutableList().optimizeReadOnlyList()\n}\n\n/**\n * Returns a new [MutableList] filled with all elements of
this collection.\n *^public fun <T> Iterable<T>.toMutableList(): MutableList<T> {\n    if (this is Collection<T>)\n        return this.toMutableList()\n    return toCollection(ArrayList<T>())\n}\n\n/**\n * Returns a new [MutableList]
filled with all elements of this collection.\n *^public fun <T> Collection<T>.toMutableList(): MutableList<T> {\n
return ArrayList(this)\n}\n\n/**\n * Returns a [Set] of all elements.\n * \n * The
returned set preserves the element iteration order of the original collection.\n *^public fun <T>
Iterable<T>.toSet(): Set<T> {\n    if (this is Collection) {\n        return when (size) {\n            0 -> emptySet()\n
            1 -> setOf(if (this is List) this[0] else iterator().next())\n            else ->
toCollection(LinkedHashSet<T>(mapCapacity(size)))\n        }\n    }\n    return
toCollection(LinkedHashSet<T>()).optimizeReadOnlySet()\n}\n\n/**\n * Returns a single list of all elements
yielded from results of [transform] function being invoked on each element of original collection.\n * \n * @sample
samples.collections.Collections.Transformations.flatMap\n *^public inline fun <T, R>
Iterable<T>.flatMap(transform: (T) -> Iterable<R>): List<R> {\n    return flatMapTo(ArrayList<R>(),
transform)\n}\n\n/**\n * Returns a single list of all elements yielded from results of [transform] function being
invoked on each element of original collection.\n * \n * @sample
samples.collections.Collections.Transformations.flatMap\n
*^@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("flatMapSequence")\npublic inline fun <T, R>
Iterable<T>.flatMap(transform: (T) -> Sequence<R>): List<R> {\n    return flatMapTo(ArrayList<R>(),
transform)\n}\n\n/**\n * Returns a single list of all elements yielded from results of [transform] function being
invoked on each element\n * and its index in the original collection.\n * \n * @sample
samples.collections.Collections.Transformations.flatMapIndexed\n
*^@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("flatMapIndexedIterable")\n@kotlin.internal.InlineOnly\npublic
inline fun <T, R> Iterable<T>.flatMapIndexed(transform: (index: Int, T) -> Iterable<R>): List<R> {\n    return
flatMapIndexedTo(ArrayList<R>(), transform)\n}\n\n/**\n * Returns a single
list of all elements yielded from results of [transform] function being invoked on each element\n * and its index in
the original collection.\n * \n * @sample samples.collections.Collections.Transformations.flatMapIndexed\n
*^@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("flatMapIndexedSequence")\n@kotlin.internal.InlineOnly\npubli
c inline fun <T, R> Iterable<T>.flatMapIndexed(transform: (index: Int, T) -> Sequence<R>): List<R> {\n    return
flatMapIndexedTo(ArrayList<R>(), transform)\n}\n\n/**\n * Appends all elements yielded from results of
[transform] function being invoked on each element\n * and its index in the original collection, to the given
[destination].\n
*^@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("flatMapIndexedIterableTo")\n@kotlin.internal.InlineOnly\npubli
c inline
fun <T, R, C : MutableCollection<in R>> Iterable<T>.flatMapIndexedTo(destination: C, transform: (index: Int, T)
-> Iterable<R>): C {\n    var index = 0\n    for (element in this) {\n        val list =
transform(checkIndexOverflow(index++), element)\n        destination.addAll(list)\n    }\n    return
destination\n}\n\n/**\n * Appends all elements yielded from results of [transform] function being invoked on each
element\n * and its index in the original collection, to the given [destination].\n
*^@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution

```

```

ByLambdaReturnType\n@kotlin.jvm.JvmName("\flatMapIndexedSequenceTo")\n@kotlin.internal.InlineOnly\npu
blic inline fun <T, R, C : MutableCollection<in R>> Iterable<T>.flatMapIndexedTo(destination: C, transform:
(index: Int, T) -> Sequence<R>): C {\n    var index = 0\n    for (element in this) {\n        val list =
transform(checkIndexOverflow(index++), element)\n        destination.addAll(list)\n
    }\n    return destination\n}\n\n/**\n * Appends all elements yielded from results of [transform] function being
invoked on each element of original collection, to the given [destination].\n */\n\npublic inline fun <T, R, C :
MutableCollection<in R>> Iterable<T>.flatMapTo(destination: C, transform: (T) -> Iterable<R>): C {\n    for
(element in this) {\n        val list = transform(element)\n        destination.addAll(list)\n    }\n    return
destination\n}\n\n/**\n * Appends all elements yielded from results of [transform] function being invoked on each
element of original collection, to the given [destination].\n */\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("\flatMapSequenceTo")\npublic inline fun <T, R, C :
MutableCollection<in R>> Iterable<T>.flatMapTo(destination: C, transform: (T) -> Sequence<R>): C {\n    for
(element in this) {\n        val list = transform(element)\n
    }\n    destination.addAll(list)\n    }\n    return destination\n}\n\n/**\n * Groups elements of the original collection by
the key returned by the given [keySelector] function\n * applied to each element and returns a map where each
group key is associated with a list of corresponding elements.\n * \n * The returned map preserves the entry iteration
order of the keys produced from the original collection.\n * \n * @sample
samples.collections.Collections.Transformations.groupBy\n */\n\npublic inline fun <T, K>
Iterable<T>.groupBy(keySelector: (T) -> K): Map<K, List<T>> {\n    return groupByTo(LinkedHashMap<K,
MutableList<T>>(), keySelector)\n}\n\n/**\n * Groups values returned by the [valueTransform] function applied to
each element of the original collection\n * by the key returned by the given [keySelector] function applied to the
element\n * and returns a map where each group key is associated with a list of corresponding values.\n * \n * The
returned map preserves the entry iteration
order of the keys produced from the original collection.\n * \n * @sample
samples.collections.Collections.Transformations.groupByKeysAndValues\n */\n\npublic inline fun <T, K, V>
Iterable<T>.groupBy(keySelector: (T) -> K, valueTransform: (T) -> V): Map<K, List<V>> {\n    return
groupByTo(LinkedHashMap<K, MutableList<V>>(), keySelector, valueTransform)\n}\n\n/**\n * Groups elements
of the original collection by the key returned by the given [keySelector] function\n * applied to each element and
puts to the [destination] map each group key associated with a list of corresponding elements.\n * \n * @return The
[destination] map.\n * \n * @sample samples.collections.Collections.Transformations.groupBy\n */\n\npublic inline
fun <T, K, M : MutableMap<in K, MutableList<T>>> Iterable<T>.groupByTo(destination: M, keySelector: (T) ->
K): M {\n    for (element in this) {\n        val key = keySelector(element)\n        val list = destination.getOrPut(key) {
ArrayList<T>() }\n        list.add(element)\n
    }\n    return destination\n}\n\n/**\n * Groups values returned by the [valueTransform] function applied to each
element of the original collection\n * by the key returned by the given [keySelector] function applied to the
element\n * and puts to the [destination] map each group key associated with a list of corresponding values.\n * \n *
@return The [destination] map.\n * \n * @sample
samples.collections.Collections.Transformations.groupByKeysAndValues\n */\n\npublic inline fun <T, K, V, M :
MutableMap<in K, MutableList<V>>> Iterable<T>.groupByTo(destination: M, keySelector: (T) -> K,
valueTransform: (T) -> V): M {\n    for (element in this) {\n        val key = keySelector(element)\n        val list =
destination.getOrPut(key) { ArrayList<V>() }\n        list.add(valueTransform(element))\n    }\n    return
destination\n}\n\n/**\n * Creates a [Grouping] source from a collection to be used later with one of group-and-fold
operations\n * using the specified [keySelector] function to
extract a key from each element.\n * \n * @sample samples.collections.Grouping.groupingByEachCount\n */\n\n@SinceKotlin("1.1")\npublic inline fun <T, K> Iterable<T>.groupingBy(crossinline keySelector: (T) -> K):
Grouping<T, K> {\n    return object : Grouping<T, K> {\n        override fun sourceIterator(): Iterator<T> =
this@groupingBy.iterator()\n        override fun keyOf(element: T): K = keySelector(element)\n    }\n}\n\n/**\n *

```

Returns a list containing the results of applying the given [transform] function to each element in the original collection.

```

@sample samples.collections.Collections.Transformations.map
public inline fun <T, R>
Iterable<T>.map(transform: (T) -> R): List<R> {
    return mapTo(ArrayList<R>(collectionSizeOrDefault(10)),
transform)
}

```

Returns a list containing the results of applying the given [transform] function to each element and its index in the original collection.

```

@param [transform] function that takes the index of an
element and the element itself
and returns the result of the transform applied to the element.
public inline
fun <T, R> Iterable<T>.mapIndexed(transform: (index: Int, T) -> R): List<R> {
    return
mapIndexedTo(ArrayList<R>(collectionSizeOrDefault(10)), transform)
}

```

Returns a list containing only the non-null results of applying the given [transform] function to each element and its index in the original collection.

```

@param [transform] function that takes the index of an element and the element itself
and returns the result of the transform applied to the element.
public inline fun <T, R : Any>
Iterable<T>.mapIndexedNotNull(transform: (index: Int, T) -> R?): List<R> {
    return
mapIndexedNotNullTo(ArrayList<R>(), transform)
}

```

Applies the given [transform] function to each element and its index in the original collection and appends only the non-null results to the given [destination].

```

@param [transform] function that takes
the index of an element and the element itself
and returns the result of the transform applied to the element.
public inline fun <T, R : Any, C : MutableCollection<in R>>
Iterable<T>.mapIndexedNotNullTo(destination:
C, transform: (index: Int, T) -> R?): C {
    forEachIndexed { index, element -> transform(index, element)?.let {
destination.add(it) } }
    return destination
}

```

Applies the given [transform] function to each element and its index in the original collection and appends the results to the given [destination].

```

@param [transform]
function that takes the index of an element and the element itself
and returns the result of the transform applied
to the element.
public inline fun <T, R, C : MutableCollection<in R>>
Iterable<T>.mapIndexedTo(destination: C, transform: (index: Int, T) -> R): C {
    var index = 0
    for (item in this)
        destination.add(transform(checkIndexOverflow(index++), item))
    return destination
}

```

Returns a list containing only the non-null results of applying the given [transform] function to each element in the original collection.

```

@sample samples.collections.Collections.Transformations.mapNotNull
public inline fun <T, R : Any>
Iterable<T>.mapNotNull(transform: (T) -> R?): List<R> {
    return
mapNotNullTo(ArrayList<R>(), transform)
}

```

Applies the given [transform] function to each element in the original collection and appends only the non-null results to the given [destination].

```

public inline fun
<T, R : Any, C : MutableCollection<in R>>
Iterable<T>.mapNotNullTo(destination: C, transform: (T) -> R?): C {
    forEach { element -> transform(element)?.let { destination.add(it) } }
    return destination
}

```

Applies the given [transform] function to each element of the original collection and appends the results to the given [destination].

```

public inline fun <T, R, C : MutableCollection<in R>>
Iterable<T>.mapTo(destination:
C, transform: (T) -> R): C {
    for (item in this)
        destination.add(transform(item))
    return
destination
}

```

Returns a lazy [Iterable] that wraps each element of the original collection into an [IndexedValue] containing the index of that element and the element itself.

```

public fun <T>
Iterable<T>.withIndex(): Iterable<IndexedValue<T>> {
    return IndexingIterable { iterator() }
}

```

Returns a list containing only distinct elements from the given collection.

```

Among equal elements of the
given collection, only the first one will be present in the resulting list.
The elements in the resulting list are in the
same order as they were in the source collection.
@sample
samples.collections.Collections.Transformations.distinctAndDistinctBy
public fun <T>
Iterable<T>.distinct():
List<T> {
    return this.toMutableSet().toList()
}

```

Returns a list containing only elements from the given collection having distinct keys returned by the given [selector] function.

```

Among elements of the given collection with equal
keys, only the first one will be present in the resulting list.
The elements in the resulting list are in the same order
as they were in the source collection.
@sample
samples.collections.Collections.Transformations.distinctAndDistinctBy
public inline fun <T, K>
Iterable<T>.distinctBy(selector: (T) -> K): List<T> {
    val set = HashSet<K>()
    val list = ArrayList<T>()

```

```

for (e in this) {
    val key = selector(e)
    if (set.add(key))
        list.add(e)
}
return list
}

* Returns a set containing all elements that are contained by both this collection and the specified collection.
The returned set preserves the element iteration order of the original collection.
To get a set containing all elements that are contained at least in one of these collections use [union].

public infix fun
<T> Iterable<T>.intersect(other: Iterable<T>): Set<T> {
    val set = this.toMutableSet()
    set.retainAll(other)
    return set
}

* Returns a set containing all elements that are contained by this collection and not contained
by the specified collection.
The returned set preserves the element iteration order of the original
collection.

public infix fun <T> Iterable<T>.subtract(other: Iterable<T>): Set<T> {
    val set =
this.toMutableSet()
    set.removeAll(other)
    return set
}

* Returns a new [MutableSet] containing all
distinct elements from the given collection.
The returned set preserves the element iteration order of the
original collection.

public fun <T> Iterable<T>.toMutableSet(): MutableSet<T> {
    return when (this) {
        is Collection<T> -> LinkedHashSet(this)
        else -> toCollection(LinkedHashSet<T>())
    }
}

* Returns a set containing all distinct elements from both collections.
The returned set preserves the element iteration order of the original collection.
Those elements of the [other]
collection that are unique are iterated in the end
in the order of the [other] collection.
To get a set
containing all elements that are contained in both collections use [intersect].

public infix fun <T>
Iterable<T>.union(other: Iterable<T>): Set<T> {
    val set = this.toMutableSet()
    set.addAll(other)
    return set
}

* Returns `true` if all elements match the given [predicate].
Note that if the collection
contains no elements, the function returns `true` because there are no elements in it that _do not_ match the
predicate.
See a more detailed explanation of this logic concept in ["Vacuous
truth"](https://en.wikipedia.org/wiki/Vacuous_truth) article.
@sample
samples.collections.Collections.Aggregates.all

public inline fun <T> Iterable<T>.all(predicate: (T) ->
Boolean): Boolean {
    if (this is Collection
    && isEmpty()) return true
    for (element in this) if (!predicate(element)) return false
    return true
}

* Returns `true` if collection has at least one element.
@sample
samples.collections.Collections.Aggregates.any

public fun <T> Iterable<T>.any(): Boolean {
    if (this is
Collection) return !isEmpty()
    return iterator().hasNext()
}

* Returns `true` if at least one element
matches the given [predicate].
@sample
samples.collections.Collections.Aggregates.anyWithPredicate

public inline fun <T> Iterable<T>.any(predicate: (T) -> Boolean): Boolean {
    if (this is Collection &&
isEmpty()) return false
    for (element in this) if (predicate(element)) return true
    return false
}

* Returns the number of elements in this collection.

public fun <T> Iterable<T>.count(): Int {
    if (this is
Collection) return size
    var count = 0
    for (element in this) checkCountOverflow(++count)
    return
count
}

* Returns the number of elements in this collection.
@kotlin.internal.InlineOnly
public inline fun <T>
Collection<T>.count(): Int {
    return size
}

* Returns the number of elements matching the given
[predicate].

public inline fun <T> Iterable<T>.count(predicate: (T) -> Boolean): Int {
    if (this is Collection
&& isEmpty()) return 0
    var count = 0
    for (element in this) if (predicate(element))
checkCountOverflow(++count)
    return count
}

* Accumulates value starting with [initial] value and
applying [operation] from left to right
to current accumulator value and each element.
Returns the
specified [initial] value if the collection is empty.
@param [operation] function that takes current
accumulator value and an element, and calculates the next accumulator value.

public inline fun <T, R>
Iterable<T>.fold(initial: R, operation: (acc: R, T) -> R): R {
    var accumulator = initial
    for (element
in this) accumulator = operation(accumulator, element)
    return accumulator
}

* Accumulates value
starting with [initial] value and applying [operation] from left to right
to current accumulator value and each
element with its index in the original collection.
Returns the specified [initial] value if the collection is
empty.
@param [operation] function that takes the index of an element, current accumulator value
and the element itself, and calculates the next accumulator value.

public inline fun <T, R>
Iterable<T>.foldIndexed(initial: R, operation: (index: Int, acc: R, T) -> R): R {
    var index = 0
    var

```

```

accumulator = initial\n  for (element in this) accumulator = operation(checkIndexOverflow(index++), accumulator,
element)\n  return accumulator\n}\n\n/**\n * Accumulates value starting with [initial] value and applying
[operation] from right to left\n * to each element and current accumulator value.\n * \n * Returns the specified
[initial] value if the list is empty.\n * \n * @param [operation] function that takes an element and current
accumulator value, and calculates the next accumulator value.\n */\npublic inline fun <T, R>
List<T>.foldRight(initial: R, operation: (T, acc: R) -> R): R {\n  var accumulator = initial\n  if (!isEmpty()) {\n
val iterator = listIterator(size)\n    while (iterator.hasPrevious()) {\n      accumulator =
operation(iterator.previous(), accumulator)\n    }\n  }\n  return accumulator\n}\n\n/**\n * Accumulates value
starting with [initial] value and applying [operation] from right to left\n * to each element with its index in the
original list and current accumulator value.\n * \n * Returns the specified [initial] value if the list is empty.\n * \n *
@param [operation] function that takes the index of an element, the element itself\n * and current accumulator
value, and calculates the next accumulator value.\n */\npublic inline fun <T, R> List<T>.foldRightIndexed(initial:
R, operation: (index: Int, T, acc: R) -> R): R {\n  var accumulator = initial\n  if (!isEmpty()) {\n    val iterator =
listIterator(size)\n    while (iterator.hasPrevious()) {\n      val index = iterator.previousIndex()\n
accumulator = operation(index, iterator.previous(), accumulator)\n    }\n  }\n  return accumulator\n}\n\n/**\n *
Performs the given [action] on each element.\n */\n@kotlin.internal.HidesMembers\npublic inline fun <T>
Iterable<T>.forEach(action: (T) -> Unit): Unit {\n  for (element in this) action(element)\n}\n\n/**\n * Performs the
given [action] on each element, providing sequential index with the element.\n * @param [action] function that
takes the index of an element and the element itself\n * and performs the action on the element.\n */\npublic inline
fun <T> Iterable<T>.forEachIndexed(action: (index: Int, T) -> Unit): Unit {\n  var index = 0\n  for (item in this)
action(checkIndexOverflow(index++), item)\n}\n\n/**\n * Returns the largest element.\n * \n * If any of elements is `NaN` returns `NaN`.\n * \n * @throws
NoSuchElementException if the collection is empty.\n */\n\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxOrThrow")\n@Suppress("CONFLICTING_OVERLOA
DS")\npublic fun Iterable<Double>.max(): Double {\n  val iterator = iterator()\n  if (!iterator.hasNext()) throw
NoSuchElementException()\n  var max = iterator.next()\n  while (iterator.hasNext()) {\n    val e =
iterator.next()\n    max = maxOf(max, e)\n  }\n  return max\n}\n\n/**\n * Returns the largest element.\n * \n * If any of elements is `NaN` returns `NaN`.\n * \n * @throws NoSuchElementException if the collection is empty.\n */\n\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxOrThrow")\n@Suppress("CONFLICTING_OVERLOA
DS")\npublic fun Iterable<Float>.max(): Float {\n  val iterator = iterator()\n  if (!iterator.hasNext()) throw
NoSuchElementException()\n  var max = iterator.next()\n  while
(iterator.hasNext()) {\n    val e = iterator.next()\n    max = maxOf(max, e)\n  }\n  return max\n}\n\n/**\n *
Returns the largest element.\n * \n * @throws NoSuchElementException if the collection is empty.\n */\n\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxOrThrow")\n@Suppress("CONFLICTING_OVERLOA
DS")\npublic fun <T : Comparable<T>> Iterable<T>.max(): T {\n  val iterator = iterator()\n  if
(!iterator.hasNext()) throw NoSuchElementException()\n  var max = iterator.next()\n  while (iterator.hasNext())
{\n    val e = iterator.next()\n    if (max < e) max = e\n  }\n  return max\n}\n\n/**\n * Returns the first
element yielding the largest value of the given function.\n * \n * @throws NoSuchElementException if the
collection is empty.\n * \n * @sample samples.collections.Collections.Aggregates.maxBy\n */\n\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxByOrThrow")\n@Suppress("CONFLICTING_OVERL
OADS")\npublic inline fun <T, R : Comparable<R>> Iterable<T>.maxBy(selector:
(T) -> R): T {\n  val iterator = iterator()\n  if (!iterator.hasNext()) throw NoSuchElementException()\n  var
maxElem = iterator.next()\n  if (!iterator.hasNext()) return maxElem\n  var maxValue = selector(maxElem)\n  do
{\n    val e = iterator.next()\n    val v = selector(e)\n    if (maxValue < v) {\n      maxElem = e\n
maxValue = v\n    }\n  } while (iterator.hasNext())\n  return maxElem\n}\n\n/**\n * Returns the first element
yielding the largest value of the given function or `null` if there are no elements.\n * \n * @sample
samples.collections.Collections.Aggregates.maxByOrNull\n */\n\n@SinceKotlin("1.4")\npublic inline fun <T, R :
Comparable<R>> Iterable<T>.maxByOrNull(selector: (T) -> R): T? {\n  val iterator = iterator()\n  if

```

```
(iterator.hasNext()) return null\n    var maxElem = iterator.next()\n    if (!iterator.hasNext()) return maxElem\n    var\n    maxValue = selector(maxElem)\n    do {\n        val e = iterator.next()\n        val v = selector(e)\n        if (maxValue < v) {\n            maxElem = e\n            maxValue = v\n        }\n    } while\n    (iterator.hasNext())\n    return maxElem\n}\n\n/**\n * Returns the largest value among all values produced by\n [selector] function\n * applied to each element in the collection.\n * \n * If any of values produced by [selector]\n function is `NaN`, the returned result is `NaN`.\n * \n * @throws NoSuchElementException if the collection is\n empty.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T> Iterable<T>.maxOf(selector: (T) ->\nDouble): Double {\n    val iterator = iterator()\n    if (!iterator.hasNext()) throw NoSuchElementException()\n    var\n    maxValue = selector(iterator.next())\n    while (iterator.hasNext()) {\n        val v = selector(iterator.next())\n        maxValue = maxOf(maxValue, v)\n    }\n    return maxValue\n}\n\n/**\n
```

```
* Returns the largest value among all values produced by [selector] function\n * applied to each element in the\n collection.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n * \n * @throws NoSuchElementException if the collection is empty.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T> Iterable<T>.maxOf(selector: (T) ->\nFloat): Float {\n    val iterator = iterator()\n    if (!iterator.hasNext()) throw NoSuchElementException()\n    var\n    maxValue = selector(iterator.next())\n    while (iterator.hasNext()) {\n        val v = selector(iterator.next())\n        maxValue = maxOf(maxValue, v)\n    }\n    return maxValue\n}\n\n/**\n * Returns the largest value among all\n values produced by [selector] function\n * applied to each element in the collection.\n * \n * @throws\n NoSuchElementException if the\n collection is empty.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T, R : Comparable<R>>\nIterable<T>.maxOf(selector: (T) -> R): R {\n    val iterator = iterator()\n    if (!iterator.hasNext()) throw\n    NoSuchElementException()\n    var maxValue = selector(iterator.next())\n    while (iterator.hasNext()) {\n        val v\n        = selector(iterator.next())\n        if (maxValue < v) {\n            maxValue = v\n        }\n    }\n    return\n    maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to\n each element in the collection or `null` if there are no elements.\n * \n * If any of values produced by [selector]\n function is `NaN`, the returned result is `NaN`.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic\ninline fun <T> Iterable<T>.maxOfOrNull(selector: (T) -> Double): Double? {\n    val iterator = iterator()\n    if\n    (iterator.hasNext()) return null\n    var maxValue = selector(iterator.next())\n    while (iterator.hasNext()) {\n        val v = selector(iterator.next())\n        maxValue = maxOf(maxValue, v)\n    }\n    return maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to each element in the\n collection or `null` if there are no elements.\n * \n * If any of values produced by [selector] function is `NaN`, the\n returned result is `NaN`.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T> Iterable<T>.maxOfOrNull(selector: (T)\n-> Float): Float? {\n    val iterator = iterator()\n    if (iterator.hasNext()) return null\n    var maxValue =\n    selector(iterator.next())\n    while (iterator.hasNext())\n    {\n        val v = selector(iterator.next())\n        maxValue = maxOf(maxValue, v)\n    }\n    return\n    maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to\n each element in the collection or `null` if there are no elements.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T, R : Comparable<R>>
```



```

Iterable<T>.maxOrNull(selector: (T) -> R): R? {\n    val iterator = iterator()\n    if (!iterator.hasNext()) return\n    null\n    var maxValue = selector(iterator.next())\n    while (iterator.hasNext()) {\n        val v =\n        selector(iterator.next())\n        if (maxValue < v) {\n            maxValue = v\n        }\n    }\n    return\n    maxValue\n}\n\n/**\n * Returns the largest value according to the provided [comparator]\n * among all values\n * produced by [selector] function applied to each element in the collection.\n *\n * @throws NoSuchElementException if the collection is empty.\n *\n */\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T, R>\n\nIterable<T>.maxOfWith(comparator: Comparator<in R>, selector: (T) -> R): R {\n    val iterator = iterator()\n    if\n    (!iterator.hasNext()) throw NoSuchElementException()\n    var maxValue = selector(iterator.next())\n    while\n    (iterator.hasNext()) {\n        val v = selector(iterator.next())\n        if (comparator.compare(maxValue, v) < 0) {\n           \n            maxValue = v\n        }\n    }\n    return maxValue\n}\n\n/**\n * Returns the largest value according to the provided\n * [comparator]\n * among all values produced by [selector] function applied to each element in the collection or `null`\n * if there are no elements.\n *\n */\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic\n\ninline fun <T, R> Iterable<T>.maxOfWithOrNull(comparator: Comparator<in R>, selector: (T) -> R): R? {\n    val\n    iterator = iterator()\n    if (!iterator.hasNext()) return null\n    var maxValue = selector(iterator.next())\n    while\n    (iterator.hasNext()) {\n        val v = selector(iterator.next())\n        if (comparator.compare(maxValue, v) < 0) {\n           \n            maxValue = v\n        }\n    }\n    return maxValue\n}\n\n/**\n * Returns the largest element or `null` if there are no\n * elements.\n * If any of elements is `NaN` returns `NaN`.\n */\n\n@SinceKotlin("1.4")\npublic fun\n\nIterable<Double>.maxOrNull(): Double? {\n    val iterator = iterator()\n    if (!iterator.hasNext()) return null\n    var\n    max = iterator.next()\n    while (iterator.hasNext()) {\n        val e = iterator.next()\n        max = maxOf(max, e)\n    }\n    return max\n}\n\n/**\n * Returns the largest element or `null` if there are no elements.\n * If any of\n * elements is\n * `NaN` returns `NaN`.\n */\n\n@SinceKotlin("1.4")\npublic fun Iterable<Float>.maxOrNull(): Float? {\n    val\n    iterator = iterator()\n    if (!iterator.hasNext()) return null\n    var max = iterator.next()\n    while (iterator.hasNext())\n    {\n        val e = iterator.next()\n        max = maxOf(max, e)\n    }\n    return max\n}\n\n/**\n * Returns the largest\n * element or `null` if there are no elements.\n */\n\n@SinceKotlin("1.4")\npublic fun <T : Comparable<T>>\n\nIterable<T>.maxOrNull(): T? {\n    val iterator = iterator()\n    if (!iterator.hasNext()) return null\n    var max =\n    iterator.next()\n    while (iterator.hasNext()) {\n        val e = iterator.next()\n        if (max < e) max = e\n    }\n    return max\n}\n\n/**\n * Returns the first element having the largest value according to the provided\n * [comparator].\n * @throws NoSuchElementException if the collection is empty.\n *\n */\n\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxWithOrThrow")\n@Suppress("CONFLICTING_OVER\nLOADS")\npublic\n\nfun <T> Iterable<T>.maxWith(comparator: Comparator<in T>): T {\n    val iterator = iterator()\n    if\n    (!iterator.hasNext()) throw NoSuchElementException()\n    var max = iterator.next()\n    while (iterator.hasNext())\n    {\n        val e = iterator.next()\n        if (comparator.compare(max, e) < 0) max = e\n    }\n    return max\n}\n\n/**\n * Returns the first element having the largest value according to the provided [comparator] or `null` if there are no\n * elements.\n */\n\n@SinceKotlin("1.4")\npublic fun <T> Iterable<T>.maxWithOrNull(comparator: Comparator<in\nT>): T? {\n    val iterator = iterator()\n    if (!iterator.hasNext()) return null\n    var max = iterator.next()\n    while\n    (iterator.hasNext()) {\n        val e = iterator.next()\n        if (comparator.compare(max, e) < 0) max = e\n    }\n    return max\n}\n\n/**\n * Returns the smallest element.\n * If any of elements is `NaN` returns `NaN`.\n * @throws NoSuchElementException if the collection is empty.\n *\n */\n\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minOrThrow")\n@Suppress("CONFLICTING_OVERLOA\nDS")\npublic\n\nfun Iterable<Double>.min(): Double {\n    val iterator = iterator()\n    if (!iterator.hasNext()) throw\n    NoSuchElementException()\n    var min = iterator.next()\n    while (iterator.hasNext()) {\n        val e =

```

```

iterator.next()\n    min = minOf(min, e)\n    }\n    return min\n}\n\n/**\n * Returns the smallest element.\n * \n * If
any of elements is `NaN` returns `NaN`.\n * \n * @throws NoSuchElementException if the collection is empty.\n
*\n * @SinceKotlin("1.7")\n */\n@kotlin.jvm.JvmName("minOrThrow")\n@Suppress("CONFLICTING_OVERLOA
DS")\npublic fun Iterable<Float>.min(): Float {\n    val iterator = iterator()\n    if (!iterator.hasNext()) throw
NoSuchElementException()\n    var min = iterator.next()\n    while (iterator.hasNext()) {\n        val e =
iterator.next()\n        min = minOf(min, e)\n    }\n    return min\n}\n\n/**\n * Returns the smallest element.\n * \n *
@throws NoSuchElementException
if the collection is empty.\n
*\n * @SinceKotlin("1.7")\n */\n@kotlin.jvm.JvmName("minOrThrow")\n@Suppress("CONFLICTING_OVERLOA
DS")\npublic fun <T : Comparable<T>> Iterable<T>.min(): T {\n    val iterator = iterator()\n    if
(!iterator.hasNext()) throw NoSuchElementException()\n    var min = iterator.next()\n    while (iterator.hasNext())
{\n        val e = iterator.next()\n        if (min > e) min = e\n    }\n    return min\n}\n\n/**\n * Returns the first element
yielding the smallest value of the given function.\n * \n * @throws NoSuchElementException if the collection is
empty.\n * \n * @sample samples.collections.Collections.Aggregates.minBy\n
*\n * @SinceKotlin("1.7")\n */\n@kotlin.jvm.JvmName("minByOrThrow")\n@Suppress("CONFLICTING_OVERLO
ADS")\npublic inline fun <T, R : Comparable<R>> Iterable<T>.minBy(selector: (T) -> R): T {\n    val iterator =
iterator()\n    if (!iterator.hasNext()) throw NoSuchElementException()\n    var minElem = iterator.next()\n    if
(!iterator.hasNext())\n        return minElem\n    var minValue = selector(minElem)\n    do {\n        val e = iterator.next()\n        val v =
selector(e)\n        if (minValue > v) {\n            minElem = e\n            minValue = v\n        }\n    } while
(iterator.hasNext())\n    return minElem\n}\n\n/**\n * Returns the first element yielding the smallest value of the
given function or `null` if there are no elements.\n * \n * @sample
samples.collections.Collections.Aggregates.minByOrNull\n */\n@SinceKotlin("1.4")\npublic inline fun <T, R :
Comparable<R>> Iterable<T>.minByOrNull(selector: (T) -> R): T? {\n    val iterator = iterator()\n    if
(!iterator.hasNext()) return null\n    var minElem = iterator.next()\n    if (!iterator.hasNext()) return minElem\n    var
minValue = selector(minElem)\n    do {\n        val e = iterator.next()\n        val v = selector(e)\n        if (minValue >
v) {\n            minElem = e\n            minValue = v\n        }\n    } while (iterator.hasNext())\n    return
minElem\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n * applied to
each element in the collection.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result
is `NaN`.\n * \n * @throws NoSuchElementException if the collection is empty.\n
*\n * @SinceKotlin("1.4")\n */\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T> Iterable<T>.minOf(selector: (T) ->
Double): Double {\n    val iterator = iterator()\n    if (!iterator.hasNext()) throw NoSuchElementException()\n    var
minValue = selector(iterator.next())\n    while (iterator.hasNext()) {\n        val v = selector(iterator.next())\n
minValue = minOf(minValue, v)\n    }\n    return minValue\n}\n\n/**\n * Returns the smallest value among all
values produced by [selector] function\n * applied to each element in the collection.\n * \n * If any of values
produced
by [selector] function is `NaN`, the returned result is `NaN`.\n * \n * @throws NoSuchElementException if the
collection is empty.\n
*\n * @SinceKotlin("1.4")\n */\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T> Iterable<T>.minOf(selector: (T) ->
Float): Float {\n    val iterator = iterator()\n    if (!iterator.hasNext()) throw NoSuchElementException()\n    var
minValue = selector(iterator.next())\n    while (iterator.hasNext()) {\n        val v = selector(iterator.next())\n
minValue = minOf(minValue, v)\n    }\n    return minValue\n}\n\n/**\n * Returns the smallest value among all
values produced by [selector] function\n * applied to each element in the collection.\n * \n * @throws
NoSuchElementException if the collection is empty.\n
*\n * @SinceKotlin("1.4")\n */\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic

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```

inline fun <T, R : Comparable<R>> Iterable<T>.minOf(selector: (T) -> R): R {
    val iterator = iterator()
    if (!iterator.hasNext()) throw NoSuchElementException()
    var minValue = selector(iterator.next())
    while (iterator.hasNext()) {
        val v = selector(iterator.next())
        if (minValue > v) {
            minValue = v
        }
    }
    return minValue
}

Returns the smallest value among all values produced by [selector] function applied to each element in the collection or `null` if there are no elements.
If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.

@SinceKotlin("1.4")
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolutionByLambdaReturnType
@kotlin.internal.InlineOnly
public inline fun <T> Iterable<T>.minOfOrNull(selector: (T) -> Double): Double? {
    val iterator = iterator()
    if (!iterator.hasNext()) return null
    var minValue = selector(iterator.next())
    while (iterator.hasNext()) {
        val v = selector(iterator.next())
        minValue = minOf(minValue, v)
    }
    return minValue
}

Returns the smallest value among all values produced by [selector] function applied to each element in the collection or `null` if there are no elements.
If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.

@SinceKotlin("1.4")
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolutionByLambdaReturnType
@kotlin.internal.InlineOnly
public inline fun <T> Iterable<T>.minOfOrNull(selector: (T) -> Float): Float? {
    val iterator = iterator()
    if (!iterator.hasNext()) return null
    var minValue = selector(iterator.next())
    while (iterator.hasNext()) {
        val v = selector(iterator.next())
        minValue = minOf(minValue, v)
    }
    return minValue
}

Returns the smallest value among all values produced by [selector] function applied to each element in the collection or `null` if there are no elements.

@SinceKotlin("1.4")
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolutionByLambdaReturnType
@kotlin.internal.InlineOnly
public inline fun <T, R : Comparable<R>> Iterable<T>.minOfOrNull(selector: (T) -> R): R? {
    val iterator = iterator()
    if (!iterator.hasNext()) return null
    var minValue = selector(iterator.next())
    while (iterator.hasNext()) {
        val v = selector(iterator.next())
        if (minValue > v) {
            minValue = v
        }
    }
    return minValue
}

Returns the smallest value according to the provided [comparator] among all values produced by [selector] function applied to each element in the collection.
@throws NoSuchElementException if the collection is empty.

@SinceKotlin("1.4")
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolutionByLambdaReturnType
@kotlin.internal.InlineOnly
public inline fun <T, R> Iterable<T>.minOfWith(comparator: Comparator<in R>, selector: (T) -> R): R {
    val iterator = iterator()
    if (!iterator.hasNext()) throw NoSuchElementException()
    var minValue = selector(iterator.next())
    while (iterator.hasNext()) {
        val v = selector(iterator.next())
        if (comparator.compare(minValue, v) > 0) {
            minValue = v
        }
    }
    return minValue
}

Returns the smallest value according to the provided [comparator] among all values produced by [selector] function applied to each element in the collection or `null` if there are no elements.

@SinceKotlin("1.4")
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolutionByLambdaReturnType
@kotlin.internal.InlineOnly
public inline fun <T, R> Iterable<T>.minOfWithOrNull(comparator: Comparator<in R>, selector: (T) -> R): R? {
    val iterator = iterator()
    if (!iterator.hasNext()) return null
    var minValue = selector(iterator.next())
    while (iterator.hasNext()) {
        val v = selector(iterator.next())
        if (comparator.compare(minValue, v) > 0) {
            minValue = v
        }
    }
    return minValue
}

Returns the smallest element or `null` if there are no elements.
If any of elements is `NaN` returns `NaN`.

@SinceKotlin("1.4")
public fun Iterable<Double>.minOrNull(): Double? {
    val iterator = iterator()
    if (!iterator.hasNext()) return null
    var min = iterator.next()
    while (iterator.hasNext()) {
        val e = iterator.next()
        min = minOf(min, e)
    }
    return min
}

Returns the smallest element or `null` if there are no elements.
If any of elements is `NaN` returns `NaN`.

@SinceKotlin("1.4")
public fun Iterable<Float>.minOrNull(): Float? {
    val iterator = iterator()
    if

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(!iterator.hasNext()) return
    null\n    var min = iterator.next()\n    while (iterator.hasNext()) {\n        val e = iterator.next()\n        min =
minOf(min, e)\n    }\n    return min\n}\n\n/**\n * Returns the smallest element or `null` if there are no elements.\n *\n * @SinceKotlin("1.4")\n */\npublic fun <T : Comparable<T>> Iterable<T>.minOrNull(): T? {\n    val iterator =
iterator()\n    if (!iterator.hasNext()) return null\n    var min = iterator.next()\n    while (iterator.hasNext()) {\n        val e = iterator.next()\n        if (min > e) min = e\n    }\n    return min\n}\n\n/**\n * Returns the first element having
the smallest value according to the provided [comparator].\n *\n * @throws NoSuchElementException if the
collection is empty.\n *\n * @SinceKotlin("1.7")\n */\n@kotlin.jvm.JvmName("minWithOrThrow")\n@Suppress("CONFLICTING_OVER
LOADS")\npublic fun <T> Iterable<T>.minWith(comparator: Comparator<in T>): T {\n    val iterator = iterator()\n    if (!iterator.hasNext()) throw NoSuchElementException()\n    var
min = iterator.next()\n    while (iterator.hasNext()) {\n        val e = iterator.next()\n        if (comparator.compare(min,
e) > 0) min = e\n    }\n    return min\n}\n\n/**\n * Returns the first element having the smallest value according to
the provided [comparator] or `null` if there are no elements.\n *\n * @SinceKotlin("1.4")\n */\npublic fun <T>
Iterable<T>.minWithOrNull(comparator: Comparator<in T>): T? {\n    val iterator = iterator()\n    if
(!iterator.hasNext()) return null\n    var min = iterator.next()\n    while (iterator.hasNext()) {\n        val e =
iterator.next()\n        if (comparator.compare(min, e) > 0) min = e\n    }\n    return min\n}\n\n/**\n * Returns `true` if
the collection has no elements.\n *\n * @sample samples.collections.Collections.Aggregates.none\n */\npublic fun
<T> Iterable<T>.none(): Boolean {\n    if (this is Collection) return isEmpty()\n    return
!iterator().hasNext()\n}\n\n/**\n * Returns `true` if no elements match the given [predicate].\n *\n * @sample samples.collections.Collections.Aggregates.noneWithPredicate\n */\npublic inline fun <T>
Iterable<T>.none(predicate: (T) -> Boolean): Boolean {\n    if (this is Collection && isEmpty()) return true\n    for
(element in this) if (predicate(element)) return false\n    return true\n}\n\n/**\n * Performs the given [action] on each
element and returns the collection itself afterwards.\n *\n * @SinceKotlin("1.1")\n */\npublic inline fun <T, C :
Iterable<T>> C.onEach(action: (T) -> Unit): C {\n    return apply { for (element in this) action(element)
}\n}\n\n/**\n * Performs the given [action] on each element, providing sequential index with the element,\n * and
returns the collection itself afterwards.\n *\n * @param [action] function that takes the index of an element and the
element itself\n * and performs the action on the element.\n *\n * @SinceKotlin("1.4")\n */\npublic inline fun <T, C :
Iterable<T>> C.onEachIndexed(action: (index: Int, T) -> Unit): C {\n    return apply { forEachIndexed(action)
}\n}\n\n/**\n * Accumulates value starting with the first element and applying [operation] from left to right\n * to
current accumulator value and each element.\n *\n * \n * Throws an exception if this collection is empty. If the
collection can be empty in an expected way,\n * please use [reduceOrNull] instead. It returns `null` when its receiver
is empty.\n *\n * @param [operation] function that takes current accumulator value and an element,\n * and
calculates the next accumulator value.\n *\n * @sample samples.collections.Collections.Aggregates.reduce\n */\npublic inline fun <S, T : S> Iterable<T>.reduce(operation: (acc: S, T) -> S): S {\n    val iterator = this.iterator()\n    if
(!iterator.hasNext()) throw UnsupportedOperationException("Empty collection can't be reduced.")\n    var
accumulator: S = iterator.next()\n    while (iterator.hasNext()) {\n        accumulator = operation(accumulator,
iterator.next())\n    }\n    return accumulator\n}\n\n/**\n * Accumulates value starting
with the first element and applying [operation] from left to right\n * to current accumulator value and each element
with its index in the original collection.\n *\n * \n * Throws an exception if this collection is empty. If the collection can
be empty in an expected way,\n * please use [reduceIndexedOrNull] instead. It returns `null` when its receiver is
empty.\n *\n * @param [operation] function that takes the index of an element, current accumulator value and the
element itself,\n * and calculates the next accumulator value.\n *\n * @sample
samples.collections.Collections.Aggregates.reduce\n */\npublic inline fun <S, T : S>
Iterable<T>.reduceIndexed(operation: (index: Int, acc: S, T) -> S): S {\n    val iterator = this.iterator()\n    if
(!iterator.hasNext()) throw UnsupportedOperationException("Empty collection can't be reduced.")\n    var index =
1\n    var accumulator: S = iterator.next()\n    while (iterator.hasNext()) {\n        accumulator =
operation(checkIndexOverflow(index++),

```

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    accumulator, iterator.next())\n } \n return accumulator\n}\n\n/**\n * Accumulates value starting with the first
element and applying [operation] from left to right\n * to current accumulator value and each element with its index
in the original collection.\n * \n * Returns `null` if the collection is empty.\n * \n * @param [operation] function that
takes the index of an element, current accumulator value and the element itself,\n * and calculates the next
accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduceOrNull\n
*\n@SinceKotlin("1.4")\npublic inline fun <S, T : S> Iterable<T>.reduceIndexedOrNull(operation: (index: Int,
acc: S, T) -> S): S? {\n    val iterator = this.iterator()\n    if (!iterator.hasNext()) return null\n    var index = 1\n    var
accumulator: S = iterator.next()\n    while (iterator.hasNext()) {\n        accumulator =
operation(checkIndexOverflow(index++), accumulator, iterator.next())\n    }\n    return accumulator\n}\n\n/**\n * Accumulates value starting with the first element and applying [operation] from left to right\n * to current
accumulator value and each element.\n * \n * Returns `null` if the collection is empty.\n * \n * @param [operation]
function that takes current accumulator value and an element,\n * and calculates the next accumulator value.\n * \n *
@sample samples.collections.Collections.Aggregates.reduceOrNull\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic inline fun <S, T : S>
Iterable<T>.reduceOrNull(operation: (acc: S, T) -> S): S? {\n    val iterator = this.iterator()\n    if
(!iterator.hasNext()) return null\n    var accumulator: S = iterator.next()\n    while (iterator.hasNext()) {\n
accumulator = operation(accumulator, iterator.next())\n    }\n    return accumulator\n}\n\n/**\n * Accumulates value
starting with the last element and applying [operation] from right to left\n * to each element and current accumulator
value.\n * \n
* Throws an exception if this list is empty. If the list can be empty in an expected way,\n * please use
[reduceRightOrNull] instead. It returns `null` when its receiver is empty.\n * \n * @param [operation] function that
takes an element and current accumulator value,\n * and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceRight\n
*\npublic inline fun <S, T : S>
List<T>.reduceRight(operation: (T, acc: S) -> S): S {\n    val iterator = listIterator(size)\n    if
(!iterator.hasPrevious())\n        throw UnsupportedOperationException("Empty list can't be reduced.")\n    var
accumulator: S = iterator.previous()\n    while (iterator.hasPrevious()) {\n        accumulator =
operation(iterator.previous(), accumulator)\n    }\n    return accumulator\n}\n\n/**\n * Accumulates value starting
with the last element and applying [operation] from right to left\n * to each element with its index in the original list
and current accumulator
value.\n * \n * Throws an exception if this list is empty. If the list can be empty in an expected way,\n * please use
[reduceRightIndexedOrNull] instead. It returns `null` when its receiver is empty.\n * \n * @param [operation]
function that takes the index of an element, the element itself and current accumulator value,\n * and calculates the
next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduceRight\n
*\npublic
inline fun <S, T : S> List<T>.reduceRightIndexed(operation: (index: Int, T, acc: S) -> S): S {\n    val iterator =
listIterator(size)\n    if (!iterator.hasPrevious())\n        throw UnsupportedOperationException("Empty list can't be
reduced.")\n    var accumulator: S = iterator.previous()\n    while (iterator.hasPrevious()) {\n        val index =
iterator.previousIndex()\n        accumulator = operation(index, iterator.previous(), accumulator)\n    }\n    return
accumulator\n}\n\n/**\n * Accumulates value starting with the last element
and applying [operation] from right to left\n * to each element with its index in the original list and current
accumulator value.\n * \n * Returns `null` if the list is empty.\n * \n * @param [operation] function that takes the
index of an element, the element itself and current accumulator value,\n * and calculates the next accumulator
value.\n * \n * @sample samples.collections.Collections.Aggregates.reduceRightOrNull\n
*\n@SinceKotlin("1.4")\npublic inline fun <S, T : S> List<T>.reduceRightIndexedOrNull(operation: (index: Int,
T, acc: S) -> S): S? {\n    val iterator = listIterator(size)\n    if (!iterator.hasPrevious())\n        return null\n    var
accumulator: S = iterator.previous()\n    while (iterator.hasPrevious()) {\n        val index = iterator.previousIndex()\n
accumulator = operation(index, iterator.previous(), accumulator)\n    }\n    return accumulator\n}\n\n/**\n * Accumulates value starting with the last element and applying [operation] from right to left\n

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\* to each element and current accumulator value.\n \* \n \* Returns `null` if the list is empty.\n \* \n \* @param [operation] function that takes an element and current accumulator value,\n \* and calculates the next accumulator value.\n \* \n \* @sample samples.collections.Collections.Aggregates.reduceRightOrNull\n \* \n \* @SinceKotlin("1.4")\n \* @WasExperimental(ExperimentalStdlibApi::class)\n \* public inline fun <S, T : S> List<T>.reduceRightOrNull(operation: (T, acc: S) -> S): S? {\n val iterator = listIterator(size)\n if (!iterator.hasPrevious())\n return null\n var accumulator: S = iterator.previous()\n while (iterator.hasPrevious()) {\n accumulator = operation(iterator.previous(), accumulator)\n }\n return accumulator\n}\n \* \n \* Returns a list containing successive accumulation values generated by applying [operation] from left to right\n \* to each element and current accumulator value that starts with [initial] value.\n \* \n \* Note that `acc` value passed to [operation] function should not be mutated;\n \* otherwise it would affect the previous value in resulting list.\n \* \n \* @param [operation] function that takes current accumulator value and an element, and calculates the next accumulator value.\n \* \n \* @sample samples.collections.Collections.Aggregates.runningFold\n \* \n \* @SinceKotlin("1.4")\n \* public inline fun <T, R> Iterable<T>.runningFold(initial: R, operation: (acc: R, T) -> R): List<R> {\n val estimatedSize = collectionSizeOrDefault(9)\n if (estimatedSize == 0) return listOf(initial)\n val result = ArrayList<R>(estimatedSize + 1).apply { add(initial) }\n var accumulator = initial\n for (element in this) {\n accumulator = operation(accumulator, element)\n result.add(accumulator)\n }\n return result\n}\n \* \n \* Returns a list containing successive accumulation values generated by applying [operation] from left to right\n \* to each element, its index in the original collection and current accumulator value that starts with [initial] value.\n \* \n \* Note that `acc` value passed to [operation] function should not be mutated;\n \* otherwise it would affect the previous value in resulting list.\n \* \n \* @param [operation] function that takes the index of an element, current accumulator value\n \* and the element itself, and calculates the next accumulator value.\n \* \n \* @sample samples.collections.Collections.Aggregates.runningFold\n \* \n \* @SinceKotlin("1.4")\n \* public inline fun <T, R> Iterable<T>.runningFoldIndexed(initial: R, operation: (index: Int, acc: R, T) -> R): List<R> {\n val estimatedSize = collectionSizeOrDefault(9)\n if (estimatedSize == 0) return listOf(initial)\n val result = ArrayList<R>(estimatedSize + 1).apply { add(initial) }\n var index = 0\n var accumulator = initial\n for (element in this) {\n accumulator = operation(index++, accumulator, element)\n result.add(accumulator)\n }\n return result\n}\n \* \n \* Returns a list containing successive accumulation values generated by applying [operation] from left to right\n \* to each element and current accumulator value that starts with the first element of this collection.\n \* \n \* Note that `acc` value passed to [operation] function should not be mutated;\n \* otherwise it would affect the previous value in resulting list.\n \* \n \* @param [operation] function that takes current accumulator value and the element, and calculates the next accumulator value.\n \* \n \* @sample samples.collections.Collections.Aggregates.runningReduce\n \* \n \* @SinceKotlin("1.4")\n \* @WasExperimental(ExperimentalStdlibApi::class)\n \* public inline fun <S, T : S> Iterable<T>.runningReduce(operation: (acc: S, T) -> S): List<S> {\n val iterator = this.iterator()\n if (!iterator.hasNext()) return emptyList()\n var accumulator: S = iterator.next()\n val result = ArrayList<S>(collectionSizeOrDefault(10)).apply { add(accumulator) }\n while (iterator.hasNext()) {\n accumulator = operation(accumulator, iterator.next())\n result.add(accumulator)\n }\n return result\n}\n \* \n \* Returns a list containing successive accumulation values generated by applying [operation] from left to right\n \* to each element, its index in the original collection and current accumulator value that starts with the first element of this collection.\n \* \n \* Note that `acc` value passed to [operation] function should not be mutated;\n \* otherwise it would affect the previous value in resulting list.\n \* \n \* @param [operation] function that takes the index of an element, current accumulator value\n \* and the element itself, and calculates the next accumulator value.\n \* \n \* @sample samples.collections.Collections.Aggregates.runningReduce\n \* \n \* @SinceKotlin("1.4")\n \* public inline fun <S, T : S> Iterable<T>.runningReduceIndexed(operation: (index: Int, acc: S, T) -> S): List<S> {\n val iterator = this.iterator()\n if (!iterator.hasNext()) return emptyList()\n }

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var accumulator: S = iterator.next()\n  val result = ArrayList<S>(collectionSizeOrDefault(10)).apply {
add(accumulator) }\n  var index = 1\n  while (iterator.hasNext()) {\n    accumulator = operation(index++,
accumulator, iterator.next())\n    result.add(accumulator)\n  }\n  return result\n}\n\n/**\n * Returns a list
containing successive accumulation values generated by applying [operation] from left to right\n * to each element
and current accumulator value that starts with [initial] value.\n * \n * Note that `acc` value passed to [operation]
function should not be mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n * @param
[operation] function that takes current accumulator value and an element, and calculates the next accumulator
value.\n * \n * @sample samples.collections.Collections.Aggregates.scan\n
*/\n\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic inline fun <T, R>
Iterable<T>.scan(initial: R, operation:
(acc: R, T) -> R): List<R> {\n  return runningFold(initial, operation)\n}\n\n/**\n * Returns a list containing
successive accumulation values generated by applying [operation] from left to right\n * to each element, its index in
the original collection and current accumulator value that starts with [initial] value.\n * \n * Note that `acc` value
passed to [operation] function should not be mutated;\n * otherwise it would affect the previous value in resulting
list.\n * \n * @param [operation] function that takes the index of an element, current accumulator value\n * and the
element itself, and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.scan\n
*/\n\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic inline fun <T, R>
Iterable<T>.scanIndexed(initial: R, operation: (index: Int, acc: R, T) -> R): List<R> {\n  return
runningFoldIndexed(initial, operation)\n}\n\n/**\n * Returns the sum of all values
produced by [selector] function applied to each element in the collection.\n */\n\n@Deprecated("Use sumOf
instead.", ReplaceWith("this.sumOf(selector)"))\n@DeprecatedSinceKotlin(warningSince = "1.5")\npublic inline
fun <T> Iterable<T>.sumBy(selector: (T) -> Int): Int {\n  var sum: Int = 0\n  for (element in this) {\n    sum +=
selector(element)\n  }\n  return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function
applied to each element in the collection.\n */\n\n@Deprecated("Use sumOf instead.",
ReplaceWith("this.sumOf(selector)"))\n@DeprecatedSinceKotlin(warningSince = "1.5")\npublic inline fun <T>
Iterable<T>.sumByDouble(selector: (T) -> Double): Double {\n  var sum: Double = 0.0\n  for (element in this)
{\n    sum += selector(element)\n  }\n  return sum\n}\n\n/**\n * Returns the sum of all values produced by
[selector] function applied to each element in the collection.\n
*/\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfDouble")\n@kotlin.internal.InlineOnly\npublic
inline fun <T> Iterable<T>.sumOf(selector: (T) -> Double): Double {\n  var sum: Double = 0.toDouble()\n  for
(element in this) {\n    sum += selector(element)\n  }\n  return sum\n}\n\n/**\n * Returns the sum of all values
produced by [selector] function applied to each element in the collection.\n
*/\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfInt")\n@kotlin.internal.InlineOnly\npublic inline fun <T>
Iterable<T>.sumOf(selector: (T) -> Int): Int {\n  var sum: Int = 0.toInt()\n  for (element in this) {\n    sum +=
selector(element)\n  }\n  return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function
applied to each element in the collection.\n
*/\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfLong")\n@kotlin.internal.InlineOnly\npublic
inline fun <T> Iterable<T>.sumOf(selector: (T) -> Long): Long {\n  var sum: Long = 0.toLong()\n  for (element
in this) {\n    sum += selector(element)\n  }\n  return sum\n}\n\n/**\n * Returns the sum of all values produced
by [selector] function applied to each element in the collection.\n
*/\n\n@SinceKotlin("1.5")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfUInt")\n@WasExperimental(ExperimentalUnsignedType
s::class)\n@kotlin.internal.InlineOnly\npublic inline fun <T> Iterable<T>.sumOf(selector: (T) -> UInt): UInt {\n
var sum: UInt = 0.toUInt()\n  for (element in this) {\n    sum += selector(element)\n  }\n  return

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sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each element in the
collection.\n
*\n@SinceKotlin("1.5")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfULong")\n@WasExperimental(ExperimentalUnsignedTy
pes::class)\n@kotlin.internal.InlineOnly\npublic inline fun <T> Iterable<T>.sumOf(selector: (T) -> ULong): ULong
{\n    var sum: ULong = 0.toULong()\n    for (element in this) {\n        sum += selector(element)\n    }\n    return
sum\n}\n\n/**\n * Returns an original collection containing all the non-`null` elements, throwing an
[IllegalArgumentException] if there are any `null` elements.\n *\npublic fun <T : Any>
Iterable<T>?.requireNotNulls(): Iterable<T> {\n    for (element in this) {\n        if (element == null) {\n            throw
IllegalArgumentException("null element found in $this.")\n        }\n    }\n    @Suppress("UNCHECKED_CAST")\n    return this as Iterable<T>}\n}\n\n/**\n * Returns an original collection
containing all the non-`null` elements, throwing
an [IllegalArgumentException] if there are any `null` elements.\n *\npublic fun <T : Any>
List<T>?.requireNotNulls(): List<T> {\n    for (element in this) {\n        if (element == null) {\n            throw
IllegalArgumentException("null element found in $this.")\n        }\n    }\n    @Suppress("UNCHECKED_CAST")\n    return this as List<T>}\n}\n\n/**\n * Splits this collection into a list of
lists each not exceeding the given [size].\n *\n * The last list in the resulting list may have fewer elements than the
given [size].\n *\n * @param size the number of elements to take in each list, must be positive and can be greater
than the number of elements in this collection.\n *\n * @sample
samples.collections.Collections.Transformations.chunked\n *\n@SinceKotlin("1.2")\npublic fun <T>
Iterable<T>.chunked(size: Int): List<List<T>> {\n    return windowed(size, size, partialWindows = true)\n}\n\n/**\n * Splits this collection into several lists each not exceeding the given [size]\n
* and applies the given [transform] function to an each.\n *\n * @return list of results of the [transform] applied to
an each list.\n *\n * Note that the list passed to the [transform] function is ephemeral and is valid only inside that
function.\n *\n * You should not store it or allow it to escape in some way, unless you made a snapshot of it.\n *\n * The
last list may have fewer elements than the given [size].\n *\n * @param size the number of elements to take in each
list, must be positive and can be greater than the number of elements in this collection.\n *\n * @sample
samples.text.Strings.chunkedTransform\n *\n@SinceKotlin("1.2")\npublic fun <T, R> Iterable<T>.chunked(size:
Int, transform: (List<T>) -> R): List<R> {\n    return windowed(size, size, partialWindows = true, transform =
transform)\n}\n}\n\n/**\n * Returns a list containing all elements of the original collection without the first occurrence
of the given [element].\n *\npublic operator fun <T> Iterable<T>.minus(element:
T): List<T> {\n    val result = ArrayList<T>(collectionSizeOrDefault(10))\n    var removed = false\n    return
this.filterTo(result) { if (!removed && it == element) { removed = true; false } else true }\n}\n\n/**\n * Returns a
list containing all elements of the original collection except the elements contained in the given [elements] array.\n
*\npublic operator fun <T> Iterable<T>.minus(elements: Array<out T>): List<T> {\n    if (elements.isEmpty())
return this.toList()\n    return this.filterNot { it in elements }\n}\n}\n\n/**\n * Returns a list containing all elements of
the original collection except the elements contained in the given [elements] collection.\n *\npublic operator fun
<T> Iterable<T>.minus(elements: Iterable<T>): List<T> {\n    val other =
elements.convertToListIfNotCollection()\n    if (other.isEmpty())\n        return this.toList()\n    return this.filterNot {
it in other }\n}\n}\n\n/**\n * Returns a list containing all elements of the original collection except
the elements contained in the given [elements] sequence.\n *\npublic operator fun <T>
Iterable<T>.minus(elements: Sequence<T>): List<T> {\n    val other = elements.toList()\n    if (other.isEmpty())\n
return this.toList()\n    return this.filterNot { it in other }\n}\n}\n\n/**\n * Returns a list containing all elements of the
original collection without the first occurrence of the given [element].\n *\n@kotlin.internal.InlineOnly\npublic
inline fun <T> Iterable<T>.minusElement(element: T): List<T> {\n    return minus(element)\n}\n}\n\n/**\n * Splits the
original collection into pair of lists,\n * where *first* list contains elements for which [predicate] yielded `true`,\n *
while *second* list contains elements for which [predicate] yielded `false`.\n *\n * @sample
samples.collections.Iterables.Operations.partition\n *\npublic inline fun <T> Iterable<T>.partition(predicate: (T) ->

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Boolean): Pair<List<T>, List<T>> {\n    val first = ArrayList<T>()\n    val second = ArrayList<T>()\n    for (element in this) {\n        if (predicate(element)) {\n            first.add(element)\n        } else {\n            second.add(element)\n        }\n    }\n    return Pair(first, second)\n}\n\n/n/**\n * Returns a list containing all elements of the original collection and then the given [element].\n */\npublic operator fun <T> Iterable<T>.plus(element: T): List<T> {\n    if (this is Collection) return this.plus(element)\n    val result = ArrayList<T>()\n    result.addAll(this)\n    result.add(element)\n    return result\n}\n\n/n/**\n * Returns a list containing all elements of the original collection and then the given [element].\n */\npublic operator fun <T> Collection<T>.plus(element: T): List<T> {\n    val result = ArrayList<T>(size + 1)\n    result.addAll(this)\n    result.add(element)\n    return result\n}\n\n/n/**\n * Returns a list containing all elements of the original collection and then all elements of the given [elements] array.\n */\npublic operator fun <T> Iterable<T>.plus(elements: Array<out T>): List<T> {\n    if (this is Collection) return this.plus(elements)\n    val result = ArrayList<T>()\n    result.addAll(this)\n    result.addAll(elements)\n    return result\n}\n\n/n/**\n * Returns a list containing all elements of the original collection and then all elements of the given [elements] collection.\n */\npublic operator fun <T> Collection<T>.plus(elements: Collection<T>): List<T> {\n    val result = ArrayList<T>(this.size + elements.size)\n    result.addAll(this)\n    result.addAll(elements)\n    return result\n}\n\n/n/**\n * Returns a list containing all elements of the original collection and then all elements of the given [elements] collection.\n */\npublic operator fun <T> Iterable<T>.plus(elements: Iterable<T>): List<T> {\n    if (this is Collection) return this.plus(elements)\n    val result = ArrayList<T>()\n    result.addAll(this)\n    result.addAll(elements)\n    return result\n}\n\n/n/**\n * Returns a list containing all elements of the original collection and then all elements of the given [elements] collection.\n */\npublic operator fun <T> Collection<T>.plus(elements: Iterable<T>): List<T> {\n    if (elements is Collection) {\n        val result = ArrayList<T>(this.size + elements.size)\n        result.addAll(this)\n        result.addAll(elements)\n        return result\n    } else {\n        val result = ArrayList<T>(this)\n        result.addAll(elements)\n        return result\n    }\n}\n\n/n/**\n * Returns a list containing all elements of the original collection and then all elements of the given [elements] sequence.\n */\npublic operator fun <T> Iterable<T>.plus(elements: Sequence<T>): List<T> {\n    val result = ArrayList<T>()\n    result.addAll(this)\n    result.addAll(elements)\n    return result\n}\n\n/n/**\n * Returns a list containing all elements of the original collection and then all elements of the given [elements] sequence.\n */\npublic operator fun <T> Collection<T>.plus(elements: Sequence<T>): List<T> {\n    val result = ArrayList<T>(this.size + 10)\n    result.addAll(this)\n    result.addAll(elements)\n    return result\n}\n\n/n/**\n * Returns a list containing all elements of the original collection and then the given [element].\n */\n@kotlin.internal.InlineOnly\npublic inline fun <T> Iterable<T>.plusElement(element: T): List<T> {\n    return plus(element)\n}\n\n/n/**\n * Returns a list containing all elements of the original collection and then the given [element].\n */\n@kotlin.internal.InlineOnly\npublic inline fun <T> Collection<T>.plusElement(element: T): List<T> {\n    return plus(element)\n}\n\n/n/**\n * Returns a list of snapshots of the window of the given [size]\n * sliding along this collection with the given [step], where each\n * snapshot is a list.\n * Several last lists may have fewer elements than the given [size].\n * Both [size] and [step] must be positive and can be greater than the number of elements in this collection.\n * @param size the number of elements to take in each window\n * @param step the number of elements to move the window forward by on an each step, by default 1\n * @param partialWindows controls whether or not to keep partial windows in the end if any, by default `false` which means partial windows won't be preserved\n * @sample samples.collections.Sequences.Transformations.takeWindows\n */\n@SinceKotlin("1.2")\npublic fun <T> Iterable<T>.windowed(size: Int, step: Int = 1, partialWindows: Boolean = false): List<List<T>> {\n    checkWindowSizeStep(size, step)\n    if (this is RandomAccess && this is List) {\n        val thisSize = this.size\n        val resultCapacity = thisSize / step + if (thisSize % step == 0) 0 else 1\n        val result = ArrayList<List<T>>(resultCapacity)\n        var index = 0\n        while (index in 0 until thisSize) {\n            val windowSize = size.coerceAtMost(thisSize - index)\n            if (windowSize < size && !partialWindows) break\n            result.add(List(windowSize) { this[it

```

```

+ index] })\n        index += step\n    }\n    return result\n }\n val result = ArrayList<List<T>>()\n windowedIterator(iterator(), size, step, partialWindows, reuseBuffer = false).forEach {\n    result.add(it)\n }\n return result\n}\n\n/**\n * Returns a list of results of applying the given [transform] function to\n * an each list representing a view over the window of the given [size]\n * sliding along this collection with the given [step].\n * Note that the list passed to the [transform] function is ephemeral and is valid only inside that function.\n * You should not store it or allow it to escape in some way, unless you made a snapshot of it.\n * Several last lists may have fewer elements than the given [size].\n * Both [size] and [step] must be positive and can be greater than the number of elements in this collection.\n * @param size the number of elements to take in each window\n * @param step the number of elements to move the window forward\n * by on an each step, by default 1\n * @param partialWindows controls whether or not to keep partial windows in the end if any,\n * by default `false` which means partial windows won't be preserved\n * \n * @sample\n samples.collections.Sequences.Transformations.averageWindows\n *\n @SinceKotlin("1.2")\n\npublic fun <T, R> Iterable<T>.windowed(size: Int, step: Int = 1, partialWindows: Boolean = false, transform: (List<T>) -> R): List<R> {\n    checkWindowSizeStep(size, step)\n    if (this is RandomAccess && this is List) {\n        val thisSize = this.size\n        val resultCapacity = thisSize / step + if (thisSize % step == 0) 0 else 1\n        val result = ArrayList<R>(resultCapacity)\n        val window = MovingSubList(this)\n        var index = 0\n        while (index in 0 until thisSize) {\n            val windowSize = size.coerceAtMost(thisSize - index)\n            if (!partialWindows && windowSize < size) break\n            window.move(index, index + windowSize)\n            result.add(transform(window))\n            index += step\n        }\n        return result\n    }\n    val result = ArrayList<R>()\n    windowedIterator(iterator(), size, step, partialWindows, reuseBuffer = true).forEach {\n        result.add(transform(it))\n    }\n    return result\n}\n\n/**\n * Returns a list of pairs built from the elements of `this` collection and the [other] array with the same index.\n * The returned list has length of the shortest collection.\n * @sample\n samples.collections.Iterables.Operations.zipIterable\n *\n\npublic infix fun <T, R> Iterable<T>.zip(other: Array<out R>): List<Pair<T, R>> {\n    return zip(other) { t1, t2 -> t1 to t2 }\n}\n\n/**\n * Returns a list of values built from the elements of `this` collection and the [other] array with the same index\n * using the provided [transform] function applied to each pair of elements.\n * The returned list has length of the shortest collection.\n * \n * @sample\n samples.collections.Iterables.Operations.zipIterableWithTransform\n *\n\npublic inline fun <T, R, V> Iterable<T>.zip(other: Array<out R>, transform: (a: T, b: R) -> V): List<V> {\n    val arraySize = other.size\n    val list = ArrayList<V>(minOf(collectionSizeOrDefault(10), arraySize))\n    var i = 0\n    for (element in this) {\n        if (i >= arraySize) break\n        list.add(transform(element, other[i++]))\n    }\n    return list\n}\n\n/**\n * Returns a list of pairs built from the elements of `this` collection and [other] collection with the same index.\n * The returned list has length of the shortest collection.\n * \n * @sample\n samples.collections.Iterables.Operations.zipIterable\n *\n\npublic infix fun <T, R> Iterable<T>.zip(other: Iterable<R>): List<Pair<T, R>> {\n    return zip(other) { t1, t2 -> t1 to t2 }\n}\n\n/**\n * Returns a list of values built from the elements of `this` collection and the [other] collection with the same index\n * using the provided [transform] function applied to each pair of elements.\n * \n * The returned list has length of the shortest collection.\n * \n * @sample\n samples.collections.Iterables.Operations.zipIterableWithTransform\n *\n\npublic inline fun <T, R, V> Iterable<T>.zip(other: Iterable<R>, transform: (a: T, b: R) -> V): List<V> {\n    val first = iterator()\n    val second = other.iterator()\n    val list = ArrayList<V>(minOf(collectionSizeOrDefault(10), other.collectionSizeOrDefault(10)))\n    while (first.hasNext() && second.hasNext()) {\n        list.add(transform(first.next(), second.next()))\n    }\n    return list\n}\n\n/**\n * Returns a list of pairs of each two adjacent elements in this collection.\n * \n * The returned list is empty if this collection contains less than two elements.\n * \n * @sample\n samples.collections.Collections.Transformations.zipWithNext\n *\n\n @SinceKotlin("1.2")\n\npublic fun <T> Iterable<T>.zipWithNext(): List<Pair<T, T>> {\n    return zipWithNext { a, b -> a to b }\n}\n\n/**\n * Returns a list containing the results of applying the given [transform] function\n * to an each pair of two adjacent elements in this collection.\n * \n * The returned list is empty if this collection contains less than two elements.\n * \n * @sample

```

```

samples.collections.Collections.Transformations.zipWithNextToFindDeltas\n *\n@SinceKotlin("1.2")\npublic
inline fun <T, R> Iterable<T>.zipWithNext(transform: (a: T, b: T) -> R): List<R> {\n  val iterator = iterator()\n  if
(iterator.hasNext()) return emptyList()\n  val result = mutableListOf<R>()\n  var current = iterator.next()\n
while (iterator.hasNext()) {\n    val next = iterator.next()\n    result.add(transform(current, next))\n    current
= next\n  }\n  return result\n}\n\n/**\n * Appends the string from all the elements separated using [separator] and
using the given [prefix] and [postfix] if supplied.\n * \n * If the collection could be huge, you can specify a non-
negative value of [limit], in which case only the first [limit]\n * elements will be appended,
followed by the [truncated] string (which defaults to "...").\n * \n * @sample
samples.collections.Collections.Transformations.joinTo\n *\npublic fun <T, A : Appendable>
Iterable<T>.joinTo(buffer: A, separator: CharSequence = '\n', prefix: CharSequence = "", postfix: CharSequence
= "", limit: Int = -1, truncated: CharSequence = "...", transform: ((T) -> CharSequence)? = null): A {\n
buffer.append(prefix)\n  var count = 0\n  for (element in this) {\n    if (++count > 1) buffer.append(separator)\n
    if (limit < 0 || count <= limit) {\n      buffer.appendElement(element, transform)\n    } else break\n  }\n  if
(limit >= 0 && count > limit) buffer.append(truncated)\n  buffer.append(postfix)\n  return buffer\n}\n\n/**\n *
Creates a string from all the elements separated using [separator] and using the given [prefix] and [postfix] if
supplied.\n * \n * If the collection could be huge, you can specify a non-negative value of [limit], in which
case only the first [limit]\n * elements will be appended, followed by the [truncated] string (which defaults to
"...").\n * \n * @sample samples.collections.Collections.Transformations.joinToString\n *\npublic fun <T>
Iterable<T>.joinToString(separator: CharSequence = '\n', prefix: CharSequence = "", postfix: CharSequence =
"", limit: Int = -1, truncated: CharSequence = "...", transform: ((T) -> CharSequence)? = null): String {\n  return
joinTo(StringBuilder(), separator, prefix, postfix, limit, truncated, transform).toString()\n}\n\n/**\n * Returns this
collection as an [Iterable].\n *\n@kotlin.internal.InlineOnly\npublic inline fun <T> Iterable<T>.asIterable():
Iterable<T> {\n  return this\n}\n\n/**\n * Creates a [Sequence] instance that wraps the original collection returning
its elements when being iterated.\n * \n * @sample
samples.collections.Sequences.Building.sequenceFromCollection\n *\npublic fun <T> Iterable<T>.asSequence():
Sequence<T> {\n  return Sequence
{ this.iterator() }\n}\n\n/**\n * Returns an average value of elements in the collection.\n
*\n@kotlin.jvm.JvmName("averageOfByte")\npublic fun Iterable<Byte>.average(): Double {\n  var sum:
Double = 0.0\n  var count: Int = 0\n  for (element in this) {\n    sum += element\n
checkCountOverflow(++count)\n  }\n  return if (count == 0) Double.NaN else sum / count\n}\n\n/**\n * Returns
an average value of elements in the collection.\n *\n@kotlin.jvm.JvmName("averageOfShort")\npublic fun
Iterable<Short>.average(): Double {\n  var sum: Double = 0.0\n  var count: Int = 0\n  for (element in this) {\n
sum += element\n  checkCountOverflow(++count)\n  }\n  return if (count == 0) Double.NaN else sum /
count\n}\n\n/**\n * Returns an average value of elements in the collection.\n
*\n@kotlin.jvm.JvmName("averageOfInt")\npublic fun Iterable<Int>.average(): Double {\n  var sum: Double =
0.0\n  var count: Int = 0\n  for (element in this) {\n
sum += element\n  checkCountOverflow(++count)\n  }\n  return if (count == 0) Double.NaN else sum /
count\n}\n\n/**\n * Returns an average value of elements in the collection.\n
*\n@kotlin.jvm.JvmName("averageOfLong")\npublic fun Iterable<Long>.average(): Double {\n  var sum:
Double = 0.0\n  var count: Int = 0\n  for (element in this) {\n    sum += element\n
checkCountOverflow(++count)\n  }\n  return if (count == 0) Double.NaN else sum / count\n}\n\n/**\n * Returns
an average value of elements in the collection.\n *\n@kotlin.jvm.JvmName("averageOfFloat")\npublic fun
Iterable<Float>.average(): Double {\n  var sum: Double = 0.0\n  var count: Int = 0\n  for (element in this) {\n
sum += element\n  checkCountOverflow(++count)\n  }\n  return if (count == 0) Double.NaN else sum /
count\n}\n\n/**\n * Returns an average value of elements in the collection.\n
*\n@kotlin.jvm.JvmName("averageOfDouble")\npublic fun Iterable<Double>.average():
Double {\n  var sum: Double = 0.0\n  var count: Int = 0\n  for (element in this) {\n    sum += element\n
checkCountOverflow(++count)\n  }\n  return if (count == 0) Double.NaN else sum / count\n}\n\n/**\n * Returns

```

```

the sum of all elements in the collection.\n */\n@kotlin.jvm.JvmName("sumOfByte")\npublic fun
Iterable<Byte>.sum(): Int {\n    var sum: Int = 0\n    for (element in this) {\n        sum += element\n    }\n    return
sum\n}\n\n/**\n * Returns the sum of all elements in the collection.\n
*/\n@kotlin.jvm.JvmName("sumOfShort")\npublic fun Iterable<Short>.sum(): Int {\n    var sum: Int = 0\n    for
(element in this) {\n        sum += element\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all elements in the
collection.\n */\n@kotlin.jvm.JvmName("sumOfInt")\npublic fun Iterable<Int>.sum(): Int {\n    var sum: Int = 0\n
for (element in this) {\n        sum += element\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all elements
in the collection.\n */\n@kotlin.jvm.JvmName("sumOfLong")\npublic fun Iterable<Long>.sum(): Long {\n    var
sum: Long = 0L\n    for (element in this) {\n        sum += element\n    }\n    return sum\n}\n\n/**\n * Returns the
sum of all elements in the collection.\n */\n@kotlin.jvm.JvmName("sumOfFloat")\npublic fun
Iterable<Float>.sum(): Float {\n    var sum: Float = 0.0f\n    for (element in this) {\n        sum += element\n    }\n
return sum\n}\n\n/**\n * Returns the sum of all elements in the collection.\n
*/\n@kotlin.jvm.JvmName("sumOfDouble")\npublic fun Iterable<Double>.sum(): Double {\n    var sum: Double
= 0.0\n    for (element in this) {\n        sum += element\n    }\n    return sum\n}\n\n"/\n * Copyright 2010-2018
JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the
Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\npackage kotlin.collections\n\nimport
kotlin.comparisons.naturalOrder\n\nimport
kotlin.random.Random\n\nimport kotlin.js.arrayBufferIsView\n\n/**\n * Returns the array if it's not `null`, or an
empty array otherwise.\n */\n * @sample samples.collections.Arrays.Usage.arrayOrEmpty\n
*/\n@kotlin.internal.InlineOnly\npublic actual inline fun <T> Array<out T>?.orEmpty(): Array<out T> = this ?:
emptyArray<T>()\n\n/**\n * Returns a *typed* array containing all of the elements of this collection.\n */\n *
Allocates an array of runtime type `T` having its size equal to the size of this collection\n * and populates the array
with the elements of this collection.\n */\n * @sample
samples.collections.Collections.Collections.collectionToTypedArray\n\n */\n@kotlin.internal.InlineOnly\npublic
actual inline fun <T> Collection<T>.toArray(): Array<T> =
copyToArray(this)\n\n@JsName("copyToArray")\n@PublishedApi\ninternal fun <T> copyToArray(collection:
Collection<T>): Array<T> {\n    return if (collection.asDynamic().toArray !== undefined)\n        collection.asDynamic().toArray().unsafeCast<Array<T>>()\n
    else\n        copyToArrayImpl(collection).unsafeCast<Array<T>>()\n}\n\n@JsName("copyToArrayImpl")\ninternal actual fun
copyToArrayImpl(collection: Collection<*>): Array<Any?> {\n    val array = emptyArray<Any?>()\n    val iterator
= collection.iterator()\n    while (iterator.hasNext())\n        array.asDynamic().push(iterator.next())\n    return
array\n}\n\n@JsName("copyToExistingArrayImpl")\ninternal actual fun <T> copyToArrayImpl(collection:
Collection<*>, array: Array<T>): Array<T> {\n    if (array.size < collection.size)\n        return
copyToArrayImpl(collection).unsafeCast<Array<T>>()\n    val iterator = collection.iterator()\n    var index = 0\n
while (iterator.hasNext()) {\n        array[index++] = iterator.next().unsafeCast<T>()\n    }\n    if (index < array.size)
{\n        array[index] = null.unsafeCast<T>()\n    }\n    return array\n}\n\n\n/**\n * Returns an immutable list
containing only the specified object [element].\n */\n\npublic
fun <T> listOf(element: T): List<T> =
arrayListOf(element)\n\n@PublishedApi\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\ninternal actual
inline fun <E> buildListInternal(builderAction: MutableList<E>.() -> Unit): List<E> {\n    return
ArrayList<E>().apply(builderAction).build()\n}\n\n@PublishedApi\n@SinceKotlin("1.3")\n@kotlin.internal.Inlin
eOnly\ninternal actual inline fun <E> buildListInternal(capacity: Int, builderAction: MutableList<E>.() -> Unit):
List<E> {\n    checkBuilderCapacity(capacity)\n    return
ArrayList<E>(capacity).apply(builderAction).build()\n}\n\n\n/**\n * Returns an immutable set containing only the
specified object [element].\n */\n\npublic fun <T> setOf(element: T): Set<T> =
hashSetOf(element)\n\n@PublishedApi\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\ninternal actual inline
fun <E> buildSetInternal(builderAction: MutableSet<E>.() -> Unit): Set<E> {\n    return

```

```

LinkedHashSet<E>().apply(builderAction).build()\n\n\n@PublishedApi\n@SinceKotlin("1.3")\n@kotlin.internal.
InlineOnly\ninternal
    actual inline fun <E> buildSetInternal(capacity: Int, builderAction: MutableSet<E>().->Unit): Set<E> {\n    return
LinkedHashSet<E>(capacity).apply(builderAction).build()\n\n\n/**\n * Returns an immutable map, mapping
only the specified key to the\n * specified value.\n */\npublic fun <K, V> mapOf(pair: Pair<K, V>): Map<K, V> =
HashMapOf(pair)\n\n\n@PublishedApi\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\ninternal actual inline
fun <K, V> buildMapInternal(builderAction: MutableMap<K, V>().->Unit): Map<K, V> {\n    return
LinkedHashMap<K,
V>().apply(builderAction).build()\n\n\n@PublishedApi\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\ninte
rnal actual inline fun <K, V> buildMapInternal(capacity: Int, builderAction: MutableMap<K, V>().->Unit):
Map<K, V> {\n    return LinkedHashMap<K, V>(capacity).apply(builderAction).build()\n\n\n/**\n * Fills the
list with the provided [value].\n * Each element in the list gets
replaced with the [value].\n */\n@SinceKotlin("1.2")\npublic actual fun <T> MutableList<T>.fill(value: T): Unit
{\n    for (index in 0..lastIndex) {\n        this[index] = value\n    }\n\n\n/**\n * Randomly shuffles elements in this
list.\n * See: https://en.wikipedia.org/wiki/Fisher%2%80%93Yates\_shuffle#The\_modern\_algorithm\n */\n@SinceKotlin("1.2")\npublic actual fun <T> MutableList<T>.shuffle(): Unit = shuffle(Random)\n\n\n/**\n * Returns a new list with the elements of this list randomly shuffled.\n */\n@SinceKotlin("1.2")\npublic actual fun
<T> Iterable<T>.shuffled(): List<T> = toMutableList().apply { shuffle() }\n\n\n/**\n * Sorts elements in the list in-
place according to their natural sort order.\n * The sort is _stable_. It means that equal elements preserve their
order relative to each other after sorting.\n * @sample samples.collections.Collections.Sorting.sortMutableList\n */\npublic actual fun <T : Comparable<T>> MutableList<T>.sort(): Unit {\n    CollectionsSort(this,
naturalOrder())\n}\n\n\n/**\n * Sorts elements in the list in-place according to the order specified with
[comparator].\n * The sort is _stable_. It means that equal elements preserve their order relative to each other
after sorting.\n * @sample samples.collections.Collections.Sorting.sortMutableListWith\n */\npublic actual fun
<T> MutableList<T>.sortWith(comparator: Comparator<in T>): Unit {\n    CollectionsSort(this,
comparator)\n}\n\n\nprivate fun <T> CollectionsSort(list: MutableList<T>, comparator: Comparator<in T>) {\n    if
(list.size <= 1) return\n\n    val array = copyToArray(list)\n    sortArrayWith(array, comparator)\n\n    for (i in 0 until
array.size) {\n        list[i] = array[i]\n    }\n\n\ninternal actual fun <T> arrayOfNulls(reference: Array<T>, size: Int):
Array<T> {\n    return
arrayOfNulls<Any>(size).unsafeCast<Array<T>>()\n}\n\n\n@SinceKotlin("1.3")\n@PublishedApi\n@JsName("arrayCopy")\ninternal fun <T> arrayCopy(source: Array<out T>, destination:
Array<in T>, destinationOffset: Int, startIndex: Int, endIndex: Int) {\n
AbstractList.checkRangeIndexes(startIndex, endIndex, source.size)\n    val rangeSize = endIndex - startIndex\n
AbstractList.checkRangeIndexes(destinationOffset, destinationOffset + rangeSize, destination.size)\n\n    if
(arrayBufferIsView(destination) && arrayBufferIsView(source)) {\n        val subrange =
source.asDynamic().subarray(startIndex, endIndex)\n        destination.asDynamic().set(subrange,
destinationOffset)\n    } else {\n        if (source !== destination || destinationOffset <= startIndex) {\n            for
(index in 0 until rangeSize) {\n                destination[destinationOffset + index] = source[startIndex + index]\n
            }\n        } else {\n            for (index in rangeSize - 1 downTo 0) {\n                destination[destinationOffset + index] =
source[startIndex + index]\n            }\n        }\n    }\n\n\n// no singleton map implementation in js, return map as
is\n@Suppress("NOTHING_TO_INLINE")\ninternal
    actual inline fun <K, V> Map<K, V>.toSingletonMapOrSelf(): Map<K, V> =
this\n\n\n@Suppress("NOTHING_TO_INLINE")\ninternal actual inline fun <K, V> Map<out K,
V>.toSingletonMap(): Map<K, V> = this.toMutableMap()\n\n\n@Suppress("NOTHING_TO_INLINE")\ninternal
actual inline fun <T> Array<out T>.copyToArrayOfAny(isVarargs: Boolean): Array<out Any?> =\n    if
(isVarargs)\n        // no need to copy vararg array in JS\n        this\n    else\n        this.copyOfOf()\n\n\n\n@PublishedApi\ninternal actual fun checkIndexOverflow(index: Int): Int {\n    if (index < 0)
{\n        throwIndexOverflow()\n    }\n    return index\n}\n\n\n@PublishedApi\ninternal actual fun

```

```

checkCountOverflow(count: Int): Int {
    if (count < 0) {
        throwCountOverflow()
    }
    return count
}

```

JS map and set implementations do not make use of capacities or load factors.

```

@PublishedApi
internal fun mapCapacity(expectedSize: Int) = expectedSize

```

Checks a collection builder function capacity argument. In JS no validation is made in Map/Set constructor yet.

```

@SinceKotlin("1.3")
@PublishedApi
internal fun checkBuilderCapacity(capacity: Int) {
    require(capacity >= 0) { "capacity must be non-negative." }
}

```

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```

@file:kotlin.jvm.JvmMultifileClass
@file:kotlin.jvm.JvmName("CollectionsKt")
package kotlin.collections

```

Returns the given iterator itself. This allows to use an instance of iterator in a `for` loop.

```

@sample samples.collections.Iterators.iterator

```

```

@kotlin.internal.InlineOnly
public inline operator fun <T> Iterator<T>.iterator(): Iterator<T> = this

```

Returns an [Iterator] that wraps each element produced by the original iterator into an [IndexedValue] containing the index of that element and the element itself.

```

@sample samples.collections.Iterators.withIndexIterator

```

```

@public fun <T> Iterator<T>.withIndex(): Iterator<IndexedValue<T>> = IndexingIterator(this)

```

Performs the given [operation] on each element of this [Iterator].

```

@sample samples.collections.Iterators.forEachIterator

```

```

@public inline fun <T> Iterator<T>.forEach(operation: (T) -> Unit): Unit {
    for (element in this) operation(element)
}

```

Returns an [Iterator] that wraps each element produced by the original iterator into an [IndexedValue], counting index from zero.

```

@kotlin.internal class IndexingIterator<out T>(private val iterator: Iterator<T>) : Iterator<IndexedValue<T>> {
    private var index = 0
    final override fun hasNext(): Boolean = iterator.hasNext()
    final override fun next(): IndexedValue<T> = IndexedValue(checkIndexOverflow(index++), iterator.next())
}

```

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```

@file:kotlin.jvm.JvmMultifileClass
@file:kotlin.jvm.JvmName("ComparisonsKt")
package kotlin.comparisons

```

NOTE: THIS FILE IS AUTO-GENERATED by the GenerateStandardLib.kt. See: <https://github.com/JetBrains/kotlin/tree/master/libraries/stdlib>

```

@kotlin.jvm.nimpor kotlin.random

```

Returns the greater of two values. If values are equal, returns the first one.

```

@SinceKotlin("1.1")
@public expect fun <T : Comparable<T>> maxOf(a: T, b: T): T

```

Returns the greater of two values.

```

@SinceKotlin("1.1")
@kotlin.internal.InlineOnly
@public expect inline fun maxOf(a: Byte, b: Byte): Byte

```

Returns the greater of two values.

```

@SinceKotlin("1.1")
@kotlin.internal.InlineOnly
@public expect inline fun maxOf(a: Short, b: Short): Short

```

Returns the greater of two values.

```

@SinceKotlin("1.1")
@kotlin.internal.InlineOnly
@public expect inline fun maxOf(a: Int, b: Int): Int

```

Returns the greater of two values.

```

@SinceKotlin("1.1")
@kotlin.internal.InlineOnly
@public expect inline fun maxOf(a: Long, b: Long): Long

```

Returns the greater of two values. If either value is `NaN`, returns `NaN`.

```

@SinceKotlin("1.1")
@kotlin.internal.InlineOnly
@public expect inline fun maxOf(a: Float, b: Float): Float

```

Returns the greater of two values. If either value is `NaN`, returns `NaN`.

```

@SinceKotlin("1.1")
@kotlin.internal.InlineOnly
@public expect inline fun maxOf(a: Double, b: Double): Double

```

Returns the greater of three values. If there are multiple equal maximal values, returns the first of them.

```

@SinceKotlin("1.1")
@public expect fun <T : Comparable<T>> maxOf(a: T, b: T, c: T): T

```

Returns the greater of three values.

```

@SinceKotlin("1.1")
@kotlin.internal.InlineOnly
@public expect inline fun maxOf(a: Byte, b: Byte, c: Byte): Byte

```

Returns the greater of three values.

```

@SinceKotlin("1.1")
@kotlin.internal.InlineOnly
@public expect inline fun maxOf(a: Short, b: Short, c: Short): Short

```

Returns the greater of three values.

```

@SinceKotlin("1.1")
@kotlin.internal.InlineOnly
@public expect inline fun maxOf(a: Int, b: Int, c: Int): Int

```

Returns the greater of three values.

```

@SinceKotlin("1.1")
@kotlin.internal.InlineOnly
@public expect inline fun maxOf(a: Long, b: Long, c: Long): Long

```

Returns the greater of three values. If

any value is `NaN`, returns `NaN`.

```

@SinceKotlin("1.1")@kotlin.internal.InlineOnly@public expect inline
fun maxOf(a: Float, b: Float, c: Float): Float {
    * Returns the greater of three values.
    * If any value is `NaN`, returns `NaN`.
}

```

Double, b: Double, c: Double): Double

```

@SinceKotlin("1.1")@kotlin.internal.InlineOnly@public expect inline fun maxOf(a: Double, b: Double, c: Double): Double {
    * Returns the greater of three values according to the order specified by the given [comparator].
    * If there are multiple equal maximal values, returns the first of them.
}

```

```

@SinceKotlin("1.1")@public fun <T> maxOf(a: T, b: T, c: T, comparator: Comparator<in T>): T {
    * Returns the greater of three values according to the order specified by the given [comparator].
    * If values are equal, returns the first one.
}

```

```

@SinceKotlin("1.1")@public fun <T> maxOf(a: T, b: T, comparator: Comparator<in T>): T {
    * Returns the greater of two values according to the order specified by the given [comparator].
    * If values are equal, returns the first one.
}

```

```

@SinceKotlin("1.4")@public expect fun <T : Comparable<T>> maxOf(a: T, vararg other: T): T {
    * Returns the greater of the given values.
    * If there are multiple equal maximal values, returns the first of them.
}

```

```

@SinceKotlin("1.4")@public expect fun maxOf(a: Byte, vararg other: Byte): Byte {
    * Returns the greater of the given values.
}

```

```

@SinceKotlin("1.4")@public expect fun maxOf(a: Short, vararg other: Short): Short {
    * Returns the greater of the given values.
}

```

```

@SinceKotlin("1.4")@public expect fun maxOf(a: Int, vararg other: Int): Int {
    * Returns the greater of the given values.
}

```

```

@SinceKotlin("1.4")@public expect fun maxOf(a: Long, vararg other: Long): Long {
    * Returns the greater of the given values.
    * If any value is `NaN`, returns `NaN`.
}

```

```

@SinceKotlin("1.4")@public expect fun maxOf(a: Float, vararg other: Float): Float {
    * Returns the greater of the given values.
    * If any value is `NaN`, returns `NaN`.
}

```

```

@SinceKotlin("1.4")@public expect fun maxOf(a: Double, vararg other: Double): Double {
    * Returns the greater of the given values according to the order specified by the given [comparator].
    * If there are multiple equal maximal values, returns the first of them.
}

```

```

@SinceKotlin("1.4")@public fun <T> maxOf(a: T, vararg other: T, comparator: Comparator<in T>): T {
    * Returns the smaller of two values.
    * If values are equal, returns the first one.
}

```

```

@SinceKotlin("1.1")@kotlin.internal.InlineOnly@public expect inline fun minOf(a: Byte, b: Byte): Byte {
    * Returns the smaller of two values.
}

```

```

@SinceKotlin("1.1")@kotlin.internal.InlineOnly@public expect inline fun minOf(a: Short, b: Short): Short {
    * Returns the smaller of two values.
}

```

```

@SinceKotlin("1.1")@kotlin.internal.InlineOnly@public expect inline fun minOf(a: Int, b: Int): Int {
    * Returns the smaller of two values.
}

```

```

@SinceKotlin("1.1")@kotlin.internal.InlineOnly@public expect inline fun minOf(a: Long, b: Long): Long {
    * Returns the smaller of two values.
    * If either value is `NaN`, returns `NaN`.
}

```

```

@SinceKotlin("1.1")@kotlin.internal.InlineOnly@public expect inline fun minOf(a: Float, b: Float): Float {
    * Returns the smaller of two values.
    * If either value is `NaN`, returns `NaN`.
}

```

```

@SinceKotlin("1.1")@kotlin.internal.InlineOnly@public expect inline fun minOf(a: Double, b: Double): Double {
    * Returns the smaller of three values.
    * If there are multiple equal minimal values, returns the first of them.
}

```

```

@SinceKotlin("1.1")@kotlin.internal.InlineOnly@public expect fun <T : Comparable<T>> minOf(a: T, b: T, c: T): T {
    * Returns the smaller of three values.
}

```

```

@SinceKotlin("1.1")@kotlin.internal.InlineOnly@public expect inline fun minOf(a: Byte, b: Byte, c: Byte): Byte {
    * Returns the smaller of three values.
}

```

```

@SinceKotlin("1.1")@kotlin.internal.InlineOnly@public expect inline fun minOf(a: Short, b: Short, c: Short): Short {
    * Returns the smaller of three values.
}

```

```

@SinceKotlin("1.1")@kotlin.internal.InlineOnly@public expect inline fun minOf(a: Int, b: Int, c: Int): Int {
    * Returns the smaller of three values.
}

```

```

@SinceKotlin("1.1")@kotlin.internal.InlineOnly@public expect inline fun minOf(a: Long, b: Long, c: Long): Long {
    * Returns the smaller of three values.
    * If
}

```

```

any value is `NaN`, returns `NaN`.
inline fun minOf(a: Float, b: Float, c: Float): Float {
    * Returns the smaller of three values.
    * If any value is `NaN`, returns `NaN`.
}

inline fun minOf(a: Double, b: Double, c: Double): Double {
    * Returns the smaller of three values according to the order
    specified by the given [comparator].
    * If there are multiple equal
    minimal values, returns the first of them.
}

inline fun <T> minOf(a: T, b: T, c: T,
    comparator: Comparator<in T>): T {
    return minOf(a, minOf(b, c, comparator), comparator)
}

inline fun minOf(a: T, b: T, comparator:
    Comparator<in T>): T {
    return if (comparator.compare(a, b) <= 0) a else b
}

inline fun <T> minOf(a: T, vararg other: T): T {
    * Returns the smaller of
    the given values.
    * If there are multiple equal minimal values, returns the first of them.
}

inline fun minOf(a: Byte, vararg
    other: Byte): Byte {
    * Returns the smaller of the given values.
}

inline fun minOf(a:
    Short, vararg other: Short): Short {
    * Returns the smaller of the given values.
}

inline fun minOf(a: Int, vararg other: Int): Int {
    * Returns the smaller of
    the given values.
}

inline fun minOf(a: Long, vararg other: Long):
    Long {
    * Returns the smaller of the given values.
    * If any value is `NaN`, returns `NaN`.
}

inline fun minOf(a: Float, vararg other: Float):
    Float {
    * Returns the
    smaller of the given values.
    * If any value is `NaN`, returns `NaN`.
}

inline fun minOf(a: Double, vararg other: Double):
    Double {
    * Returns the smaller of the given values
    according to the order specified by the given [comparator].
    * If there are multiple equal minimal values,
    returns the first of them.
}

inline fun <T> minOf(a: T, vararg other: T, comparator:
    Comparator<in T>): T {
    var
    min = a
    for (e in other) if (comparator.compare(min, e) > 0) min = e
    return min
}

/* Copyright
2010-2022 JetBrains s.r.o. and Kotlin Programming Language contributors.
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by the Apache 2.0 license that can be found in the license/LICENSE.txt file.

@file:kotlin.jvm.JvmMultifileClass@file:kotlin.jvm.JvmName("MapsKt")
package
kotlin.collections
// NOTE: THIS FILE IS AUTO-GENERATED by the GenerateStandardLib.kt
// See:
https://github.com/JetBrains/kotlin/tree/master/libraries/stdlib
nimport kotlin.random.*
import
kotlin.ranges.contains
import kotlin.ranges.reversed

inline fun firstNotNullOf(
    [transform] function being applied to entries of this map in iteration order,
    or throws
[NoSuchElementException] if no non-null value was produced.
) @sample
samples.collections.Collections.Transformations.firstNotNullOf

inline fun firstNotNullOfOrNull(
    [transform] function being applied to
    entries of this map in iteration order,
    or `null` if no non-null value was produced.
) @sample
samples.collections.Collections.Transformations.firstNotNullOf

inline fun <K, V, R : Any> Map<out K, V>.firstNotNullOfOrNull(
    transform: (Map.Entry<K, V>) -> R?): R? {
    for (element in this) {
        val result =
        transform(element)
        if (result != null) {
            return result
        }
    }
    return null
}

Returns a [List] containing all key-value pairs.
public fun <K, V> Map<out K, V>.toList(): List<Pair<K, V>>
{
    if (size == 0)
        return emptyList()
    val iterator = entries.iterator()
    if (!iterator.hasNext())
        return emptyList()
    val first = iterator.next()
    if (!iterator.hasNext())
        return listOf(first.toPair())
    val result =
}

```



```

ArrayList<Pair<K, V>>(size)\n result.add(first.toPair())\n do {\n result.add(iterator.next().toPair())\n }
while (iterator.hasNext())\n return result\n}\n\n/**\n * Returns a single list of all elements yielded from results of
[transform] function being invoked on each entry of original map.\n * \n * @sample
samples.collections.Maps.Transformations.flatMap\n */\npublic inline fun <K, V, R> Map<out K,
V>.flatMap(transform: (Map.Entry<K, V>) -> Iterable<R>): List<R> {\n return flatMapTo(ArrayList<R>(),
transform)\n}\n\n/**\n * Returns a single list of all elements yielded from results of [transform] function being
invoked on each entry of original map.\n * \n * @sample samples.collections.Collections.Transformations.flatMap\n */\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("flatMapSequence")\npublic
inline fun <K, V, R> Map<out K, V>.flatMap(transform: (Map.Entry<K, V>) -> Sequence<R>): List<R> {\n
return flatMapTo(ArrayList<R>(), transform)\n}\n\n/**\n * Appends all elements yielded from results of
[transform] function being invoked on each entry of original map, to the given [destination].\n */\npublic inline fun
<K, V, R, C : MutableCollection<in R>> Map<out K, V>.flatMapTo(destination: C, transform: (Map.Entry<K, V>)
-> Iterable<R>): C {\n for (element in this) {\n val list = transform(element)\n destination.addAll(list)\n
}\n return destination\n}\n\n/**\n * Appends all elements yielded from results of [transform] function being
invoked on each entry of original map, to the given [destination].\n */\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("flatMapSequenceTo")\npublic
inline fun <K, V, R, C : MutableCollection<in R>> Map<out K, V>.flatMapTo(destination: C, transform:
(Map.Entry<K, V>) -> Sequence<R>): C {\n for (element in this) {\n val list = transform(element)\n
destination.addAll(list)\n }\n return destination\n}\n\n/**\n * Returns a list containing the results of applying the
given [transform] function\n * to each entry in the original map.\n * \n * @sample
samples.collections.Maps.Transformations.mapToList\n */\npublic inline fun <K, V, R> Map<out K,
V>.map(transform: (Map.Entry<K, V>) -> R): List<R> {\n return mapTo(ArrayList<R>(size),
transform)\n}\n\n/**\n * Returns a list containing only the non-null results of applying the given [transform]
function\n * to each entry in the original map.\n * \n * @sample
samples.collections.Maps.Transformations.mapNotNull\n */\npublic inline fun <K, V, R : Any> Map<out K,
V>.mapNotNull(transform:
(Map.Entry<K, V>) -> R?): List<R> {\n return mapNotNullTo(ArrayList<R>(), transform)\n}\n\n/**\n * Applies
the given [transform] function to each entry in the original map\n * and appends only the non-null results to the
given [destination].\n */\npublic inline fun <K, V, R : Any, C : MutableCollection<in R>> Map<out K,
V>.mapNotNullTo(destination: C, transform: (Map.Entry<K, V>) -> R?): C {\n forEach { element ->
transform(element)?.let { destination.add(it) } }\n return destination\n}\n\n/**\n * Applies the given [transform]
function to each entry of the original map\n * and appends the results to the given [destination].\n */\npublic inline
fun <K, V, R, C : MutableCollection<in R>> Map<out K, V>.mapTo(destination: C, transform: (Map.Entry<K, V>)
-> R): C {\n for (item in this)\n destination.add(transform(item))\n return destination\n}\n\n/**\n * Returns
`true` if all entries match the given [predicate].\n * \n * Note that if the map contains no entries,
the function returns `true`\n * because there are no entries in it that do not match the predicate.\n * See a more
detailed explanation of this logic concept in ["Vacuous truth"](https://en.wikipedia.org/wiki/Vacuous_truth)
article.\n * \n * @sample samples.collections.Collections.Aggregates.all\n */\npublic inline fun <K, V> Map<out K,
V>.all(predicate: (Map.Entry<K, V>) -> Boolean): Boolean {\n if (isEmpty()) return true\n for (element in this)
if (!predicate(element)) return false\n return true\n}\n\n/**\n * Returns `true` if map has at least one entry.\n * \n *
@sample samples.collections.Collections.Aggregates.any\n */\npublic fun <K, V> Map<out K, V>.any(): Boolean
{\n return !isEmpty()\n}\n\n/**\n * Returns `true` if at least one entry matches the given [predicate].\n * \n *
@sample samples.collections.Collections.Aggregates.anyWithPredicate\n */\npublic inline fun <K, V> Map<out K,
V>.any(predicate: (Map.Entry<K, V>) -> Boolean): Boolean {\n if (isEmpty())
return false\n for (element in this) if (predicate(element)) return true\n return false\n}\n\n/**\n * Returns the
number of entries in this map.\n */\n@kotlin.internal.InlineOnly\npublic inline fun <K, V> Map<out K, V>.count():

```

```

Int { \n  return size \n } \n \n /** \n * Returns the number of entries matching the given [predicate]. \n */ \n public inline
fun <K, V> Map<out K, V>.count(predicate: (Map.Entry<K, V>) -> Boolean): Int { \n  if (isEmpty()) return 0 \n
var count = 0 \n  for (element in this) if (predicate(element)) ++count \n  return count \n } \n \n /** \n * Performs the
given [action] on each entry. \n */ \n @kotlin.internal.HidesMembers \n public inline fun <K, V> Map<out K,
V>.forEach(action: (Map.Entry<K, V>) -> Unit): Unit { \n  for (element in this) action(element) \n } \n \n /** \n *
Returns the first entry yielding the largest value of the given function. \n * \n * @throws NoSuchElementException
if the map is empty. \n * \n * @sample samples.collections.Collections.Aggregates.maxBy \n
*/ \n @SinceKotlin("1.7") \n @kotlin.jvm.JvmName("maxByOrThrow") \n @kotlin.internal.InlineOnly \n @Suppress
("CONFLICTING_OVERLOADS") \n public inline fun <K, V, R : Comparable<R>> Map<out K,
V>.maxBy(selector: (Map.Entry<K, V>) -> R): Map.Entry<K, V> { \n  return entries.maxBy(selector) \n } \n \n /** \n *
Returns the first entry yielding the largest value of the given function or `null` if there are no entries. \n * \n *
@sample samples.collections.Collections.Aggregates.maxByOrNull \n
*/ \n @SinceKotlin("1.4") \n @kotlin.internal.InlineOnly \n public inline fun <K, V, R : Comparable<R>> Map<out
K, V>.maxByOrNull(selector: (Map.Entry<K, V>) -> R): Map.Entry<K, V>? { \n  return
entries.maxByOrNull(selector) \n } \n \n /** \n * Returns the largest value among all values produced by [selector]
function \n * applied to each entry in the map. \n * \n * If any of values produced by [selector] function is `NaN`, the
returned result is `NaN`. \n * \n * @throws NoSuchElementException if the map is empty. \n
*/ \n @SinceKotlin("1.4") \n @OptIn(kotlin.experimental.ExperimentalTypeInference::class) \n @OverloadResolution
ByLambdaReturnType \n @kotlin.internal.InlineOnly \n public
inline fun <K, V> Map<out K, V>.maxOf(selector: (Map.Entry<K, V>) -> Double): Double { \n  return
entries.maxOf(selector) \n } \n \n /** \n * Returns the largest value among all values produced by [selector] function \n *
applied to each entry in the map. \n * \n * If any of values produced by [selector] function is `NaN`, the returned
result is `NaN`. \n * \n * @throws NoSuchElementException if the map is empty. \n
*/ \n @SinceKotlin("1.4") \n @OptIn(kotlin.experimental.ExperimentalTypeInference::class) \n @OverloadResolution
ByLambdaReturnType \n @kotlin.internal.InlineOnly \n public inline fun <K, V> Map<out K, V>.maxOf(selector:
(Map.Entry<K, V>) -> Float): Float { \n  return entries.maxOf(selector) \n } \n \n /** \n * Returns the largest value
among all values produced by [selector] function \n * applied to each entry in the map. \n * \n * @throws
NoSuchElementException if the map is empty. \n
*/ \n @SinceKotlin("1.4") \n @OptIn(kotlin.experimental.ExperimentalTypeInference::class) \n @OverloadResolution
ByLambdaReturnType \n @kotlin.internal.InlineOnly \n public inline fun <K, V, R : Comparable<R>> Map<out K,
V>.maxOf(selector: (Map.Entry<K, V>) -> R): R { \n  return entries.maxOf(selector) \n } \n \n /** \n * Returns the
largest value among all values produced by [selector] function \n * applied to each entry in the map or `null` if there
are no entries. \n * \n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`. \n
*/ \n @SinceKotlin("1.4") \n @OptIn(kotlin.experimental.ExperimentalTypeInference::class) \n @OverloadResolution
ByLambdaReturnType \n @kotlin.internal.InlineOnly \n public inline fun <K, V> Map<out K,
V>.maxOfOrNull(selector: (Map.Entry<K, V>) -> Double): Double? { \n  return
entries.maxOfOrNull(selector) \n } \n \n /** \n * Returns the largest value among all values produced by [selector]
function \n * applied
to each entry in the map or `null` if there are no entries. \n * \n * If any of values produced by [selector] function is
`NaN`, the returned result is `NaN`. \n
*/ \n @SinceKotlin("1.4") \n @OptIn(kotlin.experimental.ExperimentalTypeInference::class) \n @OverloadResolution
ByLambdaReturnType \n @kotlin.internal.InlineOnly \n public inline fun <K, V> Map<out K,
V>.maxOfOrNull(selector: (Map.Entry<K, V>) -> Float): Float? { \n  return
entries.maxOfOrNull(selector) \n } \n \n /** \n * Returns the largest value among all values produced by [selector]
function \n * applied to each entry in the map or `null` if there are no entries. \n
*/ \n @SinceKotlin("1.4") \n @OptIn(kotlin.experimental.ExperimentalTypeInference::class) \n @OverloadResolution
ByLambdaReturnType \n @kotlin.internal.InlineOnly \n public inline fun <K, V, R : Comparable<R>> Map<out K,
V>.maxOfOrNull(selector: (Map.Entry<K, V>) -> R): R? { \n  return entries.maxOfOrNull(selector) \n } \n \n /** \n *

```

Returns the largest value according to the provided [comparator] among all values produced by [selector] function applied to each entry in the map. @throws NoSuchElementException if the map is empty.

```

*\/n@SinceKotlin("1.4")\/n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\/n@OverloadResolution
ByLambdaReturnType\/n@kotlin.internal.InlineOnly\/npublic inline fun <K, V, R> Map<out K,
V>.maxOfWith(comparator: Comparator<in R>, selector: (Map.Entry<K, V>) -> R): R {\/n return
entries.maxOfWith(comparator, selector)\/n}\/n\/n**\/n * Returns the largest value according to the provided
[comparator] among all values produced by [selector] function applied to each entry in the map or `null` if there
are no entries.\/n
*\/n@SinceKotlin("1.4")\/n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\/n@OverloadResolution
ByLambdaReturnType\/n@kotlin.internal.InlineOnly\/npublic inline fun <K, V, R> Map<out K,
V>.maxOfWithOrNull(comparator: Comparator<in R>, selector: (Map.Entry<K, V>) -> R): R? {\/n return
entries.maxOfWithOrNull(comparator,
selector)\/n}\/n\/n**\/n * Returns the first entry having the largest value according to the provided [comparator].\/n *
@throws NoSuchElementException if the map is empty.\/n
*\/n@SinceKotlin("1.7")\/n@kotlin.jvm.JvmName("maxWithOrThrow")\/n@kotlin.internal.InlineOnly\/n@Suppress(
"CONFLICTING_OVERLOADS")\/npublic inline fun <K, V> Map<out K, V>.maxWith(comparator:
Comparator<in Map.Entry<K, V>>): Map.Entry<K, V> {\/n return entries.maxWith(comparator)\/n}\/n\/n**\/n *
Returns the first entry having the largest value according to the provided [comparator] or `null` if there are no
entries.\/n *\/n@SinceKotlin("1.4")\/n@kotlin.internal.InlineOnly\/npublic inline fun <K, V> Map<out K,
V>.maxWithOrNull(comparator: Comparator<in Map.Entry<K, V>>): Map.Entry<K, V>? {\/n return
entries.maxWithOrNull(comparator)\/n}\/n\/n**\/n * Returns the first entry yielding the smallest value of the given
function.\/n *\/n * @throws NoSuchElementException if the map is empty.\/n *
\/n * @sample samples.collections.Collections.Aggregates.minBy\/n
*\/n@SinceKotlin("1.7")\/n@kotlin.jvm.JvmName("minByOrThrow")\/n@kotlin.internal.InlineOnly\/n@Suppress(
"CONFLICTING_OVERLOADS")\/npublic inline fun <K, V, R : Comparable<R>> Map<out K,
V>.minBy(selector: (Map.Entry<K, V>) -> R): Map.Entry<K, V> {\/n return entries.minBy(selector)\/n}\/n\/n**\/n *
Returns the first entry yielding the smallest value of the given function or `null` if there are no entries.\/n *\/n *
@sample samples.collections.Collections.Aggregates.minByOrNull\/n
*\/n@SinceKotlin("1.4")\/n@kotlin.internal.InlineOnly\/npublic inline fun <K, V, R : Comparable<R>> Map<out
K, V>.minByOrNull(selector: (Map.Entry<K, V>) -> R): Map.Entry<K, V>? {\/n return
entries.minByOrNull(selector)\/n}\/n\/n**\/n * Returns the smallest value among all values produced by [selector]
function applied to each entry in the map.\/n *\/n * If any of values produced by [selector] function is `NaN`, the
returned result is `NaN`.\/n *
\/n * @throws NoSuchElementException if the map is empty.\/n
*\/n@SinceKotlin("1.4")\/n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\/n@OverloadResolution
ByLambdaReturnType\/n@kotlin.internal.InlineOnly\/npublic inline fun <K, V> Map<out K, V>.minOf(selector:
(Map.Entry<K, V>) -> Double): Double {\/n return entries.minOf(selector)\/n}\/n\/n**\/n * Returns the smallest
value among all values produced by [selector] function applied to each entry in the map.\/n *\/n * If any of values
produced by [selector] function is `NaN`, the returned result is `NaN`.\/n *\/n * @throws NoSuchElementException
if the map is empty.\/n
*\/n@SinceKotlin("1.4")\/n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\/n@OverloadResolution
ByLambdaReturnType\/n@kotlin.internal.InlineOnly\/npublic inline fun <K, V> Map<out K, V>.minOf(selector:
(Map.Entry<K, V>) -> Float): Float {\/n return entries.minOf(selector)\/n}\/n\/n**\/n * Returns the smallest value
among all values produced by [selector]
function applied to each entry in the map.\/n *\/n * @throws NoSuchElementException if the map is empty.\/n
*\/n@SinceKotlin("1.4")\/n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\/n@OverloadResolution
ByLambdaReturnType\/n@kotlin.internal.InlineOnly\/npublic inline fun <K, V, R : Comparable<R>> Map<out K,

```

```

V>.minOf(selector: (Map.Entry<K, V>) -> R): R {
    return entries.minOf(selector)
}

```

Returns the smallest value among all values produced by [selector] function applied to each entry in the map or `null` if there are no entries.

```


```

If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.

```


```

Since Kotlin 1.4

```


```

ExperimentalTypeInference

```


```

OverloadResolution

```


```

ByLambdaReturnType

```


```

kotlin.internal.InlineOnly

```

public inline fun <K, V> Map<out K,
V>.minOfOrNull(selector: (Map.Entry<K, V>) -> Double): Double? {
    return
entries.minOfOrNull(selector)
}

```

Returns the smallest value among all values produced by [selector] function applied to each entry in the map or `null` if there are no entries.

```


```

If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.

```


```

Since Kotlin 1.4

```


```

ExperimentalTypeInference

```


```

OverloadResolution

```


```

ByLambdaReturnType

```


```

kotlin.internal.InlineOnly

```

public inline fun <K, V> Map<out K,
V>.minOfOrNull(selector: (Map.Entry<K, V>) -> Float): Float? {
    return
entries.minOfOrNull(selector)
}

```

Returns the smallest value among all values produced by [selector] function applied to each entry in the map or `null` if there are no entries.

```


```

Since Kotlin 1.4

```


```

ExperimentalTypeInference

```


```

OverloadResolution

```


```

ByLambdaReturnType

```


```

kotlin.internal.InlineOnly

```

public inline fun <K, V, R : Comparable<R>> Map<out K,
V>.minOfOrNull(selector: (Map.Entry<K, V>) -> R): R? {
    return entries.minOfOrNull(selector)
}

```

Returns the smallest value according to the provided [comparator] among all values produced by [selector] function applied to each entry in the map.

```


```

@throws NoSuchElementException if the map is empty.

```


```

Since Kotlin 1.4

```


```

ExperimentalTypeInference

```


```

OverloadResolution

```


```

ByLambdaReturnType

```


```

kotlin.internal.InlineOnly

```

public inline fun <K, V, R> Map<out K,
V>.minOfWith(comparator: Comparator<in R>, selector: (Map.Entry<K, V>) -> R): R {
    return
entries.minOfWith(comparator, selector)
}

```

Returns the smallest value according to the provided [comparator] among all values produced by [selector] function applied to each entry in the map or `null` if there are no entries.

```


```

Since Kotlin 1.4

```


```

ExperimentalTypeInference

```


```

OverloadResolution

```


```

ByLambdaReturnType

```


```

kotlin.internal.InlineOnly

```

public inline fun <K, V, R> Map<out K,
V>.minOfWithOrNull(comparator: Comparator<in
R>, selector: (Map.Entry<K, V>) -> R): R? {
    return entries.minOfWithOrNull(comparator,
selector)
}

```

Returns the first entry having the smallest value according to the provided [comparator].

```


```

@throws NoSuchElementException if the map is empty.

```


```

Since Kotlin 1.7

```


```

kotlin.jvm.JvmName("minWithOrThrow")

```


```

kotlin.internal.InlineOnly

```


```

Suppress("CONFLICTING\_OVERLOADS")

```


```

public inline fun <K, V> Map<out K, V>.minWith(comparator:
Comparator<in Map.Entry<K, V>>): Map.Entry<K, V> {
 return entries.minWith(comparator)
}

Returns the first entry having the smallest value according to the provided [comparator] or `null` if there are no entries.

```


```

Since Kotlin 1.4

```


```

kotlin.internal.InlineOnly

```


```

public inline fun <K, V> Map<out K,
V>.minWithOrNull(comparator: Comparator<in Map.Entry<K, V>>): Map.Entry<K, V>? {
 return
entries.minWithOrNull(comparator)
}

Returns `true` if the map has no entries.

```


```

@sample

```


```

samples.collections.Collections.Aggregates.none

```


```

public fun <K, V> Map<out K, V>.none(): Boolean {
 return isEmpty()
}

Returns `true` if no entries match the given [predicate].

```


```

@sample

```


```

samples.collections.Collections.Aggregates.noneWithPredicate

```


```

public inline fun <K, V> Map<out K,
V>.none(predicate: (Map.Entry<K, V>) -> Boolean): Boolean {
 if (isEmpty()) return true
 for (element in this) if (predicate(element)) return false
 return true
}

Performs the given [action] on each entry and returns the map itself afterwards.

```


```

Since Kotlin 1.1

```


```

public inline fun <K, V, M : Map<out K, V>>
M.onEach(action: (Map.Entry<K, V>) -> Unit): M {
 return apply { for (element in this) action(element)
}
}

Performs the given [action] on each entry, providing sequential index with the entry, and returns the map itself afterwards.

```


```

@param [action] function that takes the index of an entry and the entry itself

performs

```
the action on the entry.\n *^@SinceKotlin("1.4")\npublic inline fun <K, V, M : Map<out K, V>>  
M.onEachIndexed(action: (index: Int, Map.Entry<K, V>) -> Unit): M {\n    return apply {  
entries.forEachIndexed(action) }\n}\n\n/**\n * Creates an [Iterable] instance that wraps the original map returning  
its entries when being iterated.\n *^@kotlin.internal.InlineOnly\npublic inline fun <K, V> Map<out K,  
V>.asIterable(): Iterable<Map.Entry<K, V>> {\n    return entries\n}\n\n/**\n * Creates a [Sequence] instance that  
wraps the original map returning its entries when being iterated.\n *^@public fun <K, V> Map<out K,  
V>.asSequence(): Sequence<Map.Entry<K, V>> {\n    return entries.asSequence()\n}\n\n"/*\n * Copyright 2010-  
2021 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the  
Apache 2.0 license that can be found in the license/LICENSE.txt file.\n *^@package kotlin.text\n\n// NOTE:  
THIS FILE IS AUTO-GENERATED by the GenerateUnicodeData.kt\n//  
See: https://github.com/JetBrains/kotlin/tree/master/libraries/stdlib\n\n// 10 mappings totally\ninternal fun  
Char.titlecaseImpl(): String {\n    val uppercase = uppercase()\n    if (uppercase.length > 1) {\n        return if (this ==  
"\u0149") uppercase else uppercase[0] + uppercase.substring(1).lowercase()\n    }\n    return  
titlecaseChar().toString()\n}\n"/*\n * Copyright 2010-2021 JetBrains s.r.o. and Kotlin Programming Language  
contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the  
license/LICENSE.txt file.\n *^@package kotlin.text\n\n/**\n * Converts this character to lower case using Unicode  
mapping rules of the invariant locale.\n *^@Deprecated("Use lowercaseChar() instead.")  
ReplaceWith("lowercaseChar()")\n\n@DeprecatedSinceKotlin(warningSince =  
"1.5")\n@kotlin.internal.InlineOnly\npublic actual inline fun Char.toLowerCase(): Char =  
lowercaseChar()\n\n/**\n * Converts this character to lower  
case using Unicode mapping rules of the invariant locale.\n *^*\n * This function performs one-to-one character  
mapping.\n * To support one-to-many character mapping use the [lowercase] function.\n * If this character has no  
mapping equivalent, the character itself is returned.\n *^*\n * @sample samples.text.Chars.lowercase\n\n*^@SinceKotlin("1.5")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic  
actual inline fun Char.lowercaseChar(): Char = lowercase()[0]\n\n/**\n * Converts this character to lower case  
using Unicode mapping rules of the invariant locale.\n *^*\n * This function supports one-to-many character mapping,  
thus the length of the returned string can be greater than one.\n * For example, ``\u0130'.lowercase()`` returns  
``\u0069\u0307``,\n * where ``\u0130`` is the LATIN CAPITAL LETTER I WITH DOT ABOVE character  
(`\u0130`).\n * If this character has no lower case mapping, the result of `toString()` of this char is returned.\n *^*\n * @sample samples.text.Chars.lowercase\n\n*^@SinceKotlin("1.5")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic  
actual inline fun Char.lowercase(): String = toString().asDynamic().toLowerCase().unsafeCast<String>()\n\n/**\n * Converts this character to upper case using Unicode mapping rules of the invariant locale.\n *^*\n * @sample samples.text.Chars.uppercase\n\n*^@Deprecated("Use uppercaseChar() instead.")  
ReplaceWith("uppercaseChar()")\n\n@DeprecatedSinceKotlin(warningSince =  
"1.5")\n@kotlin.internal.InlineOnly\npublic actual inline fun Char.toUpperCase(): Char =  
uppercaseChar()\n\n/**\n * Converts this character to upper case using Unicode mapping rules of the invariant  
locale.\n *^*\n * This function performs one-to-one character mapping.\n * To support one-to-many character  
mapping use the [uppercase] function.\n * If this character has no mapping equivalent, the character itself is  
returned.\n *^*\n * @sample samples.text.Chars.uppercase\n\n*^@SinceKotlin("1.5")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic  
actual fun Char.uppercaseChar(): Char {\n    val uppercase = uppercase()\n    return if (uppercase.length > 1) this  
else uppercase[0]\n}\n\n/**\n * Converts this character to upper case using Unicode mapping rules of the invariant  
locale.\n *^*\n * This function supports one-to-many character mapping, thus the length of the returned string can be  
greater than one.\n * For example, ``\uFB00'.uppercase()`` returns ``\u0046\u0046``,\n * where ``\uFB00`` is the  
LATIN SMALL LIGATURE FF character (`\ufb00`).\n * If this character has no upper case mapping, the result of  
`toString()` of this char is returned.\n *^*\n * @sample samples.text.Chars.uppercase\n
```

```

*^@SinceKotlin("1.5")^@WasExperimental(ExperimentalStdlibApi::class)^@kotlin.internal.InlineOnly^npubli
c actual inline fun Char.toUpperCase(): String = toString().asDynamic().toUpperCase().unsafeCast<String>()\n/**\n
* Converts this character to title case using Unicode mapping rules of the invariant
locale.\n *\n * This function performs one-to-one character mapping.\n * To support one-to-many character
mapping use the [titlecase] function.\n * If this character has no mapping equivalent, the result of calling
[uppercaseChar] is returned.\n *\n * @sample samples.text.Chars.titlecase\n *^@SinceKotlin("1.5")^npubli
c actual fun Char.titlecaseChar(): Char = titlecaseCharImpl()\n/**\n * Returns `true` if this character is a Unicode
high-surrogate code unit (also known as leading-surrogate code unit).\n */^npubli
c actual fun
Char.isHighSurrogate(): Boolean = this in
Char.MIN_HIGH_SURROGATE..Char.MAX_HIGH_SURROGATE\n/**\n * Returns `true` if this character is a
Unicode low-surrogate code unit (also known as trailing-surrogate code unit).\n */^npubli
c actual fun
Char.isLowSurrogate(): Boolean = this in
Char.MIN_LOW_SURROGATE..Char.MAX_LOW_SURROGATE\n/**\n * Returns the Unicode general
category of this character.\n */^@SinceKotlin("1.5")^npubli
c actual val Char.category:
CharCategory\n get() = CharCategory.valueOf(getCategoryValue())\n/**\n * Returns `true` if this character
(Unicode code point) is defined in Unicode.\n *\n * A character is considered to be defined in Unicode if its
[category] is not [CharCategory.UNASSIGNED].\n */^@SinceKotlin("1.5")^npubli
c actual fun Char.isDefined():
Boolean {\n if (this < "\u0080") {\n return true\n }\n return getCategoryValue() !=
CharCategory.UNASSIGNED.value\n}\n/**\n * Returns `true` if this character is a letter.\n *\n * A character is
considered to be a letter if its [category] is [CharCategory.UPPERCASE_LETTER],\n *
[CharCategory.LOWERCASE_LETTER], [CharCategory.TITLECASE_LETTER],
[CharCategory.MODIFIER_LETTER], or [CharCategory.OTHER_LETTER].\n *\n * @sample
samples.text.Chars.isLetter\n *^@SinceKotlin("1.5")^npubli
c actual fun Char.isLetter(): Boolean {\n if (this in
'a'..'z' || this in 'A'..'Z') {\n return true\n }\n if (this < "\u0080") {\n return false\n
}\n return isLetterImpl()\n}\n/**\n * Returns `true` if this character is a letter or digit.\n *\n * @see isLetter\n
* @see isDigit\n *\n * @sample samples.text.Chars.isLetterOrDigit\n *^@SinceKotlin("1.5")^npubli
c actual fun
Char.isLetterOrDigit(): Boolean {\n if (this in 'a'..'z' || this in 'A'..'Z' || this in '0'..'9') {\n return true\n }\n if
(this < "\u0080") {\n return false\n }\n return isDigitImpl() || isLetterImpl()\n}\n/**\n * Returns `true` if
this character is a digit.\n *\n * A character is considered to be a digit if its [category] is
[CharCategory.DECIMAL_DIGIT_NUMBER].\n *\n * @sample samples.text.Chars.isDigit\n
*^@SinceKotlin("1.5")^npubli
c actual fun Char.isDigit(): Boolean {\n if (this in '0'..'9') {\n return true\n
}\n if (this < "\u0080") {\n return false\n }\n return isDigitImpl()\n}\n/**\n * Returns `true` if this
character is upper case.\n *\n * A character is considered to
be an upper case character if its [category] is [CharCategory.UPPERCASE_LETTER],\n * or it has contributory
property `Other_Uppercase` as defined by the Unicode Standard.\n *\n * @sample
samples.text.Chars.isUpperCase\n *^@SinceKotlin("1.5")^npubli
c actual fun Char.isUpperCase(): Boolean {\n if (this in 'A'..'Z') {\n return true\n }\n if (this < "\u0080") {\n
return false\n }\n return
isUpperCaseImpl()\n}\n/**\n * Returns `true` if this character is lower case.\n *\n * A character is considered to
be a lower case character if its [category] is [CharCategory.LOWERCASE_LETTER],\n * or it has contributory
property `Other_Lowercase` as defined by the Unicode Standard.\n *\n * @sample
samples.text.Chars.isLowerCase\n *^@SinceKotlin("1.5")^npubli
c actual fun Char.isLowerCase(): Boolean {\n if (this in 'a'..'z') {\n return true\n }\n if (this < "\u0080") {\n
return false\n }\n return
isLowerCaseImpl()\n}\n/**\n * Returns
`true` if this character is a title case letter.\n *\n * A character is considered to be a title case letter if its
[category] is [CharCategory.TITLECASE_LETTER].\n *\n * @sample samples.text.Chars.isTitleCase\n
*^@SinceKotlin("1.5")^npubli
c actual fun Char.isTitleCase(): Boolean {\n if (this < "\u0080") {\n return
false\n }\n return getCategoryValue() == CharCategory.TITLECASE_LETTER.value\n}\n/**\n * Returns
`true` if this character is an ISO control character.\n *\n * A character is considered to be an ISO control character if

```

```

its [category] is [CharCategory.CONTROL],\n * meaning the Char is in the range ``\u0000..\u001F`` or in the
range ``\u007F..\u009F``.\n *\n * @sample samples.text.Chars.isISOControl\n *\n @SinceKotlin("1.5")\n\npublic
actual fun Char.isISOControl(): Boolean {\n  return this <= "\u001F" || this in "\u007F..\u009F"\n }\n\n**\n *
Determines whether a character is whitespace according to the Unicode standard.\n * Returns `true`
if the character is whitespace.\n *\n * @sample samples.text.Chars.isWhitespace\n *\n\npublic actual fun
Char.isWhitespace(): Boolean = isWhitespaceImpl(),"/*\n * Copyright 2010-2021 JetBrains s.r.o. and Kotlin
Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be
found in the license/LICENSE.txt file.\n *\n @npackage kotlin.text\n\nimport kotlin.js.RegExp\n\n**\n * Converts
the characters in the specified array to a string.\n *\n @SinceKotlin("1.2")\n\n @Deprecated("Use
CharArray.concatToString() instead",
ReplaceWith("chars.concatToString()"))\n\n @DeprecatedSinceKotlin(warningSince = "1.4", errorSince =
"1.5")\n\n\npublic actual fun String(chars: CharArray): String {\n  var result = ""\n  for (char in chars) {\n
result += char\n  }\n  return result\n }\n\n**\n * Converts the characters from a portion of the specified array to a
string.\n *\n * @throws IndexOutOfBoundsException if either [offset] or [length]
are less than zero\n * or `offset + length` is out of [chars] array bounds.\n
*\n\n @SinceKotlin("1.2")\n\n @Deprecated("Use CharArray.concatToString(startIndex, endIndex) instead",
ReplaceWith("chars.concatToString(offset, offset + length)"))\n\n @DeprecatedSinceKotlin(warningSince = "1.4",
errorSince = "1.5")\n\n\npublic actual fun String(chars: CharArray, offset: Int, length: Int): String {\n  if (offset < 0 ||
length < 0 || chars.size - offset < length)\n    throw IndexOutOfBoundsException("size: ${chars.size}; offset:
$offset; length: $length")\n  var result = ""\n  for (index in offset until offset + length) {\n    result +=
chars[index]\n  }\n  return result\n }\n\n**\n * Concatenates characters in this [CharArray] into a String.\n
*\n\n @SinceKotlin("1.4")\n\n @WasExperimental(ExperimentalStdlibApi::class)\n\n\npublic actual fun
CharArray.concatToString(): String {\n  var result = ""\n  for (char in this) {\n    result += char\n  }\n
return result\n }\n\n**\n
* Concatenates characters in this [CharArray] or its subrange into a String.\n *\n * @param startIndex the
beginning (inclusive) of the subrange of characters, 0 by default.\n * @param endIndex the end (exclusive) of the
subrange of characters, size of this array by default.\n *\n * @throws IndexOutOfBoundsException if [startIndex] is
less than zero or [endIndex] is greater than the size of this array.\n * @throws IllegalArgumentException if
[startIndex] is greater than [endIndex].\n
*\n\n @SinceKotlin("1.4")\n\n @WasExperimental(ExperimentalStdlibApi::class)\n\n @Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\n\n\npublic actual fun CharArray.concatToString(startIndex: Int = 0,
endIndex: Int = this.size): String {\n  AbstractList.checkBoundsIndexes(startIndex, endIndex, this.size)\n  var
result = ""\n  for (index in startIndex until endIndex) {\n    result += this[index]\n  }\n  return
result\n }\n\n**\n * Returns a [CharArray] containing characters of this string.\n
*\n\n @SinceKotlin("1.4")\n\n @WasExperimental(ExperimentalStdlibApi::class)\n\n\npublic actual fun
String.toCharArray(): CharArray {\n  return CharArray(length) { get(it) }\n }\n\n**\n * Returns a [CharArray]
containing characters of this string or its substring.\n *\n * @param startIndex the beginning (inclusive) of the
substring, 0 by default.\n * @param endIndex the end (exclusive) of the substring, length of this string by default.\n
*\n * @throws IndexOutOfBoundsException if [startIndex] is less than zero or [endIndex] is greater than the length
of this string.\n * @throws IllegalArgumentException if [startIndex] is greater than [endIndex].\n
*\n\n @SinceKotlin("1.4")\n\n @WasExperimental(ExperimentalStdlibApi::class)\n\n @Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\n\n\npublic actual fun String.toCharArray(startIndex: Int = 0, endIndex: Int =
this.length): CharArray {\n  AbstractList.checkBoundsIndexes(startIndex, endIndex, length)\n  return
CharArray(endIndex - startIndex)
  { get(startIndex + it) }\n }\n\n**\n * Decodes a string from the bytes in UTF-8 encoding in this array.\n *\n *
Malformed byte sequences are replaced by the replacement char `'\uFFFF`.\n
*\n\n @SinceKotlin("1.4")\n\n @WasExperimental(ExperimentalStdlibApi::class)\n\n\npublic actual fun
ByteArray.decodeToString(): String {\n  return decodeUtf8(this, 0, size, false)\n }\n\n**\n * Decodes a string from

```

the bytes in UTF-8 encoding in this array or its subrange.  
 \* @param startIndex the beginning (inclusive) of the subrange to decode, 0 by default.  
 \* @param endIndex the end (exclusive) of the subrange to decode, size of this array by default.  
 \* @param throwOnInvalidSequence specifies whether to throw an exception on malformed byte sequence or replace it by the replacement char `        `.  
 \* @throws IndexOutOfBoundsException if [startIndex] is less than zero or [endIndex] is greater than the size of this array.  
 \* @throws IllegalArgumentException if [startIndex] is greater than [endIndex].  
 \* @throws CharacterCodingException if the byte array contains malformed UTF-8 byte sequence and [throwOnInvalidSequence] is true.

```

*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@Suppress("ACTUAL_FUNCTIONS_WITH_DEFAULT_ARGUMENTS")\npublic actual fun ByteArray.decodeToString(\n    startIndex: Int = 0,\n    endIndex: Int = this.size,\n    throwOnInvalidSequence: Boolean = false\n): String {\n    AbstractList.checkBoundsIndexes(startIndex, endIndex, this.size)\n    return decodeUtf8(this, startIndex, endIndex,\n        throwOnInvalidSequence)\n}\n\n/**\n * Encodes this string to an array of bytes in UTF-8 encoding.\n * Any malformed char sequence is replaced by the replacement byte sequence.

```

```

*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic actual fun String.encodeToByteArray(): ByteArray {\n    return encodeUtf8(this, 0, length, false)\n}\n\n/**\n * Encodes this string or its substring to an array of bytes in UTF-8 encoding.

```

\* @param startIndex the beginning (inclusive) of the substring to encode, 0 by default.  
 \* @param endIndex the end (exclusive) of the substring to encode, length of this string by default.  
 \* @param throwOnInvalidSequence specifies whether to throw an exception on malformed char sequence or replace.  
 \* @throws IndexOutOfBoundsException if [startIndex] is less than zero or [endIndex] is greater than the length of this string.  
 \* @throws IllegalArgumentException if [startIndex] is greater than [endIndex].  
 \* @throws CharacterCodingException if this string contains malformed char sequence and [throwOnInvalidSequence] is true.

```

*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@Suppress("ACTUAL_FUNCTIONS_WITH_DEFAULT_ARGUMENTS")\npublic actual fun String.encodeToByteArray(\n    startIndex: Int = 0,\n    endIndex: Int = this.length,\n    throwOnInvalidSequence: Boolean = false\n): ByteArray {\n    AbstractList.checkBoundsIndexes(\n        startIndex,\n        endIndex, length)\n    return encodeUtf8(this, startIndex, endIndex, throwOnInvalidSequence)\n}\n\n/**\n * Returns a copy of this string converted to upper case using the rules of the default locale.

```

`@Deprecated("Use uppercase() instead.", ReplaceWith("uppercase()))`  
`@DeprecatedSinceKotlin(warningSince = "1.5")`  
`@kotlin.internal.InlineOnly`  
`public actual inline fun String.toUpperCase(): String = asDynamic().toUpperCase()`  
 \* Returns a copy of this string converted to upper case using Unicode mapping rules of the invariant locale.  
 \* This function supports one-to-many and many-to-one character mapping,  
 thus the length of the returned string can be different from the length of the original string.  
 \* @sample samples.text.Strings.uppercase

```

*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic actual inline fun String.toUpperCase(): String = asDynamic().toUpperCase()\n\n/**\n * Returns a copy of this string converted to lower case using the rules of the default locale.

```

`@Deprecated("Use lowercase() instead.", ReplaceWith("lowercase()))`  
`@DeprecatedSinceKotlin(warningSince = "1.5")`  
`@kotlin.internal.InlineOnly`  
`public actual inline fun String.toLowerCase(): String = asDynamic().toLowerCase()`  
 \* Returns a copy of this string converted to lower case using Unicode mapping rules of the invariant locale.  
 \* This function supports one-to-many and many-to-one character mapping,  
 thus the length of the returned string can be different from the length of the original string.  
 \* @sample samples.text.Strings.lowercase

```

*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic actual inline fun String.toLowerCase(): String = asDynamic().toLowerCase()\n\n@kotlin.internal.InlineOnly\ninternal actual inline fun String.nativeIndexOf(str: String, fromIndex: Int): Int = asDynamic().indexOf(str, fromIndex)\n\n@kotlin.internal.InlineOnly\ninternal

```



```

actual inline fun String.nativeLastIndexOf(str: String, fromIndex: Int): Int = asDynamic().lastIndexOf(str,
fromIndex)\n\n@kotlin.internal.InlineOnly\n@kotlin.js.JsPolyfill("\n\nif (typeof String.prototype.startsWith ===
\nundefined)\n) {\n    Object.defineProperty(String.prototype, \"startsWith\", {\n        value: function (searchString,
position) {\n            position = position || 0;\n            return this.lastIndexOf(searchString, position) === position;\n
        }\n    });\n}\n\ninternal inline fun String.nativeStartsWith(s: String, position: Int): Boolean =
asDynamic().startsWith(s, position)\n\n@kotlin.internal.InlineOnly\n@kotlin.js.JsPolyfill("\n\nif (typeof
String.prototype.endsWith === \nundefined)\n) {\n    Object.defineProperty(String.prototype, \"endsWith\", {\n
value: function (searchString, position) {\n        var subjectString = this.toString();\n        if (position ===
undefined || position > subjectString.length)\n            position = subjectString.length;\n        }\n        position -= searchString.length;\n        var
lastIndex = subjectString.indexOf(searchString, position);\n        return lastIndex !== -1 && lastIndex ===
position;\n    }\n});\n}\n\ninternal inline fun String.nativeEndsWith(s: String): Boolean =
asDynamic().endsWith(s)\n\n@kotlin.internal.InlineOnly\npublic actual inline fun String.substring(startIndex: Int):
String = asDynamic().substring(startIndex)\n\n@kotlin.internal.InlineOnly\npublic actual inline fun
String.substring(startIndex: Int, endIndex: Int): String = asDynamic().substring(startIndex,
endIndex)\n\n@Deprecated(\"Use String.plus() instead\", ReplaceWith(\"this +
str\"))\n@DeprecatedSinceKotlin(warningSince = \"1.6\")\n@kotlin.internal.InlineOnly\npublic inline fun
String.concat(str: String): String = asDynamic().concat(str)\n\n@Deprecated(\"Use Regex.findAll() instead or
invoke matches() on String dynamically:\n    this.asDynamic().match(regex)\")\n@DeprecatedSinceKotlin(warningSince =
\n1.6\")\n@kotlin.internal.InlineOnly\npublic inline fun String.match(regex: String): Array<String>? =
asDynamic().match(regex)\n\n//native public fun String.trim(): String\n//TODO: String.replace to implement
effective trimLeading and trimTrailing\n\n@kotlin.internal.InlineOnly\ninternal inline fun
String.nativeReplace(pattern: RegExp, replacement: String): String = asDynamic().replace(pattern,
replacement)\n\n/**\n * Compares two strings lexicographically, optionally ignoring case differences.\n *\n * If
[ignoreCase] is true, the result of `Char.toUpperCaseChar().toLowerCaseChar()` on each character is compared.\n
*\n *\n * @SinceKotlin(\"1.2\")\n * @Suppress(\"ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS\")\n * public
actual fun String.compareTo(other: String, ignoreCase: Boolean = false): Int {\n    if (ignoreCase) {\n        val n1 =
this.length\n        val n2 = other.length\n        val min = minOf(n1, n2)\n        if (min == 0)\n            return n1 - n2\n        for (index in 0 until min) {\n            var thisChar = this[index]\n            var otherChar =
other[index]\n            if (thisChar != otherChar) {\n                thisChar = thisChar.toUpperCaseChar()\n
                otherChar = otherChar.toUpperCaseChar()\n                if (thisChar != otherChar) {\n                    thisChar =
thisChar.toLowerCaseChar()\n                    otherChar = otherChar.toLowerCaseChar()\n                    if (thisChar !=
otherChar) {\n                        return thisChar.compareTo(otherChar)\n                    }\n                }\n            }\n            return n1 - n2\n        } else {\n            return compareTo(other)\n        }\n}\n\n/**\n * Returns `true` if the contents
of this char sequence are equal to the contents of the specified [other],\n * i.e. both char sequences contain the same
number of the same characters in the same order.\n *\n * @sample samples.text.Strings.contentEquals\n *\n * @SinceKotlin(\"1.5\")\n * public
actual infix fun CharSequence?.contentEquals(other: CharSequence?): Boolean =
contentEqualsImpl(other)\n\n/**\n * Returns `true` if the contents of this char sequence are equal to the contents of
the specified [other], optionally ignoring case difference.\n *\n * @param ignoreCase `true` to ignore character case
when comparing contents.\n *\n * @sample samples.text.Strings.contentEquals\n *\n * @SinceKotlin(\"1.5\")\n * public
actual fun CharSequence?.contentEquals(other: CharSequence?, ignoreCase: Boolean): Boolean {\n    return if
(ignoreCase)\n        this.contentEqualsIgnoreCaseImpl(other)\n    else\n        this.contentEqualsImpl(other)\n}\n\nprivate val STRING_CASE_INSENSITIVE_ORDER = Comparator<String>
{\n    a, b -> a.compareTo(b, ignoreCase = true)\n}\n\n@SinceKotlin(\"1.2\")\npublic actual val
String.Companion.CASE_INSENSITIVE_ORDER: Comparator<String>\n    get() =
STRING_CASE_INSENSITIVE_ORDER\n\n\", \"/*\n * Copyright 2010-2021 JetBrains s.r.o. and Kotlin Programming

```

## Language

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```
*\n\n@file:kotlin.jvm.JvmMultifileClass\n@file:kotlin.jvm.JvmName("CharsKit")\n\npackage kotlin.text\n\n/**\n
```

Returns the numeric value of the decimal digit that this Char represents. Throws an exception if this Char is not a valid decimal digit.  
A Char is considered to represent a decimal digit if [isDigit] is true for the Char.

In this case, the Unicode decimal digit value of the character is returned.  
@sample

```
samples.text.Chars.digitToInt\n
```

```
*\n\n@SinceKotlin("1.5")\n\n@WasExperimental(ExperimentalStdlibApi::class)\n\npublic fun Char.digitToInt(): Int {\n    return digitOf(this, 10).also { \n        if (it < 0) throw IllegalArgumentException("Char $this is not a decimal digit")\n    }\n}\n\n/**\n
```

Returns the numeric value of the digit that this Char represents in the specified [radix].  
Throws an exception if the [radix]

is not in the range `2..36` or if this Char is not a valid digit in the specified [radix].  
A Char is considered to represent a digit in the specified [radix] if at least one of the following is true:  
- [isDigit] is `true` for the Char and the Unicode decimal digit value of the character is less than the specified [radix]. In this case the decimal digit value is returned.  
- The Char is one of the uppercase Latin letters 'A' through 'Z' and its [code] is less than `radix + 'A'.code - 10`. In this case, `this.code - 'A'.code + 10` is returned.  
- The Char is one of the lowercase Latin letters 'a' through 'z' and its [code] is less than `radix + 'a'.code - 10`. In this case, `this.code - 'a'.code + 10` is returned.  
- The Char is one of the fullwidth Latin capital letters '\uFF21' through '\uFF3A' and its [code] is less than `radix + 0xFF21 - 10`. In this case, `this.code - 0xFF21 + 10` is returned.  
- The Char is one of the fullwidth Latin small letters '\uFF41'

through '\uFF5A' and its [code] is less than `radix + 0xFF41 - 10`. In this case, `this.code - 0xFF41 + 10` is

returned.  
@sample samples.text.Chars.digitToInt

```
*\n\n@SinceKotlin("1.5")\n\n@WasExperimental(ExperimentalStdlibApi::class)\n\npublic fun Char.digitToInt(radix: Int): Int {\n    return digitToIntOrNull(radix) ?: throw IllegalArgumentException("Char $this is not a digit in the given radix=$radix")\n}\n\n/**\n
```

Returns the numeric value of the decimal digit that this Char represents, or `null` if this Char is not a valid decimal digit.  
A Char is considered to represent a decimal digit if [isDigit] is true for the Char.  
In this case, the Unicode decimal digit value of the character is returned.  
@sample

```
samples.text.Chars.digitToIntOrNull\n
```

```
*\n\n@SinceKotlin("1.5")\n\n@WasExperimental(ExperimentalStdlibApi::class)\n\npublic fun Char.digitToIntOrNull(): Int? {\n    return digitOf(this, 10).takeIf { it >= 0 }\n}\n\n/**\n
```

Returns the numeric value of the digit that this Char represents in the specified [radix], or `null` if this Char is not a valid digit in the specified [radix].  
Throws an exception if the [radix] is not in the range `2..36`.  
A Char is considered to represent a digit in the specified [radix] if at least one of the following is true:  
- [isDigit] is `true` for the Char and the Unicode decimal digit value of the character is less than the specified [radix]. In this case the decimal digit value is returned.  
- The Char is one of the uppercase Latin letters 'A' through 'Z' and its [code] is less than `radix + 'A'.code - 10`. In this case, `this.code - 'A'.code + 10` is returned.  
- The Char is one of the lowercase Latin letters 'a' through 'z' and its [code] is less than `radix + 'a'.code - 10`. In this case, `this.code - 'a'.code + 10` is returned.  
- The Char is one of the fullwidth Latin capital letters '\uFF21' through '\uFF3A' and its [code] is less than `radix + 0xFF21 - 10`.

In this case, `this.code - 0xFF21 + 10` is returned.  
- The Char is one of the fullwidth Latin small letters '\uFF41' through '\uFF5A' and its [code] is less than `radix + 0xFF41 - 10`. In this case, `this.code - 0xFF41 + 10` is returned.  
@sample samples.text.Chars.digitToIntOrNull

```
*\n\n@SinceKotlin("1.5")\n\n@WasExperimental(ExperimentalStdlibApi::class)\n\npublic fun
```

```
Char.digitToIntOrNull(radix: Int): Int? {\n    checkRadix(radix)\n    return digitOf(this, radix).takeIf { it >= 0 }\n}\n\n/**\n
```

Returns the Char that represents this decimal digit.  
Throws an exception if this value is not in the range `0..9`.  
If this value is in `0..9`, the decimal digit Char with code `0'.code + this` is returned.  
@sample

```

@sample samples.text.Chars.digitToChar\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic fun Int.digitToChar(): Char
{\n if (this in 0..9) {\n return '0' + this\n }\n throw IllegalArgumentException("Int $this
is not a decimal digit")\n}\n\n/**\n * Returns the Char that represents this numeric digit value in the specified
[radix].\n * Throws an exception if the [radix] is not in the range `2..36` or if this value is not in the range `0` until
radix`.\n * If this value is less than `10`, the decimal digit Char with code `0.code + this` is returned.\n *
Otherwise, the uppercase Latin letter with code `A.code + this - 10` is returned.\n *\n * @sample
samples.text.Chars.digitToChar\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic fun Int.digitToChar(radix:
Int): Char {\n if (radix !in 2..36) {\n throw IllegalArgumentException("Invalid radix: $radix. Valid radix
values are in range 2..36")\n }\n if (this < 0 || this >= radix) {\n throw IllegalArgumentException("Digit
$this does not represent a valid digit in radix $radix")\n }\n return if (this < 10) {\n '0' + this\n } else {\n
'A' + this - 10\n }\n}\n\n/**\n * Converts this character to lower case using Unicode mapping rules of the invariant locale.\n
*\n *\n@Deprecated("Use lowercaseChar() instead.")\n
ReplaceWith("lowercaseChar()")\n@DeprecatedSinceKotlin(warningSince = "1.5")\npublic expect fun
Char.toLowerCase(): Char\n\n/**\n * Converts this character to lower case using Unicode mapping rules of the
invariant locale.\n *\n * This function performs one-to-one character mapping.\n * To support one-to-many
character mapping use the [lowercase] function.\n * If this character has no mapping equivalent, the character itself
is returned.\n *\n * @sample samples.text.Chars.lowercase\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic expect fun
Char.lowercaseChar(): Char\n\n/**\n * Converts this character to lower case using Unicode mapping rules of the
invariant locale.\n *\n * This function supports one-to-many character mapping, thus the length of the returned
string can be greater than one.\n
*\n * For example, ``\u0130.toLowerCase()`` returns ``\u0069\u0307``,\n * where ``\u0130`` is the LATIN CAPITAL
LETTER I WITH DOT ABOVE character (``\u0130``).\n * If this character has no lower case mapping, the result of
`toString()` of this char is returned.\n *\n * @sample samples.text.Chars.lowercase\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic expect fun
Char.lowercase(): String\n\n/**\n * Converts this character to upper case using Unicode mapping rules of the
invariant locale.\n *\n *\n@Deprecated("Use uppercaseChar() instead.")\n
ReplaceWith("uppercaseChar()")\n@DeprecatedSinceKotlin(warningSince = "1.5")\npublic expect fun
Char.toUpperCase(): Char\n\n/**\n * Converts this character to upper case using Unicode mapping rules of the
invariant locale.\n *\n * This function performs one-to-one character mapping.\n * To support one-to-many
character mapping use the [uppercase] function.\n * If this character has no mapping equivalent, the character
itself is returned.\n *\n * @sample samples.text.Chars.uppercase\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic expect fun
Char.uppercaseChar(): Char\n\n/**\n * Converts this character to upper case using Unicode mapping rules of the
invariant locale.\n *\n * This function supports one-to-many character mapping, thus the length of the returned
string can be greater than one.\n * For example, ``\uFB00.toUpperCase()`` returns ``\u0046\u0046``,\n * where
``\uFB00`` is the LATIN SMALL LIGATURE FF character (``\ufb00``).\n * If this character has no upper case
mapping, the result of `toString()` of this char is returned.\n *\n * @sample samples.text.Chars.uppercase\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic expect fun
Char.uppercase(): String\n\n/**\n * Converts this character to title case using Unicode mapping rules of the
invariant locale.\n *\n * This function performs one-to-one character mapping.\n *\n * To support one-to-many
character mapping use the [titlecase] function.\n * If this character has no mapping
equivalent, the result of calling [uppercaseChar] is returned.\n *\n * @sample samples.text.Chars.titlecase\n
*\n@SinceKotlin("1.5")\npublic expect fun Char.titlecaseChar(): Char\n\n/**\n * Converts this character to title
case using Unicode mapping rules of the invariant locale.\n *\n * This function supports one-to-many character

```

mapping, thus the length of the returned string can be greater than one.  
 For example, `'\uFB00'.titlecase()` returns `\"'\u0046\u0066\"'`, where `\"'\uFB00\"` is the LATIN SMALL LIGATURE FF character (`\"'\uFB00\"`).  
 If this character has no title case mapping, the result of `[uppercase]` is returned instead.  
 @sample  
`samples.text.Chars.titlecase`  
 @SinceKotlin("1.5")  
`public fun Char.titlecase(): String = titlecaseImpl()`  
 Concatenates this Char and a String.  
 @sample  
`samples.text.Chars.plus`  
 @kotlin.internal.InlineOnly  
`public inline operator fun Char.plus(other: String): String = this.toString() + other`  
 Returns `\"true\"` if this character is equal to the `[other]` character, optionally ignoring character case.  
 Two characters are considered equal ignoring case if `\"Char.uppercaseChar().lowercaseChar()\"` on each character produces the same result.  
 @param `ignoreCase` `\"true\"` to ignore character case when comparing characters. By default `\"false\"`.  
 @sample  
`samples.text.Chars.equals`  
`public fun Char.equals(other: Char, ignoreCase: Boolean = false): Boolean {`  
 if (this == other) return true  
 if (!ignoreCase) return false  
 val thisUpper = this.uppercaseChar()  
 val otherUpper = other.uppercaseChar()  
 return thisUpper == otherUpper || thisUpper.lowercaseChar() == otherUpper.lowercaseChar()  
 }  
 Returns `\"true\"` if this character is a Unicode surrogate code unit.  
`public fun Char.isSurrogate(): Boolean = this in Char.MIN_SURROGATE..Char.MAX_SURROGATE`  
 Returns the Unicode general category of this character.  
 @SinceKotlin("1.5")  
`public expect val Char.category: CharCategory`  
 Returns `\"true\"` if this character (Unicode code point) is defined in Unicode.  
 A character is considered to be defined in Unicode if its `[category]` is not `[CharCategory.UNASSIGNED]`.  
 @SinceKotlin("1.5")  
`public expect fun Char.isDefined(): Boolean`  
 Returns `\"true\"` if this character is a letter.  
 A character is considered to be a letter if its `[category]` is `[CharCategory.UPPERCASE_LETTER]`, `[CharCategory.LOWERCASE_LETTER]`, `[CharCategory.TITLECASE_LETTER]`, `[CharCategory.MODIFIER_LETTER]`, or `[CharCategory.OTHER_LETTER]`.  
 @sample  
`samples.text.Chars.isLetter`  
 @SinceKotlin("1.5")  
`public expect fun Char.isLetter(): Boolean`  
 Returns `\"true\"` if this character is a letter or digit.  
 @see `isLetter`  
 @see `isDigit`  
 @sample  
`samples.text.Chars.isLetterOrDigit`  
 @SinceKotlin("1.5")  
`public expect fun Char.isLetterOrDigit(): Boolean`  
 Returns `\"true\"` if this character is a digit.  
 A character is considered to be a digit if its `[category]` is `[CharCategory.DECIMAL_DIGIT_NUMBER]`.  
 @sample  
`samples.text.Chars.isDigit`  
 @SinceKotlin("1.5")  
`public expect fun Char.isDigit(): Boolean`  
 Returns `\"true\"` if this character is upper case.  
 A character is considered to be an upper case character if its `[category]` is `[CharCategory.UPPERCASE_LETTER]`, or it has contributory property `\"Other_Uppercase\"` as defined by the Unicode Standard.  
 @sample  
`samples.text.Chars.isUpperCase`  
 @SinceKotlin("1.5")  
`public expect fun Char.isUpperCase(): Boolean`  
 Returns `\"true\"` if this character is lower case.  
 A character is considered to be a lower case character if its `[category]` is `[CharCategory.LOWERCASE_LETTER]`, or it has contributory property `\"Other_Lowercase\"` as defined by the Unicode Standard.  
 @sample  
`samples.text.Chars.isLowerCase`  
 @SinceKotlin("1.5")  
`public expect fun Char.isLowerCase(): Boolean`  
 Returns `\"true\"` if this character is a title case letter.  
 A character is considered to be a title case letter if its `[category]` is `[CharCategory.TITLECASE_LETTER]`.  
 @sample  
`samples.text.Chars.isTitleCase`  
 @SinceKotlin("1.5")  
`public expect fun Char.isTitleCase(): Boolean`  
 Returns `\"true\"` if this character is an ISO control character.  
 A character is considered to be an ISO control character if its `[category]` is `[CharCategory.CONTROL]`, meaning the Char is in the range `\"'\u0000'..\"'\u001F\"` or in the range `\"'\u007F'..\"'\u009F\"`.  
 @sample  
`samples.text.Chars.isISOControl`  
 @SinceKotlin("1.5")  
`public expect fun Char.isISOControl(): Boolean`  
 Determines whether a character is whitespace according to the Unicode standard.  
 Returns `\"true\"` if the character is whitespace.  
 @sample  
`samples.text.Chars.isWhitespace`  
 @public  
`expect fun Char.isWhitespace(): Boolean`  
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found in the license/LICENSE.txt file.\n \*/\n\npackage kotlin\n\n\n/\*\*\n \* Creates a Char with the specified [code],\n \* or throws an exception if the [code] is out of `Char.MIN\_VALUE.code..Char.MAX\_VALUE.code`.\n \*/\n \* If the\n \* program that calls this function is written in a way that only valid [code] is passed as the argument,\n \* using the\n \* overload that takes a [UShort] argument is preferable (`Char(intValue.toUShort())`).\n \* That overload doesn't check\n \* validity of the argument, and may improve program performance when the function is called routinely inside a\n \* loop.\n \*/\n \* @sample samples.text.Chars.charFromCode\n

```
*/\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun Char(code:
```

```
Int): Char {\n    if (code < Char.MIN_VALUE.code || code > Char.MAX_VALUE.code) {\n        throw\n        IllegalArgumentException("Invalid Char code: $code")\n    }\n    return code.toChar()\n}\n\n/**\n * Creates a Char\n * with the specified [code].\n */\n * @sample samples.text.Chars.charFromCode\n
```

```
*/\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalStdlibApi::class)\n@Suppress("NO_ACTUAL_FOR_EXPECT")\npublic expect fun Char(code: UShort): Char\n\n/**\n * Returns the code of this Char.\n */\n * Code of\n * a Char is the value it was constructed with, and the UTF-16 code unit corresponding to this Char.\n */\n * @sample\n * samples.text.Chars.code\n
```

```
*/\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\n@Suppress("DEPRECATION")\n@kotlin.internal.IntrinsicConstEvaluation\npublic inline val Char.code: Int get() =\n    this.toInt()\n\n/*\n * Copyright 2010-2022 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use\n * of this source code
```

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```
*/\n@file:kotlin.jvm.JvmMultifileClass\n@file:kotlin.jvm.JvmName("SequencesKt")\n\npackage\nkotlin.sequences\n\n\n// NOTE: THIS FILE IS AUTO-GENERATED by the GenerateStandardLib.kt\n// See:\n// https://github.com/JetBrains/kotlin/tree/master/libraries/stdlib\n\nimport kotlin.random.*\n\n/**\n * Returns\n * `true` if [element] is found in the sequence.\n */\n * The operation is _terminal_.\n */\n\npublic operator fun\n<@kotlin.internal.OnlyInputTypes T> Sequence<T>.contains(element: T): Boolean {\n    return indexOf(element)\n    >= 0\n}\n\n/**\n * Returns an element at the given [index] or throws an [IndexOutOfBoundsException] if the\n * [index] is out of bounds of this sequence.\n */\n * The operation is _terminal_.\n */\n * @sample\n * samples.collections.Collections.Elements.elementAt\n */\n\npublic fun <T> Sequence<T>.elementAt(index: Int): T\n{\n    return elementAtOrElse(index) {\n        throw IndexOutOfBoundsException("Sequence\n        doesn't contain element at index $index.")\n    }\n}\n\n/**\n * Returns an element at the given [index] or the result of\n * calling the [defaultValue] function if the [index] is out of bounds of this sequence.\n */\n * The operation is\n * _terminal_.\n */\n * @sample samples.collections.Collections.Elements.elementAtOrElse\n */\n\npublic fun <T>\nSequence<T>.elementAtOrElse(index: Int, defaultValue: (Int) -> T): T {\n    if (index < 0)\n        return\n        defaultValue(index)\n    val iterator = iterator()\n    var count = 0\n    while (iterator.hasNext()) {\n        val element\n        = iterator.next()\n        if (index == count++)\n            return element\n    }\n    return\n    defaultValue(index)\n}\n\n/**\n * Returns an element at the given [index] or `null` if the [index] is out of bounds of\n * this sequence.\n */\n * The operation is _terminal_.\n */\n * @sample\n * samples.collections.Collections.Elements.elementAtOrNull\n */\n\npublic fun <T>\nSequence<T>.elementAtOrNull(index: Int): T? {\n    if (index\n    < 0)\n        return null\n    val iterator = iterator()\n    var count = 0\n    while (iterator.hasNext()) {\n        val\n        element = iterator.next()\n        if (index == count++)\n            return element\n    }\n    return null\n}\n\n/**\n * Returns the first element matching the given [predicate], or `null` if no such element was found.\n */\n * The\n * operation is _terminal_.\n */\n * @sample samples.collections.Collections.Elements.find\n
```

```
*/\n@kotlin.internal.InlineOnly\npublic inline fun <T> Sequence<T>.find(predicate: (T) -> Boolean): T? {\n    return firstOrNull(predicate)\n}\n\n/**\n * Returns the last element matching the given [predicate], or `null` if no\n * such element was found.\n */\n * The operation is _terminal_.\n */\n * @sample\n * samples.collections.Collections.Elements.find\n */\n\n@kotlin.internal.InlineOnly\npublic inline fun <T>\nSequence<T>.findLast(predicate: (T) -> Boolean): T? {\n    return lastOrNull(predicate)\n}\n\n/**\n * Returns the
```

```

first element.\n *\n * The operation
is _terminal_.\n *\n * @throws NoSuchElementException if the sequence is empty.\n *\npublic fun <T>
Sequence<T>.first(): T {\n    val iterator = iterator()\n    if (!iterator.hasNext())\n        throw
NoSuchElementException("Sequence is empty.")\n    return iterator.next()\n}\n\n/**\n * Returns the first element
matching the given [predicate].\n * @throws [NoSuchElementException] if no such element is found.\n *\n * The
operation is _terminal_.\n *\npublic inline fun <T> Sequence<T>.first(predicate: (T) -> Boolean): T {\n    for
(element in this) if (predicate(element)) return element\n    throw NoSuchElementException("Sequence contains no
element matching the predicate.")\n}\n\n/**\n * Returns the first non-null value produced by [transform] function
being applied to elements of this sequence in iteration order,\n * or throws [NoSuchElementException] if no non-
null value was produced.\n *\n * The operation is _terminal_.\n *\n * @sample
samples.collections.Collections.Transformations.firstNotNullOf\n
*\n@SinceKotlin("1.5")\n@kotlin.internal.InlineOnly\npublic inline fun <T, R : Any>
Sequence<T>.firstNotNullOf(transform: (T) -> R?): R {\n    return firstNotNullOfOrNull(transform) ?: throw
NoSuchElementException("No element of the sequence was transformed to a non-null value.")\n}\n\n/**\n *
Returns the first non-null value produced by [transform] function being applied to elements of this sequence in
iteration order,\n * or `null` if no non-null value was produced.\n *\n * The operation is _terminal_.\n *\n *
@sample samples.collections.Collections.Transformations.firstNotNullOf\n
*\n@SinceKotlin("1.5")\n@kotlin.internal.InlineOnly\npublic inline fun <T, R : Any>
Sequence<T>.firstNotNullOfOrNull(transform: (T) -> R?): R? {\n    for (element in this) {\n        val result =
transform(element)\n        if (result != null) {\n            return result\n        }\n    }\n    return null\n}\n\n/**\n *
Returns the first element, or `null` if the
sequence is empty.\n *\n * The operation is _terminal_.\n *\npublic fun <T> Sequence<T>.firstOrNull(): T? {\n    val
iterator = iterator()\n    if (!iterator.hasNext())\n        return null\n    return iterator.next()\n}\n\n/**\n *
Returns the first element matching the given [predicate], or `null` if element was not found.\n *\n * The operation
is _terminal_.\n *\npublic inline fun <T> Sequence<T>.firstOrNull(predicate: (T) -> Boolean): T? {\n    for (element
in this) if (predicate(element)) return element\n    return null\n}\n\n/**\n * Returns first index of [element], or -1
if the sequence does not contain element.\n *\n * The operation is _terminal_.\n *\npublic fun
<@kotlin.internal.OnlyInputTypes T> Sequence<T>.indexOf(element: T): Int {\n    var index = 0\n    for (item in
this) {\n        checkIndexOverflow(index)\n        if (element == item)\n            return index\n        index++\n    }\n    return -1\n}\n\n/**\n * Returns index of the first element matching the given
[predicate], or -1 if the sequence does not contain such element.\n *\n * The operation is _terminal_.\n *\npublic
inline fun <T> Sequence<T>.indexOfFirst(predicate: (T) -> Boolean): Int {\n    var index = 0\n    for (item in this)
{\n        checkIndexOverflow(index)\n        if (predicate(item))\n            return index\n        index++\n    }\n    return
-1\n}\n\n/**\n * Returns index of the last element matching the given [predicate], or -1 if the sequence does not
contain such element.\n *\n * The operation is _terminal_.\n *\npublic inline fun <T>
Sequence<T>.indexOfLast(predicate: (T) -> Boolean): Int {\n    var lastIndex = -1\n    var index = 0\n    for (item
in this) {\n        checkIndexOverflow(index)\n        if (predicate(item))\n            lastIndex = index\n        index++\n
    }\n    return lastIndex\n}\n\n/**\n * Returns the last element.\n *\n * The operation is _terminal_.\n *\n * @throws
NoSuchElementException if the sequence is empty.\n *\n * @sample
samples.collections.Collections.Elements.last\n
*\npublic fun <T> Sequence<T>.last(): T {\n    val iterator = iterator()\n    if (!iterator.hasNext())\n        throw
NoSuchElementException("Sequence is empty.")\n    var last = iterator.next()\n    while (iterator.hasNext())\n
last = iterator.next()\n    return last\n}\n\n/**\n * Returns the last element matching the given [predicate].\n *\n *
The operation is _terminal_.\n *\n * @throws NoSuchElementException if no such element is found.\n *\n * @sample
samples.collections.Collections.Elements.last\n *\npublic inline fun <T> Sequence<T>.last(predicate: (T)
-> Boolean): T {\n    var last: T? = null\n    var found = false\n    for (element in this) {\n        if (predicate(element))
{\n            last = element\n            found = true\n        }\n    }\n    if (!found) throw
NoSuchElementException("Sequence contains no element matching the predicate.")\n}

```

```

@Suppress("UNCHECKED_CAST")\n    return last as T\n}\n\n/**\n * Returns
last index of [element], or -1 if the sequence does not contain element.\n *\n * The operation is _terminal_.\n
*/\npublic fun <@kotlin.internal.OnlyInputTypes T> Sequence<T>.lastIndexOf(element: T): Int {\n    var lastIndex
= -1\n    var index = 0\n    for (item in this) {\n        checkIndexOverflow(index)\n        if (element == item)\n            lastIndex = index\n            index++\n    }\n    return lastIndex\n}\n\n/**\n * Returns the last element, or `null` if the
sequence is empty.\n *\n * The operation is _terminal_.\n *\n * @sample
samples.collections.Collections.Elements.last\n */\npublic fun <T> Sequence<T>.lastOrNull(): T? {\n    val iterator
= iterator()\n    if (!iterator.hasNext())\n        return null\n    var last = iterator.next()\n    while (iterator.hasNext())\n        last = iterator.next()\n    return last\n}\n\n/**\n * Returns the last element matching the given [predicate], or `null`
if no such element was found.\n *\n * The operation is _terminal_.\n *\n * @sample
samples.collections.Collections.Elements.last\n */\npublic inline fun <T>
Sequence<T>.lastOrNull(predicate: (T) -> Boolean): T? {\n    var last: T? = null\n    for (element in this) {\n        if
(predicate(element)) {\n            last = element\n        }\n    }\n    return last\n}\n\n/**\n * Returns the single element,
or throws an exception if the sequence is empty or has more than one element.\n *\n * The operation is _terminal_.\n
*/\npublic fun <T> Sequence<T>.single(): T {\n    val iterator = iterator()\n    if (!iterator.hasNext())\n        throw
NoSuchElementException("Sequence is empty.")\n    val single = iterator.next()\n    if (iterator.hasNext())\n        throw
IllegalArgumentException("Sequence has more than one element.")\n    return single\n}\n\n/**\n * Returns the single element matching the given [predicate], or throws exception if there is no or more than one matching
element.\n *\n * The operation is _terminal_.\n */\npublic inline fun <T> Sequence<T>.single(predicate:
(T) -> Boolean): T {\n    var single: T? = null\n    var found = false\n    for (element in this) {\n        if
(predicate(element)) {\n            if (found) throw IllegalArgumentException("Sequence contains more than one
matching element.")\n            single = element\n            found = true\n        }\n    }\n    if (!found) throw
NoSuchElementException("Sequence contains no element matching the predicate.")\n}\n\n@Suppress("UNCHECKED_CAST")\n    return single as T\n}\n\n/**\n * Returns single element, or `null` if the
sequence is empty or has more than one element.\n *\n * The operation is _terminal_.\n */\npublic fun <T>
Sequence<T>.singleOrNull(): T? {\n    val iterator = iterator()\n    if (!iterator.hasNext())\n        return null\n    val
single = iterator.next()\n    if (iterator.hasNext())\n        return null\n    return single\n}\n\n/**\n * Returns the single
element matching the given [predicate], or `null` if element was not found or more than
one element was found.\n *\n * The operation is _terminal_.\n */\npublic inline fun <T>
Sequence<T>.singleOrNull(predicate: (T) -> Boolean): T? {\n    var single: T? = null\n    var found = false\n    for
(element in this) {\n        if (predicate(element)) {\n            if (found) return null\n            single = element\n
found = true\n        }\n    }\n    if (!found) return null\n    return single\n}\n\n/**\n * Returns a sequence containing
all elements except first [n] elements.\n *\n * The operation is _intermediate_ and _stateless_.\n *\n * @throws
IllegalArgumentException if [n] is negative.\n *\n * @sample
samples.collections.Collections.Transformations.drop\n */\npublic fun <T> Sequence<T>.drop(n: Int):
Sequence<T> {\n    require(n >= 0) { "Requested element count $n is less than zero." }\n    return when {\n        n
== 0 -> this\n        this is DropTakeSequence -> this.drop(n)\n        else -> DropSequence(this, n)\n    }\n}\n\n/**\n * Returns a sequence containing
all elements except first elements that satisfy the given [predicate].\n *\n * The operation is _intermediate_ and
_stateless_.\n *\n * @sample
samples.collections.Collections.Transformations.drop\n */\npublic fun <T>
Sequence<T>.dropWhile(predicate: (T) -> Boolean): Sequence<T> {\n    return DropWhileSequence(this,
predicate)\n}\n\n/**\n * Returns a sequence containing only elements matching the given [predicate].\n *\n * The
operation is _intermediate_ and _stateless_.\n *\n * @sample
samples.collections.Collections.Filtering.filter\n */\npublic fun <T> Sequence<T>.filter(predicate: (T) -> Boolean): Sequence<T> {\n    return
FilteringSequence(this, true, predicate)\n}\n\n/**\n * Returns a sequence containing only elements matching the
given [predicate].\n *\n * @param [predicate] function that takes the index of an element and the element itself\n * and
returns the result of predicate evaluation on the element.\n *\n * The operation is _intermediate_ and _stateless_.\n
*/\n\n

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@sample samples.collections.Collections.Filtering.filterIndexed\n *\npublic fun <T>
Sequence<T>.filterIndexed(predicate: (index: Int, T) -> Boolean): Sequence<T> {\n // TODO: Rewrite with
generalized MapFilterIndexingSequence\n return
TransformingSequence(FilteringSequence(IndexingSequence(this), true, { predicate(it.index, it.value) }), { it.value
})\n}\n\n/**\n * Appends all elements matching the given [predicate] to the given [destination].\n * @param
[predicate] function that takes the index of an element and the element itself\n * and returns the result of predicate
evaluation on the element.\n *\n * The operation is _terminal_.\n *\n * @sample
samples.collections.Collections.Filtering.filterIndexedTo\n *\npublic inline fun <T, C : MutableCollection<in T>>
Sequence<T>.filterIndexedTo(destination: C, predicate: (index: Int, T) -> Boolean): C {\n forEachIndexed {
index, element ->\n if (predicate(index, element)) destination.add(element)\n }\n return
destination\n}\n\n/**\n
* Returns a sequence containing all elements that are instances of specified type parameter R.\n *\n * The operation
is _intermediate_ and _stateless_.\n *\n * @sample samples.collections.Collections.Filtering.filterIsInstance\n
*\npublic inline fun <reified R> Sequence<*>.filterIsInstance(): Sequence<@kotlin.internal.NoInfer R> {\n
@Suppress(\"UNCHECKED_CAST\")\n return filter { it is R } as Sequence<R>\n}\n\n/**\n * Appends all
elements that are instances of specified type parameter R to the given [destination].\n *\n * The operation is
_intermediate_.\n *\n * @sample samples.collections.Collections.Filtering.filterIsInstanceTo\n *\npublic inline fun
<reified R, C : MutableCollection<in R>> Sequence<*>.filterIsInstanceTo(destination: C): C {\n for (element in
this) if (element is R) destination.add(element)\n return destination\n}\n\n/**\n * Returns a sequence containing
all elements not matching the given [predicate].\n *\n * The operation is _intermediate_
and _stateless_.\n *\n * @sample samples.collections.Collections.Filtering.filter\n *\npublic fun <T>
Sequence<T>.filterNot(predicate: (T) -> Boolean): Sequence<T> {\n return FilteringSequence(this, false,
predicate)\n}\n\n/**\n * Returns a sequence containing all elements that are not `null`.\n *\n * The operation is
_intermediate_ and _stateless_.\n *\n * @sample samples.collections.Collections.Filtering.filterNotNull\n
*\npublic fun <T : Any> Sequence<T?>.filterNotNull(): Sequence<T> {\n
@Suppress(\"UNCHECKED_CAST\")\n return filterNot { it == null } as Sequence<T>\n}\n\n/**\n * Appends all
elements that are not `null` to the given [destination].\n *\n * The operation is _terminal_.\n *\n * @sample
samples.collections.Collections.Filtering.filterNotNullTo\n *\npublic fun <C : MutableCollection<in T>, T : Any>
Sequence<T?>.filterNotNullTo(destination: C): C {\n for (element in this) if (element != null)
destination.add(element)\n return destination\n}\n\n/**\n
* Appends all elements not matching the given [predicate] to the given [destination].\n *\n * The operation is
_intermediate_.\n *\n * @sample samples.collections.Collections.Filtering.filterTo\n *\npublic inline fun <T, C :
MutableCollection<in T>> Sequence<T>.filterNotTo(destination: C, predicate: (T) -> Boolean): C {\n for
(element in this) if (!predicate(element)) destination.add(element)\n return destination\n}\n\n/**\n * Appends all
elements matching the given [predicate] to the given [destination].\n *\n * The operation is _terminal_.\n *\n *
@sample samples.collections.Collections.Filtering.filterTo\n *\npublic inline fun <T, C : MutableCollection<in
T>> Sequence<T>.filterTo(destination: C, predicate: (T) -> Boolean): C {\n for (element in this) if
(predicate(element)) destination.add(element)\n return destination\n}\n\n/**\n * Returns a sequence containing
first [n] elements.\n *\n * The operation is _intermediate_ and _stateless_.\n *\n * @throws
IllegalArgumentException
if [n] is negative.\n *\n * @sample samples.collections.Collections.Transformations.take\n *\npublic fun <T>
Sequence<T>.take(n: Int): Sequence<T> {\n require(n >= 0) { \"Requested element count $n is less than zero.\"
}\n return when {\n n == 0 -> emptySequence()\n this is DropTakeSequence -> this.take(n)\n else ->
TakeSequence(this, n)\n }\n}\n\n/**\n * Returns a sequence containing first elements satisfying the given
[predicate].\n *\n * The operation is _intermediate_ and _stateless_.\n *\n * @sample
samples.collections.Collections.Transformations.take\n *\npublic fun <T> Sequence<T>.takeWhile(predicate: (T) -
> Boolean): Sequence<T> {\n return TakeWhileSequence(this, predicate)\n}\n\n/**\n * Returns a sequence that
yields elements of this sequence sorted according to their natural sort order.\n *\n * The sort is _stable_. It means

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that equal elements preserve their order relative to each other after sorting.\n \* \n \* The operation is

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_intermediate_ and _stateful_.\n * \n\npublic fun <T : Comparable<T>> Sequence<T>.sorted(): Sequence<T> {\n
return object : Sequence<T> {\n    override fun iterator(): Iterator<T> {\n        val sortedList =
this@sorted.toMutableList()\n        sortedList.sort()\n        return sortedList.iterator()\n    }\n }\n}\n\n/**\n

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\* Returns a sequence that yields elements of this sequence sorted according to natural sort order of the value returned by specified [selector] function.\n \* \n \* The sort is `_stable_`. It means that equal elements preserve their order relative to each other after sorting.\n \* \n \* The operation is `_intermediate_ and _stateful_`. \n \* \n \* @sample samples.collections.Collections.Sorting.sortedBy\n \* \n\npublic inline fun <T, R : Comparable<R>> Sequence<T>.sortedBy(crossinline selector: (T) -> R?): Sequence<T> {\n return sortedWith(compareBy(selector))\n}\n\n/\*\*\n \* Returns a sequence that yields elements of this sequence sorted descending according to natural sort order of the value returned by specified [selector] function.\n \* \n \* The sort is `_stable_`. It means that equal elements preserve their order relative to each other after sorting.\n \* \n \* The operation is `_intermediate_ and _stateful_`. \n \* \n\npublic inline fun <T, R : Comparable<R>> Sequence<T>.sortedByDescending(crossinline selector: (T) -> R?): Sequence<T> {\n return sortedWith(compareByDescending(selector))\n}\n\n/\*\*\n \* Returns a sequence that yields elements of this sequence sorted descending according to their natural sort order.\n \* \n \* The sort is `_stable_`. It means that equal elements preserve their order relative to each other after sorting.\n \* \n \* The operation is `_intermediate_ and _stateful_`. \n \* \n\npublic fun <T : Comparable<T>> Sequence<T>.sortedDescending(): Sequence<T> {\n return sortedWith(reverseOrder())\n}\n\n/\*\*\n \* Returns a sequence that yields elements of this sequence sorted according to the specified [comparator].\n \* \n \* The sort is `_stable_`. It means that equal elements preserve their order relative to each other after sorting.\n \* \n \* The operation is `_intermediate_ and _stateful_`. \n \* \n\npublic fun <T> Sequence<T>.sortedWith(comparator: Comparator<in T>): Sequence<T> {\n return object : Sequence<T> {\n override fun iterator(): Iterator<T> {\n val sortedList = this@sortedWith.toMutableList()\n sortedList.sortWith(comparator)\n return sortedList.iterator()\n }\n }\n}\n\n/\*\*\n \* Returns a [Map] containing key-value pairs provided by [transform] function\n \* applied to elements of the given sequence.\n \* \n \* If any of two pairs would have the same key the last one gets added to the map.\n \* \n \* The returned map preserves the entry iteration order of the original sequence.\n \* \n \* The operation is `_terminal_`. \n \* \n \* @sample samples.collections.Collections.Transformations.associate\n \* \n\npublic inline fun <T, K, V> Sequence<T>.associate(transform: (T) -> Pair<K, V>): Map<K, V> {\n return associateTo(LinkedHashMap<K, V>(), transform)\n}\n\n/\*\*\n \* Returns a [Map] containing the elements from the given sequence indexed by the key\n \* returned from [keySelector] function applied to each element.\n \* \n \* If any two elements would have the same key returned by [keySelector] the last one gets added to the map.\n \* \n \* The returned map preserves the entry iteration order of the original sequence.\n \* \n \* The operation is `_terminal_`. \n \* \n \* @sample samples.collections.Collections.Transformations.associateBy\n \* \n\npublic inline fun <T, K> Sequence<T>.associateBy(keySelector: (T) -> K): Map<K, T> {\n return associateByTo(LinkedHashMap<K, T>(), keySelector)\n}\n\n/\*\*\n \* Returns a [Map] containing the values provided by [valueTransform] and indexed by [keySelector] functions applied to elements of the given sequence.\n \* \n \* If any two elements would have the same key returned by [keySelector] the last one gets added to the map.\n \* \n \* The returned map preserves the entry iteration order of the original sequence.\n \* \n \* The operation is `_terminal_`. \n \* \n \* @sample samples.collections.Collections.Transformations.associateByWithValueTransform\n \* \n\npublic inline fun <T, K, V> Sequence<T>.associateBy(keySelector: (T) -> K, valueTransform: (T) -> V): Map<K, V> {\n return associateByTo(LinkedHashMap<K, V>(), keySelector, valueTransform)\n}\n\n/\*\*\n \* Populates and returns the [destination] mutable map with key-value pairs,\n \* where key is provided by the [keySelector] function applied to each element of the given sequence\n \* and value is the element itself.\n \* \n \* If any two elements would have the same key returned by [keySelector] the last one gets added to the map.\n \* \n \* The operation is `_terminal_`. \n \* \n \* @sample samples.collections.Collections.Transformations.associateByTo\n \* \n\npublic inline fun <T, K, M : MutableMap<in K, in T>> Sequence<T>.associateByTo(destination: M, keySelector: (T) -> K): M {\n for

(element in this) {\n destination.put(keySelector(element), element)\n }\n return destination\n}\n\n/\*\*\n \* Populates and returns the [destination] mutable map with key-value pairs,\n \* where key is provided by the [keySelector] function and\n \* and value is provided by the [valueTransform] function applied to elements of the given sequence.\n \* \n \* If any two elements would have the same key returned by [keySelector] the last one gets added to the map.\n \* \n \* The operation is \_terminal\_.\n \* \n \* @sample samples.collections.Collections.Transformations.associateByToWithValueTransform\n \*/\npublic inline fun <T, K, V, M : MutableMap<in K, in V>> Sequence<T>.associateByTo(destination: M, keySelector: (T) -> K, valueTransform: (T) -> V): M {\n for (element in this) {\n destination.put(keySelector(element), valueTransform(element))\n }\n return destination\n}\n\n/\*\*\n \* Populates and returns the [destination] mutable map with key-value pairs\n \* provided by [transform] function applied to each element of the given sequence.\n \* \n \* If any of two pairs would have the same key the last one gets added to the map.\n \* \n \* The operation is \_terminal\_.\n \* \n \* @sample samples.collections.Collections.Transformations.associateTo\n \*/\npublic inline fun <T, K, V, M : MutableMap<in K, in V>> Sequence<T>.associateTo(destination: M, transform: (T) -> Pair<K, V>): M {\n for (element in this) {\n destination += transform(element)\n }\n return destination\n}\n\n/\*\*\n \* Returns a [Map] where keys are elements from the given sequence and values are\n \* produced by the [valueSelector] function applied to each element.\n \* \n \* If any two elements are equal, the last one gets added to the map.\n \* \n \* The returned map preserves the entry iteration order of the original sequence.\n \* \n \* The operation is \_terminal\_.\n \* \n \* @sample samples.collections.Collections.Transformations.associateWith\n \*/\n@SinceKotlin("1.3")\npublic inline fun <K, V> Sequence<K>.associateWith(valueSelector: (K) -> V): Map<K, V> {\n val result = LinkedHashMap<K, V>()\n return associateWithTo(result, valueSelector)\n}\n\n/\*\*\n \* Populates and returns the [destination] mutable map with key-value pairs for each element of the given sequence,\n \* where key is the element itself and value is provided by the [valueSelector] function applied to that key.\n \* \n \* If any two elements are equal, the last one overwrites the former value in the map.\n \* \n \* The operation is \_terminal\_.\n \* \n \* @sample samples.collections.Collections.Transformations.associateWithTo\n \*/\n@SinceKotlin("1.3")\npublic inline fun <K, V, M : MutableMap<in K, in V>> Sequence<K>.associateWithTo(destination: M, valueSelector: (K) -> V): M {\n for (element in this) {\n destination.put(element, valueSelector(element))\n }\n return destination\n}\n\n/\*\*\n \* Appends all elements to the given [destination] collection.\n \* \n \* The operation is \_terminal\_.\n \*/\npublic fun <T, C : MutableCollection<in T>> Sequence<T>.toCollection(destination: C): C {\n for (item in this) {\n destination.add(item)\n }\n return destination\n}\n\n/\*\*\n \* Returns a new [HashSet] of all elements.\n \* \n \* The operation is \_terminal\_.\n \*/\npublic fun <T> Sequence<T>.toHashSet(): HashSet<T> {\n return toCollection(HashSet<T>())\n}\n\n/\*\*\n \* Returns a [List] containing all elements.\n \* \n \* The operation is \_terminal\_.\n \*/\npublic fun <T> Sequence<T>.toList(): List<T> {\n return this.toMutableList().optimizeReadOnlyList()\n}\n\n/\*\*\n \* Returns a new [MutableList] filled with all elements of this sequence.\n \* \n \* The operation is \_terminal\_.\n \*/\npublic fun <T> Sequence<T>.toMutableList(): MutableList<T> {\n return toCollection(ArrayList<T>())\n}\n\n/\*\*\n \* Returns a [Set] of all elements.\n \* \n \* The returned set preserves the element iteration order of the original sequence.\n \* \n \* The operation is \_terminal\_.\n \*/\npublic fun <T> Sequence<T>.toSet(): Set<T> {\n return toCollection(LinkedHashSet<T>()).optimizeReadOnlySet()\n}\n\n/\*\*\n \* Returns a single sequence of all elements from results of [transform] function being invoked on each element of original sequence.\n \* \n \* The operation is \_intermediate\_ and \_stateless\_.\n \* \n \* @sample samples.collections.Collections.Transformations.flatMap\n \*/\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@kotlin.jvm.JvmName("flatMapIterable")\npublic fun <T, R> Sequence<T>.flatMap(transform: (T) -> Iterable<R>): Sequence<R> {\n return FlatteningSequence(this, transform, Iterable<R>::iterator)\n}\n\n/\*\*\n \* Returns a single sequence of all elements from results of [transform] function being invoked on each element of original sequence.\n \* \n \* The operation is \_intermediate\_ and

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_stateless_.\n * \n * @sample samples.collections.Collections.Transformations.flatMap\n * \npublic fun <T, R>
Sequence<T>.flatMap(transform:
(T) -> Sequence<R>): Sequence<R> {\n    return FlatteningSequence(this, transform,
Sequence<R>::iterator)\n}\n\n/**\n * Returns a single sequence of all elements yielded from results of [transform]
function being invoked on each element\n * and its index in the original sequence.\n * \n * The operation is
_intermediate_ and _stateless_.\n * \n * @sample
samples.collections.Collections.Transformations.flatMapIndexed\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("flatMapIndexedIterable")\npublic fun <T, R>
Sequence<T>.flatMapIndexed(transform: (index: Int, T) -> Iterable<R>): Sequence<R> {\n    return
flatMapIndexed(this, transform, Iterable<R>::iterator)\n}\n\n/**\n * Returns a single sequence of all elements
yielded from results of [transform] function being invoked on each element\n * and its index in the original
sequence.\n * \n * The operation is _intermediate_
and _stateless_.\n * \n * @sample samples.collections.Collections.Transformations.flatMapIndexed\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("flatMapIndexedSequence")\npublic fun <T, R>
Sequence<T>.flatMapIndexed(transform: (index: Int, T) -> Sequence<R>): Sequence<R> {\n    return
flatMapIndexed(this, transform, Sequence<R>::iterator)\n}\n\n/**\n * Appends all elements yielded from results of
[transform] function being invoked on each element\n * and its index in the original sequence, to the given
[destination].\n * \n * The operation is _terminal_.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("flatMapIndexedIterableTo")\n@kotlin.internal.InlineOnly\npublic
inline fun <T, R, C : MutableCollection<in R>> Sequence<T>.flatMapIndexedTo(destination: C, transform:
(index:
Int, T) -> Iterable<R>): C {\n    var index = 0\n    for (element in this) {\n        val list =
transform(checkIndexOverflow(index++), element)\n        destination.addAll(list)\n    }\n    return
destination\n}\n\n/**\n * Appends all elements yielded from results of [transform] function being invoked on each
element\n * and its index in the original sequence, to the given [destination].\n * \n * The operation is _terminal_.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("flatMapIndexedSequenceTo")\n@kotlin.internal.InlineOnly\npublic
inline fun <T, R, C : MutableCollection<in R>> Sequence<T>.flatMapIndexedTo(destination: C, transform:
(index: Int, T) -> Sequence<R>): C {\n    var index = 0\n    for (element in this) {\n        val list =
transform(checkIndexOverflow(index++), element)\n        destination.addAll(list)\n    }\n    return
destination\n}\n\n/**\n * Appends all elements yielded from results of [transform] function being invoked on each
element of original sequence, to the given
[destination].\n * \n * The operation is _terminal_.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("flatMapIterableTo")\npublic inline fun <T, R, C :
MutableCollection<in R>> Sequence<T>.flatMapTo(destination: C, transform: (T) -> Iterable<R>): C {\n    for
(element in this) {\n        val list = transform(element)\n        destination.addAll(list)\n    }\n    return
destination\n}\n\n/**\n * Appends all elements yielded from results of [transform] function being invoked on each
element of original sequence, to the given [destination].\n * \n * The operation is _terminal_.\n * \npublic inline fun
<T, R, C : MutableCollection<in R>> Sequence<T>.flatMapTo(destination: C, transform: (T) -> Sequence<R>): C
{\n    for (element in this) {\n        val list = transform(element)\n        destination.addAll(list)\n    }\n    return destination\n}\n\n/**\n * Groups elements of the original sequence by
the key returned by the given [keySelector] function\n * applied to each element and returns a map where each
group key is associated with a list of corresponding elements.\n * \n * The returned map preserves the entry iteration
order of the keys produced from the original sequence.\n * \n * The operation is _terminal_.\n * \n * @sample

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samples.collections.Collections.Transformations.groupBy\n *\npublic inline fun <T, K>
Sequence<T>.groupBy(keySelector: (T) -> K): Map<K, List<T>> {\n    return groupByTo(LinkedHashMap<K,
MutableList<T>>(), keySelector)\n}\n\n/**\n * Groups values returned by the [valueTransform] function applied to
each element of the original sequence\n * by the key returned by the given [keySelector] function applied to the
element\n * and returns a map where each group key is associated with a list of corresponding values.\n * \n * The
returned
    map preserves the entry iteration order of the keys produced from the original sequence.\n *\n * The operation is
_terminal_.\n * \n * @sample samples.collections.Collections.Transformations.groupByKeysAndValues\n
*\npublic inline fun <T, K, V> Sequence<T>.groupBy(keySelector: (T) -> K, valueTransform: (T) -> V): Map<K,
List<V>> {\n    return groupByTo(LinkedHashMap<K, MutableList<V>>(), keySelector,
valueTransform)\n}\n\n/**\n * Groups elements of the original sequence by the key returned by the given
[keySelector] function\n * applied to each element and puts to the [destination] map each group key associated with
a list of corresponding elements.\n * \n * @return The [destination] map.\n *\n * The operation is _terminal_.\n * \n
* @sample samples.collections.Collections.Transformations.groupBy\n *\npublic inline fun <T, K, M :
MutableMap<in K, MutableList<T>>> Sequence<T>.groupByTo(destination: M, keySelector: (T) -> K): M {\n
for (element in this) {\n    val key = keySelector(element)\n
    val list = destination.getOrPut(key) { ArrayList<T>() } list.add(element)\n } return
destination}\n}\n\n/**\n * Groups values returned by the [valueTransform] function applied to each element of the
original sequence\n * by the key returned by the given [keySelector] function applied to the element\n * and puts to
the [destination] map each group key associated with a list of corresponding values.\n * \n * @return The
[destination] map.\n *\n * The operation is _terminal_.\n * \n * @sample
samples.collections.Collections.Transformations.groupByKeysAndValues\n *\npublic inline fun <T, K, V, M :
MutableMap<in K, MutableList<V>>> Sequence<T>.groupByTo(destination: M, keySelector: (T) -> K,
valueTransform: (T) -> V): M {\n    for (element in this) {\n        val key = keySelector(element)\n        val list =
destination.getOrPut(key) { ArrayList<V>() } list.add(valueTransform(element))\n    } return
destination}\n}\n\n/**\n * Creates a [Grouping]
source from a sequence to be used later with one of group-and-fold operations\n * using the specified [keySelector]
function to extract a key from each element.\n *\n * The operation is _intermediate_ and _stateless_.\n * \n *
@sample samples.collections.Grouping.groupingByEachCount\n *\n@SinceKotlin("1.1")\npublic inline fun <T,
K> Sequence<T>.groupingBy(crossinline keySelector: (T) -> K): Grouping<T, K> {\n    return object :
Grouping<T, K> {\n        override fun sourceIterator(): Iterator<T> = this@groupingBy.iterator()\n        override fun
keyOf(element: T): K = keySelector(element)\n    }\n}\n\n/**\n * Returns a sequence containing the results of
applying the given [transform] function\n * to each element in the original sequence.\n *\n * The operation is
_intermediate_ and _stateless_.\n * \n * @sample samples.collections.Collections.Transformations.map\n *\npublic
fun <T, R> Sequence<T>.map(transform: (T) -> R): Sequence<R> {\n    return TransformingSequence(this,
transform)\n}\n\n/**\n * Returns a sequence containing the results of applying the given [transform] function\n * to
each element and its index in the original sequence.\n * @param [transform] function that takes the index of an
element and the element itself\n * and returns the result of the transform applied to the element.\n *\n * The
operation is _intermediate_ and _stateless_.\n *\npublic fun <T, R> Sequence<T>.mapIndexed(transform: (index:
Int, T) -> R): Sequence<R> {\n    return TransformingIndexedSequence(this, transform)\n}\n\n/**\n * Returns a
sequence containing only the non-null results of applying the given [transform] function\n * to each element and its
index in the original sequence.\n * @param [transform] function that takes the index of an element and the element
itself\n * and returns the result of the transform applied to the element.\n *\n * The operation is _intermediate_
and _stateless_.\n *\npublic fun <T, R : Any> Sequence<T>.mapIndexedNotNull(transform: (index:
Int, T) -> R?): Sequence<R> {\n    return TransformingIndexedSequence(this,
transform).filterNotNull()\n}\n\n/**\n * Applies the given [transform] function to each element and its index in the
original sequence\n * and appends only the non-null results to the given [destination].\n * @param [transform]
function that takes the index of an element and the element itself\n * and returns the result of the transform applied

```

to the element.

```

    * The operation is _terminal_.
    * public inline fun <T, R : Any, C : MutableCollection<in R>> Sequence<T>.mapIndexedNotNullTo(destination: C, transform: (index: Int, T) -> R?): C {
    *   forEachIndexed { index, element -> transform(index, element)?.let { destination.add(it) } }
    *   return destination
    * }
    * Applies the given [transform] function to each element and its index in the original sequence
    * and appends the results to the given [destination].
    * @param [transform] function that takes the index of an element and the element
    * itself
    * and returns the result of the transform applied to the element.
    * The operation is _terminal_.
    * public inline fun <T, R, C : MutableCollection<in R>> Sequence<T>.mapIndexedTo(destination: C, transform:
    * (index: Int, T) -> R): C {
    *   var index = 0
    *   for (item in this)
    *     destination.add(transform(checkIndexOverflow(index++), item))
    *   return destination
    * }
    * Returns a sequence containing only the non-null results of applying the given [transform] function
    * to each element in the original sequence.
    * The operation is _intermediate_ and _stateless_.
    * @sample
    * samples.collections.Collections.Transformations.mapNotNull
    * public fun <T, R : Any> Sequence<T>.mapNotNull(transform: (T) -> R?): Sequence<R> {
    *   return TransformingSequence(this, transform).filterNotNull()
    * }
    * Applies the given [transform] function to each element in the original sequence
    * and appends only the non-null results to the given [destination].
    * The operation is _terminal_.
    * public inline fun <T, R : Any, C : MutableCollection<in R>> Sequence<T>.mapNotNullTo(destination: C, transform: (T) -> R?): C {
    *   forEach { element -> transform(element)?.let { destination.add(it) } }
    *   return destination
    * }
    * Applies the given [transform] function to each element of the original sequence
    * and appends the results to the given [destination].
    * The operation is _terminal_.
    * public inline fun <T, R, C : MutableCollection<in R>> Sequence<T>.mapTo(destination: C, transform: (T) -> R): C {
    *   for (item in this)
    *     destination.add(transform(item))
    *   return destination
    * }
    * Returns a sequence that wraps each element of the original sequence
    * into an [IndexedValue] containing the index of that element and the element itself.
    * The operation is _intermediate_ and _stateless_.
    * public fun <T> Sequence<T>.withIndex(): Sequence<IndexedValue<T>> {
    *   return IndexingSequence(this)
    * }
    * Returns a sequence containing only distinct elements from the given sequence.
    * Among equal elements of the given sequence, only the first one will be present in the resulting sequence.
    * The elements in the resulting sequence are in the same order as they were in the source sequence.
    * The operation is _intermediate_ and _stateful_.
    * @sample
    * samples.collections.Collections.Transformations.distinctAndDistinctBy
    * public fun <T> Sequence<T>.distinct(): Sequence<T> {
    *   return this.distinctBy { it }
    * }
    * Returns a sequence containing only elements from the given sequence
    * having distinct keys returned by the given [selector] function.
    * Among elements of the given sequence with equal keys, only the first one will be present in the resulting sequence.
    * The elements in the resulting sequence are in the same order as they were in the source sequence.
    * The operation is _intermediate_ and _stateful_.
    * @sample
    * samples.collections.Collections.Transformations.distinctAndDistinctBy
    * public fun <T, K> Sequence<T>.distinctBy(selector: (T) -> K): Sequence<T> {
    *   return DistinctSequence(this, selector)
    * }
    * Returns a new [MutableSet] containing all distinct elements from the given sequence.
    * The returned set preserves the element iteration order of the original sequence.
    * The operation is _terminal_.
    * public fun <T> Sequence<T>.toMutableSet(): MutableSet<T> {
    *   val set = LinkedHashSet<T>()
    *   for (item in this)
    *     set.add(item)
    *   return set
    * }
    * Returns `true` if all elements match the given [predicate].
    * Note that if the sequence contains no elements, the function returns `true`
    * because there are no elements in it that _do not_ match the predicate.
    * See a more detailed explanation of this logic concept in ["Vacuous truth"](https://en.wikipedia.org/wiki/Vacuous_truth) article.
    * The operation is _terminal_.
    * @sample
    * samples.collections.Collections.Aggregates.all
    * public inline fun <T> Sequence<T>.all(predicate: (T) -> Boolean): Boolean {
    *   for (element in this)
    *     if (!predicate(element))
    *       return false
    *   return true
    * }
    * Returns `true` if sequence has at least one element.
    * The operation is _terminal_.
    * @sample
    * samples.collections.Collections.Aggregates.any
    * public fun <T> Sequence<T>.any(): Boolean {
    *   return
  
```

```

iterator().hasNext()\n\n/**\n * Returns `true` if at least one element matches the given [predicate].\n *\n * The operation is _terminal_.\n *\n * @sample samples.collections.Collections.Aggregates.anyWithPredicate\n *\npublic inline fun <T> Sequence<T>.any(predicate: (T) -> Boolean): Boolean {\n    for (element in this) if (predicate(element)) return true\n    return false\n}\n\n/**\n * Returns the number of elements in this sequence.\n *\n * The operation is _terminal_.\n *\npublic fun <T> Sequence<T>.count(): Int {\n    var count = 0\n    for (element in this) checkCountOverflow(++count)\n    return count\n}\n\n/**\n * Returns the number of elements matching the given [predicate].\n *\n * The operation is _terminal_.\n *\npublic inline fun <T> Sequence<T>.count(predicate: (T) -> Boolean): Int {\n    var count = 0\n    for (element in this) if (predicate(element)) checkCountOverflow(++count)\n    return count\n}\n\n/**\n * Accumulates value starting with [initial] value and applying [operation] from left to right\n * to current accumulator value and each element.\n *\n * Returns the specified [initial] value if the sequence is empty.\n *\n * @param [operation] function that takes current accumulator value and an element, and calculates the next accumulator value.\n *\n * The operation is _terminal_.\n *\npublic inline fun <T, R> Sequence<T>.fold(initial: R, operation: (acc: R, T) -> R): R {\n    var accumulator = initial\n    for (element in this) accumulator = operation(accumulator, element)\n    return accumulator\n}\n\n/**\n * Accumulates value starting with [initial] value and applying [operation] from left to right\n * to current accumulator value and each element with its index in the original sequence.\n *\n * Returns the specified [initial] value if the sequence is empty.\n *\n * @param [operation] function that takes the index of an element, current accumulator value\n * and the element itself, and calculates the next accumulator value.\n *\n * The operation is _terminal_.\n *\npublic inline fun <T, R> Sequence<T>.foldIndexed(initial: R, operation: (index: Int, acc: R, T) -> R): R {\n    var index = 0\n    var accumulator = initial\n    for (element in this) accumulator = operation(checkIndexOverflow(index++), accumulator, element)\n    return accumulator\n}\n\n/**\n * Performs the given [action] on each element.\n *\n * The operation is _terminal_.\n *\npublic inline fun <T> Sequence<T>.forEach(action: (T) -> Unit): Unit {\n    for (element in this) action(element)\n}\n\n/**\n * Performs the given [action] on each element, providing sequential index with the element.\n *\n * @param [action] function that takes the index of an element and the element itself\n * and performs the action on the element.\n *\n * The operation is _terminal_.\n *\npublic inline fun <T> Sequence<T>.forEachIndexed(action: (index: Int, T) -> Unit): Unit {\n    var index = 0\n    for (item in this) action(checkIndexOverflow(index++), item)\n}\n\n/**\n * Returns the largest element.\n *\n * If any of elements is `NaN` returns `NaN`.\n *\n * The operation is _terminal_.\n *\n * @throws NoSuchElementException if the sequence is empty.\n *\n * @since Kotlin("1.7")\n * @kotlin.jvm.JvmName("maxOrThrow")\n * @Suppress("CONFLICTING_OVERLOADS")\npublic fun Sequence<Double>.max(): Double {\n    val iterator = iterator()\n    if (!iterator.hasNext()) throw NoSuchElementException()\n    var max = iterator.next()\n    while (iterator.hasNext()) {\n        val e = iterator.next()\n        max = maxOf(max, e)\n    }\n    return max\n}\n\n/**\n * Returns the largest element.\n *\n * If any of elements is `NaN` returns `NaN`.\n *\n * The operation is _terminal_.\n *\n * @throws NoSuchElementException if the sequence is empty.\n *\n * @since Kotlin("1.7")\n * @kotlin.jvm.JvmName("maxOrThrow")\n * @Suppress("CONFLICTING_OVERLOADS")\npublic fun Sequence<Float>.max(): Float {\n    val iterator = iterator()\n    if (!iterator.hasNext()) throw NoSuchElementException()\n    var max = iterator.next()\n    while (iterator.hasNext()) {\n        val e = iterator.next()\n        max = maxOf(max, e)\n    }\n    return max\n}\n\n/**\n * Returns the largest element.\n *\n * The operation is _terminal_.\n *\n * @throws NoSuchElementException if the sequence is empty.\n *\n * @since Kotlin("1.7")\n * @kotlin.jvm.JvmName("maxOrThrow")\n * @Suppress("CONFLICTING_OVERLOADS")\npublic fun <T : Comparable<T>> Sequence<T>.max(): T {\n    val iterator = iterator()\n    if (!iterator.hasNext()) throw NoSuchElementException()\n    var max = iterator.next()\n    while (iterator.hasNext()) {\n        val e = iterator.next()\n        if (max < e) max = e\n    }\n    return max\n}\n\n/**\n * Returns the first element yielding the largest value of the given function.\n *\n * The operation is _terminal_.\n *\n * @throws NoSuchElementException if the sequence is empty.\n *\n * @sample samples.collections.Collections.Aggregates.maxBy\n *\n * @since Kotlin("1.7")\n * @kotlin.jvm.JvmName("maxByOrThrow")\n * @Suppress("CONFLICTING_OVERL

```

```

OADS")\npublic inline fun <T, R : Comparable<R>> Sequence<T>.maxBy(selector: (T) -> R): T {\n    val iterator
= iterator()\n    if (!iterator.hasNext()) throw NoSuchElementException()\n    var maxElem = iterator.next()\n    if
(!iterator.hasNext()) return maxElem\n    var maxValue = selector(maxElem)\n    do {\n        val e = iterator.next()\n
        val v = selector(e)\n        if (maxValue < v) {\n            maxElem = e\n            maxValue = v\n        }\n    } while
(iterator.hasNext())\n
    return maxElem\n}\n\n/**\n * Returns the first element yielding the largest value of the given function or `null` if
there are no elements.\n * \n * The operation is _terminal_.\n * \n * @sample
samples.collections.Collections.Aggregates.maxByOrNull\n */\n\n@SinceKotlin("1.4")\npublic inline fun <T, R :
Comparable<R>> Sequence<T>.maxByOrNull(selector: (T) -> R): T? {\n    val iterator = iterator()\n    if
(!iterator.hasNext()) return null\n    var maxElem = iterator.next()\n    if (!iterator.hasNext()) return maxElem\n    var
maxValue = selector(maxElem)\n    do {\n        val e = iterator.next()\n        val v = selector(e)\n        if (maxValue <
v) {\n            maxElem = e\n            maxValue = v\n        }\n    } while (iterator.hasNext())\n    return
maxElem\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to
each element in the sequence.\n * \n * If any of values produced by [selector] function is `NaN`, the returned
result is `NaN`.\n * \n * The operation is _terminal_.\n * \n * @throws NoSuchElementException if the sequence is
empty.\n */\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T> Sequence<T>.maxOf(selector: (T) ->
Double): Double {\n    val iterator = iterator()\n    if (!iterator.hasNext()) throw NoSuchElementException()\n    var
maxValue = selector(iterator.next())\n    while (iterator.hasNext()) {\n        val v = selector(iterator.next())\n
maxValue = maxOf(maxValue, v)\n    }\n    return maxValue\n}\n\n/**\n * Returns the largest value among all
values produced by [selector] function\n * applied to each element in the sequence.\n * \n * If any of values
produced by [selector] function is `NaN`, the returned result is `NaN`.\n * \n * The operation is _terminal_.\n * \n *
@throws NoSuchElementException if the sequence is empty.\n */\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic
inline fun <T> Sequence<T>.maxOf(selector: (T) -> Float): Float {\n    val iterator = iterator()\n    if
(!iterator.hasNext()) throw NoSuchElementException()\n    var maxValue = selector(iterator.next())\n    while
(iterator.hasNext()) {\n        val v = selector(iterator.next())\n        maxValue = maxOf(maxValue, v)\n    }\n    return
maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to
each element in the sequence.\n * \n * The operation is _terminal_.\n * \n * @throws NoSuchElementException if
the sequence is empty.\n */\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T, R : Comparable<R>>
Sequence<T>.maxOf(selector: (T) -> R): R {\n    val iterator = iterator()\n
    if (!iterator.hasNext()) throw NoSuchElementException()\n    var maxValue = selector(iterator.next())\n    while
(iterator.hasNext()) {\n        val v = selector(iterator.next())\n        if (maxValue < v) {\n            maxValue = v\n
        }\n    }\n    return maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector]
function\n * applied to each element in the sequence or `null` if there are no elements.\n * \n * If any of values
produced by [selector] function is `NaN`, the returned result is `NaN`.\n * \n * The operation is _terminal_.\n */\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T> Sequence<T>.maxOfOrNull(selector:
(T) -> Double): Double? {\n    val iterator = iterator()\n    if (!iterator.hasNext()) return null\n    var maxValue =
selector(iterator.next())\n    while (iterator.hasNext()) {\n        val v = selector(iterator.next())\n
maxValue = maxOf(maxValue, v)\n    }\n    return maxValue\n}\n\n/**\n * Returns the largest value among all
values produced by [selector] function\n * applied to each element in the sequence or `null` if there are no
elements.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n * \n * The
operation is _terminal_.\n */

```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T> Sequence<T>.maxOrNull(selector:\n(T) -> Float): Float? {\n    val iterator = iterator()\n    if (!iterator.hasNext()) return null\n    var max = selector(iterator.next())\n    while (iterator.hasNext()) {\n        val v = selector(iterator.next())\n        max =\n        maxOf(max, v)\n    }\n    return max\n}\n\n/**\n * Returns the largest value among all values produced\n * by [selector] function\n * applied to each
```

```
element in the sequence or `null` if there are no elements.\n * The operation is _terminal_.
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T, R : Comparable<R>>\nSequence<T>.maxOrNull(selector: (T) -> R): R? {\n    val iterator = iterator()\n    if (!iterator.hasNext()) return\n    null\n    var max = selector(iterator.next())\n    while (iterator.hasNext()) {\n        val v =\n        selector(iterator.next())\n        if (max < v) {\n            max = v\n        }\n    }\n    return\n    max\n}\n\n/**\n * Returns the largest value according to the provided [comparator]\n * among all values\n * produced by [selector] function applied to each element in the sequence.\n * @throws
```

```
NoSuchElementException if the sequence is empty.\n * The operation is _terminal_.
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic
```

```
inline fun <T, R> Sequence<T>.maxWith(comparator: Comparator<in R>, selector: (T) -> R): R {\n    val\n    iterator = iterator()\n    if (!iterator.hasNext()) throw NoSuchElementException()\n    var max =\n    selector(iterator.next())\n    while (iterator.hasNext()) {\n        val v = selector(iterator.next())\n        if\n        (comparator.compare(max, v) < 0) {\n            max = v\n        }\n    }\n    return max\n}\n\n/**\n * Returns the largest value according to the provided [comparator]\n * among all values produced by [selector]\n * function applied to each element in the sequence or `null` if there are no elements.\n * The operation is\n * _terminal_.
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T, R>
```

```
Sequence<T>.maxWithOrNull(comparator: Comparator<in R>, selector:
```

```
(T) -> R): R? {\n    val iterator = iterator()\n    if (!iterator.hasNext()) return null\n    var max =\n    selector(iterator.next())\n    while (iterator.hasNext()) {\n        val v = selector(iterator.next())\n        if\n        (comparator.compare(max, v) < 0) {\n            max = v\n        }\n    }\n    return max\n}\n\n/**\n * Returns the largest element or `null` if there are no elements.\n * If any of elements is `NaN` returns `NaN`.\n * The operation is _terminal_.
```

```
*\n@SinceKotlin("1.4")\npublic\nDouble? {\n    val iterator = iterator()\n    if (!iterator.hasNext()) return null\n    var max = iterator.next()\n    while\n    (iterator.hasNext()) {\n        val e = iterator.next()\n        max = maxOf(max, e)\n    }\n    return max\n}\n\n/**\n * Returns the largest element or `null` if there are no elements.\n * If any of elements is `NaN` returns `NaN`.\n * The operation is _terminal_.
```

```
*\n@SinceKotlin("1.4")\npublic\nfun Sequence<Float>.maxOrNull(): Float? {\n    val iterator = iterator()\n    if (!iterator.hasNext()) return null\n    var max = iterator.next()\n    while (iterator.hasNext()) {\n        val e = iterator.next()\n        max = maxOf(max, e)\n    }\n    return max\n}\n\n/**\n * Returns the largest element or `null` if there are no elements.\n * The operation
```

```
is _terminal_.
```

```
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxWithOrThrow")\n@Suppress("CONFLICTING_OVERLOADS")\npublic
```

```
fun <T> Sequence<T>.maxWith(comparator: Comparator<in T>): T {\n    val iterator = iterator()\n    if\n    (!iterator.hasNext()) throw NoSuchElementException()\n    var max = iterator.next()\n    while (iterator.hasNext())
```



```

{\n    val e = iterator.next()\n    if (comparator.compare(max, e) < 0) max = e\n } \n return max\n}\n\n/**\n * Returns the first element having the largest value according to the provided [comparator] or `null` if there are no elements.\n *\n * The operation is _terminal_.\n */\n@SinceKotlin("1.4")\npublic fun <T> Sequence<T>.maxWithOrNull(comparator: Comparator<in T>): T? {\n    val iterator = iterator()\n    if (!iterator.hasNext()) return null\n    var max = iterator.next()\n    while (iterator.hasNext()) {\n        val e = iterator.next()\n        if (comparator.compare(max, e) < 0) max = e\n    }\n    return max\n}\n\n/**\n * Returns the smallest element.\n *\n * If any of elements is `NaN` returns `NaN`.\n *\n * The operation is _terminal_.\n *\n * @throws NoSuchElementException if the sequence is empty.\n */\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minOrThrow")\n@Suppress("CONFLICTING_OVERLOADS")\npublic fun Sequence<Double>.min(): Double {\n    val iterator = iterator()\n    if (!iterator.hasNext()) throw NoSuchElementException()\n    var min = iterator.next()\n    while (iterator.hasNext()) {\n        val e = iterator.next()\n        min = minOf(min, e)\n    }\n    return min\n}\n\n/**\n * Returns the smallest element.\n *\n * If any of elements is `NaN` returns `NaN`.\n *\n * The operation is _terminal_.\n *\n * @throws NoSuchElementException if the sequence is empty.\n */\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minOrThrow")\n@Suppress("CONFLICTING_OVERLOADS")\npublic fun Sequence<Float>.min(): Float {\n    val iterator = iterator()\n    if (!iterator.hasNext()) throw NoSuchElementException()\n    var min = iterator.next()\n    while (iterator.hasNext()) {\n        val e = iterator.next()\n        min = minOf(min, e)\n    }\n    return min\n}\n\n/**\n * Returns the smallest element.\n *\n * The operation is _terminal_.\n *\n * @throws NoSuchElementException if the sequence is empty.\n */\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minOrThrow")\n@Suppress("CONFLICTING_OVERLOADS")\npublic fun <T : Comparable<T>> Sequence<T>.min(): T {\n    val iterator = iterator()\n    if (!iterator.hasNext()) throw NoSuchElementException()\n    var min = iterator.next()\n    while (iterator.hasNext()) {\n        val e = iterator.next()\n        if (min > e) min = e\n    }\n    return min\n}\n\n/**\n * Returns the first element yielding the smallest value of the given function.\n *\n * The operation is _terminal_.\n *\n * @throws NoSuchElementException if the sequence is empty.\n *\n * @sample samples.collections.Collections.Aggregates.minBy\n */\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minByOrThrow")\n@Suppress("CONFLICTING_OVERLOADS")\npublic inline fun <T, R : Comparable<R>> Sequence<T>.minBy(selector: (T) -> R): T {\n    val iterator = iterator()\n    if (!iterator.hasNext()) throw NoSuchElementException()\n    var minElem = iterator.next()\n    if (!iterator.hasNext()) return minElem\n    var minValue = selector(minElem)\n    do {\n        val e = iterator.next()\n        val v = selector(e)\n        if (minValue > v) {\n            minElem = e\n            minValue = v\n        }\n    } while (iterator.hasNext())\n    return minElem\n}\n\n/**\n * Returns the first element yielding the smallest value of the given function or `null` if there are no elements.\n *\n * The operation is _terminal_.\n *\n * @sample samples.collections.Collections.Aggregates.minByOrNull\n */\n@SinceKotlin("1.4")\npublic inline fun <T, R : Comparable<R>> Sequence<T>.minByOrNull(selector: (T) -> R): T? {\n    val iterator = iterator()\n    if (!iterator.hasNext()) return null\n    var minElem = iterator.next()\n    if (!iterator.hasNext()) return minElem\n    var minValue = selector(minElem)\n    do {\n        val e = iterator.next()\n        val v = selector(e)\n        if (minValue > v) {\n            minElem = e\n            minValue = v\n        }\n    } while (iterator.hasNext())\n    return minElem\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n * applied to each element in the sequence.\n *\n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n *\n * The operation is _terminal_.\n *\n * @throws NoSuchElementException if the sequence is empty.\n */\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T> Sequence<T>.minOf(selector: (T) -> Double): Double {\n    val iterator = iterator()\n    if (!iterator.hasNext()) throw NoSuchElementException()\n    var minValue = selector(iterator.next())\n    while (iterator.hasNext()) {\n        val

```

v = selector(iterator.next())\n minValue = minOf(minValue, v)\n }\n return minValue\n}\n\n/\*\*\n \* Returns the smallest value among all values produced by [selector] function\n \* applied to each element in the sequence.\n \* \n \* If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n \* \n \* The operation is \_terminal\_.\n \* \n \* @throws NoSuchElementException if the sequence is empty.\n

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T> Sequence<T>.minOf(selector: (T) -> Float): Float {\n    val iterator = iterator()\n    if (!iterator.hasNext()) throw NoSuchElementException()\n    var\n    minValue = selector(iterator.next())\n    while (iterator.hasNext()) {\n        val v = selector(iterator.next())\n        minValue = minOf(minValue, v)\n    }\n    return minValue\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n * applied to each element in the sequence.\n * \n * The operation is _terminal_.\n * \n * @throws NoSuchElementException if the sequence is empty.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T, R : Comparable<R>> Sequence<T>.minOf(selector: (T) -> R): R {\n    val iterator = iterator()\n    if (!iterator.hasNext()) throw\n    NoSuchElementException()\n    var minValue = selector(iterator.next())\n    while (iterator.hasNext()) {\n        val v\n        = selector(iterator.next())\n        if (minValue > v) {\n            minValue = v\n        }\n    }\n    return\n    minValue\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n * applied to each element in the sequence or `null` if there are no elements.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is
```

`NaN`.\n \* \n \* The operation is \_terminal\_.\n

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T> Sequence<T>.minOfOrNull(selector: (T) -> Double): Double? {\n    val iterator = iterator()\n    if (!iterator.hasNext()) return null\n    var minValue =\n    selector(iterator.next())\n    while (iterator.hasNext()) {\n        val v = selector(iterator.next())\n        minValue =\n        minOf(minValue, v)\n    }\n    return minValue\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n * applied to each element in the sequence or `null` if there are no elements.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n * \n * The operation is _terminal_.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic\n    inline fun <T> Sequence<T>.minOfOrNull(selector: (T) -> Float): Float? {\n        val iterator = iterator()\n        if\n        (!iterator.hasNext()) return null\n        var minValue = selector(iterator.next())\n        while (iterator.hasNext()) {\n            val\n            v = selector(iterator.next())\n            minValue = minOf(minValue, v)\n        }\n        return minValue\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n * applied to each element in the sequence or `null` if there are no elements.\n * \n * The operation is _terminal_.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T, R : Comparable<R>> Sequence<T>.minOfOrNull(selector: (T) -> R): R? {\n    val iterator = iterator()\n    if (!iterator.hasNext()) return\n    null\n    var minValue = selector(iterator.next())\n    while (iterator.hasNext()) {\n        val v =\n        selector(iterator.next())\n
```

```
        if (minValue > v) {\n            minValue = v\n        }\n    }\n    return minValue\n}\n\n/**\n * Returns the smallest value according to the provided [comparator]\n * among all values produced by [selector] function applied to each element in the sequence.\n * \n * @throws NoSuchElementException if the sequence is empty.\n * \n * The operation is _terminal_.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T, R>
```

```
Sequence<T>.minOfWith(comparator: Comparator<in R>, selector: (T) -> R): R {\n    val iterator = iterator()\n    if\n    (!iterator.hasNext()) throw NoSuchElementException()\n    var minValue = selector(iterator.next())\n    while\n    (iterator.hasNext()) {\n        val v = selector(iterator.next())\n        if (comparator.compare(minValue, v) > 0) {\n
```

```

    minValue = v\n    }\n    }\n    return minValue\n}\n}\n * Returns the smallest
value according to the provided [comparator]\n * among all values produced by [selector] function applied to each
element in the sequence or `null` if there are no elements.\n * The operation is _terminal_.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T, R>
Sequence<T>.minOfWithOrNull(comparator: Comparator<in R>, selector: (T) -> R): R? {\n    val iterator =
iterator()\n    if (!iterator.hasNext()) return null\n    var minValue = selector(iterator.next())\n    while
(iterator.hasNext()) {\n        val v = selector(iterator.next())\n        if (comparator.compare(minValue, v) > 0) {\n
minValue = v\n        }\n    }\n    return minValue\n}\n}\n * Returns the smallest element or `null` if there are
no elements.\n * If any of elements is `NaN` returns `NaN`.\n * The operation is _terminal_.\n
*\n@SinceKotlin("1.4")\npublic
fun Sequence<Double>.minOrNull(): Double? {\n    val iterator = iterator()\n    if (!iterator.hasNext()) return null\n
var min = iterator.next()\n    while (iterator.hasNext()) {\n        val e = iterator.next()\n        min = minOf(min, e)\n
}\n    return min\n}\n}\n * Returns the smallest element or `null` if there are no elements.\n * If any of
elements is `NaN` returns `NaN`.\n * The operation is _terminal_.\n *\n@SinceKotlin("1.4")\npublic fun
Sequence<Float>.minOrNull(): Float? {\n    val iterator = iterator()\n    if (!iterator.hasNext()) return null\n    var
min = iterator.next()\n    while (iterator.hasNext()) {\n        val e = iterator.next()\n        min = minOf(min, e)\n
}\n    return min\n}\n}\n * Returns the smallest element or `null` if there are no elements.\n * The operation is
_terminal_.\n *\n@SinceKotlin("1.4")\npublic fun <T : Comparable<T>> Sequence<T>.minOrNull(): T? {\n
val iterator = iterator()\n    if (!iterator.hasNext())
return null\n    var min = iterator.next()\n    while (iterator.hasNext()) {\n        val e = iterator.next()\n        if (min >
e) min = e\n    }\n    return min\n}\n}\n * Returns the first element having the smallest value according to the
provided [comparator].\n * The operation is _terminal_.\n * @throws NoSuchElementException if the
sequence is empty.\n
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minWithOrThrow")\n@Suppress("CONFLICTING_OVERLOADS")\npublic fun <T> Sequence<T>.minWith(comparator: Comparator<in T>): T {\n    val iterator =
iterator()\n    if (!iterator.hasNext()) throw NoSuchElementException()\n    var min = iterator.next()\n    while
(iterator.hasNext()) {\n        val e = iterator.next()\n        if (comparator.compare(min, e) > 0) min = e\n    }\n    return
min\n}\n}\n * Returns the first element having the smallest value according to the provided [comparator] or
`null` if there are no elements.\n * The operation is _terminal_.\n
*\n@SinceKotlin("1.4")\npublic fun <T> Sequence<T>.minWithOrNull(comparator: Comparator<in T>): T? {\n
val iterator = iterator()\n    if (!iterator.hasNext()) return null\n    var min = iterator.next()\n    while
(iterator.hasNext()) {\n        val e = iterator.next()\n        if (comparator.compare(min, e) > 0) min = e\n    }\n    return
min\n}\n}\n * Returns `true` if the sequence has no elements.\n * The operation is _terminal_.\n *
@sample samples.collections.Collections.Aggregates.none\n *\n@SinceKotlin("1.4")\npublic fun <T> Sequence<T>.none(): Boolean {\n
return !iterator().hasNext()\n}\n}\n * Returns `true` if no elements match the given [predicate].\n * The
operation is _terminal_.\n *
@sample samples.collections.Collections.Aggregates.noneWithPredicate\n
*\n@SinceKotlin("1.4")\npublic inline fun <T> Sequence<T>.none(predicate: (T) -> Boolean): Boolean {\n    for (element in this) if
(predicate(element)) return false\n    return true\n}\n}\n * Returns a sequence which performs
the given [action] on each element of the original sequence as they pass through it.\n * The operation is
_intermediate_ and _stateless_.\n *\n@SinceKotlin("1.1")\npublic fun <T> Sequence<T>.onEach(action: (T) ->
Unit): Sequence<T> {\n    return map {\n        action(it)\n        it\n    }\n}\n}\n * Returns a sequence which
performs the given [action] on each element of the original sequence as they pass through it.\n * @param [action]
function that takes the index of an element and the element itself\n * and performs the action on the element.\n *
The operation is _intermediate_ and _stateless_.\n *\n@SinceKotlin("1.4")\npublic fun <T>
Sequence<T>.onEachIndexed(action: (index: Int, T) -> Unit): Sequence<T> {\n    return mapIndexed { index,
element ->\n        action(index, element)\n        element\n    }\n}\n}\n * Accumulates value starting with the first
element and applying [operation] from left to right\n * to current accumulator value and each element.\n

```

\* \n \* Throws an exception if this sequence is empty. If the sequence can be empty in an expected way, \n \* please use [reduceOrNull] instead. It returns `null` when its receiver is empty. \n \* \n \* @param [operation] function that takes current accumulator value and an element, \n \* and calculates the next accumulator value. \n \* \n \* The operation is \_terminal\_ \n \* \n \* @sample samples.collections.Collections.Aggregates.reduce \n \* \n public inline fun <S, T : S> Sequence<T>.reduce(operation: (acc: S, T) -> S): S { \n val iterator = this.iterator() \n if (!iterator.hasNext()) throw UnsupportedOperationException("Empty sequence can't be reduced.") \n var accumulator: S = iterator.next() \n while (iterator.hasNext()) { \n accumulator = operation(accumulator, iterator.next()) \n } \n return accumulator \n } \n \n /\*\* \n \* Accumulates value starting with the first element and applying [operation] from left to right \n \* to current accumulator value and each element with its index in the original sequence. \n \* \n \* Throws an exception if this sequence is empty. If the sequence can be empty in an expected way, \n \* please use [reduceIndexedOrNull] instead. It returns `null` when its receiver is empty. \n \* \n \* @param [operation] function that takes the index of an element, current accumulator value and the element itself, \n \* and calculates the next accumulator value. \n \* \n \* The operation is \_terminal\_ \n \* \n \* @sample samples.collections.Collections.Aggregates.reduce \n \* \n public inline fun <S, T : S> Sequence<T>.reduceIndexed(operation: (index: Int, acc: S, T) -> S): S { \n val iterator = this.iterator() \n if (!iterator.hasNext()) throw UnsupportedOperationException("Empty sequence can't be reduced.") \n var index = 1 \n var accumulator: S = iterator.next() \n while (iterator.hasNext()) { \n accumulator = operation(checkIndexOverflow(index++), accumulator, iterator.next()) \n } \n return accumulator \n } \n \n /\*\* \n \* Accumulates value starting with the first element and applying [operation] from left to right \n \* to current accumulator value and each element with its index in the original sequence. \n \* \n \* Returns `null` if the sequence is empty. \n \* \n \* @param [operation] function that takes the index of an element, current accumulator value and the element itself, \n \* and calculates the next accumulator value. \n \* \n \* The operation is \_terminal\_ \n \* \n \* @sample samples.collections.Collections.Aggregates.reduceOrNull \n \* \n @SinceKotlin("1.4") \n public inline fun <S, T : S> Sequence<T>.reduceIndexedOrNull(operation: (index: Int, acc: S, T) -> S): S? { \n val iterator = this.iterator() \n if (!iterator.hasNext()) return null \n var index = 1 \n var accumulator: S = iterator.next() \n while (iterator.hasNext()) { \n accumulator = operation(checkIndexOverflow(index++), accumulator, iterator.next()) \n } \n return accumulator \n } \n \n /\*\* \n \* Accumulates value starting with the first element and applying [operation] from left to right \n \* to current accumulator value and each element. \n \* \n \* Returns `null` if the sequence is empty. \n \* \n \* @param [operation] function that takes current accumulator value and an element, \n \* and calculates the next accumulator value. \n \* \n \* The operation is \_terminal\_ \n \* \n \* @sample samples.collections.Collections.Aggregates.reduceOrNull \n \* \n @SinceKotlin("1.4") \n @WasExperimental(ExperimentalStdlibApi::class) \n public inline fun <S, T : S> Sequence<T>.reduceOrNull(operation: (acc: S, T) -> S): S? { \n val iterator = this.iterator() \n if (!iterator.hasNext()) return null \n var accumulator: S = iterator.next() \n while (iterator.hasNext()) { \n accumulator = operation(accumulator, iterator.next()) \n } \n return accumulator \n } \n \n /\*\* \n \* Returns a sequence containing successive accumulation values generated by applying [operation] from left to right \n \* to each element and current accumulator value that starts with [initial] value. \n \* \n \* Note that `acc` value passed to [operation] function should not be mutated; \n \* otherwise it would affect the previous value in resulting sequence. \n \* The [initial] value should also be immutable (or should not be mutated) \n \* as it may be passed to [operation] function later because of sequence's lazy nature. \n \* \n \* @param [operation] function that takes current accumulator value and an element, and calculates the next accumulator value. \n \* \n \* The operation is \_intermediate\_ and \_stateless\_ \n \* \n \* @sample samples.collections.Collections.Aggregates.runningFold \n \* \n @SinceKotlin("1.4") \n public fun <T, R> Sequence<T>.runningFold(initial: R, operation: (acc: R, T) -> R): Sequence<R> { \n return sequence { \n yield(initial) \n var accumulator = initial \n for (element in this@runningFold) { \n accumulator = operation(accumulator, element) \n yield(accumulator) \n } \n } \n } \n \n /\*\* \n \* Returns a sequence containing successive

accumulation values generated by applying [operation] from left to right to each element, its index in the original sequence and current accumulator value that starts with [initial] value. Note that `acc` value passed to [operation] function should not be mutated; otherwise it would affect the previous value in resulting sequence. The [initial] value should also be immutable (or should not be mutated) as it may be passed to [operation] function later because of sequence's lazy nature.

@param [operation] function that takes the index of an element, current accumulator value and the element itself, and calculates the next accumulator value. The operation is `_intermediate_` and `_stateless_`.

@sample

```

samples.collections.Collections.Aggregates.runningFold
*/@SinceKotlin("1.4")
public fun <T, R>
Sequence<T>.runningFoldIndexed(initial: R, operation: (index: Int, acc: R, T) -> R): Sequence<R> {
    return sequence {
        yield(initial)
        var index = 0
        var accumulator = initial
        for (element in this@runningFoldIndexed) {
            accumulator = operation(checkIndexOverflow(index++), accumulator, element)
        }
        yield(accumulator)
    }
}

```

Returns a sequence containing successive accumulation values generated by applying [operation] from left to right to each element and current accumulator value that starts with the first element of this sequence. Note that `acc` value passed to [operation] function should not be mutated; otherwise it would affect the previous value in resulting sequence.

@param [operation] function that takes current accumulator value and the element, and calculates the next accumulator value. The operation is `_intermediate_` and `_stateless_`.

@sample

```

samples.collections.Collections.Aggregates.runningReduce
*/@SinceKotlin("1.4")
@WasExperimental(ExperimentalStdlibApi::class)
public fun <S, T : S> Sequence<T>.runningReduce(operation: (acc: S, T) -> S): Sequence<S> {
    return sequence {
        val iterator = iterator()
        if (iterator.hasNext()) {
            var accumulator: S = iterator.next()
        }
        yield(accumulator)
        while (iterator.hasNext()) {
            accumulator = operation(accumulator, iterator.next())
            yield(accumulator)
        }
    }
}

```

Returns a sequence containing successive accumulation values generated by applying [operation] from left to right to each element, its index in the original sequence and current accumulator value that starts with the first element of this sequence. Note that `acc` value passed to [operation] function should not be mutated; otherwise it would affect the previous value in resulting sequence.

@param [operation] function that takes the index of an element, current accumulator value and the element itself, and calculates the next accumulator value. The operation is `_intermediate_` and `_stateless_`.

@sample

```

samples.collections.Collections.Aggregates.runningReduceIndexed
*/@SinceKotlin("1.4")
public fun <S, T : S>
Sequence<T>.runningReduceIndexed(operation: (index: Int, acc: S, T) -> S): Sequence<S> {
    return sequence {
        val iterator = iterator()
        if (iterator.hasNext()) {
            var accumulator: S = iterator.next()
        }
        yield(accumulator)
        var index = 1
        while (iterator.hasNext()) {
            accumulator = operation(checkIndexOverflow(index++), accumulator, iterator.next())
            yield(accumulator)
        }
    }
}

```

Returns a sequence containing successive accumulation values generated by applying [operation] from left to right to each element and current accumulator value that starts with [initial] value. Note that `acc` value passed to [operation] function should not be mutated; otherwise it would affect the previous value in resulting sequence.

The [initial] value should also be immutable (or should not be mutated) as it may be passed to [operation] function later because of sequence's lazy nature.

@param [operation] function that takes current accumulator value and an element, and calculates the next accumulator value. The operation is `_intermediate_` and `_stateless_`.

@sample

```

samples.collections.Collections.Aggregates.scan
*/@SinceKotlin("1.4")
@WasExperimental(ExperimentalStdlibApi::class)
public fun <T, R>
Sequence<T>.scan(initial: R, operation: (acc: R, T) -> R): Sequence<R> {
    return runningFold(initial, operation)
}

```

Returns a sequence containing successive accumulation values generated by applying [operation] from left to right to each element, its index in the original sequence and current accumulator value that starts with [initial] value. Note that `acc` value

passed to [operation] function should not be mutated;\n \* otherwise it would affect the previous value in resulting sequence.\n \* The [initial] value should also be immutable (or should not be mutated)\n \* as it may be passed to [operation] function later because of sequence's lazy nature.\n \* \n \* @param [operation] function that takes the index of an element, current accumulator value\n \* and the element itself, and calculates the next accumulator value.\n \* \n \* The operation is \_intermediate\_ and \_stateless\_.\n \* \n \* @sample samples.collections.Collections.Aggregates.scan\n

```
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic fun <T, R>\nSequence<T>.scanIndexed(initial: R, operation: (index: Int, acc: R, T) -> R): Sequence<R> {\n    return\n    runningFoldIndexed(initial, operation)\n}\n\n/**\n * Returns the sum of all values produced by [selector] function\n    applied to each element in the sequence.\n * \n * The operation is _terminal_.\n */\n@Deprecated("Use sumOf\n    instead.", ReplaceWith("this.sumOf(selector)"))\n@DeprecatedSinceKotlin(warningSince = "1.5")\npublic\n    inline fun <T> Sequence<T>.sumBy(selector: (T) -> Int): Int {\n        var sum: Int = 0\n        for (element in this) {\n            sum += selector(element)\n        }\n        return sum\n    }\n\n/**\n * Returns the sum of all values produced by [selector]\n    function applied to each element in the sequence.\n * \n * The operation is _terminal_.\n */\n@Deprecated("Use\n    sumOf instead.", ReplaceWith("this.sumOf(selector)"))\n@DeprecatedSinceKotlin(warningSince =\n    "1.5")\npublic inline fun <T> Sequence<T>.sumByDouble(selector: (T) -> Double): Double {\n    var sum: Double\n    = 0.0\n    for (element in this) {\n        sum += selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum\n    of all values produced by [selector] function applied to each element in the sequence.\n * \n * The operation is\n    _terminal_.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\n    ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfDouble")\n@kotlin.internal.InlineOnly\npublic\n    inline fun <T> Sequence<T>.sumOf(selector: (T) -> Double): Double {\n        var sum: Double = 0.toDouble()\n        for\n        (element in this) {\n            sum += selector(element)\n        }\n        return sum\n    }\n\n/**\n * Returns the sum of all values\n    produced by [selector] function applied to each element in the sequence.\n * \n * The operation is _terminal_.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\n    ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfInt")\n@kotlin.internal.InlineOnly\npublic inline fun <T>\nSequence<T>.sumOf(selector: (T) -> Int): Int {\n    var sum: Int = 0.toInt()\n    for (element in this) {\n        sum +=\n        selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values\n    produced by [selector] function\n    applied to each element in the sequence.\n * \n * The operation is _terminal_.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\n    ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfLong")\n@kotlin.internal.InlineOnly\npublic\n    inline fun <T> Sequence<T>.sumOf(selector: (T) -> Long): Long {\n        var sum: Long = 0.toLong()\n        for\n        (element in this) {\n            sum += selector(element)\n        }\n        return sum\n    }\n\n/**\n * Returns the sum of all values\n    produced by [selector] function applied to each element in the sequence.\n * \n * The operation is _terminal_.\n
```

```
*\n@SinceKotlin("1.5")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\n    ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfUInt")\n@WasExperimental(ExperimentalUnsignedType\n    s::class)\n@kotlin.internal.InlineOnly\npublic inline fun <T> Sequence<T>.sumOf(selector: (T) -> UInt): UInt {\n    var sum: UInt = 0.toUInt()\n    for (element in this) {\n        sum += selector(element)\n    }\n    return\n    sum\n}\n\n/**\n * Returns the sum of\n    all values produced by [selector] function applied to each element in the sequence.\n * \n * The operation is\n    _terminal_.\n
```

```
*\n@SinceKotlin("1.5")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\n    ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfULong")\n@WasExperimental(ExperimentalUnsignedTy\n    pes::class)\n@kotlin.internal.InlineOnly\npublic inline fun <T> Sequence<T>.sumOf(selector: (T) -> ULong):\n    ULong {\n        var sum: ULong = 0.toULong()\n        for (element in this) {\n            sum += selector(element)\n        }\n        return sum\n    }\n\n/**\n * Returns an original collection containing all the non-`null` elements, throwing an\n    [IllegalArgumentException] if there are any `null` elements.\n * \n * The operation is _intermediate_ and\n    _stateless_.\n */\npublic fun <T : Any> Sequence<T?.>.requireNonNulls(): Sequence<T> {\n    return map { it ?\n
```



```

`true`,\n * while *second* list contains elements for which [predicate] yielded `false`.\n *\n * The operation is
_terminal_.\n *\n * @sample samples.collections.Sequences.Transformations.partition\n *\npublic inline fun <T>
Sequence<T>.partition(predicate: (T) -> Boolean): Pair<List<T>, List<T>> {\n    val first = ArrayList<T>()\n    val
second = ArrayList<T>()\n    for (element in this) {\n        if (predicate(element)) {\n            first.add(element)\n
        } else {\n            second.add(element)\n        }\n    }\n    return Pair(first, second)\n}\n\n/**\n * Returns a sequence
containing all elements of the original sequence and then the given [element].\n *\n * The operation is
_intermediate_ and _stateless_.\n *\npublic operator fun <T> Sequence<T>.plus(element: T): Sequence<T> {\n
return sequenceOf(this, sequenceOf(element)).flatten()\n}\n\n/**\n * Returns a sequence containing all elements of
original sequence and then all elements of the given [elements] array.\n
*\n * Note that the source sequence and the array being added are iterated only when an `iterator` is requested
from\n * the resulting sequence. Changing any of them between successive calls to `iterator` may affect the result.\n
**\n * The operation is _intermediate_ and _stateless_.\n *\npublic operator fun <T> Sequence<T>.plus(elements:
Array<out T>): Sequence<T> {\n    return this.plus(elements.asList())\n}\n\n/**\n * Returns a sequence containing
all elements of original sequence and then all elements of the given [elements] collection.\n *\n * Note that the
source sequence and the collection being added are iterated only when an `iterator` is requested from\n * the
resulting sequence. Changing any of them between successive calls to `iterator` may affect the result.\n *\n * The
operation is _intermediate_ and _stateless_.\n *\npublic operator fun <T> Sequence<T>.plus(elements:
Iterable<T>): Sequence<T> {\n    return sequenceOf(this, elements.asSequence()).flatten()\n}\n\n/**\n * Returns a
sequence containing all elements of original sequence and then all elements of the given [elements]
sequence.\n *\n * Note that the source sequence and the sequence being added are iterated only when an `iterator` is
requested from\n * the resulting sequence. Changing any of them between successive calls to `iterator` may affect
the result.\n *\n * The operation is _intermediate_ and _stateless_.\n *\npublic operator fun <T>
Sequence<T>.plus(elements: Sequence<T>): Sequence<T> {\n    return sequenceOf(this,
elements).flatten()\n}\n\n/**\n * Returns a sequence containing all elements of the original sequence and then the
given [element].\n *\n * The operation is _intermediate_ and _stateless_.\n *\n@kotlin.internal.InlineOnly\npublic
inline fun <T> Sequence<T>.plusElement(element: T): Sequence<T> {\n    return plus(element)\n}\n\n/**\n *
Returns a sequence of snapshots of the window of the given [size]\n * sliding along this sequence with the given
[step], where each\n
*\n * snapshot is a list.\n *\n * Several last lists may have fewer elements than the given [size].\n *\n * Both [size] and
[step] must be positive and can be greater than the number of elements in this sequence.\n *\n * @param size the
number of elements to take in each window\n * @param step the number of elements to move the window forward
by on an each step, by default 1\n * @param partialWindows controls whether or not to keep partial windows in the
end if any,\n * by default `false` which means partial windows won't be preserved\n *\n * @sample
samples.collections.Sequences.Transformations.takeWindows\n *\n@SinceKotlin("1.2")\npublic fun <T>
Sequence<T>.windowed(size: Int, step: Int = 1, partialWindows: Boolean = false): Sequence<List<T>> {\n    return
windowedSequence(size, step, partialWindows, reuseBuffer = false)\n}\n\n/**\n * Returns a sequence of results of
applying the given [transform] function to\n * an each list representing a view over the window of the given [size]\n
*\n * sliding along this sequence with the given [step].\n *\n * Note that the list passed to the [transform] function is
ephemeral and is valid only inside that function.\n * You should not store it or allow it to escape in some way,
unless you made a snapshot of it.\n * Several last lists may have fewer elements than the given [size].\n *\n * Both
[size] and [step] must be positive and can be greater than the number of elements in this sequence.\n *\n * @param
size the number of elements to take in each window\n * @param step the number of elements to move the window
forward by on an each step, by default 1\n * @param partialWindows controls whether or not to keep partial
windows in the end if any,\n * by default `false` which means partial windows won't be preserved\n *\n * @sample
samples.collections.Sequences.Transformations.averageWindows\n *\n@SinceKotlin("1.2")\npublic fun <T, R>
Sequence<T>.windowed(size: Int, step: Int = 1, partialWindows: Boolean = false, transform: (List<T>) ->

```



```

R): Sequence<R> {\n  return windowedSequence(size, step, partialWindows, reuseBuffer =
true).map(transform)\n}\n\n/**\n * Returns a sequence of values built from the elements of `this` sequence and the
[other] sequence with the same index.\n * The resulting sequence ends as soon as the shortest input sequence ends.\n
*\n * The operation is _intermediate_ and _stateless_.\n * \n * @sample
samples.collections.Sequences.Transformations.zip\n */\npublic infix fun <T, R> Sequence<T>.zip(other:
Sequence<R>): Sequence<Pair<T, R>> {\n  return MergingSequence(this, other) { t1, t2 -> t1 to t2 }\n}\n\n/**\n *
Returns a sequence of values built from the elements of `this` sequence and the [other] sequence with the same
index\n * using the provided [transform] function applied to each pair of elements.\n * The resulting sequence ends
as soon as the shortest input sequence ends.\n * \n * The operation is _intermediate_ and _stateless_.\n * \n *
@sample samples.collections.Sequences.Transformations.zipWithTransform\n */\npublic fun <T, R, V> Sequence<T>.zip(other: Sequence<R>, transform: (a: T, b: R) -> V): Sequence<V> {\n
return MergingSequence(this, other, transform)\n}\n\n/**\n * Returns a sequence of pairs of each two adjacent
elements in this sequence.\n * \n * The returned sequence is empty if this sequence contains less than two
elements.\n * \n * The operation is _intermediate_ and _stateless_.\n * \n * @sample
samples.collections.Collections.Transformations.zipWithNext\n */\n@SinceKotlin("1.2")\npublic fun <T>
Sequence<T>.zipWithNext(): Sequence<Pair<T, T>> {\n  return zipWithNext { a, b -> a to b }\n}\n\n/**\n *
Returns a sequence containing the results of applying the given [transform] function\n * to an each pair of two
adjacent elements in this sequence.\n * \n * The returned sequence is empty if this sequence contains less than two
elements.\n * \n * The operation is _intermediate_ and _stateless_.\n * \n * @sample
samples.collections.Collections.Transformations.zipWithNextToFindDeltas\n */\n@SinceKotlin("1.2")\npublic fun <T, R> Sequence<T>.zipWithNext(transform: (a: T, b: T) -> R):
Sequence<R> {\n  return sequenceResult@\n    val iterator = iterator()\n    if (!iterator.hasNext())
return@result\n    var current = iterator.next()\n    while (iterator.hasNext()) {\n      val next =
iterator.next()\n      yield(transform(current, next))\n      current = next\n    }\n  }\n}\n\n/**\n * Appends
the string from all the elements separated using [separator] and using the given [prefix] and [postfix] if supplied.\n *
\n * If the collection could be huge, you can specify a non-negative value of [limit], in which case only the first
[limit]\n * elements will be appended, followed by the [truncated] string (which defaults to "...").\n * \n * The
operation is _terminal_.\n * \n * @sample samples.collections.Collections.Transformations.joinTo\n */\npublic fun
<T, A : Appendable> Sequence<T>.joinTo(buffer:
A, separator: CharSequence = "\n", prefix: CharSequence = "", postfix: CharSequence = "", limit: Int = -1,
truncated: CharSequence = "...", transform: ((T) -> CharSequence)? = null): A {\n  buffer.append(prefix)\n  var
count = 0\n  for (element in this) {\n    if (++count > 1) buffer.append(separator)\n    if (limit < 0 || count <=
limit) {\n      buffer.appendElement(element, transform)\n    } else break\n  }\n  if (limit >= 0 && count >
limit) buffer.append(truncated)\n  buffer.append(postfix)\n  return buffer\n}\n\n/**\n * Creates a string from all
the elements separated using [separator] and using the given [prefix] and [postfix] if supplied.\n * \n * If the
collection could be huge, you can specify a non-negative value of [limit], in which case only the first [limit]\n *
elements will be appended, followed by the [truncated] string (which defaults to "...").\n * \n * The operation is
_intermediate_.\n * \n * @sample samples.collections.Collections.Transformations.joinToString\n */\npublic fun <T> Sequence<T>.joinToString(separator: CharSequence = "\n", prefix: CharSequence = "",
postfix: CharSequence = "", limit: Int = -1, truncated: CharSequence = "...", transform: ((T) -> CharSequence)? =
null): String {\n  return joinTo(StringBuilder(), separator, prefix, postfix, limit, truncated,
transform).toString()\n}\n\n/**\n * Creates an [Iterable] instance that wraps the original sequence returning its
elements when being iterated.\n */\npublic fun <T> Sequence<T>.asIterable(): Iterable<T> {\n  return Iterable {
this.iterator() }\n}\n\n/**\n * Returns this sequence as a [Sequence].\n */\n@kotlin.internal.InlineOnly\npublic
inline fun <T> Sequence<T>.asSequence(): Sequence<T> {\n  return this\n}\n\n/**\n * Returns an average value
of elements in the sequence.\n * \n * The operation is _terminal_.\n */\n@kotlin.jvm.JvmName("averageOfByte")\npublic fun Sequence<Byte>.average(): Double {\n  var sum:
Double = 0.0\n

```

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    var count: Int = 0\n    for (element in this) {\n        sum += element\n        checkCountOverflow(++count)\n    }\n    return if (count == 0) Double.NaN else sum / count\n}\n\n/**\n * Returns an average value of elements in the\n sequence.\n *\n * The operation is _terminal_.\n */\n@kotlin.jvm.JvmName("averageOfShort")\npublic fun\nSequence<Short>.average(): Double {\n    var sum: Double = 0.0\n    var count: Int = 0\n    for (element in this) {\n        sum += element\n        checkCountOverflow(++count)\n    }\n    return if (count == 0) Double.NaN else sum /\n count\n}\n\n/**\n * Returns an average value of elements in the sequence.\n *\n * The operation is _terminal_.\n */\n@kotlin.jvm.JvmName("averageOfInt")\npublic fun Sequence<Int>.average(): Double {\n    var sum: Double\n = 0.0\n    var count: Int = 0\n    for (element in this) {\n        sum += element\n        checkCountOverflow(++count)\n    }\n    return if (count == 0) Double.NaN else sum / count\n}\n\n/**\n * Returns\n an average value of elements in the sequence.\n *\n * The operation is _terminal_.\n */\n@kotlin.jvm.JvmName("averageOfLong")\npublic fun Sequence<Long>.average(): Double {\n    var sum:\n Double = 0.0\n    var count: Int = 0\n    for (element in this) {\n        sum += element\n    }\n    return if (count == 0) Double.NaN else sum / count\n}\n\n/**\n * Returns\n an average value of elements in the sequence.\n *\n * The operation is _terminal_.\n */\n@kotlin.jvm.JvmName("averageOfFloat")\npublic fun Sequence<Float>.average(): Double {\n    var sum:\n Double = 0.0\n    var count: Int = 0\n    for (element in this) {\n        sum += element\n    }\n    return if (count == 0) Double.NaN else sum / count\n}\n\n/**\n * Returns\n an average value of elements in the sequence.\n *\n * The operation is _terminal_.\n */\n@kotlin.jvm.JvmName("averageOfDouble")\npublic fun Sequence<Double>.average(): Double {\n    var sum:\n Double\n = 0.0\n    var count: Int = 0\n    for (element in this) {\n        sum += element\n    }\n    return if (count == 0) Double.NaN else sum / count\n}\n\n/**\n * Returns\n the sum of all elements in the sequence.\n *\n * The operation is _terminal_.\n */\n@kotlin.jvm.JvmName("sumOfByte")\npublic fun Sequence<Byte>.sum(): Int {\n    var sum: Int = 0\n    for\n (element in this) {\n        sum += element\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all elements in the\n sequence.\n *\n * The operation is _terminal_.\n */\n@kotlin.jvm.JvmName("sumOfShort")\npublic fun\nSequence<Short>.sum(): Int {\n    var sum: Int = 0\n    for (element in this) {\n        sum += element\n    }\n    return\n sum\n}\n\n/**\n * Returns the sum of all elements in the sequence.\n *\n * The operation is _terminal_.\n */\n@kotlin.jvm.JvmName("sumOfInt")\npublic fun Sequence<Int>.sum(): Int {\n    var sum: Int = 0\n    for\n (element in this) {\n        sum += element\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all elements in the sequence.\n *\n * The operation is\n _terminal_.\n */\n@kotlin.jvm.JvmName("sumOfLong")\npublic fun Sequence<Long>.sum(): Long {\n    var sum:\n Long = 0L\n    for (element in this) {\n        sum += element\n    }\n    return sum\n}\n\n/**\n * Returns the sum of\n all elements in the sequence.\n *\n * The operation is _terminal_.\n */\n@kotlin.jvm.JvmName("sumOfFloat")\npublic fun Sequence<Float>.sum(): Float {\n    var sum: Float = 0.0f\n    for (element in this) {\n        sum += element\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all elements in\n the sequence.\n *\n * The operation is _terminal_.\n */\n@kotlin.jvm.JvmName("sumOfDouble")\npublic fun\nSequence<Double>.sum(): Double {\n    var sum: Double = 0.0\n    for (element in this) {\n        sum += element\n    }\n    return sum\n}\n\n"/**\n * Copyright 2010-2022 JetBrains s.r.o. and Kotlin Programming Language\n contributors.\n * Use of this\n source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\n@file:kotlin.jvm.JvmMultifileClass\n@file:kotlin.jvm.JvmName("SetsKt")\n\npackage\nkotlin.collections\n\n/\n\n// NOTE: THIS FILE IS AUTO-GENERATED by the GenerateStandardLib.kt\n// See:\n https://github.com/JetBrains/kotlin/tree/master/libraries/stdlib\n\nimport kotlin.random.*\nimport\nkotlin.ranges.contains\nimport kotlin.ranges.reversed\n\n/**\n * Returns a set containing all elements of the original\n set except the given [element].\n *\n * The returned set preserves the element iteration order of the original set.\n */\npublic operator fun <T> Set<T>.minus(element: T): Set<T> {\n    val result =\n LinkedHashSet<T>(mapCapacity(size))\n    var removed = false\n    return this.filterTo(result) { if (!removed && it

```

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== element) { removed = true; false } else true }
}

/** Returns a set containing all elements of the original
set except the elements contained in the given [elements]
array.
 * The returned set preserves the element iteration order of the original set.
 */
public operator fun <T> Set<T>.minus(elements: Array<out T>): Set<T> {
    val result = LinkedHashSet<T>(this)
    result.removeAll(elements)
    return result
}

/** Returns a set containing all elements of the original set
except the elements contained in the given [elements] collection.
 * The returned set preserves the element
iteration order of the original set.
 */
public operator fun <T> Set<T>.minus(elements: Iterable<T>): Set<T> {
    val other = elements.convertToListIfNotCollection()
    if (other.isEmpty())
        return this.toSet()
    if (other is Set)
        return this.filterNotTo(LinkedHashSet<T>()) { it in other }
    val result = LinkedHashSet<T>(this)
    result.removeAll(other)
    return result
}

/** Returns a set containing all elements of the original set
except the elements contained in the given [elements] sequence.
 * The returned set preserves the element iteration order of the original set.
 */
public operator fun <T> Set<T>.minus(elements: Sequence<T>): Set<T> {
    val result = LinkedHashSet<T>(this)
    result.removeAll(elements)
    return result
}

/** Returns a set containing all elements of the original set
except the given [element].
 * The returned set preserves the element iteration order of the original set.
 */
@kotlin.internal.InlineOnly
public inline fun <T> Set<T>.minusElement(element: T): Set<T> {
    return minus(element)
}

/** Returns a set containing all elements of the original set and then the given [element] if
it isn't already in this set.
 * The returned set preserves the element iteration order of the original set.
 */
public operator fun <T> Set<T>.plus(element: T): Set<T> {
    val result =
    LinkedHashSet<T>(mapCapacity(size + 1))
    result.addAll(this)
    result.add(element)
    return
    result
}

/** Returns a set
containing all elements of the original set and the given [elements] array,
 * which aren't already in this set.
 * The returned set preserves the element iteration order of the original set.
 */
public operator fun <T> Set<T>.plus(elements: Array<out T>): Set<T> {
    val result = LinkedHashSet<T>(mapCapacity(this.size +
    elements.size))
    result.addAll(this)
    result.addAll(elements)
    return result
}

/** Returns a set
containing all elements of the original set and the given [elements] collection,
 * which aren't already in this set.
 * The returned set preserves the element iteration order of the original set.
 */
public operator fun <T> Set<T>.plus(elements: Iterable<T>): Set<T> {
    val result =
    LinkedHashSet<T>(mapCapacity(elements.collectionSizeOrNull()?.let { this.size + it } ?: this.size * 2))
    result.addAll(this)
    result.addAll(elements)
    return result
}

/** Returns a set containing all elements of
the original set and the
given [elements] sequence,
 * which aren't already in this set.
 * The returned set preserves the element
iteration order of the original set.
 */
public operator fun <T> Set<T>.plus(elements: Sequence<T>): Set<T> {
    val result = LinkedHashSet<T>(mapCapacity(this.size * 2))
    result.addAll(this)
    result.addAll(elements)
    return result
}

/** Returns a set containing all elements of the original set and then the given [element] if it
isn't already in this set.
 * The returned set preserves the element iteration order of the original set.
 */
@kotlin.internal.InlineOnly
public inline fun <T> Set<T>.plusElement(element: T): Set<T> {
    return plus(element)
}
}

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contributors.
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license/LICENSE.txt file.
 */

@file:kotlin.jvm.JvmMultifileClass
@file:kotlin.jvm.JvmName("StringsKt")
package
kotlin.text

// NOTE: THIS FILE IS AUTO-GENERATED by the GenerateStandardLib.kt
// See:
https://github.com/JetBrains/kotlin/tree/master/libraries/stdlib

import kotlin.random.*

/** Returns a
character at the given [index] or throws an [IndexOutOfBoundsException] if the [index] is out of bounds of this char
sequence.
 * @sample samples.collections.Collections.elements.elementAt
 */
public expect fun
CharSequence.elementAt(index: Int): Char

/** Returns a character at the given [index] or the result of calling
the [defaultValue] function if the [index] is out of bounds of this char sequence.
 * @sample
samples.collections.Collections.elements.elementAtOrElse
 */
@kotlin.internal.InlineOnly
public inline fun

```

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CharSequence.elementAtOrElse(index: Int, defaultValue: (Int) -> Char): Char {
    return if (index >= 0 && index <= lastIndex) get(index) else defaultValue(index)}
}
Returns a character at the given [index] or `null` if the [index] is out of bounds of this char sequence.
@sample
samples.collections.Collections.Elements.elementAtOrNull
@kotlin.internal.InlineOnly
public inline fun
CharSequence.elementAtOrNull(index: Int): Char? {
    return this.getOrNull(index)}
Returns the first character matching the given [predicate], or `null` if no such character was found.
@sample
samples.collections.Collections.Elements.find
@kotlin.internal.InlineOnly
public inline fun
CharSequence.find(predicate: (Char) -> Boolean): Char? {
    return firstOrNull(predicate)}
Returns the last character matching the given [predicate], or `null` if no such character was found.
@sample
samples.collections.Collections.Elements.find
@kotlin.internal.InlineOnly
public inline fun
CharSequence.findLast(predicate: (Char) -> Boolean): Char? {
    return lastOrNull(predicate)}
Returns the first character.
@throws NoSuchElementException
if the char sequence is empty.
public fun CharSequence.first(): Char {
    if (isEmpty())
        throw NoSuchElementException("Char sequence is empty.")
    return this[0]}
Returns the first character matching the given [predicate].
@throws [NoSuchElementException] if no such character is found.
public inline fun CharSequence.first(predicate: (Char) -> Boolean): Char {
    for (element in this) if (predicate(element))
        return element
    throw NoSuchElementException("Char sequence contains no character matching the predicate.")}
Returns the first non-null value produced by [transform] function being applied to characters of this char sequence in iteration order, or throws [NoSuchElementException] if no non-null value was produced.
@sample
samples.collections.Collections.Transformations.firstNotNullOf
@SinceKotlin("1.5")
@kotlin.internal.InlineOnly
public inline fun <R : Any>
CharSequence.firstNotNullOf(transform:
(Char) -> R?): R {
    return firstNotNullOfOrNull(transform) ?: throw NoSuchElementException("No element of the char sequence was transformed to a non-null value.")}
Returns the first non-null value produced by [transform] function being applied to characters of this char sequence in iteration order, or `null` if no non-null value was produced.
@sample
samples.collections.Collections.Transformations.firstNotNullOf
@SinceKotlin("1.5")
@kotlin.internal.InlineOnly
public inline fun <R : Any>
CharSequence.firstNotNullOfOrNull(transform: (Char) -> R?): R? {
    for (element in this) {
        val result = transform(element)
        if (result != null)
            return result
    }
    return null}
Returns the first character, or `null` if the char sequence is empty.
public fun CharSequence.firstOrNull(): Char? {
    return if (isEmpty()) null else this[0]}
Returns the first character matching the given [predicate], or `null` if character was not found.
public inline fun CharSequence.firstOrNull(predicate: (Char) -> Boolean): Char? {
    for (element in this) if (predicate(element))
        return element
    return null}
Returns a character at the given [index] or the result of calling the [defaultValue] function if the [index] is out of bounds of this char sequence.
@kotlin.internal.InlineOnly
public inline fun
CharSequence.getOrNull(index: Int, defaultValue: (Int) -> Char): Char {
    return if (index >= 0 && index <= lastIndex) get(index) else defaultValue(index)}
Returns a character at the given [index] or `null` if the [index] is out of bounds of this char sequence.
@sample
samples.collections.Collections.Elements.getOrNull
@kotlin.internal.InlineOnly
public fun
CharSequence.getOrNull(index: Int): Char? {
    return if (index >= 0 && index <= lastIndex) get(index) else null}
Returns index of the first character matching the given [predicate], or -1 if the char sequence does not contain such character.
public inline fun
CharSequence.indexOfFirst(predicate: (Char) -> Boolean): Int {
    for (index in indices) {
        if (predicate(this[index]))
            return index
    }
    return -1}
Returns index of the last character matching the given [predicate], or -1 if the char sequence does not contain such character.
public inline fun
CharSequence.indexOfLast(predicate: (Char) -> Boolean): Int {
    for (index in indices.reversed()) {
        if (predicate(this[index]))
            return index
    }
    return -1}
Returns the last character.
@throws NoSuchElementException if the char sequence is empty.
@sample

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samples.text.Strings.last\n * \npublic fun CharSequence.last(): Char {\n  if (isEmpty())\n    throw\n    NoSuchElementException("Char sequence is empty.")\n  return this[lastIndex]\n}\n\n/**\n * Returns the last\n * character\n * matching the given [predicate].\n * \n * @throws NoSuchElementException if no such character is found.\n * \n * @sample samples.text.Strings.last\n * \npublic inline fun CharSequence.last(predicate: (Char) -> Boolean): Char {\n  for (index in this.indices.reversed()) {\n    val element = this[index]\n    if (predicate(element)) return\n    element\n  }\n  throw NoSuchElementException("Char sequence contains no character matching the\n  predicate.")\n}\n\n/**\n * Returns the last character, or `null` if the char sequence is empty.\n * \n * @sample\n * samples.text.Strings.last\n * \npublic fun CharSequence.lastOrNull(): Char? {\n  return if (isEmpty()) null else\n  this[length - 1]\n}\n\n/**\n * Returns the last character matching the given [predicate], or `null` if no such character\n * was found.\n * \n * @sample samples.text.Strings.last\n * \npublic inline fun CharSequence.lastOrNull(predicate:\n * (Char) -> Boolean): Char? {\n  for (index in this.indices.reversed()) {\n    val\n    element = this[index]\n    if (predicate(element)) return element\n  }\n  return null\n}\n\n/**\n * Returns a\n * random character from this char sequence.\n * \n * @throws NoSuchElementException if this char sequence is\n * empty.\n * \n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\npublic inline fun CharSequence.random(): Char\n * {\n  return random(Random)\n}\n\n/**\n * Returns a random character from this char sequence using the specified\n * source of randomness.\n * \n * @throws NoSuchElementException if this char sequence is empty.\n * \n@SinceKotlin("1.3")\npublic fun CharSequence.random(random: Random): Char {\n  if (isEmpty())\n  throw NoSuchElementException("Char sequence is empty.")\n  return get(random.nextInt(length))\n}\n\n/**\n * Returns a random character from this char sequence, or `null` if this char sequence is empty.\n * \n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic\n * inline fun CharSequence.randomOrNull():\n * Char? {\n  return randomOrNull(Random)\n}\n\n/**\n * Returns a random character from this char sequence\n * using the specified source of randomness, or `null` if this char sequence is empty.\n * \n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic fun\n * CharSequence.randomOrNull(random: Random): Char? {\n  if (isEmpty())\n  return null\n  return\n  get(random.nextInt(length))\n}\n\n/**\n * Returns the single character, or throws an exception if the char sequence\n * is empty or has more than one character.\n * \npublic fun CharSequence.single(): Char {\n  return when (length)\n  {\n    0 -> throw NoSuchElementException("Char sequence is empty.")\n    1 -> this[0]\n    else -> throw\n    IllegalArgumentException("Char sequence has more than one element.")\n  }\n}\n\n/**\n * Returns the single\n * character matching the given [predicate], or throws exception if there is no or more than one matching character.\n * \npublic inline fun CharSequence.single(predicate:\n * (Char) -> Boolean): Char {\n  var single: Char? = null\n  var found = false\n  for (element in this) {\n    if\n    (predicate(element)) {\n      if (found) throw IllegalArgumentException("Char sequence contains more than one\n      matching element.")\n      single = element\n      found = true\n    }\n  }\n  if (!found) throw\n  NoSuchElementException("Char sequence contains no character matching the predicate.")\n}\n\n@Suppress("UNCHECKED_CAST")\nreturn single as Char\n}\n\n/**\n * Returns single character, or `null` if\n * the char sequence is empty or has more than one character.\n * \npublic fun CharSequence.singleOrNull(): Char?\n * {\n  return if (length == 1) this[0] else null\n}\n\n/**\n * Returns the single character matching the given\n * [predicate], or `null` if character was not found or more than one character was found.\n * \npublic inline fun\n * CharSequence.singleOrNull(predicate: (Char) -> Boolean): Char? {\n  var single:\n  Char? = null\n  var found = false\n  for (element in this) {\n    if (predicate(element)) {\n      if (found)\n      return null\n      single = element\n      found = true\n    }\n  }\n  if (!found) return null\n  return\n  single\n}\n\n/**\n * Returns a subsequence of this char sequence with the first [n] characters removed.\n * \n * @throws IllegalArgumentException if [n] is negative.\n * \n * @sample samples.text.Strings.drop\n * \npublic fun\n * CharSequence.drop(n: Int): CharSequence {\n  require(n >= 0) { "Requested character count $n is less than zero." }\n  return subSequence(n.coerceAtMost(length), length)\n}\n\n/**\n * Returns a string with the first [n] characters\n * removed.\n * \n * @throws IllegalArgumentException if [n] is negative.\n * \n * @sample

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samples.text.Strings.drop\n */\npublic fun String.drop(n: Int): String {\n  require(n >= 0) { \"Requested character
count $n is less than zero.\" }\n  return substring(n.coerceAtMost(length))\n}\n\n/**\n
* Returns a subsequence of this char sequence with the last [n] characters removed.\n * \n * @throws
IllegalArgumentOutOfRangeException if [n] is negative.\n * \n * @sample samples.text.Strings.drop\n */\npublic fun
CharSequence.dropLast(n: Int): CharSequence {\n  require(n >= 0) { \"Requested character count $n is less than
zero.\" }\n  return take((length - n).coerceAtLeast(0))\n}\n\n/**\n
* Returns a string with the last [n] characters
removed.\n * \n * @throws IllegalArgumentOutOfRangeException if [n] is negative.\n * \n * @sample
samples.text.Strings.drop\n */\npublic fun String.dropLast(n: Int): String {\n  require(n >= 0) { \"Requested
character count $n is less than zero.\" }\n  return take((length - n).coerceAtLeast(0))\n}\n\n/**\n
* Returns a
subsequence of this char sequence containing all characters except last characters that satisfy the given [predicate].\n
\n * \n * @sample samples.text.Strings.drop\n */\npublic inline fun CharSequence.dropLastWhile(predicate: (Char) ->
Boolean):
CharSequence {\n  for (index in lastIndex downTo 0)\n    if (!predicate(this[index]))\n      return
subSequence(0, index + 1)\n  return \"\"\n}\n\n/**\n
* Returns a string containing all characters except last
characters that satisfy the given [predicate].\n * \n * @sample samples.text.Strings.drop\n */\npublic inline fun
String.dropLastWhile(predicate: (Char) -> Boolean): String {\n  for (index in lastIndex downTo 0)\n    if
(!predicate(this[index]))\n      return substring(0, index + 1)\n  return \"\"\n}\n\n/**\n
* Returns a subsequence
of this char sequence containing all characters except first characters that satisfy the given [predicate].\n * \n *
@sample samples.text.Strings.drop\n */\npublic inline fun CharSequence.dropWhile(predicate: (Char) -> Boolean):
CharSequence {\n  for (index in this.indices)\n    if (!predicate(this[index]))\n      return subSequence(index,
length)\n  return \"\"\n}\n\n/**\n
* Returns a string containing
all characters except first characters that satisfy the given [predicate].\n * \n * @sample samples.text.Strings.drop\n
*/\npublic inline fun String.dropWhile(predicate: (Char) -> Boolean): String {\n  for (index in this.indices)\n    if
(!predicate(this[index]))\n      return substring(index)\n  return \"\"\n}\n\n/**\n
* Returns a char sequence
containing only those characters from the original char sequence that match the given [predicate].\n * \n * @sample
samples.text.Strings.filter\n */\npublic inline fun CharSequence.filter(predicate: (Char) -> Boolean): CharSequence
{\n  return filterTo(StringBuilder(), predicate)\n}\n\n/**\n
* Returns a string containing only those characters from
the original string that match the given [predicate].\n * \n * @sample samples.text.Strings.filter\n */\npublic inline
fun String.filter(predicate: (Char) -> Boolean): String {\n  return filterTo(StringBuilder(),
predicate).toString()\n}\n\n/**\n
* Returns a char sequence containing
only those characters from the original char sequence that match the given [predicate].\n * @param [predicate]
function that takes the index of a character and the character itself\n * and returns the result of predicate evaluation
on the character.\n * \n * @sample samples.collections.Collections.Filtering.filterIndexed\n */\npublic inline fun
CharSequence.filterIndexed(predicate: (index: Int, Char) -> Boolean): CharSequence {\n  return
filterIndexedTo(StringBuilder(), predicate)\n}\n\n/**\n
* Returns a string containing only those characters from the
original string that match the given [predicate].\n * @param [predicate] function that takes the index of a character
and the character itself\n * and returns the result of predicate evaluation on the character.\n * \n * @sample
samples.collections.Collections.Filtering.filterIndexed\n */\npublic inline fun String.filterIndexed(predicate: (index:
Int, Char) -> Boolean): String {\n  return filterIndexedTo(StringBuilder(), predicate).toString()\n}\n\n/**\n
* Appends all characters matching the given [predicate] to the given [destination].\n * @param [predicate] function
that takes the index of a character and the character itself\n * and returns the result of predicate evaluation on the
character.\n * \n * @sample samples.collections.Collections.Filtering.filterIndexedTo\n */\npublic inline fun <C :
Appendable> CharSequence.filterIndexedTo(destination: C, predicate: (index: Int, Char) -> Boolean): C {\n
  forEachIndexed { index, element ->\n    if (predicate(index, element)) destination.append(element)\n  }\n  return destination\n}\n\n/**\n
* Returns a char sequence containing only those characters from the original char
sequence that do not match the given [predicate].\n * \n * @sample samples.text.Strings.filterNot\n */\npublic inline
fun CharSequence.filterNot(predicate: (Char) -> Boolean): CharSequence {\n  return filterNotTo(StringBuilder(),
predicate)\n}\n\n/**\n
* Returns a string containing only

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those characters from the original string that do not match the given [predicate].\n * \n * @sample
samples.text.Strings.filterNot\n * \n\npublic inline fun String.filterNot(predicate: (Char) -> Boolean): String {\n
return filterNotTo(StringBuilder(), predicate).toString()\n}\n\n/**\n * Appends all characters not matching the given
[predicate] to the given [destination].\n * \n * @sample samples.collections.Collections.Filtering.filterTo\n
*\n\npublic inline fun <C : Appendable> CharSequence.filterNotTo(destination: C, predicate: (Char) -> Boolean): C
{\n  for (element in this) if (!predicate(element)) destination.append(element)\n  return destination\n}\n\n/**\n *
Appends all characters matching the given [predicate] to the given [destination].\n * \n * @sample
samples.collections.Collections.Filtering.filterTo\n * \n\npublic inline fun <C : Appendable>
CharSequence.filterTo(destination: C, predicate: (Char) -> Boolean): C {\n  for (index in 0 until length) {\n    val
element
= get(index)\n    if (predicate(element)) destination.append(element)\n  }\n  return destination\n}\n\n/**\n *
Returns a char sequence containing characters of the original char sequence at the specified range of [indices].\n
*\n\npublic fun CharSequence.slice(indices: IntRange): CharSequence {\n  if (indices.isEmpty()) return ""\n
return subSequence(indices)\n}\n\n/**\n * Returns a string containing characters of the original string at the
specified range of [indices].\n * \n\npublic fun String.slice(indices: IntRange): String {\n  if (indices.isEmpty())
return ""\n  return substring(indices)\n}\n\n/**\n * Returns a char sequence containing characters of the original
char sequence at specified [indices].\n * \n\npublic fun CharSequence.slice(indices: Iterable<Int>): CharSequence {\n
val size = indices.collectionSizeOrDefault(10)\n  if (size == 0) return ""\n  val result = StringBuilder(size)\n
for (i in indices) {\n    result.append(get(i))\n  }\n  return result\n}\n\n/**\n * Returns a string containing
characters of the original string at specified [indices].\n
*\n\n@kotlin.internal.InlineOnly\npublic inline fun String.slice(indices: Iterable<Int>): String {\n  return (this as
CharSequence).slice(indices).toString()\n}\n\n/**\n * Returns a subsequence of this char sequence containing the
first [n] characters from this char sequence, or the entire char sequence if this char sequence is shorter.\n * \n *
@throws IllegalArgumentException if [n] is negative.\n * \n * @sample samples.text.Strings.take\n * \n\npublic fun
CharSequence.take(n: Int): CharSequence {\n  require(n >= 0) { "Requested character count $n is less than zero." }\n
return subSequence(0, n.coerceAtMost(length))\n}\n\n/**\n * Returns a string containing the first [n]
characters from this string, or the entire string if this string is shorter.\n * \n * @throws IllegalArgumentException if
[n] is negative.\n * \n * @sample samples.text.Strings.take\n * \n\npublic
fun String.take(n: Int): String {\n  require(n >= 0) { "Requested character count $n is less than zero." }\n  return
substring(0, n.coerceAtMost(length))\n}\n\n/**\n * Returns a subsequence of this char sequence containing the last
[n] characters from this char sequence, or the entire char sequence if this char sequence is shorter.\n * \n * @throws
IllegalArgumentException if [n] is negative.\n * \n * @sample samples.text.Strings.take\n * \n\npublic fun
CharSequence.takeLast(n: Int): CharSequence {\n  require(n >= 0) { "Requested character count $n is less than
zero." }\n  val length = length\n  return subSequence(length - n.coerceAtMost(length), length)\n}\n\n/**\n *
Returns a string containing the last [n] characters from this string, or the entire string if this string is shorter.\n
*\n * @throws IllegalArgumentException if [n] is negative.\n * \n * @sample samples.text.Strings.take\n * \n\npublic fun
String.takeLast(n: Int): String {\n  require(n >= 0) { "Requested character
count $n is less than zero." }\n  val length = length\n  return substring(length -
n.coerceAtMost(length))\n}\n\n/**\n * Returns a subsequence of this char sequence containing last characters that
satisfy the given [predicate].\n * \n * @sample samples.text.Strings.take\n * \n\npublic inline fun
CharSequence.takeLastWhile(predicate: (Char) -> Boolean): CharSequence {\n  for (index in lastIndex downTo 0)
{\n    if (!predicate(this[index])) {\n      return subSequence(index + 1, length)\n    }\n  }\n  return
subSequence(0, length)\n}\n\n/**\n * Returns a string containing last characters that satisfy the given [predicate].\n
*\n * @sample samples.text.Strings.take\n * \n\npublic inline fun String.takeLastWhile(predicate: (Char) ->
Boolean): String {\n  for (index in lastIndex downTo 0) {\n    if (!predicate(this[index])) {\n      return
substring(index + 1)\n    }\n  }\n  return this\n}\n\n/**\n * Returns a subsequence of this char sequence
containing the first characters that satisfy the given [predicate].\n * \n * @sample samples.text.Strings.take\n
*\n\npublic inline fun CharSequence.takeWhile(predicate: (Char) -> Boolean): CharSequence {\n  for (index in 0

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until length)\n    if (!predicate(get(index))) {\n        return subSequence(0, index)\n    }\n    return
subSequence(0, length)\n}\n\n/**\n * Returns a string containing the first characters that satisfy the given
[predicate].\n * \n * @sample samples.text.Strings.take\n */\npublic inline fun String.takeWhile(predicate: (Char) ->
Boolean): String {\n    for (index in 0 until length)\n        if (!predicate(get(index))) {\n            return substring(0,
index)\n        }\n    return this\n}\n\n/**\n * Returns a char sequence with characters in reversed order.\n */\npublic
fun CharSequence.reversed(): CharSequence {\n    return StringBuilder(this).reverse()\n}\n\n/**\n * Returns a string
with characters in reversed order.\n */\n@kotlin.internal.InlineOnly\npublic
inline fun String.reversed(): String {\n    return (this as CharSequence).reversed().toString()\n}\n\n/**\n * Returns a
[Map] containing key-value pairs provided by [transform] function\n * applied to characters of the given char
sequence.\n * \n * If any of two pairs would have the same key the last one gets added to the map.\n * \n * The
returned map preserves the entry iteration order of the original char sequence.\n * \n * @sample
samples.text.Strings.associate\n */\npublic inline fun <K, V> CharSequence.associate(transform: (Char) -> Pair<K,
V>): Map<K, V> {\n    val capacity = mapCapacity(length).coerceAtLeast(16)\n    return
associateTo(LinkedHashMap<K, V>(capacity), transform)\n}\n\n/**\n * Returns a [Map] containing the characters
from the given char sequence indexed by the key\n * returned from [keySelector] function applied to each
character.\n * \n * If any two characters would have the same key returned by [keySelector] the last one gets added
to the map.\n *
\n * The returned map preserves the entry iteration order of the original char sequence.\n * \n * @sample
samples.text.Strings.associateBy\n */\npublic inline fun <K> CharSequence.associateBy(keySelector: (Char) -> K):
Map<K, Char> {\n    val capacity = mapCapacity(length).coerceAtLeast(16)\n    return
associateByTo(LinkedHashMap<K, Char>(capacity), keySelector)\n}\n\n/**\n * Returns a [Map] containing the
values provided by [valueTransform] and indexed by [keySelector] functions applied to characters of the given char
sequence.\n * \n * If any two characters would have the same key returned by [keySelector] the last one gets added
to the map.\n * \n * The returned map preserves the entry iteration order of the original char sequence.\n * \n *
@sample samples.text.Strings.associateByWithValueTransform\n */\npublic inline fun <K, V>
CharSequence.associateBy(keySelector: (Char) -> K, valueTransform: (Char) -> V): Map<K, V> {\n    val capacity
= mapCapacity(length).coerceAtLeast(16)\n
    return associateByTo(LinkedHashMap<K, V>(capacity), keySelector, valueTransform)\n}\n\n/**\n * Populates
and returns the [destination] mutable map with key-value pairs,\n * where key is provided by the [keySelector]
function applied to each character of the given char sequence\n * and value is the character itself.\n * \n * If any two
characters would have the same key returned by [keySelector] the last one gets added to the map.\n * \n * @sample
samples.text.Strings.associateByTo\n */\npublic inline fun <K, M : MutableMap<in K, in Char>>
CharSequence.associateByTo(destination: M, keySelector: (Char) -> K): M {\n    for (element in this) {\n
destination.put(keySelector(element), element)\n    }\n    return destination\n}\n\n/**\n * Populates and returns the
[destination] mutable map with key-value pairs,\n * where key is provided by the [keySelector] function and\n * and
value is provided by the [valueTransform] function applied to characters of the given char sequence.\n * \n *
\n * If any two characters would have the same key returned by [keySelector] the last one gets added to the map.\n *
\n * @sample samples.text.Strings.associateByToWithValueTransform\n */\npublic inline fun <K, V, M :
MutableMap<in K, in V>> CharSequence.associateByTo(destination: M, keySelector: (Char) -> K,
valueTransform: (Char) -> V): M {\n    for (element in this) {\n        destination.put(keySelector(element),
valueTransform(element))\n    }\n    return destination\n}\n\n/**\n * Populates and returns the [destination] mutable
map with key-value pairs\n * provided by [transform] function applied to each character of the given char
sequence.\n * \n * If any of two pairs would have the same key the last one gets added to the map.\n * \n * @sample
samples.text.Strings.associateTo\n */\npublic inline fun <K, V, M : MutableMap<in K, in V>>
CharSequence.associateTo(destination: M, transform: (Char) -> Pair<K, V>): M {\n    for (element in this) {\n
destination += transform(element)\n
    }\n    return destination\n}\n\n/**\n * Returns a [Map] where keys are characters from the given char sequence
and values are\n * produced by the [valueSelector] function applied to each character.\n * \n * If any two characters

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are equal, the last one gets added to the map.\n \* \n \* The returned map preserves the entry iteration order of the original char sequence.\n \* \n \* @sample samples.text.Strings.associateWith\n \* \n \* @SinceKotlin("1.3")\n public inline fun <V> CharSequence.associateWith(valueSelector: (Char) -> V): Map<Char, V> {\n val result = LinkedHashMap<Char, V>(mapCapacity(length.coerceAtMost(128)).coerceAtLeast(16))\n return associateWithTo(result, valueSelector)\n }\n\n\n \* Populates and returns the [destination] mutable map with key-value pairs for each character of the given char sequence,\n \* where key is the character itself and value is provided by the [valueSelector] function applied to that key.\n \* \n \* If any two characters are equal, the last one overwrites the former value in the map.\n \* \n \* @sample samples.text.Strings.associateWithTo\n \* \n \* @SinceKotlin("1.3")\n public inline fun <V, M : MutableMap<in Char, in V>> CharSequence.associateWithTo(destination: M, valueSelector: (Char) -> V): M {\n for (element in this) {\n destination.put(element, valueSelector(element))\n }\n return destination\n }\n\n\n \* Appends all characters to the given [destination] collection.\n \* \n \* @public fun <C : MutableCollection<in Char>> CharSequence.toCollection(destination: C): C {\n for (item in this) {\n destination.add(item)\n }\n return destination\n }\n\n\n \* Returns a new [HashSet] of all characters.\n \* \n \* @public fun CharSequence.toHashSet(): HashSet<Char> {\n return toCollection(HashSet<Char>(mapCapacity(length.coerceAtMost(128))))\n }\n\n\n\n \* Returns a [List] containing all characters.\n \* \n \* @public fun CharSequence.toList(): List<Char> {\n return when (length) {\n 0 -> emptyList()\n 1 -> listOf(this[0])\n else -> this.toMutableList()\n }\n }\n\n\n\n \* Returns a new [MutableList] filled with all characters of this char sequence.\n \* \n \* @public fun CharSequence.toMutableList(): MutableList<Char> {\n return toCollection(ArrayList<Char>(length))\n }\n\n\n\n \* Returns a [Set] of all characters.\n \* \n \* \n \* The returned set preserves the element iteration order of the original char sequence.\n \* \n \* @public fun CharSequence.toSet(): Set<Char> {\n return when (length) {\n 0 -> emptySet()\n 1 -> setOf(this[0])\n else -> toCollection(LinkedHashSet<Char>(mapCapacity(length.coerceAtMost(128))))\n }\n }\n\n\n\n \* Returns a single list of all elements yielded from results of [transform] function being invoked on each character of original char sequence.\n \* \n \* @sample samples.collections.Collections.Transformations.flatMap\n \* \n \* @public inline fun <R> CharSequence.flatMap(transform: (Char) -> Iterable<R>): List<R> {\n return flatMapTo(ArrayList<R>(), transform)\n }\n\n\n\n \* Returns a single list of all elements yielded from results of [transform] function being invoked on each character\n \* and its index in the original char sequence.\n \* \n \* @sample samples.collections.Collections.Transformations.flatMapIndexed\n \* \n \* @SinceKotlin("1.4")\n \* @OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n \* @OverloadResolutionByLambdaReturnType\n \* @kotlin.jvm.JvmName("flatMapIndexedIterable")\n \* @kotlin.internal.InlineOnly\n \* @public inline fun <R> CharSequence.flatMapIndexed(transform: (index: Int, Char) -> Iterable<R>): List<R> {\n return flatMapIndexedTo(ArrayList<R>(), transform)\n }\n\n\n\n \* Appends all elements yielded from results of [transform] function being invoked on each character\n \* and its index in the original char sequence, to the given [destination].\n \* \n \* @SinceKotlin("1.4")\n \* @OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n \* @OverloadResolutionByLambdaReturnType\n \* @kotlin.jvm.JvmName("flatMapIndexedIterableTo")\n \* @kotlin.internal.InlineOnly\n \* @public inline fun <R, C : MutableCollection<in R>> CharSequence.flatMapIndexedTo(destination: C, transform: (index: Int, Char) -> Iterable<R>): C {\n var index = 0\n for (element in this) {\n val list = transform(index++, element)\n destination.addAll(list)\n }\n return destination\n }\n\n\n\n \* Appends all elements yielded from results of [transform] function being invoked on each character of original char sequence, to the given [destination].\n \* \n \* @public inline fun <R, C : MutableCollection<in R>> CharSequence.flatMapTo(destination: C, transform: (Char) -> Iterable<R>): C {\n for (element in this) {\n val list = transform(element)\n destination.addAll(list)\n }\n return destination\n }\n\n\n\n \* Groups characters of the original char sequence by the key returned by the given [keySelector] function\n \* applied to each character and returns a map where each group key is associated with

a list of corresponding characters.

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    * The returned map preserves the entry iteration order of the keys produced
    * from the original char sequence.
    * @sample samples.collections.Collections.Transformations.groupBy
    */
    public inline fun <K> CharSequence.groupBy(keySelector: (Char) -> K): Map<K, List<Char>> {
        return groupByTo(LinkedHashMap<K, MutableList<Char>>(), keySelector)
    }
    */
    * Groups values returned by the [valueTransform] function applied to each character of the original char sequence
    * by the key returned by the given [keySelector] function applied to the character
    * and returns a map where each group key is associated with a list of corresponding values.
    * The returned map preserves the entry iteration order of the keys produced
    * from the original char sequence.
    * @sample
    samples.collections.Collections.Transformations.groupByKeysAndValues
    */
    public inline fun <K, V> CharSequence.groupBy(keySelector: (Char) -> K, valueTransform: (Char)
    -> V): Map<K, List<V>> {
        return groupByTo(LinkedHashMap<K, MutableList<V>>(), keySelector, valueTransform)
    }
    */
    * Groups characters of the original char sequence by the key returned by the given
    [keySelector] function
    * applied to each character and puts to the [destination] map each group key associated
    with a list of corresponding characters.
    * @return The [destination] map.
    * @sample
    samples.collections.Collections.Transformations.groupBy
    */
    public inline fun <K, M : MutableMap<in K, MutableList<Char>>> CharSequence.groupByTo(destination: M, keySelector: (Char) -> K): M {
        for (element in this) {
            val key = keySelector(element)
            val list = destination.getOrPut(key) { ArrayList<Char>() }
            list.add(element)
        }
        return destination
    }
    */
    * Groups values returned by the [valueTransform] function applied to each character of the original char sequence
    * by the key returned by the given [keySelector] function applied
    to the character
    * and puts to the [destination] map each group key associated with a list of corresponding
    values.
    * @return The [destination] map.
    * @sample
    samples.collections.Collections.Transformations.groupByKeysAndValues
    */
    public inline fun <K, V, M : MutableMap<in K, MutableList<V>>> CharSequence.groupByTo(destination: M, keySelector: (Char) -> K, valueTransform: (Char) -> V): M {
        for (element in this) {
            val key = keySelector(element)
            val list = destination.getOrPut(key) { ArrayList<V>() }
            list.add(valueTransform(element))
        }
        return destination
    }
    */
    * Creates a [Grouping] source from a char sequence to be used later with one of group-and-fold operations
    * using the specified [keySelector] function to extract a key from each character.
    * @sample
    samples.collections.Grouping.groupingByEachCount
    */
    @SinceKotlin("1.1")
    public inline fun <K> CharSequence.groupingBy(crossinline keySelector: (Char) -> K): Grouping<Char, K> {
        return object : Grouping<Char, K> {
            override fun sourceIterator(): Iterator<Char> = this@groupingBy.iterator()
            override fun keyOf(element: Char): K = keySelector(element)
        }
    }
    */
    * Returns a list containing the results of applying the given [transform] function
    * to each character in the original char sequence.
    * @sample samples.text.Strings.map
    */
    public inline fun <R> CharSequence.map(transform: (Char) -> R): List<R> {
        return mapTo(ArrayList<R>(length), transform)
    }
    */
    * Returns a list containing the results of applying the given [transform] function
    * to each character and its index in the original char sequence.
    * @param [transform] function that takes the index of a character and the character itself
    * and returns the result of the transform applied to the character.
    */
    public inline fun <R> CharSequence.mapIndexed(transform: (index: Int, Char) -> R): List<R> {
        return mapIndexedTo(ArrayList<R>(length), transform)
    }
    */
    * Returns a list containing only the non-null results of applying the given [transform]
    function
    * to each character and its index in the original char sequence.
    * @param [transform] function that takes the index of a character and the character itself
    * and returns the result of the transform applied to the character.
    */
    public inline fun <R : Any> CharSequence.mapIndexedNotNull(transform: (index: Int, Char) -> R?): List<R> {
        return mapIndexedNotNullTo(ArrayList<R>(), transform)
    }
    */
    * Applies the given [transform] function to each character and its index in the original char sequence
    * and appends only the non-null results to the given [destination].
    * @param [transform] function that takes the index of a character and the character itself
    * and returns the result of the transform applied to the character.
    */
    public inline fun <R : Any, D> CharSequence.mapIndexedNotNullTo(destination: D, transform: (index: Int, Char) -> R?): D {
        return destination.also {
            mapIndexedNotNullTo(ArrayList<R>(), transform).forEach { it.addTo(destination) }
        }
    }
    */

```

`C : MutableCollection<in R>> CharSequence.mapIndexedNotNullTo(destination: C, transform: (index: Int, Char) -> R?): C` {`\n forEachIndexed { index, element -> transform(index, element)?.let { destination.add(it) } }`}`\n return destination``\n\n``*/``\n * Applies the given [transform] function to each character and its index in the original char sequence``\n * and appends the results to the given [destination].``\n * @param [transform] function that takes the index of a character and the character itself``\n * and returns the result of the transform applied to the character.``\n */``\npublic inline fun <R, C : MutableCollection<in R>>`

`CharSequence.mapIndexedTo(destination: C, transform: (index: Int, Char) -> R): C` {`\n var index = 0``\n for (item in this)``\n destination.add(transform(index++, item))``\n return destination``\n\n``*/``\n * Returns a list containing only the non-null results of applying the given [transform] function``\n * to each character in the original char sequence.``\n * \n * @sample samples.collections.Collections.Transformations.mapNotNull``\n */``\npublic inline fun <R : Any> CharSequence.mapNotNull(transform: (Char) -> R?): List<R>` {`\n return mapNotNullTo(ArrayList<R>(), transform)`}`\n\n``*/``\n * Applies the given [transform] function to each character in the original char sequence``\n * and appends only the non-null results to the given [destination].``\n */``\npublic inline fun <R : Any, C : MutableCollection<in R>> CharSequence.mapNotNullTo(destination: C, transform: (Char) -> R?): C` {`\n forEach { element -> transform(element)?.let { destination.add(it) } }`}`\n return destination``\n\n``*/``\n * Applies the given [transform] function to each character of the original char sequence``\n * and appends the results to the given [destination].``\n */``\npublic inline fun <R, C : MutableCollection<in R>>`

`CharSequence.mapTo(destination: C, transform: (Char) -> R): C` {`\n for (item in this)``\n destination.add(transform(item))``\n return destination``\n\n``*/``\n * Returns a lazy [Iterable] that wraps each character of the original char sequence``\n * into an [IndexedValue] containing the index of that character and the character itself.``\n */``\npublic fun CharSequence.withIndex(): Iterable<IndexedValue<Char>>` {`\n return IndexingIterable { iterator() }`}`\n\n``*/``\n * Returns `true` if all characters match the given [predicate].``\n * \n * Note that if the char sequence contains no characters, the function returns `true```\n * because there are no characters in it that do not match the predicate.``\n * See a more detailed explanation of this logic concept in ["Vacuous truth"](https://en.wikipedia.org/wiki/Vacuous_truth) article.``\n * \n * @sample samples.collections.Collections.Aggregates.all``\n */``\npublic inline fun CharSequence.all(predicate: (Char) -> Boolean): Boolean` {`\n for (element in this) if (!predicate(element)) return false``\n return true`}`\n\n``*/``\n * Returns `true` if char sequence has at least one character.``\n * \n * @sample samples.collections.Collections.Aggregates.any``\n */``\npublic fun CharSequence.any(): Boolean` {`\n return !isEmpty()`}`\n\n``*/``\n * Returns `true` if at least one character matches the given [predicate].``\n * \n * @sample samples.collections.Collections.Aggregates.anyWithPredicate``\n */``\npublic inline fun CharSequence.any(predicate: (Char) -> Boolean): Boolean` {`\n for (element in this) if (predicate(element)) return true``\n return false`}`\n\n``*/``\n * Returns the length of this char sequence.``\n */``\n@kotlin.internal.InlineOnly``\npublic inline fun CharSequence.count(): Int` {`\n return length`}`\n\n``*/``\n * Returns the number of characters matching the given [predicate].``\n */``\npublic inline fun CharSequence.count(predicate: (Char) -> Boolean): Int` {`\n var count = 0``\n for (element in this) if (predicate(element)) ++count``\n return count`}`\n\n``*/``\n * Accumulates value starting with [initial] value and applying [operation] from left to right``\n * to current accumulator value and each character.``\n * \n * Returns the specified [initial] value if the char sequence is empty.``\n * \n * @param [operation] function that takes current accumulator value and a character, and calculates the next accumulator value.``\n */``\npublic inline fun <R> CharSequence.fold(initial: R, operation: (acc: R, Char) -> R): R` {`\n var accumulator = initial``\n for (element in this) accumulator = operation(accumulator, element)``\n return accumulator`}`\n\n``*/``\n * Accumulates value starting with [initial] value and applying [operation] from left to right``\n * to current accumulator value and each character with its index in the original char sequence.``\n * \n * Returns the specified [initial] value if the char sequence is empty.``\n * \n * @param [operation] function that takes the index of a character, current accumulator value``\n * and the character itself, and calculates the next accumulator value.``\n */``\npublic inline fun <R> CharSequence.foldIndexed(initial: R, operation: (index: Int, acc: R, Char) -> R):`

```

R {
    var index = 0
    var accumulator = initial
    for (element
in this) accumulator = operation(index++, accumulator, element)
    return accumulator
}

/** Accumulates
value starting with [initial] value and applying [operation] from right to left
* to each character and current
accumulator value.
* Returns the specified [initial] value if the char sequence is empty.
* @param
[operation] function that takes a character and current accumulator value, and calculates the next accumulator
value.
*/
public inline fun <R> CharSequence.foldRight(initial: R, operation: (Char, acc: R) -> R): R {
    var index = lastIndex
    var accumulator = initial
    while (index >= 0) {
        accumulator = operation(get(index--),
accumulator)
    }
    return accumulator
}

/** Accumulates value starting with [initial] value and applying
[operation] from right to left
* to each character with its index in the original char sequence and current
accumulator value.
* Returns the specified [initial] value if the
char sequence is empty.
* @param [operation] function that takes the index of a character, the character
itself
* and current accumulator value, and calculates the next accumulator value.
*/
public inline fun <R>
CharSequence.foldRightIndexed(initial: R, operation: (index: Int, Char, acc: R) -> R): R {
    var index =
lastIndex
    var accumulator = initial
    while (index >= 0) {
        accumulator = operation(index, get(index),
accumulator)
        --index
    }
    return accumulator
}

/** Performs the given [action] on each
character.
*/
public inline fun CharSequence.forEach(action: (Char) -> Unit): Unit {
    for (element in this)
action(element)
}

/** Performs the given [action] on each character, providing sequential index with the
character.
* @param [action] function that takes the index of a character and the character itself
* and performs
the action on the character.
*/
public inline fun CharSequence.forEachIndexed(action: (index:
Int, Char) -> Unit): Unit {
    var index = 0
    for (item in this) action(index++, item)
}

/** Returns the
largest character.
* @throws NoSuchElementException if the char sequence is empty.
*/
@SinceKotlin("1.7")
@kotlin.jvm.JvmName("maxOrThrow")
@Suppress("CONFLICTING_OVERLOADS")
public fun CharSequence.max(): Char {
    if (isEmpty()) throw NoSuchElementException()
    var max =
this[0]
    for (i in 1..lastIndex) {
        val e = this[i]
        if (max < e) max = e
    }
    return max
}

/** Returns the first character yielding the largest value of the given function.
* @throws
NoSuchElementException if the char sequence is empty.
* @sample
samples.collections.Collections.Aggregates.maxBy
*/
@SinceKotlin("1.7")
@kotlin.jvm.JvmName("maxByOrThrow")
@Suppress("CONFLICTING_OVERLOADS")
public inline fun <R : Comparable<R>> CharSequence.maxBy(selector: (Char) -> R): Char {
    if
(isEmpty()) throw NoSuchElementException()

    var maxElem = this[0]
    val lastIndex = this.lastIndex
    if (lastIndex == 0) return maxElem
    var maxValue =
selector(maxElem)
    for (i in 1..lastIndex) {
        val e = this[i]
        val v = selector(e)
        if (maxValue <
v) {
            maxElem = e
            maxValue = v
        }
    }
    return maxElem
}

/** Returns the first
character yielding the largest value of the given function or `null` if there are no characters.
* @sample
samples.collections.Collections.Aggregates.maxByOrNull
*/
@SinceKotlin("1.4")
public inline fun <R :
Comparable<R>> CharSequence.maxByOrNull(selector: (Char) -> R): Char? {
    if (isEmpty()) return null
    var
maxElem = this[0]
    val lastIndex = this.lastIndex
    if (lastIndex == 0) return maxElem
    var maxValue =
selector(maxElem)
    for (i in 1..lastIndex) {
        val e = this[i]
        val v = selector(e)
        if (maxValue <
v) {
            maxElem = e
            maxValue = v
        }
    }
    return maxElem
}

/** Returns the largest value among all values
produced by [selector] function
* applied to each character in the char sequence.
* @sample
samples.collections.Collections.Aggregates.maxOf
* If any of values produced
by [selector] function is `NaN`, the returned result is `NaN`.
* @throws NoSuchElementException if the char
sequence is empty.
*/
@SinceKotlin("1.4")
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolution
ByLambdaReturnType
@kotlin.internal.InlineOnly
public inline fun CharSequence.maxOf(selector: (Char) ->
Double): Double {
    if (isEmpty()) throw NoSuchElementException()
    var maxValue = selector(this[0])
    for
(i in 1..lastIndex) {
        val v = selector(this[i])
        maxValue = maxOf(maxValue, v)
    }
    return
maxValue
}

/** Returns the largest value among all values produced by [selector] function
* applied to

```

each character in the char sequence.  
 \* If any of values produced by [selector] function is NaN, the returned result is NaN.  
 \* @throws NoSuchElementException if the char sequence is empty.

```

* Since Kotlin("1.4")
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolutionByLambdaReturnType
@kotlin.internal.InlineOnly
public inline fun CharSequence.maxOf(selector: (Char) -> Float): Float {
    if (isEmpty()) throw NoSuchElementException()
    var maxValue = selector(this[0])
    for (i in 1..lastIndex) {
        val v = selector(this[i])
        maxValue = maxOf(maxValue, v)
    }
    return maxValue
}

```

\* Returns the largest value among all values produced by [selector] function applied to each character in the char sequence.  
 \* @throws NoSuchElementException if the char sequence is empty.

```

* Since Kotlin("1.4")
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolutionByLambdaReturnType
@kotlin.internal.InlineOnly
public inline fun <R : Comparable<R>> CharSequence.maxOf(selector: (Char) -> R): R {
    if (isEmpty()) throw NoSuchElementException()
    var maxValue = selector(this[0])
    for (i in 1..lastIndex) {
        val v = selector(this[i])
        if (maxValue < v) {
            maxValue = v
        }
    }
    return maxValue
}

```

\* Returns the largest value among all values produced by [selector] function applied to each character in the char sequence or null if there are no characters.  
 \* If any of values produced by [selector] function is NaN, the returned result is NaN.

```

* Since Kotlin("1.4")
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolutionByLambdaReturnType
@kotlin.internal.InlineOnly
public inline fun CharSequence.maxOfOrNull(selector: (Char) -> Double): Double? {
    if (isEmpty()) return null
    var maxValue = selector(this[0])
    for (i in 1..lastIndex) {
        val v = selector(this[i])
        maxValue = maxOf(maxValue, v)
    }
    return maxValue
}

```

\* Returns the largest value among all values produced by [selector] function applied to each character in the char sequence or null if there are no characters.  
 \* If any of values produced by [selector] function is NaN, the returned result is NaN.

```

* Since Kotlin("1.4")
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolutionByLambdaReturnType
@kotlin.internal.InlineOnly
public inline fun CharSequence.maxOfOrNull(selector: (Char) -> Float): Float? {
    if (isEmpty()) return null
    var maxValue = selector(this[0])
    for (i in 1..lastIndex) {
        val v = selector(this[i])
        maxValue = maxOf(maxValue, v)
    }
    return maxValue
}

```

\* Returns the largest value among all values produced by [selector] function applied to each character in the char sequence or null if there are no characters.

```

* Since Kotlin("1.4")
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolutionByLambdaReturnType
@kotlin.internal.InlineOnly
public inline fun <R : Comparable<R>> CharSequence.maxOfOrNull(selector: (Char) -> R): R? {
    if (isEmpty()) return null
    var maxValue = selector(this[0])
    for (i in 1..lastIndex) {
        val v = selector(this[i])
        if (maxValue < v) {
            maxValue = v
        }
    }
    return maxValue
}

```

\* Returns the largest value according to the provided [comparator] among all values produced by [selector] function applied to each character in the char sequence.  
 \* @throws NoSuchElementException if the char sequence is empty.

```

* Since Kotlin("1.4")
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolutionByLambdaReturnType
@kotlin.internal.InlineOnly
public inline fun <R> CharSequence.maxOfWith(comparator: Comparator<in R>, selector: (Char) -> R): R {
    if (isEmpty()) throw NoSuchElementException()
    var maxValue = selector(this[0])
    for (i in 1..lastIndex) {
        val v = selector(this[i])
        if (comparator.compare(maxValue, v) < 0) {
            maxValue = v
        }
    }
    return maxValue
}

```

\* Returns the largest value according to the provided [comparator] among all values produced by [selector] function applied to each character in the char sequence or null if there are no characters.

```

* Since Kotlin("1.4")
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolutionByLambdaReturnType
@kotlin.internal.InlineOnly
public inline fun <R> CharSequence.maxOfWithOrNull(comparator: Comparator<in R>, selector: (Char) -> R): R? {
    if (isEmpty())

```

```

return null\n    var maxValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        if (comparator.compare(maxValue, v) < 0) {\n            maxValue = v\n        }\n    }\n    return maxValue\n}\n\nReturns the largest character or `null` if there are no characters.\n*/\n@SinceKotlin("1.4")\npublic fun CharSequence.maxOrNull(): Char? {\n    if (isEmpty()) return null\n    var max = this[0]\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        if (max < e) max = e\n    }\n    return max\n}\n\nReturns the first character having the largest value according to the provided [comparator].\n*/\n\n* @throws NoSuchElementException if the char sequence is empty.\n\n*/\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxWithOrThrow")\n@Suppress("CONFLICTING_OVERLOADS")\npublic fun CharSequence.maxWith(comparator: Comparator<in Char>): Char {\n    if (isEmpty())\n        throw NoSuchElementException()\n    var max = this[0]\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        if (comparator.compare(max, e) < 0) max = e\n    }\n    return max\n}\n\nReturns the first character having the largest value according to the provided [comparator] or `null` if there are no characters.\n\n*/\n\n@SinceKotlin("1.4")\npublic fun CharSequence.maxWithOrNull(comparator: Comparator<in Char>): Char? {\n    if (isEmpty()) return null\n    var max = this[0]\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        if (comparator.compare(max, e) < 0) max = e\n    }\n    return max\n}\n\nReturns the smallest character.\n*/\n\n* @throws NoSuchElementException if the char sequence is empty.\n\n*/\n\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minOrThrow")\n@Suppress("CONFLICTING_OVERLOADS")\npublic fun CharSequence.min(): Char {\n    if (isEmpty())\n        throw NoSuchElementException()\n    var min = this[0]\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        if (min > e) min = e\n    }\n    return min\n}\n\nReturns the first character yielding the smallest value of the given function.\n*/\n\n* @throws NoSuchElementException if the char sequence is empty.\n\n*/\n\n* @sample samples.collections.Collections.Aggregates.minBy\n\n*/\n\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minByOrThrow")\n@Suppress("CONFLICTING_OVERLOADS")\npublic inline fun <R : Comparable<R>> CharSequence.minBy(selector: (Char) -> R): Char {\n    if (isEmpty())\n        throw NoSuchElementException()\n    var minElem = this[0]\n    val lastIndex = this.lastIndex\n    if (lastIndex == 0)\n        return minElem\n    var minValue = selector(minElem)\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        val v = selector(e)\n        if (minValue > v) {\n            minElem = e\n            minValue = v\n        }\n    }\n    return minElem\n}\n\nReturns the first character yielding the smallest value of the given function or `null` if there are no characters.\n*/\n\n* @sample samples.collections.Collections.Aggregates.minByOrNull\n\n*/\n\n@SinceKotlin("1.4")\npublic inline fun <R : Comparable<R>> CharSequence.minByOrNull(selector: (Char) -> R): Char? {\n    if (isEmpty()) return null\n    var minElem = this[0]\n    val lastIndex = this.lastIndex\n    if (lastIndex == 0)\n        return minElem\n    var minValue = selector(minElem)\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        val v = selector(e)\n        if (minValue > v) {\n            minElem = e\n            minValue = v\n        }\n    }\n    return minElem\n}\n\nReturns the smallest value among all values produced by [selector] function\n*/\n\n* applied to each character in the char sequence.\n*/\n\n* If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n*/\n\n* @throws NoSuchElementException if the char sequence is empty.\n\n*/\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun CharSequence.minOf(selector: (Char) -> Double): Double {\n    if (isEmpty())\n        throw NoSuchElementException()\n    var minValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n        minValue = minOf(minValue, v)\n    }\n    return minValue\n}\n\nReturns the smallest value among all values produced by [selector] function\n*/\n\n* applied to each character in the char sequence.\n*/\n\n* If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n*/\n\n* @throws NoSuchElementException if the char sequence is empty.\n\n*/\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun CharSequence.minOf(selector: (Char) ->

```

```

Float): Float {
    if (isEmpty()) throw NoSuchElementException()
    var minValue = selector(this[0])
    for (i in 1..lastIndex) {
        val v = selector(this[i])
        minValue = minOf(minValue, v)
    }
    return
    minValue
}

Returns the smallest value among all values produced by [selector] function
* applied to each character in the char sequence.
* @throws NoSuchElementException if the char sequence is empty.

SinceKotlin("1.4")
OptIn(kotlin.experimental.ExperimentalTypeInference::class)
OverloadResolution
ByLambdaReturnType
kotlin.internal.InlineOnly
public
inline fun <R : Comparable<R>> CharSequence.minOf(selector: (Char) -> R): R {
    if (isEmpty()) throw
    NoSuchElementException()
    var minValue = selector(this[0])
    for (i in 1..lastIndex) {
        val v =
        selector(this[i])
        if (minValue > v) {
            minValue = v
        }
    }
    return minValue
}

Returns the smallest value among all values produced by [selector] function
* applied to each character in the char
sequence or `null` if there are no characters.
* If any of values produced by [selector] function is `NaN`, the
returned result is `NaN`.

SinceKotlin("1.4")
OptIn(kotlin.experimental.ExperimentalTypeInference::class)
OverloadResolution
ByLambdaReturnType
kotlin.internal.InlineOnly
public
inline fun CharSequence.minOfOrNull(selector:
(Char) -> Double): Double? {
    if (isEmpty()) return null
    var
    minValue = selector(this[0])
    for (i in 1..lastIndex) {
        val v = selector(this[i])
        minValue =
        minOf(minValue, v)
    }
    return minValue
}

Returns the smallest value among all values produced
by [selector] function
* applied to each character in the char sequence or `null` if there are no characters.
* If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.

SinceKotlin("1.4")
OptIn(kotlin.experimental.ExperimentalTypeInference::class)
OverloadResolution
ByLambdaReturnType
kotlin.internal.InlineOnly
public
inline fun CharSequence.minOfOrNull(selector:
(Char) -> Float): Float? {
    if (isEmpty()) return null
    var minValue = selector(this[0])
    for (i in 1..lastIndex)
    {
        val v = selector(this[i])
        minValue = minOf(minValue, v)
    }
    return minValue
}

Returns the smallest value among all values produced by [selector] function
* applied to each character
in the char sequence or `null` if there are no characters.

SinceKotlin("1.4")
OptIn(kotlin.experimental.ExperimentalTypeInference::class)
OverloadResolution
ByLambdaReturnType
kotlin.internal.InlineOnly
public
inline fun <R : Comparable<R>>
CharSequence.minOfOrNull(selector: (Char) -> R): R? {
    if (isEmpty()) return null
    var minValue =
    selector(this[0])
    for (i in 1..lastIndex) {
        val v = selector(this[i])
        if (minValue > v) {
            minValue = v
        }
    }
    return minValue
}

Returns the smallest value according to the provided
[comparator]
* among all values produced by [selector] function applied to each character in the char sequence.
* @throws NoSuchElementException if the char sequence is empty.

SinceKotlin("1.4")
OptIn(kotlin.experimental.ExperimentalTypeInference::class)
OverloadResolution
ByLambdaReturnType
kotlin.internal.InlineOnly
public
inline fun <R> CharSequence.minOfWith(comparator:
Comparator<in R>, selector: (Char) -> R): R {
    if (isEmpty()) throw NoSuchElementException()
    var
    minValue = selector(this[0])
    for (i in 1..lastIndex) {
        val v = selector(this[i])
        if
        (comparator.compare(minValue, v) > 0) {
            minValue = v
        }
    }
    return minValue
}

Returns the smallest value according to the provided [comparator]
* among all values produced by [selector]
function applied to each character in the char sequence or `null` if there are no characters.

SinceKotlin("1.4")
OptIn(kotlin.experimental.ExperimentalTypeInference::class)
OverloadResolution
ByLambdaReturnType
kotlin.internal.InlineOnly
public
inline fun <R>
CharSequence.minOfWithOrNull(comparator: Comparator<in R>, selector: (Char) -> R): R? {
    if (isEmpty())
    return null
    var minValue = selector(this[0])
    for (i in 1..lastIndex) {
        val v = selector(this[i])
        if
        (comparator.compare(minValue, v) > 0)
        {
            minValue = v
        }
    }
    return minValue
}

Returns the smallest character or `null` if
there are no characters.

SinceKotlin("1.4")
public fun CharSequence.minOrNull(): Char? {
    if
    (isEmpty()) return null
    var min = this[0]
    for (i in 1..lastIndex) {
        val e = this[i]
        if (min > e) min =
        e
    }
    return min
}

Returns the first character having the smallest value according to the provided

```

```

[comparator].\n * \n * @throws NoSuchElementException if the char sequence is empty.\n
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minWithOrThrow")\n@Suppress("CONFLICTING_OVERLOADS")\npublic fun CharSequence.minWith(comparator: Comparator<in Char>): Char {\n if (isEmpty()) throw\nNoSuchElementException()\n var min = this[0]\n for (i in 1..lastIndex) {\n val e = this[i]\n if\n(comparator.compare(min, e) > 0) min = e\n }\n return min\n}\n\n/**\n * Returns the first character having\n the smallest value according to the provided [comparator] or `null` if there are no characters.\n
*\n@SinceKotlin("1.4")\npublic fun CharSequence.minWithOrNull(comparator: Comparator<in Char>): Char?\n {\n if (isEmpty()) return null\n var min = this[0]\n for (i in 1..lastIndex) {\n val e = this[i]\n if\n(comparator.compare(min, e) > 0) min = e\n }\n return min\n}\n\n/**\n * Returns `true` if the char sequence has\n no characters.\n
*\n * @sample samples.collections.Collections.Aggregates.none\n
*\npublic fun\nCharSequence.none(): Boolean {\n return isEmpty()\n}\n\n/**\n * Returns `true` if no characters match the given\n [predicate].\n
*\n * @sample samples.collections.Collections.Aggregates.noneWithPredicate\n
*\npublic inline fun\nCharSequence.none(predicate: (Char) -> Boolean): Boolean {\n for (element in this) if (predicate(element)) return\nfalse\n return true\n}\n\n/**\n * Performs the given [action] on each character and returns the char sequence\n itself afterwards.\n
*\n@SinceKotlin("1.1")\npublic inline fun <S : CharSequence> S.onEach(action: (Char) ->\nUnit): S {\n return apply { for (element in this) action(element) }\n}\n\n/**\n * Performs the given [action] on\n each character, providing sequential index with the character,\n * and returns the char sequence itself afterwards.\n
*\n * @param [action] function that takes the index of a character and the character itself\n * and performs the action on\n the character.\n
*\n@SinceKotlin("1.4")\npublic inline fun <S : CharSequence> S.onEachIndexed(action: (index:\nInt, Char) -> Unit): S {\n return apply { forEachIndexed(action) }\n}\n\n/**\n * Accumulates value starting with\n the first character and applying [operation] from left to right\n * to current accumulator value and each character.\n
*\n * Throws an exception if this char sequence is empty. If the char sequence can be empty in an expected way,\n * please use [reduceOrNull] instead. It returns `null` when its receiver\n is empty.\n
*\n * @param [operation] function that takes current accumulator value and a character,\n * and\n calculates the next accumulator value.\n
*\n * @sample samples.collections.Collections.Aggregates.reduce\n
*\npublic inline fun CharSequence.reduce(operation: (acc: Char, Char) -> Char): Char {\n if (isEmpty())\nthrow UnsupportedOperationException("Empty char sequence can't be reduced.")\n var accumulator = this[0]\n for (index in 1..lastIndex) {\n accumulator = operation(accumulator, this[index])\n }\n return\naccumulator\n}\n\n/**\n * Accumulates value starting with the first character and applying [operation] from left to\n right\n * to current accumulator value and each character with its index in the original char sequence.\n
*\n * Throws an exception if this char sequence is empty. If the char sequence can be empty in an expected way,\n * please use [reduceIndexedOrNull] instead. It returns `null` when its receiver is empty.\n
*\n * @param [operation] function that takes the index of a character, current accumulator value and the character\n itself,\n * and calculates the next accumulator value.\n
*\n * @sample\nsamples.collections.Collections.Aggregates.reduce\n
*\npublic inline fun CharSequence.reduceIndexed(operation:\n(index: Int, acc: Char, Char) -> Char): Char {\n if (isEmpty())\n throw\nUnsupportedOperationException("Empty char sequence can't be reduced.")\n var accumulator = this[0]\n for\n(index in 1..lastIndex) {\n accumulator = operation(index, accumulator, this[index])\n }\n return\naccumulator\n}\n\n/**\n * Accumulates value starting with the first character and applying [operation] from left to\n right\n * to current accumulator value and each character with its index in the original char sequence.\n
*\n * Returns `null` if the char sequence is empty.\n
*\n * @param [operation] function that takes the index of a\n character, current accumulator value and the character itself,\n * and calculates the next accumulator value.\n
*\n * @sample\nsamples.collections.Collections.Aggregates.reduceOrNull\n
*\n@SinceKotlin("1.4")\npublic inline fun\nCharSequence.reduceIndexedOrNull(operation: (index: Int, acc: Char, Char) -> Char): Char? {\n if (isEmpty())\nreturn null\n var accumulator = this[0]\n for (index in 1..lastIndex) {\n accumulator = operation(index,\naccumulator, this[index])\n }\n return accumulator\n}\n\n/**\n * Accumulates value starting with the first\n character and applying [operation] from left to right\n * to current accumulator value and each character.\n
*\n *

```



Returns `null` if the char sequence is empty.

`@param [operation]` function that takes current accumulator value and a character, and calculates the next accumulator value.

`@sample` `samples.collections.Collections.Aggregates.reduceOrNull`

```
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic inline fun
CharSequence.reduceOrNull(operation:
(acc: Char, Char) -> Char): Char? {
    if (isEmpty()) return null
    var accumulator = this[0]
    for (index in 1..lastIndex) {
        accumulator = operation(accumulator, this[index])
    }
    return accumulator
}
```

`* Accumulates value starting with the last character and applying [operation] from right to left to each character and current accumulator value.`

`* Throws an exception if this char sequence is empty. If the char sequence can be empty in an expected way, please use [reduceRightOrNull] instead. It returns `null` when its receiver is empty.`

`@param [operation]` function that takes a character and current accumulator value, and calculates the next accumulator value.

`@sample` `samples.collections.Collections.Aggregates.reduceRight`

```
\npublic inline fun
CharSequence.reduceRight(operation: (Char, acc: Char) -> Char): Char {
    var index = lastIndex
    if (index < 0) throw UnsupportedOperationException("Empty
char sequence can't be reduced.")
    var accumulator = get(index--)
    while (index >= 0) {
        accumulator =
operation(get(index--), accumulator)
    }
    return accumulator
}
```

`* Accumulates value starting with the last character and applying [operation] from right to left to each character with its index in the original char sequence and current accumulator value.`

`* Throws an exception if this char sequence is empty. If the char sequence can be empty in an expected way, please use [reduceRightIndexedOrNull] instead. It returns `null` when its receiver is empty.`

`@param [operation]` function that takes the index of a character, the character itself and current accumulator value, and calculates the next accumulator value.

`@sample` `samples.collections.Collections.Aggregates.reduceRight`

```
\npublic inline fun
CharSequence.reduceRightIndexed(operation: (index: Int, Char, acc: Char) -> Char): Char {
    var index =
lastIndex
    if (index < 0) throw UnsupportedOperationException("Empty char sequence can't be reduced.")
    var accumulator = get(index--)
    while (index >= 0) {
        accumulator = operation(index, get(index),
accumulator)
        --index
    }
    return accumulator
}
```

`* Accumulates value starting with the last character and applying [operation] from right to left to each character with its index in the original char sequence and current accumulator value.`

`* Returns `null` if the char sequence is empty.`

`@param [operation]` function that takes the index of a character, the character itself and current accumulator value, and calculates the next accumulator value.

`@sample` `samples.collections.Collections.Aggregates.reduceRightOrNull`

```
*\n@SinceKotlin("1.4")\npublic inline fun
CharSequence.reduceRightIndexedOrNull(operation: (index: Int, Char,
acc: Char) -> Char): Char? {
    var index = lastIndex
    if (index < 0) return null
    var accumulator = get(index--)
    while (index >= 0) {
        accumulator = operation(index, get(index),
accumulator)
        --index
    }
    return accumulator
}
```

`* Accumulates value starting with the last character and applying [operation] from right to left to each character and current accumulator value.`

`* Returns `null` if the char sequence is empty.`

`@param [operation]` function that takes a character and current accumulator value, and calculates the next accumulator value.

`@sample` `samples.collections.Collections.Aggregates.reduceRightOrNull`

```
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic inline fun
CharSequence.reduceRightOrNull(operation: (Char, acc: Char) -> Char): Char? {
    var index = lastIndex
    if (index < 0) return null
    var accumulator = get(index--)
    while (index >= 0) {
        accumulator =
operation(get(index--), accumulator)
    }
    return accumulator
}
```

`* Returns a list containing successive accumulation values generated by applying [operation] from left to right to each character and current accumulator value that starts with [initial] value.`

`* Note that `acc` value passed to [operation] function should not be mutated; otherwise it would affect the previous value in resulting list.`

`@param [operation]` function that takes current accumulator value and a character, and calculates the next accumulator value.

`@sample` `samples.collections.Collections.Aggregates.runningFold`

```
*\n@SinceKotlin("1.4")\npublic inline fun <R>
CharSequence.runningFold(initial: R, operation: (acc: R, Char) ->
```

```

R): List<R> { \n  if (isEmpty()) return listOf(initial)\n  val result = ArrayList<R>(length + 1).apply { add(initial)
}\n  var accumulator = initial\n  for (element in this) {\n    accumulator = operation(accumulator, element)\n
result.add(accumulator)\n  }\n  return result\n}\n\n/**\n * Returns
a list containing successive accumulation values generated by applying [operation] from left to right\n * to each
character, its index in the original char sequence and current accumulator value that starts with [initial] value.\n * \n
* Note that `acc` value passed to [operation] function should not be mutated;\n * otherwise it would affect the
previous value in resulting list.\n * \n * @param [operation] function that takes the index of a character, current
accumulator value\n * and the character itself, and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.runningFold\n * \n @SinceKotlin("1.4")\npublic inline fun <R>
CharSequence.runningFoldIndexed(initial: R, operation: (index: Int, acc: R, Char) -> R): List<R> {\n  if
(isEmpty()) return listOf(initial)\n  val result = ArrayList<R>(length + 1).apply { add(initial) }\n  var accumulator
= initial\n  for (index in indices) {\n    accumulator = operation(index, accumulator,
this[index])\n    result.add(accumulator)\n  }\n  return result\n}\n\n/**\n * Returns a list containing successive
accumulation values generated by applying [operation] from left to right\n * to each character and current
accumulator value that starts with the first character of this char sequence.\n * \n * Note that `acc` value passed to
[operation] function should not be mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n
* @param [operation] function that takes current accumulator value and a character, and calculates the next
accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.runningReduce\n
* \n @SinceKotlin("1.4")\npublic inline fun CharSequence.runningReduce(operation: (acc: Char, Char) -> Char):
List<Char> {\n  if (isEmpty()) return emptyList()\n  var accumulator = this[0]\n  val result =
ArrayList<Char>(length).apply { add(accumulator) }\n  for (index in 1 until length) {\n    accumulator =
operation(accumulator,
this[index])\n    result.add(accumulator)\n  }\n  return result\n}\n\n/**\n * Returns a list containing successive
accumulation values generated by applying [operation] from left to right\n * to each character, its index in the
original char sequence and current accumulator value that starts with the first character of this char sequence.\n * \n
* Note that `acc` value passed to [operation] function should not be mutated;\n * otherwise it would affect the
previous value in resulting list.\n * \n * @param [operation] function that takes the index of a character, current
accumulator value\n * and the character itself, and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.runningReduce\n * \n @SinceKotlin("1.4")\npublic inline fun
CharSequence.runningReduceIndexed(operation: (index: Int, acc: Char, Char) -> Char): List<Char> {\n  if
(isEmpty()) return emptyList()\n  var accumulator = this[0]\n  val result =
ArrayList<Char>(length).apply { add(accumulator) }\n  for (index in 1 until length) {\n    accumulator =
operation(index, accumulator, this[index])\n    result.add(accumulator)\n  }\n  return result\n}\n\n/**\n *
Returns a list containing successive accumulation values generated by applying [operation] from left to right\n * to
each character and current accumulator value that starts with [initial] value.\n * \n * Note that `acc` value passed to
[operation] function should not be mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n
* @param [operation] function that takes current accumulator value and a character, and calculates the next
accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.scan\n
* \n @SinceKotlin("1.4")\n @WasExperimental(ExperimentalStdlibApi::class)\npublic inline fun <R>
CharSequence.scan(initial: R, operation: (acc: R, Char) -> R): List<R> {\n  return runningFold(initial,
operation)\n}\n\n/**\n *
Returns a list containing successive accumulation values generated by applying [operation] from left to right\n *
to each character, its index in the original char sequence and current accumulator value that starts with [initial]
value.\n * \n * Note that `acc` value passed to [operation] function should not be mutated;\n * otherwise it would
affect the previous value in resulting list.\n * \n * @param [operation] function that takes the index of a character,
current accumulator value\n * and the character itself, and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.scan\n
* \n @SinceKotlin("1.4")\n @WasExperimental(ExperimentalStdlibApi::class)\npublic inline fun <R>

```

```

CharSequence.scanIndexed(initial: R, operation: (index: Int, acc: R, Char) -> R): List<R> {
    return
    runningFoldIndexed(initial, operation)
}

/**
 * Returns the sum of all values produced by [selector] function
 * applied to each character in the char sequence.
 */
@Deprecated("Use sumOf instead.")
ReplaceWith("this.sumOf(selector)")
@DeprecatedSinceKotlin(warningSince = "1.5")
public inline fun
CharSequence.sumBy(selector: (Char) -> Int): Int {
    var sum: Int = 0
    for (element in this) {
        sum +=
        selector(element)
    }
    return sum
}

/**
 * Returns the sum of all values produced by [selector] function
 * applied to each character in the char sequence.
 */
@Deprecated("Use sumOf instead.")
ReplaceWith("this.sumOf(selector)")
@DeprecatedSinceKotlin(warningSince = "1.5")
public inline fun
CharSequence.sumByDouble(selector: (Char) -> Double): Double {
    var sum: Double = 0.0
    for (element in
    this) {
        sum += selector(element)
    }
    return sum
}

/**
 * Returns the sum of all values produced by
 * [selector] function applied to each character in the char sequence.
 */
@SinceKotlin("1.4")
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolution
ByLambdaReturnType
@kotlin.jvm.JvmName("sumOfDouble")
@kotlin.internal.InlineOnly
public
inline fun CharSequence.sumOf(selector: (Char) -> Double): Double {
    var sum: Double = 0.toDouble()
    for
    (element in this) {
        sum += selector(element)
    }
    return sum
}

/**
 * Returns the sum of all values
 * produced by [selector] function applied to each character in the char sequence.
 */
@SinceKotlin("1.4")
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolution
ByLambdaReturnType
@kotlin.jvm.JvmName("sumOfInt")
@kotlin.internal.InlineOnly
public inline fun
CharSequence.sumOf(selector: (Char) -> Int): Int {
    var sum: Int = 0.toInt()
    for (element in this) {
        sum
        += selector(element)
    }
    return sum
}

/**
 * Returns the sum of all values produced by [selector]
 * function applied to each character in the char sequence.
 */
@SinceKotlin("1.4")
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolution
ByLambdaReturnType
@kotlin.jvm.JvmName("sumOfLong")
@kotlin.internal.InlineOnly
public
inline fun CharSequence.sumOf(selector: (Char) -> Long): Long {
    var sum: Long = 0.toLong()
    for (element
    in this) {
        sum += selector(element)
    }
    return sum
}

/**
 * Returns the sum of all values produced
 * by [selector] function applied to each character in the char sequence.
 */
@SinceKotlin("1.5")
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolution
ByLambdaReturnType
@kotlin.jvm.JvmName("sumOfUInt")
@WasExperimental(ExperimentalUnsignedType
s::class)
@kotlin.internal.InlineOnly
public inline fun CharSequence.sumOf(selector: (Char) -> UInt): UInt {
    var sum: UInt = 0.toUInt()
    for (element in this) {
        sum += selector(element)
    }
    return
    sum
}

/**
 * Returns the sum of all values produced by [selector] function applied to each character in the char
 * sequence.
 */
@SinceKotlin("1.5")
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolution
ByLambdaReturnType
@kotlin.jvm.JvmName("sumOfULong")
@WasExperimental(ExperimentalUnsignedT
ypes::class)
@kotlin.internal.InlineOnly
public
inline fun CharSequence.sumOf(selector: (Char) -> ULong): ULong {
    var sum: ULong = 0.toULong()
    for
    (element in this) {
        sum += selector(element)
    }
    return sum
}

/**
 * Splits this char sequence into
 * a list of strings each not exceeding the given [size].
 * The last string in the resulting list may have fewer
 * characters than the given [size].
 * @param size the number of elements to take in each string, must be positive
 * and can be greater than the number of elements in this char sequence.
 * @sample
 * samples.text.Strings.chunked
 */
@SinceKotlin("1.2")
public fun CharSequence.chunked(size: Int):
List<String> {
    return windowed(size, size, partialWindows = true)
}

/**
 * Splits this char sequence into
 * several
 * char sequences each not exceeding the given [size]
 * and applies the given [transform] function to an each.
 * @return list of results of the [transform] applied to an each char sequence.
 * Note that the char sequence
 * passed to the [transform] function is ephemeral and is valid only inside that function.
 * You should not store it or
 * allow it to escape in some way, unless you made a snapshot of it.
 * The last char sequence may have fewer

```

characters than the given [size].

`\n * \n * @param size the number of elements to take in each char sequence, must be positive and can be greater than the number of elements in this char sequence.`

`\n * \n * @sample samples.text.Strings.chunkedTransform`

```
\n * \n @SinceKotlin("1.2")\npublic fun <R> CharSequence.chunked(size: Int, transform: (CharSequence) -> R): List<R> {\n    return windowed(size, size, partialWindows = true, transform = transform)\n}\n\n/**\n * Splits this char sequence into a sequence of strings each not exceeding the given [size].\n * \n * The last string in the resulting sequence may have fewer characters than the given [size].\n * \n * @param size the number of elements to take in each string, must be positive and can be greater than the number of elements in this char sequence.\n * \n * @sample samples.collections.Collections.Transformations.chunked
```

```
*\n @SinceKotlin("1.2")\npublic fun CharSequence.chunkedSequence(size: Int): Sequence<String> {\n    return chunkedSequence(size) { it.toString() }\n}\n\n/**\n * Splits this char sequence into several char sequences each not exceeding the given [size]\n * and applies the given [transform] function to an each.\n * \n * @return sequence of results of the [transform] applied to an each char sequence.\n * \n * Note that the char sequence passed to the [transform] function is ephemeral and is valid only inside that function.\n * You should not store it or allow it to escape in some way, unless you made a snapshot of it.\n * The last char sequence may have fewer characters than the given [size].\n * \n * @param size the number of elements to take in each char sequence, must be positive and can be greater than the number of elements in this char sequence.\n * \n * @sample samples.text.Strings.chunkedTransformToSequence
```

```
*\n @SinceKotlin("1.2")\npublic fun <R> CharSequence.chunkedSequence(size: Int, transform: (CharSequence) -> R): Sequence<R> {\n    return windowedSequence(size, size, partialWindows = true, transform = transform)\n}\n\n/**\n * Splits the original char sequence into pair of char sequences,\n * where *first* char sequence contains characters for which [predicate] yielded `true`,\n * while *second* char sequence contains characters for which [predicate] yielded `false`.\n * \n * @sample samples.text.Strings.partition
```

```
*\npublic inline fun CharSequence.partition(predicate: (Char) -> Boolean): Pair<CharSequence, CharSequence> {\n    val first = StringBuilder()\n    val second = StringBuilder()\n    for (element in this) {\n        if (predicate(element)) {\n            first.append(element)\n        } else {\n            second.append(element)\n        }\n    }\n    return Pair(first, second)\n}\n\n/**\n * Splits the original string into pair of strings,\n * where *first* string contains characters for which [predicate] yielded `true`,\n * while *second* string contains characters for which [predicate] yielded `false`.\n * \n * @sample samples.text.Strings.partition
```

```
*\npublic inline fun String.partition(predicate: (Char) -> Boolean): Pair<String, String> {\n    val first = StringBuilder()\n    val second = StringBuilder()\n    for (element in this) {\n        if (predicate(element)) {\n            first.append(element)\n        } else {\n            second.append(element)\n        }\n    }\n    return Pair(first.toString(), second.toString())\n}\n\n/**\n * Returns a list of snapshots of the window of the given [size]\n * sliding along this char sequence with the given [step], where each\n * snapshot is a string.\n * \n * Several last strings may have fewer characters than the given [size].\n * Both [size] and [step] must be positive and can be greater than the number of elements in this char sequence.\n * \n * @param size the number of elements to take in each window\n * @param step the number of elements to move the window forward by on an each step, by default 1\n * @param partialWindows controls whether or not to keep partial windows in the end if any,\n * by default `false` which means partial windows won't be preserved\n * \n * @sample samples.collections.Sequences.Transformations.takeWindows
```

```
*\n @SinceKotlin("1.2")\npublic fun CharSequence.windowed(size: Int, step: Int = 1, partialWindows: Boolean = false): List<String> {\n    return windowed(size, step, partialWindows) { it.toString() }\n}\n\n/**\n * Returns a list of results of applying the given [transform] function to\n * an each char sequence representing a view over the window of the given [size]\n * sliding along this char sequence with the given [step].\n * \n * Note that the char sequence passed to the [transform] function is ephemeral and is valid only inside that function.\n * You should not store it or allow it to escape in some way, unless you made a snapshot of it.\n * Several last char sequences may have fewer characters than the given [size].\n * Both [size] and [step] must be positive and can be greater than the number of elements in this char sequence.\n * \n * @param size the number of elements to take in each window\n * @param step the number of
```

elements to move the window forward by on an each step, by default 1\n \* @param partialWindows controls whether or not to keep partial windows in the end if any,\n \* by default `false` which means partial windows won't be preserved\n \* \n \* @sample samples.collections.Sequences.Transformations.averageWindows\n \*\n@SinceKotlin("1.2")\npublic fun <R> CharSequence.windowed(size: Int, step: Int = 1, partialWindows: Boolean = false, transform: (CharSequence) -> R): List<R> {\n checkWindowSizeStep(size, step)\n val thisSize = this.length\n val resultCapacity = thisSize / step + if (thisSize % step == 0) 0 else 1\n val result = ArrayList<R>(resultCapacity)\n var index = 0\n while (index in 0 until thisSize) {\n val end = index + size\n val coercedEnd = if (end < 0 || end > thisSize) { if (partialWindows) thisSize else break } else end\n result.add(transform(subSequence(index, coercedEnd)))\n index += step\n }\n return result\n}\n\n/\*\*\n \* Returns a sequence of snapshots of the window of the given [size]\n \* sliding along this char sequence with the given [step], where each\n \* snapshot is a string.\n \* \n \* Several last strings may have fewer characters than the given [size].\n \* \n \* Both [size] and [step] must be positive and can be greater than the number of elements in this char sequence.\n \* \n \* @param size the number of elements to take in each window\n \* @param step the number of elements to move the window forward by on an each step, by default 1\n \* @param partialWindows controls whether or not to keep partial windows in the end if any,\n \* by default `false` which means partial windows won't be preserved\n \* \n \* @sample samples.collections.Sequences.Transformations.takeWindows\n \*\n@SinceKotlin("1.2")\npublic fun CharSequence.windowedSequence(size: Int, step: Int = 1, partialWindows: Boolean = false): Sequence<String> {\n return windowedSequence(size, step, partialWindows) { it.toString() }\n}\n\n/\*\*\n \* Returns a sequence of results of applying the given [transform] function to\n \* an each char sequence representing a view over the window of the given [size]\n \* sliding along this char sequence with the given [step].\n \* \n \* Note that the char sequence passed to the [transform] function is ephemeral and is valid only inside that function.\n \* You should not store it or allow it to escape in some way, unless you made a snapshot of it.\n \* \n \* Several last char sequences may have fewer characters than the given [size].\n \* \n \* Both [size] and [step] must be positive and can be greater than the number of elements in this char sequence.\n \* \n \* @param size the number of elements to take in each window\n \* @param step the number of elements to move the window forward by on an each step, by default 1\n \* @param partialWindows controls whether or not to keep partial windows in the end if any,\n \* by default `false` which means partial windows won't be preserved\n \* \n \* @sample samples.collections.Sequences.Transformations.averageWindows\n \*\n@SinceKotlin("1.2")\npublic fun <R> CharSequence.windowedSequence(size: Int, step: Int = 1, partialWindows: Boolean = false, transform: (CharSequence) -> R): Sequence<R> {\n checkWindowSizeStep(size, step)\n val windows = (if (partialWindows) indices else 0 until length - size + 1) step step\n return windows.asSequence().map { index ->\n val end = index + size\n val coercedEnd = if (end < 0 || end > length) length else end\n transform(subSequence(index, coercedEnd))\n }\n}\n\n/\*\*\n \* Returns a list of pairs built from the characters of `this` and the [other] char sequences with the same index\n \* The returned list has length of the shortest char sequence.\n \* \n \* @sample samples.text.Strings.zip\n \*\npublic infix fun CharSequence.zip(other: CharSequence): List<Pair<Char, Char>> {\n return zip(other) { c1, c2 -> c1 to c2 }\n}\n\n/\*\*\n \* Returns a list of values built from the characters of `this` and the [other] char sequences with the same index\n \* using the provided [transform] function applied to each pair of characters.\n \* \n \* The returned list has length of the shortest char sequence.\n \* \n \* @sample samples.text.Strings.zipWithTransform\n \*\npublic inline fun <V> CharSequence.zip(other: CharSequence, transform: (a: Char, b: Char) -> V): List<V> {\n val length = minOf(this.length, other.length)\n val list = ArrayList<V>(length)\n for (i in 0 until length) {\n list.add(transform(this[i], other[i]))\n }\n return list\n}\n\n/\*\*\n \* Returns a list of pairs of each two adjacent characters in this char sequence.\n \* \n \* The returned list is empty if this char sequence contains less than two characters.\n \* \n \* @sample samples.collections.Collections.Transformations.zipWithNext\n \*\n@SinceKotlin("1.2")\npublic fun CharSequence.zipWithNext(): List<Pair<Char, Char>> {\n return zipWithNext { a, b -> a to b }\n}\n\n/\*\*

Returns a list containing the results of applying the given [transform] function to an each pair of two adjacent characters in this char sequence. The returned list is empty if this char sequence contains less than two characters. @sample samples.collections.Collections.Transformations.zipWithNextToFindDeltas

```

*^@SinceKotlin("1.2")\npublic inline fun <R> CharSequence.zipWithNext(transform: (a: Char, b: Char) -> R): List<R> {
    val size = length - 1
    if (size < 1) return emptyList()
    val result = ArrayList<R>(size)
    for (index in 0 until size) {
        result.add(transform(this[index], this[index + 1]))
    }
    return result
}

```

\* Creates an [Iterable] instance that wraps the original char sequence returning its characters when being iterated.

```

*^public fun CharSequence.asIterable(): Iterable<Char> {
    if (this is String && isEmpty()) return emptyList()
    return Iterable { this.iterator() }
}

```

\* Creates a [Sequence] instance that wraps the original char sequence returning its characters when being iterated.

```

*^public fun CharSequence.asSequence(): Sequence<Char> {
    if (this is String && isEmpty()) return emptySequence()
    return Sequence { this.iterator() }
}

```

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```

*^@file:kotlin.jvm.JvmMultifileClass@file:kotlin.jvm.JvmName("StringsKt")\npackage kotlin.text
import kotlin.contracts.contract
import kotlin.jvm.JvmName

```

\* Returns a copy of this string converted to upper case using the rules of the default locale.

```

*^@Deprecated("Use uppercase() instead.", ReplaceWith("uppercase()"))\n@DeprecatedSinceKotlin(warningSince = "1.5")\npublic expect fun String.toUpperCase(): String

```

\* Returns a copy of this string converted to upper case using Unicode mapping rules of the invariant locale. This function supports one-to-many and many-to-one character mapping, thus the length of the returned string can be different from the length of the original string.

```

@sample samples.text.Strings.toUpperCase

```

```

*^@SinceKotlin("1.5")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic expect fun String.toUpperCase(): String

```

\* Returns a copy of this string converted to lower case using the rules of the default locale.

```

*^@Deprecated("Use lowercase() instead.", ReplaceWith("lowercase()"))\n@DeprecatedSinceKotlin(warningSince = "1.5")\npublic expect fun String.toLowerCase(): String

```

\* Returns a copy of this string converted to lower case using Unicode mapping rules of the invariant locale. This function supports one-to-many and many-to-one character mapping, thus the length of the returned string can be different from the length of the original string.

```

@sample samples.text.Strings.toLowerCase

```

```

*^@SinceKotlin("1.5")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic expect fun String.toLowerCase(): String

```

\* Returns a copy of this string having its first letter titlecased using the rules of the default locale, or the original string if it's empty or already starts with a title case letter. The title case of a character is usually the same as its upper case with several exceptions. The particular list of characters with the special title case form depends on the underlying platform.

```

@sample samples.text.Strings.capitalize

```

```

*^@Deprecated("Use replaceFirstChar instead.", ReplaceWith("replaceFirstChar { if (it.isLowerCase()) it.titlecase() else it.toString() }"))\n@DeprecatedSinceKotlin(warningSince = "1.5")\npublic expect fun String.capitalize(): String

```

\* Returns a copy of this string having its first letter lowercased using the rules of the default locale, or the original string if it's empty or already starts with a lower case letter.

```

@sample samples.text.Strings.decapitalize

```

```

*^@Deprecated("Use replaceFirstChar instead.", ReplaceWith("replaceFirstChar { it.lowercase() }"))\n@DeprecatedSinceKotlin(warningSince = "1.5")\npublic expect fun String.decapitalize(): String

```

\* Returns a sub sequence of this char sequence having leading and trailing characters matching the [predicate] removed.

```

*^public inline fun CharSequence.trim(predicate: (Char) -> Boolean): CharSequence {
    var startIndex = 0
    var endIndex = length - 1
    var startFound = false
    while (startIndex <= endIndex) {
        val index = if (!startFound) startIndex else endIndex
        val match = predicate(this[index])
        if (!startFound) {
            if (!match) startFound = true
        } else {
            startIndex += 1
        }
        if (!match) break
        else endIndex -= 1
    }
    return subSequence(startIndex, endIndex + 1)
}

```

\* Returns a string having leading and

trailing characters matching the [predicate] removed.

```

\n *^public inline fun String.trim(predicate: (Char) ->
Boolean): String =\n (this as CharSequence).trim(predicate).toString()\n\n/**\n * Returns a sub sequence of this
char sequence having leading characters matching the [predicate] removed.\n *^public inline fun
CharSequence.trimStart(predicate: (Char)
-> Boolean): CharSequence {\n for (index in this.indices)\n if (!predicate(this[index]))\n return
subSequence(index, length)\n return ""\n}\n\n/**\n * Returns a string having leading characters matching the
[predicate] removed.\n *^public inline fun String.trimStart(predicate: (Char) -> Boolean): String =\n (this as
CharSequence).trimStart(predicate).toString()\n\n/**\n * Returns a sub sequence of this char sequence having
trailing characters matching the [predicate] removed.\n *^public inline fun CharSequence.trimEnd(predicate:
(Char) -> Boolean): CharSequence {\n for (index in this.indices.reversed())\n if (!predicate(this[index]))\n
return subSequence(0, index + 1)\n return ""\n}\n\n/**\n * Returns a string having trailing characters
matching the [predicate] removed.\n *^public inline fun String.trimEnd(predicate: (Char) -> Boolean): String =\n
(this as CharSequence).trimEnd(predicate).toString()\n\n/**\n * Returns
a sub sequence of this char sequence having leading and trailing characters from the [chars] array removed.\n
*^public fun CharSequence.trim(vararg chars: Char): CharSequence = trim { it in chars }\n\n/**\n * Returns a
string having leading and trailing characters from the [chars] array removed.\n *^public fun String.trim(vararg
chars: Char): String = trim { it in chars }\n\n/**\n * Returns a sub sequence of this char sequence having leading
characters from the [chars] array removed.\n *^public fun CharSequence.trimStart(vararg chars: Char):
CharSequence = trimStart { it in chars }\n\n/**\n * Returns a string having leading characters from the [chars]
array removed.\n *^public fun String.trimStart(vararg chars: Char): String = trimStart { it in chars }\n\n/**\n *
Returns a sub sequence of this char sequence having trailing characters from the [chars] array removed.\n
*^public fun
CharSequence.trimEnd(vararg chars: Char): CharSequence = trimEnd { it in chars }\n\n/**\n * Returns
a string having trailing characters from the [chars] array removed.\n *^public fun String.trimEnd(vararg chars:
Char): String = trimEnd { it in chars }\n\n/**\n * Returns a sub sequence of this char sequence having leading
and trailing whitespace removed.\n *^public fun CharSequence.trim(): CharSequence =
trim(Char::isWhitespace)\n\n/**\n * Returns a string having leading and trailing whitespace removed.\n
*^@kotlin.internal.InlineOnly\npublic inline fun String.trim(): String = (this as
CharSequence).trim().toString()\n\n/**\n * Returns a sub sequence of this char sequence having leading whitespace
removed.\n *^public fun CharSequence.trimStart(): CharSequence = trimStart(Char::isWhitespace)\n\n/**\n *
Returns a string having leading whitespace removed.\n *^@kotlin.internal.InlineOnly\npublic inline fun
String.trimStart(): String = (this as CharSequence).trimStart().toString()\n\n/**\n * Returns a sub sequence of this
char sequence having trailing whitespace removed.\n *^public
fun CharSequence.trimEnd(): CharSequence = trimEnd(Char::isWhitespace)\n\n/**\n * Returns a string having
trailing whitespace removed.\n *^@kotlin.internal.InlineOnly\npublic inline fun String.trimEnd(): String = (this
as CharSequence).trimEnd().toString()\n\n/**\n * Returns a char sequence with content of this char sequence padded
at the beginning\n * to the specified [length] with the specified character or space.\n * @param length the desired
string length.\n * @param padChar the character to pad string with, if it has length less than the [length]
specified. Space is used by default.\n * @return Returns a char sequence of length at least [length]
consisting of `this` char sequence prepended with [padChar] as many times\n * as are necessary to reach that
length.\n * @sample samples.text.Strings.padStart\n *^public fun CharSequence.padStart(length: Int, padChar: Char =
'): CharSequence {\n if (length < 0)\n throw IllegalArgumentException("\Desired length
$length is less than zero.")\n if (length <= this.length)\n return this.subSequence(0, this.length)\n val sb =
StringBuilder(length)\n for (i in 1..(length - this.length))\n sb.append(padChar)\n sb.append(this)\n return
sb\n}\n\n/**\n * Pads the string to the specified [length] at the beginning with the specified character or space.\n
* @param length the desired string length.\n * @param padChar the character to pad string with, if it has length
less than the [length] specified. Space is used by default.\n * @return Returns a string of length at least
[length] consisting of `this` string prepended with [padChar] as many times\n * as are necessary to reach that
length.\n * @sample samples.text.Strings.padStart\n *^public fun String.padStart(length: Int, padChar: Char =
'): String =\n

```

```

(this as CharSequence).padStart(length, padChar).toString()\n\n/**\n * Returns a char sequence with content of this
char sequence padded at the end\n * to the specified
[length] with the specified character or space.\n *\n * @param length the desired string length.\n * @param
padChar the character to pad string with, if it has length less than the [length] specified. Space is used by default.\n *
@return Returns a char sequence of length at least [length] consisting of `this` char sequence appended with
[padChar] as many times\n * as are necessary to reach that length.\n * @sample samples.text.Strings.padEnd\n
*/\n\npublic fun CharSequence.padEnd(length: Int, padChar: Char = ' '): CharSequence {\n    if (length < 0)\n        throw IllegalArgumentException("Desired length $length is less than zero.")\n    if (length <= this.length)\n        return this.subSequence(0, this.length)\n    val sb = StringBuilder(length)\n    sb.append(this)\n    for (i in
1..(length - this.length))\n        sb.append(padChar)\n    return sb\n}\n\n/**\n * Pads the string to the specified
[length] at the end with the specified character or space.\n *\n * @param length
the desired string length.\n * @param padChar the character to pad string with, if it has length less than the [length]
specified. Space is used by default.\n * @return Returns a string of length at least [length] consisting of `this` string
appended with [padChar] as many times\n * as are necessary to reach that length.\n * @sample
samples.text.Strings.padEnd\n */\n\npublic fun String.padEnd(length: Int, padChar: Char = ' '): String =\n    (this as
CharSequence).padEnd(length, padChar).toString()\n\n/**\n * Returns `true` if this nullable char sequence is either
`null` or empty.\n *\n * @sample samples.text.Strings.stringIsNullOrEmpty\n
*/\n\n@kotlin.internal.InlineOnly\npublic inline fun CharSequence?.isNullOrEmpty(): Boolean {\n    contract {\n        returns(false) implies (this@isNullOrEmpty != null)\n    }\n    return this == null || this.length == 0\n}\n\n/**\n * Returns `true` if this char sequence is empty (contains no characters).\n *\n * @sample
samples.text.Strings.stringIsEmpty\n
*/\n\n@kotlin.internal.InlineOnly\npublic inline fun CharSequence.isEmpty(): Boolean = length == 0\n\n/**\n * Returns `true` if this char sequence is not empty.\n *\n * @sample samples.text.Strings.stringIsNotEmpty\n
*/\n\n@kotlin.internal.InlineOnly\npublic inline fun CharSequence.isNotEmpty(): Boolean = length > 0\n\n//
implemented differently in JVM and JS\n//public fun String.isBlank(): Boolean = length() == 0 || all {
it.isWhitespace() }\n\n/**\n * Returns `true` if this char sequence is not empty and contains some characters
except of whitespace characters.\n *\n * @sample samples.text.Strings.stringIsNotBlank\n
*/\n\n@kotlin.internal.InlineOnly\npublic inline fun CharSequence.isNotBlank(): Boolean = !isBlank()\n\n/**\n * Returns `true` if this nullable char sequence is either `null` or empty or consists solely of whitespace characters.\n
*\n * @sample samples.text.Strings.stringIsNullOrBlank\n
*/\n\n@kotlin.internal.InlineOnly\npublic inline fun
CharSequence?.isNullOrBlank(): Boolean
{\n    contract {\n        returns(false) implies (this@isNullOrBlank != null)\n    }\n    return this == null ||
this.isBlank()\n}\n\n/**\n * Iterator for characters of the given char sequence.\n */\n\npublic operator fun
CharSequence.iterator(): CharIterator = object : CharIterator() {\n    private var index = 0\n    public override fun
nextChar(): Char = get(index++)\n    public override fun hasNext(): Boolean = index < length\n}\n\n/** Returns
the string if it is not `null`, or the empty string otherwise. */\n\n@kotlin.internal.InlineOnly\npublic inline fun
String?.orEmpty(): String = this ?: ""\n\n/**\n * Returns this char sequence if it's not empty\n * or the result of
calling [defaultValue] function if the char sequence is empty.\n *\n * @sample samples.text.Strings.stringIfEmpty\n
*/\n\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\npublic inline fun <C, R> C.ifEmpty(defaultValue: () ->
R): R where C : CharSequence, C : R =\n    if (isEmpty()) defaultValue() else
this\n\n/**\n * Returns this char sequence if it is not empty and doesn't consist solely of whitespace characters,\n *
or the result of calling [defaultValue] function otherwise.\n *\n * @sample samples.text.Strings.stringIfNotBlank\n
*/\n\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\npublic inline fun <C, R> C.ifBlank(defaultValue: () ->
R): R where C : CharSequence, C : R =\n    if (isBlank()) defaultValue() else this\n\n/**\n * Returns the range of valid
character indices for this char sequence.\n */\n\npublic val CharSequence.indices: IntRange\n    get() = 0..length -
1\n\n/**\n * Returns the index of the last character in the char sequence or -1 if it is empty.\n */\n\npublic val
CharSequence.lastIndex: Int\n    get() = this.length - 1\n\n/**\n * Returns `true` if this CharSequence has Unicode
surrogate pair at the specified [index].\n */\n\npublic fun CharSequence.hasSurrogatePairAt(index: Int): Boolean {\n

```



```

return index in 0..length - 2\n        && this[index].isHighSurrogate()\n
        && this[index + 1].isLowSurrogate()\n\n/**\n * Returns a substring specified by the given [range] of
indices.\n */\npublic fun String.substring(range: IntRange): String = substring(range.start, range.endInclusive +
1)\n\n/**\n * Returns a subsequence of this char sequence specified by the given [range] of indices.\n */\npublic fun
CharSequence.subSequence(range: IntRange): CharSequence = subSequence(range.start, range.endInclusive +
1)\n\n/**\n * Returns a subsequence of this char sequence.\n */\n * This extension is chosen only for invocation with
old-named parameters.\n * Replace parameter names with the same as those of [CharSequence.subSequence].\n
*/\n@kotlin.internal.InlineOnly\n@Suppress("\u0027EXTENSION_SHADOWED_BY_MEMBER\u0027") // false
warning\n@Deprecated("\u0027Use parameters named startIndex and endIndex.\u0027", ReplaceWith("\u0027subSequence(startIndex
= start, endIndex = end)\u0027"))\npublic inline fun String.subSequence(start: Int, end: Int): CharSequence =
subSequence(start, end)\n\n/**\n
* Returns a substring of chars from a range of this char sequence starting at the [startIndex] and ending right before
the [endIndex].\n */\n * @param startIndex the start index (inclusive).\n * @param endIndex the end index
(exclusive). If not specified, the length of the char sequence is used.\n */\n@kotlin.internal.InlineOnly\npublic inline
fun CharSequence.substring(startIndex: Int, endIndex: Int = length): String = subSequence(startIndex,
endIndex).toString()\n\n/**\n * Returns a substring of chars at indices from the specified [range] of this char
sequence.\n */\npublic fun CharSequence.substring(range: IntRange): String = subSequence(range.start,
range.endInclusive + 1).toString()\n\n/**\n * Returns a substring before the first occurrence of [delimiter].\n * If the
string does not contain the delimiter, returns [missingDelimiterValue] which defaults to the original string.\n
*/\npublic fun String.substringBefore(delimiter: Char, missingDelimiterValue: String = this): String
{\n    val index = indexOf(delimiter)\n    return if (index == -1) missingDelimiterValue else substring(0,
index)\n}\n\n/**\n * Returns a substring before the first occurrence of [delimiter].\n * If the string does not contain
the delimiter, returns [missingDelimiterValue] which defaults to the original string.\n */\npublic fun
String.substringBefore(delimiter: String, missingDelimiterValue: String = this): String {\n    val index =
indexOf(delimiter)\n    return if (index == -1) missingDelimiterValue else substring(0, index)\n}\n\n/**\n * Returns
a substring after the first occurrence of [delimiter].\n * If the string does not contain the delimiter, returns
[missingDelimiterValue] which defaults to the original string.\n */\npublic fun String.substringAfter(delimiter:
Char, missingDelimiterValue: String = this): String {\n    val index = indexOf(delimiter)\n    return if (index == -1)
missingDelimiterValue else substring(index + 1, length)\n}\n\n/**\n * Returns a substring after
the first occurrence of [delimiter].\n * If the string does not contain the delimiter, returns [missingDelimiterValue]
which defaults to the original string.\n */\npublic fun String.substringAfter(delimiter: String,
missingDelimiterValue: String = this): String {\n    val index = indexOf(delimiter)\n    return if (index == -1)
missingDelimiterValue else substring(index + delimiter.length, length)\n}\n\n/**\n * Returns a substring before the
last occurrence of [delimiter].\n * If the string does not contain the delimiter, returns [missingDelimiterValue] which
defaults to the original string.\n */\npublic fun String.substringBeforeLast(delimiter: Char, missingDelimiterValue:
String = this): String {\n    val index = lastIndexOf(delimiter)\n    return if (index == -1) missingDelimiterValue
else substring(0, index)\n}\n\n/**\n * Returns a substring before the last occurrence of [delimiter].\n * If the string
does not contain the delimiter, returns [missingDelimiterValue] which defaults to
the original string.\n */\npublic fun String.substringBeforeLast(delimiter: String, missingDelimiterValue: String =
this): String {\n    val index = lastIndexOf(delimiter)\n    return if (index == -1) missingDelimiterValue else
substring(0, index)\n}\n\n/**\n * Returns a substring after the last occurrence of [delimiter].\n * If the string does
not contain the delimiter, returns [missingDelimiterValue] which defaults to the original string.\n */\npublic fun
String.substringAfterLast(delimiter: Char, missingDelimiterValue: String = this): String {\n    val index =
lastIndexOf(delimiter)\n    return if (index == -1) missingDelimiterValue else substring(index + 1,
length)\n}\n\n/**\n * Returns a substring after the last occurrence of [delimiter].\n * If the string does not contain
the delimiter, returns [missingDelimiterValue] which defaults to the original string.\n */\npublic fun
String.substringAfterLast(delimiter: String, missingDelimiterValue: String = this): String {\n    val index

```

```

= lastIndexOf(delimiter)\n    return if (index == -1) missingDelimiterValue else substring(index + delimiter.length,
length)\n}\n\n/**\n * Returns a char sequence with content of this char sequence where its part at the given range\n * is replaced with the [replacement] char sequence.\n * @param startIndex the index of the first character to be replaced.\n * @param endIndex the index of the first character after the replacement to keep in the string.\n */\npublic fun CharSequence.replaceRange(startIndex: Int, endIndex: Int, replacement: CharSequence):
CharSequence {\n    if (endIndex < startIndex)\n        throw IndexOutOfBoundsException("\u201cEnd index ($endIndex)
is less than start index ($startIndex).\u201c")\n    val sb = StringBuilder()\n    sb.appendRange(this, 0, startIndex)\n    sb.append(replacement)\n    sb.appendRange(this, endIndex, length)\n    return sb\n}\n\n/**\n * Replaces the part of the string at the given range with the [replacement] char sequence.\n * @param startIndex the index of the first character to be replaced.\n * @param endIndex the index of the first character after the replacement to keep in the string.\n */\n@kotlin.internal.InlineOnly\npublic inline fun
String.replaceRange(startIndex: Int, endIndex: Int, replacement: CharSequence): String =\n    (this as
CharSequence).replaceRange(startIndex, endIndex, replacement).toString()\n\n/**\n * Returns a char sequence with content of this char sequence where its part at the given [range]\n * is replaced with the [replacement] char sequence.\n * @param range the end index of the [range] is included in the part to be replaced.\n */\npublic fun
CharSequence.replaceRange(range: IntRange, replacement: CharSequence): CharSequence =\n    replaceRange(range.start, range.endInclusive + 1, replacement)\n\n/**\n * Replace the part of string at the given [range] with the [replacement] string.\n * @param range The end index of the [range] is included in the part to be replaced.\n */\n@kotlin.internal.InlineOnly\npublic inline fun
String.replaceRange(range: IntRange, replacement: CharSequence): String =\n    (this as
CharSequence).replaceRange(range, replacement).toString()\n\n/**\n * Returns a char sequence with content of this char sequence where its part at the given range is removed.\n * @param startIndex the index of the first character to be removed.\n * @param endIndex the index of the first character after the removed part to keep in the string.\n * @param [endIndex] is not included in the removed part.\n */\npublic fun
CharSequence.removeRange(startIndex: Int, endIndex: Int): CharSequence {\n    if (endIndex < startIndex)\n        throw IndexOutOfBoundsException("\u201cEnd index ($endIndex) is less than start index ($startIndex).\u201c")\n    if
(endIndex == startIndex)\n        return this.subSequence(0, length)\n    val sb = StringBuilder(length - (endIndex -
startIndex))\n    sb.appendRange(this, 0, startIndex)\n    sb.appendRange(this, endIndex, length)\n    return
sb\n}\n\n/**\n * Removes the part of a string at a given range.\n * @param startIndex the index of the first character to be removed.\n * @param endIndex the index of the first character after the removed part to keep in the string.\n * @param [endIndex] is not included in the removed part.\n */\n@kotlin.internal.InlineOnly\npublic inline fun String.removeRange(startIndex: Int, endIndex:
Int): String =\n    (this as CharSequence).removeRange(startIndex, endIndex).toString()\n\n/**\n * Returns a char sequence with content of this char sequence where its part at the given [range] is removed.\n * @param range The end index of the [range] is included in the removed part.\n */\npublic fun CharSequence.removeRange(range: IntRange):
CharSequence = removeRange(range.start, range.endInclusive + 1)\n\n/**\n * Removes the part of a string at the given [range].\n * @param range The end index of the [range] is included in the removed part.\n */\n@kotlin.internal.InlineOnly\npublic inline fun String.removeRange(range: IntRange): String =\n    (this as
CharSequence).removeRange(range).toString()\n\n/**\n * If this char sequence starts with the given [prefix], returns a new char sequence\n * with the prefix removed. Otherwise, returns a new char sequence with the same characters.\n */\npublic fun
CharSequence.removePrefix(prefix: CharSequence): CharSequence {\n    if (startsWith(prefix)) {\n        return
subSequence(prefix.length, length)\n    }\n    return subSequence(0, length)\n}\n\n/**\n * If this string starts with the given [prefix], returns a copy of this string\n * with the prefix removed. Otherwise, returns this string.\n */\npublic fun String.removePrefix(prefix: CharSequence): String {\n    if (startsWith(prefix)) {\n        return
substring(prefix.length)\n    }\n    return this\n}\n\n/**\n * If this char sequence ends with the given [suffix], returns a new char sequence\n * with the suffix removed. Otherwise, returns a new char sequence with the same characters.\n */\npublic fun CharSequence.removeSuffix(suffix: CharSequence):

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CharSequence {\n  if (endsWith(suffix)) {\n    return subSequence(0, length - suffix.length)\n  }\n  return
subSequence(0, length)\n}\n\n/**\n * If this string ends with the given [suffix], returns a copy of this string\n * with
the suffix removed. Otherwise, returns this string.\n */\npublic fun String.removeSuffix(suffix: CharSequence):
String {\n  if (endsWith(suffix)) {\n    return substring(0, length - suffix.length)\n  }\n  return this\n}\n\n/**\n *
When this char sequence starts with the given [prefix] and ends with the given [suffix],\n * returns a new char
sequence having both the given [prefix] and [suffix] removed.\n * Otherwise returns a new char sequence with the
same characters.\n */\npublic fun CharSequence.removeSurrounding(prefix: CharSequence, suffix: CharSequence):
CharSequence {\n  if ((length >= prefix.length + suffix.length) && startsWith(prefix) && endsWith(suffix)) {\n
  return subSequence(prefix.length, length - suffix.length)\n  }\n  return subSequence(0, length)\n}\n\n/**\n * Removes from a string both the given [prefix] and [suffix] if and
only if\n * it starts with the [prefix] and ends with the [suffix].\n * Otherwise returns this string unchanged.\n */\npublic fun String.removeSurrounding(prefix: CharSequence, suffix: CharSequence): String {\n  if ((length >=
prefix.length + suffix.length) && startsWith(prefix) && endsWith(suffix)) {\n    return substring(prefix.length,
length - suffix.length)\n  }\n  return this\n}\n\n/**\n * When this char sequence starts with and ends with the
given [delimiter],\n * returns a new char sequence having this [delimiter] removed both from the start and end.\n *
Otherwise returns a new char sequence with the same characters.\n */\npublic fun
CharSequence.removeSurrounding(delimiter: CharSequence): CharSequence = removeSurrounding(delimiter,
delimiter)\n}\n\n/**\n * Removes the given [delimiter] string from both the start and the end of this string\n * if and
only
if it starts with and ends with the [delimiter].\n * Otherwise returns this string unchanged.\n */\npublic fun
String.removeSurrounding(delimiter: CharSequence): String = removeSurrounding(delimiter, delimiter)\n}\n\n/**\n *
Replace part of string before the first occurrence of given delimiter with the [replacement] string.\n * If the string
does not contain the delimiter, returns [missingDelimiterValue] which defaults to the original string.\n */\npublic
fun String.replaceBefore(delimiter: Char, replacement: String, missingDelimiterValue: String = this): String {\n
  val index = indexOf(delimiter)\n  return if (index == -1) missingDelimiterValue else replaceRange(0, index,
replacement)\n}\n\n/**\n * Replace part of string before the first occurrence of given delimiter with the
[replacement] string.\n * If the string does not contain the delimiter, returns [missingDelimiterValue] which defaults
to the original string.\n */\npublic fun String.replaceBefore(delimiter: String, replacement:
String, missingDelimiterValue: String = this): String {\n  val index = indexOf(delimiter)\n  return if (index == -1)
missingDelimiterValue else replaceRange(0, index, replacement)\n}\n\n/**\n * Replace part of string after the first
occurrence of given delimiter with the [replacement] string.\n * If the string does not contain the delimiter, returns
[missingDelimiterValue] which defaults to the original string.\n */\npublic fun String.replaceAfter(delimiter: Char,
replacement: String, missingDelimiterValue: String = this): String {\n  val index = indexOf(delimiter)\n  return if
(index == -1) missingDelimiterValue else replaceRange(index + 1, length, replacement)\n}\n\n/**\n * Replace part
of string after the first occurrence of given delimiter with the [replacement] string.\n * If the string does not contain
the delimiter, returns [missingDelimiterValue] which defaults to the original string.\n */\npublic fun
String.replaceAfter(delimiter: String, replacement: String, missingDelimiterValue:
String = this): String {\n  val index = indexOf(delimiter)\n  return if (index == -1) missingDelimiterValue else
replaceRange(index + delimiter.length, length, replacement)\n}\n\n/**\n * Replace part of string after the last
occurrence of given delimiter with the [replacement] string.\n * If the string does not contain the delimiter, returns
[missingDelimiterValue] which defaults to the original string.\n */\npublic fun String.replaceAfterLast(delimiter:
String, replacement: String, missingDelimiterValue: String = this): String {\n  val index = lastIndexOf(delimiter)\n
  return if (index == -1) missingDelimiterValue else replaceRange(index + delimiter.length, length,
replacement)\n}\n\n/**\n * Replace part of string after the last occurrence of given delimiter with the [replacement]
string.\n * If the string does not contain the delimiter, returns [missingDelimiterValue] which defaults to the original
string.\n */\npublic fun String.replaceAfterLast(delimiter: Char,
replacement: String, missingDelimiterValue: String = this): String {\n  val index = lastIndexOf(delimiter)\n
  return if (index == -1) missingDelimiterValue else replaceRange(index + 1, length, replacement)\n}\n\n/**\n *
Replace part of string after the last occurrence of given delimiter with the [replacement]
string.\n * If the string does not contain the delimiter, returns [missingDelimiterValue] which defaults to the original
string.\n */\npublic fun String.replaceAfterLast(delimiter: String,
replacement: String, missingDelimiterValue: String = this): String {\n  val index = lastIndexOf(delimiter)\n
  return if (index == -1) missingDelimiterValue else replaceRange(index + 1, length, replacement)\n}\n}\n\n/**\n *

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Replace part of string before the last occurrence of given delimiter with the [replacement] string.\n * If the string
does not contain the delimiter, returns [missingDelimiterValue] which defaults to the original string.\n */\npublic
fun String.replaceBeforeLast(delimiter: Char, replacement: String, missingDelimiterValue: String = this): String {\n
    val index = lastIndexOf(delimiter)\n    return if (index == -1) missingDelimiterValue else replaceRange(0, index,
replacement)\n}\n\n/**\n * Replace part of string before the last occurrence of given delimiter with the
[replacement] string.\n * If the string does not contain the delimiter, returns [missingDelimiterValue] which defaults
to the original string.\n */\npublic fun String.replaceBeforeLast(delimiter: String,
    replacement: String, missingDelimiterValue: String = this): String {\n    val index = lastIndexOf(delimiter)\n
return if (index == -1) missingDelimiterValue else replaceRange(0, index, replacement)\n}\n\n// public fun
String.replace(oldChar: Char, newChar: Char, ignoreCase: Boolean): String // JVM- and JS-specific\n// public fun
String.replace(oldValue: String, newValue: String, ignoreCase: Boolean): String // JVM- and JS-specific\n\n/**\n *
Returns a new string obtained by replacing each substring of this char sequence that matches the given regular
expression\n * with the given [replacement].\n * The [replacement] can consist of any combination of literal text
and $-substitutions. To treat the replacement string\n * literally escape it with the
[kotlin.text.Regex.Companion.escapeReplacement] method.\n */\n@kotlin.internal.InlineOnly\npublic inline fun
CharSequence.replace(regex: Regex, replacement: String): String = regex.replace(this, replacement)\n\n/**\n *
Returns a
new string obtained by replacing each substring of this char sequence that matches the given regular expression\n *
with the result of the given function [transform] that takes [MatchResult] and returns a string to be used as a\n *
replacement for that match.\n */\n@kotlin.internal.InlineOnly\npublic inline fun CharSequence.replace(regex:
    Regex, noinline transform: (MatchResult) -> CharSequence): String =\n    regex.replace(this, transform)\n\n/**\n *
Replaces the first occurrence of the given regular expression [regex] in this char sequence with specified
[replacement] expression.\n * @param replacement A replacement expression that can include substitutions. See
[Regex.replaceFirst] for details.\n */\n@kotlin.internal.InlineOnly\npublic inline fun
CharSequence.replaceFirst(regex: Regex, replacement: String): String = regex.replaceFirst(this,
replacement)\n\n/**\n * Returns a copy of this string having its first character replaced with the result of the
specified [transform],\n *
or the original string if it's empty.\n * @param transform function that takes the first character and returns the
result of the transform applied to the character.\n * @sample samples.text.Strings.replaceFirstChar\n
*/\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalStdlibApi::class)\n@OptIn(kotlin.experimental.Exper
imentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@JvmName("replaceFirstCharWithC
har")\n@kotlin.internal.InlineOnly\npublic inline fun String.replaceFirstChar(transform: (Char) -> Char): String {\n
    return if (isEmpty()) transform(this[0]) + substring(1) else this\n}\n\n/**\n * Returns a copy of this string
having its first character replaced with the result of the specified [transform],\n *
or the original string if it's empty.\n *
@param transform function that takes the first character and returns the result of the transform applied to the
character.\n * @sample samples.text.Strings.replaceFirstChar\n
*/\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalStdlibApi::class)\n@OptIn(kotlin.experimental.Exper
imentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@JvmName("replaceFirstCharWithC
harSequence")\n@kotlin.internal.InlineOnly\npublic
inline fun String.replaceFirstChar(transform: (Char) -> CharSequence): String {\n    return if (isEmpty())
transform(this[0]).toString() + substring(1) else this\n}\n\n/**\n * Returns `true` if this char sequence matches the
given regular expression.\n */\n@kotlin.internal.InlineOnly\npublic inline infix fun CharSequence.matches(regex:
    Regex): Boolean = regex.matches(this)\n\n/**\n * Implementation of [regionMatches] for CharSequences.\n *
Invoked when it's already known that arguments are not Strings, so that no additional type checks are performed.\n
*/\ninternal fun CharSequence.regionMatchesImpl(thisOffset: Int, other: CharSequence, otherOffset: Int, length: Int,
ignoreCase: Boolean): Boolean {\n    if ((otherOffset < 0) || (thisOffset < 0) ||
(thisOffset > this.length - length) || (otherOffset > other.length - length)) {\n        return false\n    }\n    for (index
in 0 until length) {\n        if (!this[thisOffset + index].equals(other[otherOffset + index], ignoreCase))\n            return

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false\n } \n return true\n}\n\n/**\n * Returns `true` if this char sequence starts with the specified character.\n *\npublic fun CharSequence.startsWith(char: Char, ignoreCase: Boolean = false): Boolean =\n this.length > 0 && this[0].equals(char, ignoreCase)\n\n/**\n * Returns `true` if this char sequence ends with the specified character.\n *\npublic fun CharSequence.endsWith(char: Char, ignoreCase: Boolean = false): Boolean =\n this.length > 0 && this[lastIndex].equals(char, ignoreCase)\n\n/**\n * Returns `true` if this char sequence starts with the specified prefix.\n *\npublic fun CharSequence.startsWith(prefix: CharSequence, ignoreCase: Boolean = false): Boolean {\n if (!ignoreCase && this is String && prefix is String)\n return this.startsWith(prefix)\n else\n return regionMatchesImpl(0, prefix, 0, prefix.length, ignoreCase)\n}\n\n/**\n * Returns `true` if a substring of this char sequence starting at the specified offset [startIndex] starts with the specified prefix.\n *\npublic fun CharSequence.startsWith(prefix: CharSequence, startIndex: Int, ignoreCase: Boolean = false): Boolean {\n if (!ignoreCase && this is String && prefix is String)\n return this.startsWith(prefix, startIndex)\n else\n return regionMatchesImpl(startIndex, prefix, 0, prefix.length, ignoreCase)\n}\n\n/**\n * Returns `true` if this char sequence ends with the specified suffix.\n *\npublic fun CharSequence.endsWith(suffix: CharSequence, ignoreCase: Boolean = false): Boolean {\n if (!ignoreCase && this is String && suffix is String)\n return this.endsWith(suffix)\n else\n return regionMatchesImpl(length - suffix.length, suffix, 0, suffix.length, ignoreCase)\n}\n\n\n//\n common prefix and suffix\n\n/**\n * Returns the longest string `prefix` such that this char sequence and [other] char sequence both start with this prefix,\n * taking care not to split surrogate pairs.\n * If this and [other] have no common prefix, returns the empty string.\n\n * @param ignoreCase `true` to ignore character case when matching a character. By default `false`.\n * @sample samples.text.Strings.commonPrefixWith\n *\npublic fun CharSequence.commonPrefixWith(other: CharSequence, ignoreCase: Boolean = false): String {\n val shortestLength = minOf(this.length, other.length)\n var i = 0\n while (i < shortestLength && this[i].equals(other[i], ignoreCase = ignoreCase)) {\n i++\n }\n if (this.hasSurrogatePairAt(i - 1) || other.hasSurrogatePairAt(i - 1)) {\n i--\n }\n return subSequence(0, i).toString()\n}\n\n/**\n * Returns the longest string `suffix` such that this char sequence and [other] char sequence both end with this suffix,\n * taking care not to split surrogate pairs.\n * If this and [other] have no common suffix, returns the empty string.\n\n * @param ignoreCase `true` to ignore character case when matching a character. By default `false`.\n * @sample samples.text.Strings.commonSuffixWith\n *\npublic fun CharSequence.commonSuffixWith(other: CharSequence, ignoreCase: Boolean = false): String {\n val thisLength = this.length\n val otherLength = other.length\n val shortestLength = minOf(thisLength, otherLength)\n var i = 0\n while (i < shortestLength && this[thisLength - i - 1].equals(other[otherLength - i - 1], ignoreCase = ignoreCase)) {\n i++\n }\n if (this.hasSurrogatePairAt(thisLength - i - 1) || other.hasSurrogatePairAt(otherLength - i - 1)) {\n i--\n }\n return subSequence(thisLength - i, thisLength).toString()\n}\n\n\n// indexOfAny()\n\n/**\n * Finds the index of the first occurrence of any of the specified [chars] in this char sequence,\n * starting from the specified [startIndex] and optionally ignoring the case.\n\n * @param ignoreCase `true` to ignore character case when matching a character. By default `false`.\n * @return An index of the first occurrence of matched character from [chars] or -1 if none of [chars] are found.\n\n *\npublic fun CharSequence.indexOfAny(chars: CharArray, startIndex: Int = 0, ignoreCase: Boolean = false): Int {\n if (!ignoreCase && chars.size == 1 && this is String) {\n val char = chars.single()\n return nativeIndexOf(char, startIndex)\n }\n\n for (index in startIndex.coerceAtLeast(0)..lastIndex) {\n val charAtIndex = get(index)\n if (chars.any { it.equals(charAtIndex, ignoreCase) })\n return index\n }\n return -1\n}\n\n/**\n * Finds the index of the last occurrence of any of the specified [chars] in this char sequence,\n * starting from the specified [startIndex] and optionally ignoring the case.\n\n * @param startIndex The index of character to start searching at. The search proceeds backward toward the beginning of the string.\n * @param ignoreCase `true` to ignore character case when matching a character. By default `false`.\n * @return An index of the last occurrence of matched character from [chars] or -1 if none of [chars] are found.\n\n *\npublic fun CharSequence.lastIndexOfAny(chars: CharArray, startIndex: Int = lastIndex, ignoreCase: Boolean = false): Int {\n if (!ignoreCase && chars.size == 1 && this is String) {\n val char = chars.single()\n return

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nativeLastIndexOf(char, startIndex)\n  }\n\n  for (index in startIndex.coerceAtMost(lastIndex) downTo 0) {\n    val charAtIndex = get(index)\n    if (chars.any { it.equals(charAtIndex, ignoreCase) })\n      return index\n  }\n  return -1\n}\n\nprivate fun CharSequence.indexOf(other: CharSequence, startIndex: Int, endIndex: Int, ignoreCase: Boolean, last: Boolean = false): Int {\n  val indices = if (!last)\n    startIndex.coerceAtLeast(0)..endIndex.coerceAtMost(length)\n  else\n    startIndex.coerceAtMost(lastIndex) downTo endIndex.coerceAtLeast(0)\n\n  if (this is String && other is String) { // smart cast\n    for (index in indices) {\n      if (other.regionMatches(0, this, index, other.length, ignoreCase))\n        return index\n    }\n  } else {\n    for (index in indices) {\n      if (other.regionMatchesImpl(0, this, index, other.length, ignoreCase))\n        return index\n    }\n  }\n  return -1\n}\n\nprivate fun CharSequence.findAnyOf(strings: Collection<String>, startIndex: Int, ignoreCase: Boolean, last: Boolean): Pair<Int, String>? {\n  if (!ignoreCase && strings.size == 1) {\n    val string = strings.single()\n    val index = if (!last) indexOf(string, startIndex) else lastIndexOf(string, startIndex)\n    return if (index < 0) null else index to string\n  }\n\n  val indices = if (!last) startIndex.coerceAtLeast(0)..length else startIndex.coerceAtMost(lastIndex) downTo 0\n\n  if (this is String) {\n    for (index in indices) {\n      val matchingString = strings.firstOrNull { it.regionMatches(0, this, index, it.length, ignoreCase) }\n      if (matchingString != null)\n        return index to matchingString\n    }\n  } else {\n    for (index in indices) {\n      val matchingString = strings.firstOrNull { it.regionMatchesImpl(0, this, index, it.length, ignoreCase) }\n      if (matchingString != null)\n        return index to matchingString\n    }\n  }\n\n  return null\n}\n\n/**\n * Finds the first occurrence of any of the specified [strings] in this char sequence,\n * starting from the specified [startIndex] and optionally ignoring the case.\n * @param ignoreCase `true` to ignore character case when matching a string. By default `false`.\n * @return A pair of an index of the first occurrence of matched string from [strings] and the string matched\n * or `null` if none of [strings] are found.\n * To avoid ambiguous results when strings in [strings] have characters in common, this method proceeds from\n * the beginning to the end of this string, and finds at each position the first element in [strings]\n * that matches this string at that position.\n */\npublic fun CharSequence.findAnyOf(strings: Collection<String>, startIndex: Int = 0, ignoreCase: Boolean = false): Pair<Int, String>? =\n  findAnyOf(strings, startIndex, ignoreCase, last = false)\n\n/**\n * Finds the last occurrence of any of the specified [strings] in this char sequence,\n * starting from the specified [startIndex] and optionally ignoring the case.\n * @param startIndex The index of character to start searching at. The search proceeds backward toward the beginning of the string.\n * @param ignoreCase `true` to ignore character case when matching a string. By default `false`.\n * @return A pair of an index of the last occurrence of matched string from [strings] and the string matched or `null` if none of [strings] are found.\n * To avoid ambiguous results when strings in [strings] have characters in common, this method proceeds from\n * the end toward the beginning of this string, and finds at each position the first element in [strings]\n * that matches this string at that position.\n */\npublic fun CharSequence.findLastAnyOf(strings: Collection<String>, startIndex: Int = lastIndex, ignoreCase: Boolean = false): Pair<Int, String>? =\n  findAnyOf(strings, startIndex, ignoreCase, last = true)\n\n/**\n * Finds the index of the first occurrence of any of the specified [strings] in this char sequence,\n * starting from the specified [startIndex] and optionally ignoring the case.\n * @param ignoreCase `true` to ignore character case when matching a string. By default `false`.\n * @return An index of the first occurrence of matched string from [strings] or -1 if none of [strings] are found.\n * To avoid ambiguous results when strings in [strings] have characters in common, this method proceeds from\n * the beginning to the end of this string, and finds at each position the first element in [strings]\n * that matches this string at that position.\n */\npublic fun CharSequence.indexOfAny(strings: Collection<String>, startIndex: Int = 0, ignoreCase: Boolean = false): Int =\n  findAnyOf(strings, startIndex, ignoreCase, last = false)?.first ?: -1\n\n/**\n * Finds the index of the last occurrence of any of the specified [strings] in this char sequence,\n * starting from the specified [startIndex] and optionally ignoring the case.\n * @param startIndex The index of character to start searching at. The search proceeds backward toward the beginning of the string.\n * @param ignoreCase `true` to ignore character case when matching a string. By default `false`.\n * @return An index of the last occurrence of matched string from [strings] or

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-1 if none of [strings] are found.\n *\n * To avoid ambiguous
results when strings in [strings] have characters in common, this method proceeds from\n * the end toward the
beginning of this string, and finds at each position the first element in [strings]\n * that matches this string at that
position.\n *\npublic fun CharSequence.lastIndexOfAny(strings: Collection<String>, startIndex: Int = lastIndex,
ignoreCase: Boolean = false): Int =\n    findAnyOf(strings, startIndex, ignoreCase, last = true)?.first ?: -1\n\n//
indexOf\n\n/**\n * Returns the index within this string of the first occurrence of the specified character, starting
from the specified [startIndex].\n *\n * @param ignoreCase `true` to ignore character case when matching a
character. By default `false`.\n * @return An index of the first occurrence of [char] or -1 if none is found.\n
*\npublic fun CharSequence.indexOf(char: Char, startIndex: Int = 0, ignoreCase: Boolean = false): Int {\n    return
if (ignoreCase || this !is String)\n        indexOfAny(charArrayOf(char), startIndex,
ignoreCase)\n    else\n        nativeIndexOf(char, startIndex)\n}\n\n/**\n * Returns the index within this char
sequence of the first occurrence of the specified [string],\n * starting from the specified [startIndex].\n *\n * @param
ignoreCase `true` to ignore character case when matching a string. By default `false`.\n * @return An index of the
first occurrence of [string] or -1 if none is found.\n * @sample samples.text.Strings.indexOf\n *\npublic fun
CharSequence.indexOf(string: String, startIndex: Int = 0, ignoreCase: Boolean = false): Int {\n    return if
(ignoreCase || this !is String)\n        indexOf(string, startIndex, length, ignoreCase)\n    else\n        nativeIndexOf(string, startIndex)\n}\n\n/**\n * Returns the index within this char sequence of the last occurrence of
the specified character,\n * starting from the specified [startIndex].\n *\n * @param startIndex The index of
character to start searching at. The search proceeds backward toward the beginning of the string.\n
* @param ignoreCase `true` to ignore character case when matching a character. By default `false`.\n * @return An
index of the last occurrence of [char] or -1 if none is found.\n *\npublic fun CharSequence.lastIndexOf(char: Char,
startIndex: Int = lastIndex, ignoreCase: Boolean = false): Int {\n    return if (ignoreCase || this !is String)\n
        lastIndexOfAny(charArrayOf(char), startIndex, ignoreCase)\n    else\n        nativeLastIndexOf(char,
startIndex)\n}\n\n/**\n * Returns the index within this char sequence of the last occurrence of the specified
[string],\n * starting from the specified [startIndex].\n *\n * @param startIndex The index of character to start
searching at. The search proceeds backward toward the beginning of the string.\n * @param ignoreCase `true` to
ignore character case when matching a string. By default `false`.\n * @return An index of the last occurrence of
[string] or -1 if none is found.\n *\npublic fun CharSequence.lastIndexOf(string: String,
startIndex: Int = lastIndex, ignoreCase: Boolean = false): Int {\n    return if (ignoreCase || this !is String)\n
        indexOf(string, startIndex, 0, ignoreCase, last = true)\n    else\n        nativeLastIndexOf(string,
startIndex)\n}\n\n/**\n * Returns `true` if this char sequence contains the specified [other] sequence of characters as
a substring.\n *\n * @param ignoreCase `true` to ignore character case when comparing strings. By default `false`.\n
*\n * @Suppress("INAPPLICABLE_OPERATOR_MODIFIER")\npublic operator fun
CharSequence.contains(other: CharSequence, ignoreCase: Boolean = false): Boolean =\n    if (other is String)\n
        indexOf(other, ignoreCase = ignoreCase) >= 0\n    else\n        indexOf(other, 0, length, ignoreCase) >=
0\n\n\n/**\n * Returns `true` if this char sequence\n contains the specified character [char].\n *\n * @param
ignoreCase `true` to ignore character case when comparing characters. By default `false`.\n
*\n * @Suppress("INAPPLICABLE_OPERATOR_MODIFIER")\npublic
operator fun CharSequence.contains(char: Char, ignoreCase: Boolean = false): Boolean =\n    indexOf(char,
ignoreCase = ignoreCase) >= 0\n\n/**\n * Returns `true` if this char sequence contains at least one match of the
specified regular expression [regex].\n *\n * @kotlin.internal.InlineOnly\npublic inline operator fun
CharSequence.contains(regex: Regex): Boolean = regex.containsMatchIn(this)\n\n\n//
rangesDelimitedBy\n\nprivate class DelimitedRangesSequence(\n    private val input: CharSequence,\n    private
val startIndex: Int,\n    private val limit: Int,\n    private val getNextMatch: CharSequence.(currentIndex: Int) ->
Pair<Int, Int>?) : Sequence<IntRange> {\n    override fun iterator(): Iterator<IntRange> = object :
Iterator<IntRange> {\n        var nextState: Int = -1 // -1 for unknown, 0 for done, 1 for continue\n        var
currentStartIndex: Int = startIndex.coerceIn(0, input.length)\n        var nextSearchIndex: Int = currentStartIndex\n
var nextItem:

```

```

IntRange? = null\n    var counter: Int = 0\n    private fun calcNext() {\n        if (nextSearchIndex < 0) {\n            nextState = 0\n            nextItem = null\n        } else {\n            if (limit > 0 && ++counter >= limit ||\n                nextSearchIndex > input.length) {\n                nextItem = currentStartIndex..input.lastIndex\n                nextSearchIndex = -1\n            } else {\n                val match = input.getNextMatch(nextSearchIndex)\n                if (match == null) {\n                    nextItem = currentStartIndex..input.lastIndex\n                    nextSearchIndex = -1\n                } else {\n                    val (index, length) = match\n                    nextItem =\n                        currentStartIndex until index\n                    currentStartIndex = index + length\n                    nextSearchIndex =\n                        currentStartIndex + if (length == 0) 1 else 0\n                }\n            }\n            nextState = 1\n        }\n    }\n    override fun next(): IntRange {\n        if (nextState == -\n            1)\n            calcNext()\n        if (nextState == 0)\n            throw NoSuchElementException()\n        val\n            result = nextItem as IntRange\n        // Clean next to avoid keeping reference on yielded instance\n        nextItem = null\n        nextState = -1\n        return result\n    }\n    override fun hasNext(): Boolean {\n        if (nextState == -1)\n            calcNext()\n        return nextState == 1\n    }\n}\n\n/**\n * Returns a\n * sequence of index ranges of substrings in this char sequence around occurrences of the specified [delimiters].\n *\n * @param delimiters One or more characters to be used as delimiters.\n * @param startIndex The index to start\n * searching delimiters from.\n * No range having its start value less than [startIndex] is returned.\n * [startIndex] is\n * coerced\n * to be non-negative and not greater than length of this string.\n * @param ignoreCase `true` to ignore character case\n * when matching a delimiter. By default `false`.\n * @param limit The maximum number of substrings to return. Zero\n * by default means no limit is set.\n */\nprivate fun CharSequence.rangesDelimitedBy(delimiters: CharArray,\n    startIndex: Int = 0, ignoreCase: Boolean = false, limit: Int = 0): Sequence<IntRange> {\n    requireNonNegativeLimit(limit)\n    return DelimitedRangesSequence(this, startIndex, limit, { currentIndex ->\n        indexOfAny(delimiters, currentIndex, ignoreCase = ignoreCase).let { if (it < 0) null else it to 1 }\n    })\n}\n\n/**\n * Returns a sequence of index ranges of substrings in this char sequence around occurrences of the\n * specified [delimiters].\n *\n * @param delimiters One or more strings to be used as delimiters.\n * @param\n * startIndex The index to start searching delimiters from.\n * No range having its start value less than [startIndex] is\n * returned.\n * [startIndex] is coerced to be non-negative and not greater than length of this string.\n * @param\n * ignoreCase `true` to ignore character case when matching a delimiter. By default `false`.\n * @param limit The\n * maximum number of substrings to return. Zero by default means no limit is set.\n *\n * To avoid ambiguous results\n * when strings in [delimiters] have characters in common, this method proceeds from\n * the beginning to the end of\n * this string, and finds at each position the first element in [delimiters]\n * that matches this string at that position.\n */\nprivate fun CharSequence.rangesDelimitedBy(delimiters: Array<out String>, startIndex: Int = 0, ignoreCase:\n    Boolean = false, limit: Int = 0): Sequence<IntRange> {\n    requireNonNegativeLimit(limit)\n    val delimitersList =\n        delimiters.asList()\n    return DelimitedRangesSequence(this, startIndex, limit, { currentIndex ->\n        findAnyOf(delimitersList, currentIndex, ignoreCase = ignoreCase, last = false)?.let { it.first\n            to it.second.length }\n    })\n}\n\ninternal fun requireNonNegativeLimit(limit: Int) =\n    require(limit >= 0) { \"Limit\n * must be non-negative, but was $limit\" }\n\n// split\n\n/**\n * Splits this char sequence to a sequence of strings\n * around occurrences of the specified [delimiters].\n *\n * @param delimiters One or more strings to be used as\n * delimiters.\n * @param ignoreCase `true` to ignore character case when matching a delimiter. By default `false`.\n *\n * @param limit The maximum number of substrings to return. Zero by default means no limit is set.\n *\n * To avoid\n * ambiguous results when strings in [delimiters] have characters in common, this method proceeds from\n * the\n * beginning to the end of this string, and finds at each position the first element in [delimiters]\n * that matches this\n * string at that position.\n */\npublic fun CharSequence.splitToSequence(vararg delimiters: String, ignoreCase:\n    Boolean = false, limit: Int = 0): Sequence<String> =\n    rangesDelimitedBy(delimiters,\n        ignoreCase = ignoreCase, limit = limit).map { substring(it) }\n\n/**\n * Splits this char sequence to a list of strings\n * around occurrences of the specified [delimiters].\n *\n * @param delimiters One or more strings to be used as\n * delimiters.\n * @param ignoreCase `true` to ignore character case when matching a delimiter. By default `false`.\n *\n * @param limit The maximum number of substrings to return. Zero by default means no limit is set.\n *\n * To avoid

```



ambiguous results when strings in [delimiters] have characters in common, this method proceeds from the beginning to the end of this string, and matches at each position the first element in [delimiters] that is equal to a delimiter in this instance at that position.

```

public fun CharSequence.split(vararg delimiters: String, ignoreCase: Boolean = false, limit: Int = 0): List<String> {
    if (delimiters.size == 1) {
        val delimiter = delimiters[0]
        if (!delimiter.isEmpty()) {
            return split(delimiter, ignoreCase, limit)
        }
    }
    return rangesDelimitedBy(delimiters, ignoreCase = ignoreCase, limit = limit).asIterable().map { substring(it) }
}

```

**Splits this char sequence to a sequence of strings around occurrences of the specified [delimiters].** One or more characters to be used as delimiters. `ignoreCase`true`` to ignore character case when matching a delimiter. By default `false``. `limit`` The maximum number of substrings to return.

```

public fun CharSequence.splitToSequence(vararg delimiters: Char, ignoreCase: Boolean = false, limit: Int = 0): Sequence<String> =
    rangesDelimitedBy(delimiters, ignoreCase = ignoreCase, limit = limit).map { substring(it) }

```

**Splits this char sequence to a list of strings around occurrences of the specified [delimiters].** One or more characters to be used as delimiters. `ignoreCase`true`` to ignore character case when matching a delimiter. By default `false``. `limit`` The maximum number of substrings to return.

```

public fun CharSequence.split(vararg delimiters: Char, ignoreCase: Boolean = false, limit: Int = 0): List<String> {
    if (delimiters.size == 1) {
        return split(delimiters[0].toString(), ignoreCase, limit)
    }
    return rangesDelimitedBy(delimiters, ignoreCase = ignoreCase, limit = limit).asIterable().map { substring(it) }
}

```

**Splits this char sequence to a list of strings around occurrences of the specified [delimiter].** This is specialized version of split which receives single non-empty delimiter and offers better performance. `delimiter`` String used as delimiter. `ignoreCase`true`` to ignore character case when matching a delimiter. By default `false``. `limit`` The maximum number of substrings to return.

```

private fun CharSequence.split(delimiter: String, ignoreCase: Boolean, limit: Int): List<String> {
    requireNonNegativeLimit(limit)
    var currentOffset = 0
    var nextIndex = indexOf(delimiter, currentOffset, ignoreCase)
    if (nextIndex == -1 || limit == 1) {
        return listOf(this.toString())
    }
    val isLimited = limit > 0
    val result = ArrayList<String>(if (isLimited) limit.coerceAtMost(10) else 10)
    do {
        result.add(substring(currentOffset, nextIndex))
        currentOffset = nextIndex + delimiter.length
        // Do not search for next occurrence if we're reaching limit
        if (isLimited && result.size == limit - 1) break
        nextIndex = indexOf(delimiter, currentOffset, ignoreCase)
    } while (nextIndex != -1)
    result.add(substring(currentOffset, length))
    return result
}

```

**Splits this char sequence to a list of strings around matches of the given regular expression.** `limit`` Non-negative value specifying the maximum number of substrings to return. Zero by default means no limit is set.

```

@kotlin.internal.InlineOnly
public inline fun CharSequence.split(regex: Regex, limit: Int = 0): List<String> = regex.split(this, limit)

```

**Splits this char sequence to a sequence of strings around matches of the given regular expression.** `limit`` Non-negative value specifying the maximum number of substrings to return. Zero by default means no limit is set.

```

@sample samples.text.Strings.splitToSequence

```

```

@SinceKotlin("1.6")
@WasExperimental(ExperimentalStdlibApi::class)
@kotlin.internal.InlineOnly
public inline fun CharSequence.splitToSequence(regex: Regex, limit: Int = 0): Sequence<String> =
    regex.splitToSequence(this, limit)

```

**Splits this char sequence to a sequence of lines delimited by any of the following character sequences: CRLF, LF or CR.** The lines returned do not include terminating line separators.

```

public fun CharSequence.lineSequence(): Sequence<String> = splitToSequence("\\r\\n", "\\n", "\\r")

```

**Splits this char sequence to a list of lines delimited by any of the following character sequences: CRLF, LF or CR.** The lines returned do not include terminating line separators.

```

public fun CharSequence.lines(): List<String> = lineSequence().toList()

```

**Returns `true` if the contents of this char sequence are equal to the contents of the specified [other],** i.e. both char sequences contain the same number of the same characters in the same order.

```

@sample samples.text.Strings.contentEquals

```

```

@SinceKotlin("1.5")
public expect infix fun

```

```

CharSequence?.contentEquals(other: CharSequence?): Boolean\n\n/**\n * Returns `true` if the contents of this char
sequence are equal to the contents of the specified [other], optionally ignoring case difference.\n *\n * @param
ignoreCase `true` to ignore character case when comparing contents.\n *\n * @sample
samples.text.Strings.contentEquals\n */\n@SinceKotlin("1.5")\npublic expect fun
CharSequence?.contentEquals(other: CharSequence?,
ignoreCase: Boolean): Boolean\n\ninternal fun CharSequence?.contentEqualsIgnoreCaseImpl(other:
CharSequence?): Boolean {\n    if (this is String && other is String) {\n        return this.equals(other, ignoreCase =
true)\n    }\n    if (this === other) return true\n    if (this == null || other == null || this.length != other.length) return
false\n    for (i in 0 until length) {\n        if (!this[i].equals(other[i], ignoreCase = true)) {\n            return false\n
        }\n    }\n    return true\n}\n\ninternal fun CharSequence?.contentEqualsImpl(other: CharSequence?): Boolean {\n
if (this is String && other is String) {\n    return this == other\n }\n    if (this === other) return true\n    if (this
== null || other == null || this.length != other.length) return false\n    for (i in 0 until length) {\n        if (this[i] !=
other[i]) {\n            return false\n        }\n    }\n    return true\n}\n\n/**\n * Returns `true` if the content of this
string
is equal to the word `true`, `false` if it is equal to `false`,\n * and throws an exception otherwise.\n *\n * There is
also a lenient version of the function available on nullable String, [String?.toBoolean].\n * Note that this function is
case-sensitive.\n *\n * @sample samples.text.Strings.toBooleanStrict\n */\n@SinceKotlin("1.5")\npublic fun
String.toBooleanStrict(): Boolean = when (this) {\n    `true` -> true\n    `false` -> false\n    else -> throw
IllegalArgumentException("The string doesn't represent a boolean value: $this")\n}\n\n/**\n * Returns `true` if the
content of this string is equal to the word `true`, `false` if it is equal to `false`,\n * and `null` otherwise.\n *\n *
There is also a lenient version of the function available on nullable String, [String?.toBoolean].\n * Note that this
function is case-sensitive.\n *\n * @sample samples.text.Strings.toBooleanStrictOrNull\n */\n@SinceKotlin("1.5")\npublic fun String.toBooleanStrictOrNull(): Boolean?
= when (this) {\n    `true` -> true\n    `false` -> false\n    else -> null\n}, "/*\n * Copyright 2010-2022 JetBrains
s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0
license that can be found in the license/LICENSE.txt file.\n */\n\n// Auto-generated file. DO NOT
EDIT!\n\npackage kotlin\n\nimport
kotlin.jvm.*\n\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@JvmInline\npublic value class
UByteArray\n@PublishedApi\ninternal constructor(@PublishedApi internal val storage: ByteArray) :
Collection<UByte> {\n    /** Creates a new array of the specified [size], with all elements initialized to zero. *\n
public constructor(size: Int) : this(ByteArray(size))\n    /**\n     * Returns the array element at the given [index].
This method can be called using the index operator.\n     *\n     * If the [index] is out of bounds of this array, throws
an [IndexOutOfBoundsException] except in Kotlin/JS\n     * where the behavior
is unspecified.\n     *\n     * public operator fun get(index: Int): UByte = storage[index].toUByte()\n     *\n     *
Sets the element at the given [index] to the given [value]. This method can be called using the index operator.\n     *\n
     * If the [index] is out of bounds of this array, throws an [IndexOutOfBoundsException] except in Kotlin/JS\n     *
where the behavior is unspecified.\n     *\n     * public operator fun set(index: Int, value: UByte) {\n
storage[index] = value.toByte()\n     }\n     /** Returns the number of elements in the array. *\n     public override
val size: Int get() = storage.size\n     /** Creates an iterator over the elements of the array. *\n     public override
operator fun iterator(): kotlin.collections.Iterator<UByte> = Iterator(storage)\n     private class Iterator(private val
array: ByteArray) : kotlin.collections.Iterator<UByte> {\n         private var index = 0\n         override fun hasNext() =
index < array.size\n         override fun
next() = if (index < array.size) array[index++].toUByte() else throw NoSuchElementException(index.toString())\n     }\n     override fun contains(element: UByte): Boolean {\n         // TODO: Eliminate this check after KT-30016 gets
fixed.\n         // Currently JS BE does not generate special bridge method for this method.\n     }\n     @Suppress("USELESS_CAST")\n     if ((element as Any?) !is UByte) return false\n     return
storage.contains(element.toByte())\n     }\n     override fun containsAll(elements: Collection<UByte>): Boolean {\n
return (elements as Collection<*>).all { it is UByte && storage.contains(it.toByte()) }\n     }\n     override fun

```

isEmpty(): Boolean = this.storage.size == 0\n\n\*\*\n \* Creates a new array of the specified [size], where each element is calculated by calling the specified\n \* [init] function.\n \*\n \* The function [init] is called for each array element sequentially starting from the first one.\n \*\n \* It should return the value for an array element given its index.\n

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun  
UByteArray(size: Int, init: (Int) -> UByte): UByteArray {\n    return UByteArray(ByteArray(size) { index ->  
init(index).toByte()  
})\n}\n\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun  
ubyteArrayOf(vararg elements: UByte): UByteArray = elements\n", /*\n * Copyright 2010-2022 JetBrains s.r.o. and  
Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that  
can be found in the license/LICENSE.txt file.\n */\n\n// Auto-generated file. DO NOT EDIT!\n\npackage  
kotlin\n\nimport kotlin.jvm.*\n\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@JvmInline\npublic  
value class UIntArray\n@PublishedApi\ninternal constructor(@PublishedApi internal val storage: IntArray) :  
Collection<UInt> {\n\n    /** Creates a new array of the specified [size], with all elements initialized  
to zero. *\n    public constructor(size: Int) : this(IntArray(size))\n\n    /**\n     * Returns the array element at the  
given [index]. This method can be called using the index operator.\n     *\n     * If the [index] is out of bounds of this  
array, throws an [IndexOutOfBoundsException] except in Kotlin/JS\n     * where the behavior is unspecified.\n     *\n     * public operator fun get(index: Int): UInt = storage[index].toInt()\n\n    /**\n     * Sets the element at the  
given [index] to the given [value]. This method can be called using the index operator.\n     *\n     * If the [index] is  
out of bounds of this array, throws an [IndexOutOfBoundsException] except in Kotlin/JS\n     * where the behavior  
is unspecified.\n     *\n     * public operator fun set(index: Int, value: UInt) {\n        storage[index] = value.toInt()\n    }\n\n    /** Returns the number of elements in the array. *\n    public override val size: Int get() = storage.size\n\n    /** Creates an iterator over  
the elements of the array. *\n    public override operator fun iterator(): kotlin.collections.Iterator<UInt> =  
Iterator(storage)\n\n    private class Iterator(private val array: IntArray) : kotlin.collections.Iterator<UInt> {\n        private var index = 0\n        override fun hasNext() = index < array.size\n        override fun next() = if (index <  
array.size) array[index++].toInt() else throw NoSuchElementException(index.toString())\n    }\n\n    override fun  
contains(element: UInt): Boolean {\n        // TODO: Eliminate this check after KT-30016 gets fixed.\n        //  
Currently JS BE does not generate special bridge method for this method.\n        @Suppress("USELESS_CAST")\n        if ((element as Any?) !is UInt) return false\n        return  
storage.contains(element.toInt())\n    }\n\n    override fun containsAll(elements: Collection<UInt>): Boolean {\n        return (elements as Collection<*>).all { it is UInt && storage.contains(it.toInt()) }\n    }\n\n    override fun  
isEmpty():
```

Boolean = this.storage.size == 0\n\n\*\*\n \* Creates a new array of the specified [size], where each element is calculated by calling the specified\n \* [init] function.\n \*\n \* The function [init] is called for each array element sequentially starting from the first one.\n \*\n \* It should return the value for an array element given its index.\n

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun  
UIntArray(size: Int, init: (Int) -> UInt): UIntArray {\n    return UIntArray(IntArray(size) { index ->  
init(index).toInt()  
})\n}\n\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun  
uintArrayOf(vararg elements: UInt): UIntArray = elements\n", /*\n * Copyright 2010-2022 JetBrains s.r.o. and  
Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that  
can be found in the license/LICENSE.txt file.\n */\n\n// Auto-generated file. DO NOT EDIT!\n\npackage  
kotlin\n\nimport kotlin.jvm.*\n\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@JvmInline\npublic  
value class ULongArray\n@PublishedApi\ninternal constructor(@PublishedApi internal val storage: LongArray) :  
Collection<ULong> {\n\n    /** Creates a new array of the specified [size], with all elements initialized to zero. *\n    public constructor(size: Int) : this(LongArray(size))\n\n    /**\n     * Returns the array element at the given [index].  
This method can be called using the index operator.\n     *\n     * If the [index] is out of bounds of this array, throws
```

```

an [IndexOutOfBoundsException] except in Kotlin/JS\n * where the behavior is unspecified.\n *\n public
operator fun get(index: Int): ULong = storage[index].toULong()\n\n /**\n * Sets the element at the given
[index] to the given [value]. This method can be called using the index operator.\n *\n * If the [index] is out of
bounds of this array, throws an [IndexOutOfBoundsException] except
in Kotlin/JS\n * where the behavior is unspecified.\n *\n public operator fun set(index: Int, value: ULong)
{\n storage[index] = value.toLong()\n }\n\n /** Returns the number of elements in the array. *\n public
override val size: Int get() = storage.size\n\n /** Creates an iterator over the elements of the array. *\n public
override operator fun iterator(): kotlin.collections.Iterator<ULong> = Iterator(storage)\n\n private class
Iterator(private val array: LongArray) : kotlin.collections.Iterator<ULong> {\n private var index = 0\n
override fun hasNext() = index < array.size\n override fun next() = if (index < array.size)
array[index++].toULong() else throw NoSuchElementException(index.toString())\n }\n\n override fun
contains(element: ULong): Boolean {\n // TODO: Eliminate this check after KT-30016 gets fixed.\n //
Currently JS BE does not generate special bridge method for this method.\n
@Suppress(\"USELESS_CAST\")\n
if ((element as Any?) !is ULong) return false\n\n return storage.contains(element.toLong())\n }\n\n
override fun containsAll(elements: Collection<ULong>): Boolean {\n return (elements as Collection<*>).all { it
is ULong && storage.contains(it.toLong()) }\n }\n\n override fun isEmpty(): Boolean = this.storage.size ==
0\n}\n\n/**\n * Creates a new array of the specified [size], where each element is calculated by calling the
specified\n * [init] function.\n *\n * The function [init] is called for each array element sequentially starting from the
first one.\n * It should return the value for an array element given its index.\n
*\n@SinceKotlin(\"1.3\")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray(size: Int, init: (Int) -> ULong): ULongArray {\n return ULongArray(LongArray(size) { index ->
init(index).toLong()
})\n}\n\n@SinceKotlin(\"1.3\")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun ulongArrayOf(vararg elements: ULong): ULongArray = elements\n\", \"/*\n * Copyright 2010-2022
JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the
Apache 2.0 license that can be found in the license/LICENSE.txt file.\n *\n\n// Auto-generated file. DO NOT
EDIT!\n\npackage kotlin\n\nimport
kotlin.jvm.*\n\n@SinceKotlin(\"1.3\")\n@ExperimentalUnsignedTypes\n@JvmInline\npublic value class
UShortArray\n@PublishedApi\ninternal constructor(@PublishedApi internal val storage: ShortArray) :
Collection<UShort> {\n\n /** Creates a new array of the specified [size], with all elements initialized to zero. *\n
public constructor(size: Int) : this(ShortArray(size))\n\n /**\n * Returns the array element at the given [index].
This method can be called using the index operator.\n *\n * If the [index] is out of bounds of this array, throws
an [IndexOutOfBoundsException] except in Kotlin/JS\n * where
the behavior is unspecified.\n *\n public operator fun get(index: Int): UShort = storage[index].toUShort()\n\n
/**\n * Sets the element at the given [index] to the given [value]. This method can be called using the index
operator.\n *\n * If the [index] is out of bounds of this array, throws an [IndexOutOfBoundsException] except
in Kotlin/JS\n * where the behavior is unspecified.\n *\n public operator fun set(index: Int, value: UShort)
{\n storage[index] = value.toShort()\n }\n\n /** Returns the number of elements in the array. *\n public
override val size: Int get() = storage.size\n\n /** Creates an iterator over the elements of the array. *\n public
override operator fun iterator(): kotlin.collections.Iterator<UShort> = Iterator(storage)\n\n private class
Iterator(private val array: ShortArray) : kotlin.collections.Iterator<UShort> {\n private var index = 0\n
override fun hasNext() = index < array.size\n
override fun next() = if (index < array.size) array[index++].toUShort() else throw
NoSuchElementException(index.toString())\n }\n\n override fun contains(element: UShort): Boolean {\n //
TODO: Eliminate this check after KT-30016 gets fixed.\n // Currently JS BE does not generate special bridge
method for this method.\n @Suppress(\"USELESS_CAST\")\n if ((element as Any?) !is UShort) return
false\n\n return storage.contains(element.toShort())\n }\n\n override fun containsAll(elements:

```

Collection<UShort>: Boolean {  
return (elements as Collection<\*>).all { it is UShort &&  
storage.contains(it.toShort()) }  
}  
override fun isEmpty(): Boolean = this.storage.size == 0  
Creates a new array of the specified [size], where each element is calculated by calling the specified  
function. The function [init] is called for each array element sequentially starting from the first one.  
It should return  
the value for an array element given its index.

```

@SinceKotlin("1.3")@ExperimentalUnsignedTypes@kotlin.internal.InlineOnly
public inline fun
UShortArray(size: Int, init: (Int) -> UShort): UShortArray {
return UShortArray(ShortArray(size) { index ->
init(index).toShort()
})
}
@SinceKotlin("1.3")@ExperimentalUnsignedTypes@kotlin.internal.InlineOnly
public inline fun
ushortArrayOf(vararg elements: UShort): UShortArray = elements
"/
* Copyright 2010-2022 JetBrains s.r.o.
and Kotlin Programming Language contributors.
* Use of this source code is governed by the Apache 2.0 license
that can be found in the license/LICENSE.txt file.
@file:kotlin.jvm.JvmMultifileClass@file:kotlin.jvm.JvmName("UArraysKt")
@file:kotlin.jvm.JvmPackage("kotlin.collections.unsigned")
package kotlin.collections
NOTE: THIS FILE IS AUTO-GENERATED by the GenerateStandardLib.kt
See:
https://github.com/JetBrains/kotlin/tree/master/libraries/stdlib
import
kotlin.random.*
import kotlin.ranges.contains
import kotlin.ranges.reversed
* Returns 1st element*
from the array.
* If the size of this array is less than 1, throws an [IndexOutOfBoundsException] except in
Kotlin/JS
* where the behavior is unspecified.
@SinceKotlin("1.3")@ExperimentalUnsignedTypes@kotlin.internal.InlineOnly
public inline operator fun
UIntArray.component1(): UInt {
return get(0)
}
* Returns 1st element* from the array.
* If the size of this array is less than 1, throws an [IndexOutOfBoundsException] except in
Kotlin/JS
* where the behavior is unspecified.
@SinceKotlin("1.3")@ExperimentalUnsignedTypes@kotlin.internal.InlineOnly
public inline operator fun
ULongArray.component1(): ULong {
return get(0)
}
* Returns 1st element* from
the array.
* If the size of this array is less than 1, throws an [IndexOutOfBoundsException] except in
Kotlin/JS
* where the behavior
is unspecified.
@SinceKotlin("1.3")@ExperimentalUnsignedTypes@kotlin.internal.InlineOnly
public inline operator fun
UByteArray.component1(): UByte {
return get(0)
}
* Returns 1st element* from
the array.
* If the size of this array is less than 1, throws an [IndexOutOfBoundsException] except in
Kotlin/JS
* where the behavior is unspecified.
@SinceKotlin("1.3")@ExperimentalUnsignedTypes@kotlin.internal.InlineOnly
public inline operator fun
UShortArray.component1(): UShort {
return get(0)
}
* Returns 2nd element* from the array.
* If the size of this array is less than 2, throws an [IndexOutOfBoundsException] except in
Kotlin/JS
* where the
behavior is unspecified.
@SinceKotlin("1.3")@ExperimentalUnsignedTypes@kotlin.internal.InlineOnly
public inline operator fun
UIntArray.component2(): UInt {
return get(1)
}
* Returns 2nd element* from the array.
* If
the size of this array is
less than 2, throws an [IndexOutOfBoundsException] except in
Kotlin/JS
* where the behavior is unspecified.
@SinceKotlin("1.3")@ExperimentalUnsignedTypes@kotlin.internal.InlineOnly
public inline operator fun
ULongArray.component2(): ULong {
return get(1)
}
* Returns 2nd element* from the array.
* If the size of this array is less than 2, throws an [IndexOutOfBoundsException] except in
Kotlin/JS
* where the
behavior is unspecified.
@SinceKotlin("1.3")@ExperimentalUnsignedTypes@kotlin.internal.InlineOnly
public inline operator fun
UByteArray.component2(): UByte {
return get(1)
}
* Returns 2nd element* from the array.
* If the size of this array is less than 2, throws an [IndexOutOfBoundsException] except in
Kotlin/JS
* where the
behavior is unspecified.
@SinceKotlin("1.3")@ExperimentalUnsignedTypes@kotlin.internal.InlineOnly
public inline operator fun

```

UShortArray.component2(): UShort {  
 return  
 get(1)}  
 Returns 3rd \*element\* from the array.  
 If the size of this array is less than 3, throws an [IndexOutOfBoundsException] except in Kotlin/JS where the behavior is unspecified.

@SinceKotlin("1.3")@ExperimentalUnsignedTypes@kotlin.internal.InlineOnly  
 public inline operator fun  
 UIntArray.component3(): UInt {  
 return get(2)}  
 Returns 3rd \*element\* from the array.  
 If the size of this array is less than 3, throws an [IndexOutOfBoundsException] except in Kotlin/JS where the behavior is unspecified.

@SinceKotlin("1.3")@ExperimentalUnsignedTypes@kotlin.internal.InlineOnly  
 public inline operator fun  
 ULongArray.component3(): ULong {  
 return get(2)}  
 Returns 3rd \*element\* from the array.  
 If the size of this array is less than 3, throws an [IndexOutOfBoundsException] except in Kotlin/JS where the behavior is unspecified.

@SinceKotlin("1.3")@ExperimentalUnsignedTypes@kotlin.internal.InlineOnly  
 public  
 inline operator fun  
 UByteArray.component3(): UByte {  
 return get(2)}  
 Returns 3rd \*element\* from the array.  
 If the size of this array is less than 3, throws an [IndexOutOfBoundsException] except in Kotlin/JS where the behavior is unspecified.

@SinceKotlin("1.3")@ExperimentalUnsignedTypes@kotlin.internal.InlineOnly  
 public inline operator fun  
 UShortArray.component3(): UShort {  
 return get(2)}  
 Returns 4th \*element\* from the array.  
 If the size of this array is less than 4, throws an [IndexOutOfBoundsException] except in Kotlin/JS where the behavior is unspecified.

@SinceKotlin("1.3")@ExperimentalUnsignedTypes@kotlin.internal.InlineOnly  
 public inline operator fun  
 UIntArray.component4(): UInt {  
 return get(3)}  
 Returns 4th \*element\* from the array.  
 If the size of this array is less than 4, throws an [IndexOutOfBoundsException] except in Kotlin/JS where the behavior is unspecified.

@SinceKotlin("1.3")@ExperimentalUnsignedTypes@kotlin.internal.InlineOnly  
 public inline operator fun  
 ULongArray.component4(): ULong {  
 return get(3)}  
 Returns 4th \*element\* from the array.  
 If the size of this array is less than 4, throws an [IndexOutOfBoundsException] except in Kotlin/JS where the behavior is unspecified.

@SinceKotlin("1.3")@ExperimentalUnsignedTypes@kotlin.internal.InlineOnly  
 public inline operator fun  
 UByteArray.component4(): UByte {  
 return get(3)}  
 Returns 4th \*element\* from the array.  
 If the size of this array is less than 4, throws an [IndexOutOfBoundsException] except in Kotlin/JS where the behavior is unspecified.

@SinceKotlin("1.3")@ExperimentalUnsignedTypes@kotlin.internal.InlineOnly  
 public inline operator fun  
 UShortArray.component4(): UShort {  
 return get(3)}  
 Returns 5th \*element\* from the array.  
 If the size of this array is less than 5, throws an [IndexOutOfBoundsException] except in Kotlin/JS where the behavior is unspecified.

@SinceKotlin("1.3")@ExperimentalUnsignedTypes@kotlin.internal.InlineOnly  
 public inline operator fun  
 UIntArray.component5(): UInt {  
 return get(4)}  
 Returns 5th \*element\* from the array.  
 If the size of this array is less than 5, throws an [IndexOutOfBoundsException] except in Kotlin/JS where the behavior is unspecified.

@SinceKotlin("1.3")@ExperimentalUnsignedTypes@kotlin.internal.InlineOnly  
 public inline operator fun  
 ULongArray.component5(): ULong {  
 return get(4)}  
 Returns 5th \*element\* from the array.  
 If the size of this array is less than 5, throws an [IndexOutOfBoundsException] except in Kotlin/JS where the behavior is unspecified.

@SinceKotlin("1.3")@ExperimentalUnsignedTypes@kotlin.internal.InlineOnly  
 public inline operator fun  
 UByteArray.component5(): UByte {  
 return get(4)}  
 Returns 5th \*element\* from the array.  
 If the size of this array is less than 5, throws an [IndexOutOfBoundsException] except in Kotlin/JS where the behavior is unspecified.

@SinceKotlin("1.3")@ExperimentalUnsignedTypes@kotlin.internal.InlineOnly  
 public inline operator fun

```

UShortArray.component5(): UShort { \n    return get(4)\n}\n\n/**\n * Returns an element at the given [index] or
throws an [IndexOutOfBoundsException] if the [index] is out of bounds of this array.\n * \n * @sample
samples.collections.Collections.Elements.elementAt\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic expect fun UIntArray.elementAt(index: Int):
UInt\n\n/**\n * Returns an element at the given [index] or throws an [IndexOutOfBoundsException] if the [index] is
out of bounds of this array.\n * \n * @sample samples.collections.Collections.Elements.elementAt\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic expect fun ULongArray.elementAt(index:
Int): ULong\n\n/**\n * Returns an element at the given [index] or throws an [IndexOutOfBoundsException] if the
[index] is out of bounds of this array.\n * \n * @sample samples.collections.Collections.Elements.elementAt\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic expect fun UByteArray.elementAt(index: Int):
UByte\n\n/**\n * Returns an element at the given [index] or throws an [IndexOutOfBoundsException] if the [index]
is out of bounds of this array.\n * \n * @sample samples.collections.Collections.Elements.elementAt\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic expect fun UShortArray.elementAt(index: Int):
UShort\n\n/**\n * Returns an element at the given [index] or the result of calling the [defaultValue] function if the
[index] is out of bounds of this array.\n * \n * @sample
samples.collections.Collections.Elements.elementAtOrElse\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline
fun UIntArray.elementAtOrElse(index: Int, defaultValue: (Int) -> UInt): UInt { \n    return if (index >= 0 && index
<= lastIndex) get(index) else defaultValue(index)\n}\n\n/**\n * Returns an element at the given [index] or the result
of calling the [defaultValue] function if the [index] is out of bounds of this array.\n * \n * @sample
samples.collections.Collections.Elements.elementAtOrElse\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.elementAtOrElse(index: Int, defaultValue: (Int) -> ULong): ULong { \n    return if (index >= 0 &&
index <= lastIndex) get(index) else defaultValue(index)\n}\n\n/**\n * Returns an element at the given [index] or the
result of calling the [defaultValue] function if the [index] is out of bounds of this array.\n * \n * @sample
samples.collections.Collections.Elements.elementAtOrElse\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.elementAtOrElse(index:
Int, defaultValue: (Int) -> UByte): UByte { \n    return if (index >= 0 && index <= lastIndex) get(index) else
defaultValue(index)\n}\n\n/**\n * Returns an element at the given [index] or the result of calling the [defaultValue]
function if the [index] is out of bounds of this array.\n * \n * @sample
samples.collections.Collections.Elements.elementAtOrElse\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.elementAtOrElse(index: Int, defaultValue: (Int) -> UShort): UShort { \n    return if (index >= 0 &&
index <= lastIndex) get(index) else defaultValue(index)\n}\n\n/**\n * Returns an element at the given [index] or
`null` if the [index] is out of bounds of this array.\n * \n * @sample
samples.collections.Collections.Elements.elementAtOrNull\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.elementAtOrNull(index: Int): UInt? { \n
    return this.getOrNull(index)\n}\n\n/**\n * Returns an element at the given [index] or `null` if the [index] is out of
bounds of this array.\n * \n * @sample samples.collections.Collections.Elements.elementAtOrNull\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.elementAtOrNull(index: Int): ULong? { \n    return this.getOrNull(index)\n}\n\n/**\n * Returns an
element at the given [index] or `null` if the [index] is out of bounds of this array.\n * \n * @sample
samples.collections.Collections.Elements.elementAtOrNull\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.elementAtOrNull(index: Int): UByte? { \n    return this.getOrNull(index)\n}\n\n/**\n * Returns an
element at the given [index] or `null` if the [index] is out of bounds of this array.\n * \n * @sample

```

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samples.collections.Collections.Elements.elementAtOrNull\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun UShortArray.elementAtOrNull(index: Int): UShort? {\n    return this.getOrNull(index)\n}\n\n/**\n *
Returns the first element matching the given [predicate], or `null` if no such element was found.\n * \n * @sample
samples.collections.Collections.Elements.find\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.find(predicate: (UInt) -> Boolean): UInt? {\n    return firstOrNull(predicate)\n}\n\n/**\n * Returns the
first element matching the given [predicate], or `null` if no such element was found.\n * \n * @sample
samples.collections.Collections.Elements.find\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.find(predicate: (ULong) -> Boolean): ULong? {\n    return firstOrNull(predicate)\n}\n\n/**\n *
Returns the first element matching the given [predicate], or `null` if no such element was found.\n
* \n * @sample samples.collections.Collections.Elements.find\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.find(predicate: (UByte) -> Boolean): UByte? {\n    return firstOrNull(predicate)\n}\n\n/**\n * Returns
the first element matching the given [predicate], or `null` if no such element was found.\n * \n * @sample
samples.collections.Collections.Elements.find\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.find(predicate: (UShort) -> Boolean): UShort? {\n    return firstOrNull(predicate)\n}\n\n/**\n *
Returns the last element matching the given [predicate], or `null` if no such element was found.\n * \n * @sample
samples.collections.Collections.Elements.find\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.findLast(predicate: (UInt) -> Boolean): UInt? {\n    return lastOrNull(predicate)\n}\n\n/**\n
* Returns the last element matching the given [predicate], or `null` if no such element was found.\n * \n * @sample
samples.collections.Collections.Elements.find\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.findLast(predicate: (ULong) -> Boolean): ULong? {\n    return lastOrNull(predicate)\n}\n\n/**\n
* Returns the last element matching the given [predicate], or `null` if no such element was found.\n * \n * @sample
samples.collections.Collections.Elements.find\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.findLast(predicate: (UByte) -> Boolean): UByte? {\n    return lastOrNull(predicate)\n}\n\n/**\n
* Returns the last element matching the given [predicate], or `null` if no such element was found.\n * \n * @sample
samples.collections.Collections.Elements.find\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun UShortArray.findLast(predicate: (UShort) -> Boolean): UShort? {\n    return
lastOrNull(predicate)\n}\n\n/**\n * Returns the first element.\n * \n * @throws NoSuchElementException if the
array is empty.\n * \n *\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun UIntArray.first(): UInt {\n    return storage.first().toUInt()\n}\n\n/**\n * Returns the first element.\n * \n *
@throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.first(): ULong {\n    return storage.first().toULong()\n}\n\n/**\n * Returns the first element.\n * \n *
@throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.first(): UByte {\n    return storage.first().toUByte()\n}\n\n/**\n * Returns the first element.\n * \n *
@throws
NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.first(): UShort {\n    return storage.first().toUShort()\n}\n\n/**\n * Returns the first element matching

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the given [predicate].\n \* @throws [NoSuchElementException] if no such element is found.\n

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*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.first(predicate: (UInt) -> Boolean): UInt {\n  for (element in this) if (predicate(element)) return
element\n  throw NoSuchElementException("Array contains no element matching the predicate.")\n}\n\n/**\n * Returns the first element matching the given [predicate].\n * @throws [NoSuchElementException] if no such
element is found.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.first(predicate: (ULong) -> Boolean): ULong {\n  for (element in this) if
(predicate(element)) return element\n  throw NoSuchElementException("Array contains no element matching the
predicate.")\n}\n\n/**\n * Returns the first element matching the given [predicate].\n * @throws
[NoSuchElementException] if no such element is found.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.first(predicate: (UByte) -> Boolean): UByte {\n  for (element in this) if (predicate(element)) return
element\n  throw NoSuchElementException("Array contains no element matching the predicate.")\n}\n\n/**\n * Returns the first element matching the given [predicate].\n * @throws [NoSuchElementException] if no such
element is found.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.first(predicate: (UShort) -> Boolean): UShort {\n  for (element in this) if (predicate(element)) return
element\n  throw NoSuchElementException("Array contains no
element matching the predicate.")\n}\n\n/**\n * Returns the first element, or `null` if the array is empty.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UIntArray.firstOrNull(): UInt? {\n  return
if (isEmpty()) null else this[0]\n}\n\n/**\n * Returns the first element, or `null` if the array is empty.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun ULongArray.firstOrNull(): ULong? {\n
return if (isEmpty()) null else this[0]\n}\n\n/**\n * Returns the first element, or `null` if the array is empty.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UByteArray.firstOrNull(): UByte? {\n
return if (isEmpty()) null else this[0]\n}\n\n/**\n * Returns the first element, or `null` if the array is empty.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UShortArray.firstOrNull(): UShort? {\n
return if (isEmpty()) null else this[0]\n}\n\n/**\n * Returns the first element matching the given [predicate], or
`null` if element was not found.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.firstOrNull(predicate: (UInt) -> Boolean): UInt? {\n  for (element in this) if (predicate(element)) return
element\n  return null\n}\n\n/**\n * Returns the first element matching the given [predicate], or `null` if element
was not found.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun ULongArray.firstOrNull(predicate: (ULong) -> Boolean): ULong? {\n  for (element in this) if
(predicate(element)) return element\n  return null\n}\n\n/**\n * Returns the first element matching the given
[predicate], or `null` if element was not found.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.firstOrNull(predicate: (UByte) -> Boolean): UByte? {\n  for (element in this) if (predicate(element))
return element\n  return null\n}\n\n/**\n * Returns the first element matching the given [predicate], or `null` if element was not found.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.firstOrNull(predicate: (UShort) -> Boolean): UShort? {\n  for (element in this) if (predicate(element))
return element\n  return null\n}\n\n/**\n * Returns an element at the given [index] or the result of calling the
[defaultValue] function if the [index] is out of bounds of this array.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.getOrElse(index: Int, defaultValue: (Int) -> UInt): UInt {\n  return if (index >= 0 && index <=
lastIndex) get(index) else defaultValue(index)\n}\n\n/**\n * Returns an element at the given [index] or the result of
calling the [defaultValue] function if the [index] is out of bounds of this array.\n

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*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun ULongArray.getOrElse(index: Int, defaultValue: (Int) -> ULong): ULong {\n    return if (index >= 0 &&
index <= lastIndex) get(index) else defaultValue(index)\n}\n\n/**\n * Returns an element at the given [index] or the
result of calling the [defaultValue] function if the [index] is out of bounds of this array.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.getOrElse(index: Int, defaultValue: (Int) -> UByte): UByte {\n    return if (index >= 0 && index <=
lastIndex) get(index) else defaultValue(index)\n}\n\n/**\n * Returns an element at the given [index] or the result of
calling the [defaultValue] function if the [index] is out of bounds of this array.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.getOrElse(index: Int, defaultValue: (Int) -> UShort): UShort {\n    return if (index >= 0 && index <=
lastIndex) get(index)
else defaultValue(index)\n}\n\n/**\n * Returns an element at the given [index] or `null` if the [index] is out of
bounds of this array.\n * \n * @sample samples.collections.Collections.Elements.getOrNull\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UIntArray.getOrNull(index: Int): UInt? {\n
return if (index >= 0 && index <= lastIndex) get(index) else null\n}\n\n/**\n * Returns an element at the given
[index] or `null` if the [index] is out of bounds of this array.\n * \n * @sample
samples.collections.Collections.Elements.getOrNull\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun ULongArray.getOrNull(index: Int):
ULong? {\n    return if (index >= 0 && index <= lastIndex) get(index) else null\n}\n\n/**\n * Returns an element at
the given [index] or `null` if the [index] is out of bounds of this array.\n * \n * @sample
samples.collections.Collections.Elements.getOrNull\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UByteArray.getOrNull(index:
Int): UByte? {\n    return if (index >= 0 && index <= lastIndex) get(index) else null\n}\n\n/**\n * Returns an
element at the given [index] or `null` if the [index] is out of bounds of this array.\n * \n * @sample
samples.collections.Collections.Elements.getOrNull\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UShortArray.getOrNull(index: Int):
UShort? {\n    return if (index >= 0 && index <= lastIndex) get(index) else null\n}\n\n/**\n * Returns first index of
[element], or -1 if the array does not contain element.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.indexOf(element: UInt): Int {\n    return storage.indexOf(element.toInt())\n}\n\n/**\n * Returns first
index of [element], or -1 if the array does not contain element.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.indexOf(element: ULong): Int {\n    return
storage.indexOf(element.toLong())\n}\n\n/**\n * Returns first index of [element], or -1 if the array does not contain
element.\n * \n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline
fun UByteArray.indexOf(element: UByte): Int {\n    return storage.indexOf(element.toByte())\n}\n\n/**\n * Returns
first index of [element], or -1 if the array does not contain element.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.indexOf(element: UShort): Int {\n    return storage.indexOf(element.toShort())\n}\n\n/**\n * Returns
index of the first element matching the given [predicate], or -1 if the array does not contain such element.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.indexOfFirst(predicate: (UInt) -> Boolean): Int {\n    return storage.indexOfFirst { predicate(it.toUInt())
}\n}\n\n/**\n * Returns index of the first
element matching the given [predicate], or -1 if the array does not contain such element.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.indexOfFirst(predicate: (ULong) -> Boolean): Int {\n    return storage.indexOfFirst {
predicate(it.toULong()) }\n}\n\n/**\n * Returns index of the first element matching the given [predicate], or -1 if the
array does not contain such element.\n

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*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.indexOfFirst(predicate: (UByte) -> Boolean): Int {\n    return storage.indexOfFirst {
predicate(it.toUByte()) }\n}\n\n/**\n * Returns index of the first element matching the given [predicate], or -1 if the
array does not contain such element.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.indexOfFirst(predicate: (UShort) -> Boolean): Int {\n    return storage.indexOfFirst
{ predicate(it.toUShort()) }\n}\n\n/**\n * Returns index of the last element matching the given [predicate], or -1 if
the array does not contain such element.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.indexOfLast(predicate: (UInt) -> Boolean): Int {\n    return storage.indexOfLast { predicate(it.toUInt())
}\n}\n\n/**\n * Returns index of the last element matching the given [predicate], or -1 if the array does not contain
such element.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun ULongArray.indexOfLast(predicate: (ULong) -> Boolean): Int {\n    return storage.indexOfLast {
predicate(it.toULong()) }\n}\n\n/**\n * Returns index of the last element matching the given [predicate], or -1 if the
array does not contain such element.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.indexOfLast(predicate:
(UByte) -> Boolean): Int {\n    return storage.indexOfLast { predicate(it.toUByte()) }\n}\n\n/**\n * Returns index
of the last element matching the given [predicate], or -1 if the array does not contain such element.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.indexOfLast(predicate: (UShort) -> Boolean): Int {\n    return storage.indexOfLast {
predicate(it.toUShort()) }\n}\n\n/**\n * Returns the last element.\n * \n * @throws NoSuchElementException if the
array is empty.\n * \n * @sample samples.collections.Collections.Elements.last\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.last(): UInt {\n    return storage.last().toUInt()\n}\n\n/**\n * Returns the last element.\n * \n * @throws
NoSuchElementException if the array is empty.\n * \n * @sample samples.collections.Collections.Elements.last\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun ULongArray.last(): ULong {\n    return storage.last().toULong()\n}\n\n/**\n * Returns the last element.\n
* \n * @throws NoSuchElementException if the array is empty.\n * \n * @sample
samples.collections.Collections.Elements.last\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.last(): UByte {\n    return storage.last().toUByte()\n}\n\n/**\n * Returns the last element.\n * \n *
@throws NoSuchElementException if the array is empty.\n * \n * @sample
samples.collections.Collections.Elements.last\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.last(): UShort {\n    return storage.last().toUShort()\n}\n\n/**\n * Returns the last element matching
the given [predicate].\n * \n * @throws NoSuchElementException if no such element is found.\n * \n * @sample
samples.collections.Collections.Elements.last\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.last(predicate: (UInt) -> Boolean): UInt {\n    for (index in this.indices.reversed()) {\n        val element =
this[index]\n        if (predicate(element)) return element\n    }\n    throw NoSuchElementException("Array contains
no element matching the predicate.")\n}\n\n/**\n * Returns the last element matching the given [predicate].\n * \n *
@throws NoSuchElementException if no such element is found.\n * \n * @sample
samples.collections.Collections.Elements.last\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.last(predicate: (ULong) -> Boolean): ULong {\n    for (index in this.indices.reversed()) {\n        val
element = this[index]\n        if (predicate(element)) return element\n    }\n    throw
NoSuchElementException("Array contains no element matching the predicate.")\n}\n\n/**\n * Returns the last

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element matching the given [predicate].\n * \n * @throws NoSuchElementException if no such element is found.\n
* \n * @sample samples.collections.Collections.Elements.last\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.last(predicate: (UByte) -> Boolean): UByte {\n for (index in this.indices.reversed()) {\n val
element = this[index]\n if (predicate(element)) return element\n }\n throw
NoSuchElementException("Array contains no element matching the predicate.")\n}\n\n/**\n * Returns the last
element matching the given [predicate].\n * \n * @throws NoSuchElementException if no such element is found.\n
* \n * @sample samples.collections.Collections.Elements.last\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.last(predicate: (UShort) -> Boolean): UShort {\n for (index in this.indices.reversed()) {\n val
element = this[index]\n
if (predicate(element)) return element\n }\n throw NoSuchElementException("Array contains no element
matching the predicate.")\n}\n\n/**\n * Returns last index of [element], or -1 if the array does not contain
element.\n *\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline
fun UIntArray.lastIndexOf(element: UInt): Int {\n return storage.lastIndexOf(element.toInt())\n}\n\n/**\n *
Returns last index of [element], or -1 if the array does not contain element.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.lastIndexOf(element: ULong): Int {\n return storage.lastIndexOf(element.toLong())\n}\n\n/**\n *
Returns last index of [element], or -1 if the array does not contain element.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.lastIndexOf(element: UByte): Int {\n return storage.lastIndexOf(element.toByte())\n}\n\n/**\n
* Returns last index of [element], or -1 if the array does not contain element.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.lastIndexOf(element: UShort): Int {\n return storage.lastIndexOf(element.toShort())\n}\n\n/**\n
* Returns the last element, or `null` if the array is empty.\n * \n * @sample
samples.collections.Collections.Elements.last\n *\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic
fun UIntArray.lastOrNull(): UInt? {\n return if (isEmpty()) null else this[size - 1]\n}\n\n/**\n * Returns the last
element, or `null` if the array is empty.\n * \n * @sample samples.collections.Collections.Elements.last\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun ULongArray.lastOrNull(): ULong? {\n
return if (isEmpty()) null else this[size - 1]\n}\n\n/**\n * Returns the last element, or `null` if the array is empty.\n
*\n * @sample samples.collections.Collections.Elements.last\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UByteArray.lastOrNull(): UByte? {\n
return if (isEmpty()) null else this[size - 1]\n}\n\n/**\n * Returns the last element, or `null` if the array is empty.\n
*\n * @sample samples.collections.Collections.Elements.last\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UShortArray.lastOrNull(): UShort? {\n
return if (isEmpty()) null else this[size - 1]\n}\n\n/**\n * Returns the last element matching the given [predicate], or
`null` if no such element was found.\n * \n * @sample samples.collections.Collections.Elements.last\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.lastOrNull(predicate: (UInt) -> Boolean): UInt? {\n for (index in this.indices.reversed()) {\n val
element = this[index]\n if (predicate(element)) return element\n }\n return null\n}\n\n/**\n * Returns the last
element
matching the given [predicate], or `null` if no such element was found.\n * \n * @sample
samples.collections.Collections.Elements.last\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.lastOrNull(predicate: (ULong) -> Boolean): ULong? {\n for (index in this.indices.reversed()) {\n
val element = this[index]\n if (predicate(element)) return element\n }\n return null\n}\n\n/**\n * Returns the
last element matching the given [predicate], or `null` if no such element was found.\n * \n * @sample
samples.collections.Collections.Elements.last\n

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*^@SinceKotlin("1.3")^@ExperimentalUnsignedTypes^@kotlin.internal.InlineOnly^public inline fun
UByteArray.lastOrNull(predicate: (UByte) -> Boolean): UByte? {^n for (index in this.indices.reversed()) {^n
val element = this[index]^n if (predicate(element)) return element^n }^n return null^n}^n/^n * Returns the
last element matching
the given [predicate], or `null` if no such element was found.^n * ^n * @sample
samples.collections.Collections.Elements.last^n
*^@SinceKotlin("1.3")^@ExperimentalUnsignedTypes^@kotlin.internal.InlineOnly^public inline fun
UShortArray.lastOrNull(predicate: (UShort) -> Boolean): UShort? {^n for (index in this.indices.reversed()) {^n
val element = this[index]^n if (predicate(element)) return element^n }^n return null^n}^n/^n/^n * Returns a
random element from this array.^n * ^n * @throws NoSuchElementException if this array is empty.^n
*^@SinceKotlin("1.3")^@ExperimentalUnsignedTypes^@kotlin.internal.InlineOnly^public inline fun
UIntArray.random(): UInt {^n return random(Random)^n}^n/^n/^n * Returns a random element from this array.^n
* ^n * @throws NoSuchElementException if this array is empty.^n
*^@SinceKotlin("1.3")^@ExperimentalUnsignedTypes^@kotlin.internal.InlineOnly^public inline fun
ULongArray.random(): ULong {^n return random(Random)^n}^n/^n/^n *
* Returns a random element from this array.^n * ^n * @throws NoSuchElementException if this array is empty.^n
*^@SinceKotlin("1.3")^@ExperimentalUnsignedTypes^@kotlin.internal.InlineOnly^public inline fun
UByteArray.random(): UByte {^n return random(Random)^n}^n/^n/^n * Returns a random element from this
array.^n * ^n * @throws NoSuchElementException if this array is empty.^n
*^@SinceKotlin("1.3")^@ExperimentalUnsignedTypes^@kotlin.internal.InlineOnly^public inline fun
UShortArray.random(): UShort {^n return random(Random)^n}^n/^n/^n * Returns a random element from this
array using the specified source of randomness.^n * ^n * @throws NoSuchElementException if this array is empty.^n
*^@SinceKotlin("1.3")^@ExperimentalUnsignedTypes^public fun UIntArray.random(random: Random): UInt
{^n if (isEmpty())^n throw NoSuchElementException("Array is empty.")^n return
get(random.nextInt(size))^n}^n/^n/^n * Returns a random element from
this array using the specified source of randomness.^n * ^n * @throws NoSuchElementException if this array is
empty.^n *^@SinceKotlin("1.3")^@ExperimentalUnsignedTypes^public fun ULongArray.random(random:
Random): ULong {^n if (isEmpty())^n throw NoSuchElementException("Array is empty.")^n return
get(random.nextInt(size))^n}^n/^n/^n * Returns a random element from this array using the specified source of
randomness.^n * ^n * @throws NoSuchElementException if this array is empty.^n
*^@SinceKotlin("1.3")^@ExperimentalUnsignedTypes^public fun UByteArray.random(random: Random):
UByte {^n if (isEmpty())^n throw NoSuchElementException("Array is empty.")^n return
get(random.nextInt(size))^n}^n/^n/^n * Returns a random element from this array using the specified source of
randomness.^n * ^n * @throws NoSuchElementException if this array is empty.^n
*^@SinceKotlin("1.3")^@ExperimentalUnsignedTypes^public fun UShortArray.random(random: Random):
UShort {^n if (isEmpty())^n throw NoSuchElementException("Array is empty.")^n return
get(random.nextInt(size))^n}^n/^n/^n * Returns a random element from this array, or `null` if this array is empty.^n
*^@SinceKotlin("1.4")^@ExperimentalUnsignedTypes^@WasExperimental(ExperimentalStdlibApi::class)^n
^@kotlin.internal.InlineOnly^public inline fun UIntArray.randomOrNull(): UInt? {^n return
randomOrNull(Random)^n}^n/^n/^n * Returns a random element from this array, or `null` if this array is empty.^n
*^@SinceKotlin("1.4")^@ExperimentalUnsignedTypes^@WasExperimental(ExperimentalStdlibApi::class)^n
^@kotlin.internal.InlineOnly^public inline fun ULongArray.randomOrNull(): ULong? {^n return
randomOrNull(Random)^n}^n/^n/^n * Returns a random element from this array, or `null` if this array is empty.^n
*^@SinceKotlin("1.4")^@ExperimentalUnsignedTypes^@WasExperimental(ExperimentalStdlibApi::class)^n
^@kotlin.internal.InlineOnly^public inline fun UByteArray.randomOrNull():
UByte? {^n return randomOrNull(Random)^n}^n/^n/^n * Returns a random element from this array, or `null` if
this array is empty.^n
*^@SinceKotlin("1.4")^@ExperimentalUnsignedTypes^@WasExperimental(ExperimentalStdlibApi::class)^n

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@kotlin.internal.InlineOnly\npublic inline fun UShortArray.randomOrNull(): UShort? {\n    return
randomOrNull(Random)\n}\n\n/**\n * Returns a random element from this array using the specified source of
randomness, or `null` if this array is empty.\n
*\n*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalStdlibApi::class)\npu
blic fun UIntArray.randomOrNull(random: Random): UInt? {\n    if (isEmpty())\n        return null\n    return
get(random.nextInt(size))\n}\n\n/**\n * Returns a random element from this array using the specified source of
randomness, or `null` if this array is empty.\n
*\n*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalStdlibApi::class)\npu
blic fun ULongArray.randomOrNull(random:
Random): ULong? {\n    if (isEmpty())\n        return null\n    return get(random.nextInt(size))\n}\n\n/**\n * Returns
a random element from this array using the specified source of randomness, or `null` if this array is empty.\n
*\n*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalStdlibApi::class)\npu
blic fun UByteArray.randomOrNull(random: Random): UByte? {\n    if (isEmpty())\n        return null\n    return
get(random.nextInt(size))\n}\n\n/**\n * Returns a random element from this array using the specified source of
randomness, or `null` if this array is empty.\n
*\n*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalStdlibApi::class)\npu
blic fun UShortArray.randomOrNull(random: Random): UShort? {\n    if (isEmpty())\n        return null\n    return
get(random.nextInt(size))\n}\n\n/**\n * Returns the single element, or throws an exception if the array is empty or
has more than one element.\n
*\n*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun UIntArray.single(): UInt {\n    return storage.single().toUInt()\n}\n\n/**\n * Returns the single element,
or throws an exception if the array is empty or has more than one element.\n
*\n*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.single(): ULong {\n    return storage.single().toULong()\n}\n\n/**\n * Returns the single element, or
throws an exception if the array is empty or has more than one element.\n
*\n*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.single(): UByte {\n    return storage.single().toUByte()\n}\n\n/**\n * Returns the single element, or
throws an exception if the array is empty or has more than one element.\n
*\n*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.single(): UShort {\n    return
storage.single().toUShort()\n}\n\n/**\n * Returns the single element matching the given [predicate], or throws
exception if there is no or more than one matching element.\n
*\n*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.single(predicate: (UInt) -> Boolean): UInt {\n    var single: UInt? = null\n    var found = false\n    for
(element in this) {\n        if (predicate(element)) {\n            if (found) throw IllegalArgumentException("Array
contains more than one matching element.")\n            single = element\n            found = true\n        }\n    }\n    if
(!found) throw NoSuchElementException("Array contains no element matching the predicate.")\n    @Suppress("UNCHECKED_CAST")\n    return single as UInt\n}\n\n/**\n * Returns the single element matching
the given [predicate], or throws exception if there is no or more than one matching element.\n
*\n*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun ULongArray.single(predicate: (ULong) -> Boolean): ULong {\n    var single: ULong? = null\n    var
found = false\n    for (element in this) {\n        if (predicate(element)) {\n            if (found) throw
IllegalArgumentException("Array contains more than one matching element.")\n            single = element\n
found = true\n        }\n    }\n    if (!found) throw NoSuchElementException("Array contains no element matching
the predicate.")\n    @Suppress("UNCHECKED_CAST")\n    return single as ULong\n}\n\n/**\n * Returns the
single element matching the given [predicate], or throws exception if there is no or more than one matching
element.\n
*\n*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline
fun UByteArray.single(predicate: (UByte) -> Boolean): UByte {\n    var single: UByte? = null\n    var found =

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false\n for (element in this) {\n if (predicate(element)) {\n
if (found) throw IllegalArgumentException("\nArray contains more than one matching element.\n")\n single =
element\n found = true\n }\n }\n if (!found) throw NoSuchElementException("\nArray contains no
element matching the predicate.\n")\n @Suppress("\nUNCHECKED_CAST\n")\n return single as
UByte\n}\n\n/**\n * Returns the single element matching the given [predicate], or throws exception if there is no or
more than one matching element.\n
*\n@SinceKotlin("1.3\n")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.single(predicate: (UShort) -> Boolean): UShort {\n var single: UShort? = null\n var found = false\n
for (element in this) {\n if (predicate(element)) {\n if (found) throw IllegalArgumentException("\nArray
contains more than one matching element.\n")\n single = element\n found = true\n }\n }\n if
(!found) throw NoSuchElementException("\nArray contains
no element matching the predicate.\n")\n @Suppress("\nUNCHECKED_CAST\n")\n return single as
UShort\n}\n\n/**\n * Returns single element, or `null` if the array is empty or has more than one element.\n
*\n@SinceKotlin("1.3\n")\n@ExperimentalUnsignedTypes\npublic fun UIntArray.singleOrNull(): UInt? {\n
return if (size == 1) this[0] else null\n}\n\n/**\n * Returns single element, or `null` if the array is empty or has more
than one element.\n *\n@SinceKotlin("1.3\n")\n@ExperimentalUnsignedTypes\npublic fun
ULongArray.singleOrNull(): ULong? {\n return if (size == 1) this[0] else null\n}\n\n/**\n * Returns single
element, or `null` if the array is empty or has more than one element.\n
*\n@SinceKotlin("1.3\n")\n@ExperimentalUnsignedTypes\npublic fun UByteArray.singleOrNull(): UByte? {\n
return if (size == 1) this[0] else null\n}\n\n/**\n * Returns single element, or `null` if the array is empty or has more
than one element.\n *\n@SinceKotlin("1.3\n")\n@ExperimentalUnsignedTypes\npublic
fun UShortArray.singleOrNull(): UShort? {\n return if (size == 1) this[0] else null\n}\n\n/**\n * Returns the
single element matching the given [predicate], or `null` if element was not found or more than one element was
found.\n *\n@SinceKotlin("1.3\n")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline
fun UIntArray.singleOrNull(predicate: (UInt) -> Boolean): UInt? {\n var single: UInt? = null\n var found =
false\n for (element in this) {\n if (predicate(element)) {\n if (found) return null\n single =
element\n found = true\n }\n }\n if (!found) return null\n return single\n}\n\n/**\n * Returns the
single element matching the given [predicate], or `null` if element was not found or more than one element was
found.\n *\n@SinceKotlin("1.3\n")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline
fun ULongArray.singleOrNull(predicate: (ULong) -> Boolean): ULong? {\n
var single: ULong? = null\n var found = false\n for (element in this) {\n if (predicate(element)) {\n
if (found) return null\n single = element\n found = true\n }\n }\n if (!found) return null\n
return single\n}\n\n/**\n * Returns the single element matching the given [predicate], or `null` if element was not
found or more than one element was found.\n
*\n@SinceKotlin("1.3\n")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.singleOrNull(predicate: (UByte) -> Boolean): UByte? {\n var single: UByte? = null\n var found =
false\n for (element in this) {\n if (predicate(element)) {\n if (found) return null\n single =
element\n found = true\n }\n }\n if (!found) return null\n return single\n}\n\n/**\n * Returns the
single element matching the given [predicate], or `null` if element was not found or more than one element was
found.\n *\n@SinceKotlin("1.3\n")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline
fun UShortArray.singleOrNull(predicate: (UShort) -> Boolean): UShort? {\n var single: UShort? = null\n var
found = false\n for (element in this) {\n if (predicate(element)) {\n if (found) return null\n single
= element\n found = true\n }\n }\n if (!found) return null\n return single\n}\n\n/**\n * Returns a list
containing all elements except first [n] elements.\n *\n * @throws IllegalArgumentException if [n] is negative.\n *\n
*\n@sample samples.collections.Collections.Transformations.drop\n
*\n@SinceKotlin("1.3\n")\n@ExperimentalUnsignedTypes\npublic fun UIntArray.drop(n: Int): List<UInt> {\n
require(n >= 0) { "\nRequested element count $n is less than zero.\n" }\n return takeLast((size -
n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing all elements except first [n] elements.\n *\n *\n
*\n@throws

```

## IllegalArgumentException

```
if [n] is negative.\n * \n * @sample samples.collections.Collections.Transformations.drop\n\n*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun ULongArray.drop(n: Int): List<ULong> {\n    require(n >= 0) { \"Requested element count $n is less than zero.\" }\n    return takeLast((size -\n    n).coerceAtLeast(0))\n}\n\n**\n * Returns a list containing all elements except first [n] elements.\n * \n * @throws\n    IllegalArgumentException if [n] is negative.\n * \n * @sample\n    samples.collections.Collections.Transformations.drop\n\n*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UByteArray.drop(n: Int): List<UByte> {\n    require(n >= 0) { \"Requested element count $n is less than zero.\" }\n    return takeLast((size -\n    n).coerceAtLeast(0))\n}\n\n**\n * Returns a list containing all elements except first [n] elements.\n * \n * @throws\n    IllegalArgumentException if [n] is negative.\n * \n * @sample\n    samples.collections.Collections.Transformations.drop\n\n*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UShortArray.drop(n: Int): List<UShort>\n{\n    require(n >= 0) { \"Requested element count $n is less than zero.\" }\n    return takeLast((size -\n    n).coerceAtLeast(0))\n}\n\n**\n * Returns a list containing all elements except last [n] elements.\n * \n * @throws\n    IllegalArgumentException if [n] is negative.\n * \n * @sample\n    samples.collections.Collections.Transformations.drop\n\n*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UIntArray.dropLast(n: Int): List<UInt> {\n    require(n >= 0) { \"Requested element count $n is less than zero.\" }\n    return take((size -\n    n).coerceAtLeast(0))\n}\n\n**\n * Returns a list containing all elements except last [n] elements.\n * \n * @throws\n    IllegalArgumentException if [n] is negative.\n * \n * @sample\n    samples.collections.Collections.Transformations.drop\n\n*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun ULongArray.dropLast(n: Int):\n    List<ULong> {\n    require(n >= 0) { \"Requested element count $n is less than zero.\" }\n    return take((size -\n    n).coerceAtLeast(0))\n}\n\n**\n * Returns a list containing all elements except last [n] elements.\n * \n * @throws\n    IllegalArgumentException if [n] is negative.\n * \n * @sample\n    samples.collections.Collections.Transformations.drop\n\n*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UByteArray.dropLast(n: Int): List<UByte>\n{\n    require(n >= 0) { \"Requested element count $n is less than zero.\" }\n    return take((size -\n    n).coerceAtLeast(0))\n}\n\n**\n * Returns a list containing all elements except last [n] elements.\n * \n * @throws\n    IllegalArgumentException if [n] is negative.\n * \n * @sample\n    samples.collections.Collections.Transformations.drop\n\n*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UShortArray.dropLast(n: Int):\n    List<UShort> {\n    require(n >= 0) { \"Requested element count $n is less than zero.\" }\n    return take((size -\n    n).coerceAtLeast(0))\n}\n\n**\n * Returns a list containing all elements except last elements that satisfy the given [predicate].\n * \n * @sample\n    samples.collections.Collections.Transformations.drop\n\n*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun\n    UIntArray.dropLastWhile(predicate: (UInt) -> Boolean): List<UInt> {\n    for (index in lastIndex downTo 0) {\n    if (!predicate(this[index])) {\n        return take(index + 1)\n    }\n    }\n    return emptyList()\n}\n\n**\n * Returns a list containing all elements except last elements that satisfy the given [predicate].\n * \n * @sample\n    samples.collections.Collections.Transformations.drop\n\n*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun\n    ULongArray.dropLastWhile(predicate: (ULong) -> Boolean): List<ULong> {\n    for (index in lastIndex downTo 0)\n    {\n    if (!predicate(this[index])) {\n        return take(index + 1)\n    }\n    }\n    return emptyList()\n}\n\n**\n * Returns a list containing all elements except last elements that satisfy the\n    given [predicate].\n * \n * @sample\n    samples.collections.Collections.Transformations.drop
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*^@SinceKotlin("1.3")^@ExperimentalUnsignedTypes^@kotlin.internal.InlineOnly^public inline fun
UByteArray.dropLastWhile(predicate: (UByte) -> Boolean): List<UByte> {
    for (index in lastIndex downTo 0)
    {
        if (!predicate(this[index]))
        {
            return take(index + 1)
        }
    }
    return emptyList()
}
* Returns a list containing all elements except last elements that satisfy the given [predicate].
* @sample
samples.collections.Collections.Transformations.drop

*^@SinceKotlin("1.3")^@ExperimentalUnsignedTypes^@kotlin.internal.InlineOnly^public inline fun
UShortArray.dropLastWhile(predicate: (UShort) -> Boolean): List<UShort> {
    for (index in lastIndex downTo 0)
    {
        if (!predicate(this[index]))
        {
            return
            take(index + 1)
        }
    }
    return emptyList()
}
* Returns a list containing all elements except first
elements that satisfy the given [predicate].
* @sample
samples.collections.Collections.Transformations.drop

*^@SinceKotlin("1.3")^@ExperimentalUnsignedTypes^@kotlin.internal.InlineOnly^public inline fun
UIntArray.dropWhile(predicate: (UInt) -> Boolean): List<UInt> {
    var yielding = false
    val list =
    ArrayList<UInt>()
    for (item in this)
    {
        if (yielding)
        {
            list.add(item)
        }
        else if (!predicate(item))
        {
            list.add(item)
            yielding = true
        }
    }
    return list
}
* Returns a list containing all
elements except first elements that satisfy the given [predicate].
* @sample
samples.collections.Collections.Transformations.drop

*^@SinceKotlin("1.3")^@ExperimentalUnsignedTypes^@kotlin.internal.InlineOnly^public inline fun
ULongArray.dropWhile(predicate: (ULong) -> Boolean):
List<ULong> {
    var yielding = false
    val list = ArrayList<ULong>()
    for (item in this)
    {
        if
        (yielding)
        {
            list.add(item)
        }
        else if (!predicate(item))
        {
            list.add(item)
            yielding = true
        }
    }
    return list
}
* Returns a list containing all elements except first elements that satisfy the given
[predicate].
* @sample
samples.collections.Collections.Transformations.drop

*^@SinceKotlin("1.3")^@ExperimentalUnsignedTypes^@kotlin.internal.InlineOnly^public inline fun
UByteArray.dropWhile(predicate: (UByte) -> Boolean): List<UByte> {
    var yielding = false
    val list =
    ArrayList<UByte>()
    for (item in this)
    {
        if (yielding)
        {
            list.add(item)
        }
        else if (!predicate(item))
        {
            list.add(item)
            yielding = true
        }
    }
    return list
}
* Returns a list containing all
elements except first elements that satisfy the given [predicate].
*
* @sample
samples.collections.Collections.Transformations.drop

*^@SinceKotlin("1.3")^@ExperimentalUnsignedTypes^@kotlin.internal.InlineOnly^public inline fun
UShortArray.dropWhile(predicate: (UShort) -> Boolean): List<UShort> {
    var yielding = false
    val list =
    ArrayList<UShort>()
    for (item in this)
    {
        if (yielding)
        {
            list.add(item)
        }
        else if (!predicate(item))
        {
            list.add(item)
            yielding = true
        }
    }
    return list
}
* Returns a list containing only
elements matching the given [predicate].
* @sample
samples.collections.Collections.Filtering.filter

*^@SinceKotlin("1.3")^@ExperimentalUnsignedTypes^@kotlin.internal.InlineOnly^public inline fun
UIntArray.filter(predicate: (UInt) -> Boolean): List<UInt> {
    return filterTo(ArrayList<UInt>(),
    predicate)
}
* Returns a list containing only elements matching the given [predicate].
* @sample
samples.collections.Collections.Filtering.filter

*^@SinceKotlin("1.3")^@ExperimentalUnsignedTypes^@kotlin.internal.InlineOnly^public inline fun
ULongArray.filter(predicate: (ULong) -> Boolean): List<ULong> {
    return filterTo(ArrayList<ULong>(),
    predicate)
}
* Returns a list containing only elements matching the given [predicate].
* @sample
samples.collections.Collections.Filtering.filter

*^@SinceKotlin("1.3")^@ExperimentalUnsignedTypes^@kotlin.internal.InlineOnly^public inline fun
UByteArray.filter(predicate: (UByte) -> Boolean): List<UByte> {
    return filterTo(ArrayList<UByte>(),
    predicate)
}
* Returns a list containing only elements matching the given [predicate].
* @sample
samples.collections.Collections.Filtering.filter

*^@SinceKotlin("1.3")^@ExperimentalUnsignedTypes^@kotlin.internal.InlineOnly^public inline fun
UShortArray.filter(predicate: (UShort) -> Boolean): List<UShort> {
    return filterTo(ArrayList<UShort>(),

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predicate)\n}\n\n/\*\*\n

\* Returns a list containing only elements matching the given [predicate].\n \* @param [predicate] function that takes the index of an element and the element itself\n \* and returns the result of predicate evaluation on the element.\n \* \n \* @sample samples.collections.Collections.Filtering.filterIndexed\n

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*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun\nUIntArray.filterIndexed(predicate: (index: Int, UInt) -> Boolean): List<UInt> {\n    return
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filterIndexedTo(ArrayList<UInt>(), predicate)\n}\n\n/**\n * Returns a list containing only elements matching the given [predicate].\n * @param [predicate] function that takes the index of an element and the element itself\n * and returns the result of predicate evaluation on the element.\n * \n * @sample\n samples.collections.Collections.Filtering.filterIndexed\n
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*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun\nULongArray.filterIndexed(predicate:
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(index: Int, ULong) -> Boolean): List<ULong> {\n    return filterIndexedTo(ArrayList<ULong>(),\n predicate)\n}\n\n/**\n * Returns a list containing only elements matching the given [predicate].\n * @param [predicate] function that takes the index of an element and the element itself\n * and returns the result of predicate evaluation on the element.\n * \n * @sample\n samples.collections.Collections.Filtering.filterIndexed\n
```

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*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun\nUByteArray.filterIndexed(predicate: (index: Int, UByte) -> Boolean): List<UByte> {\n    return
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filterIndexedTo(ArrayList<UByte>(), predicate)\n}\n\n/**\n * Returns a list containing only elements matching the given [predicate].\n * @param [predicate] function that takes the index of an element and the element itself\n * and returns the result of predicate evaluation on the element.\n * \n * @sample\n samples.collections.Collections.Filtering.filterIndexed\n
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*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
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```
inline fun UShortArray.filterIndexed(predicate: (index: Int, UShort) -> Boolean): List<UShort> {\n    return\n filterIndexedTo(ArrayList<UShort>(), predicate)\n}\n\n/**\n * Appends all elements matching the given [predicate]\n to the given [destination].\n * @param [predicate] function that takes the index of an element and the element\n itself\n * and returns the result of predicate evaluation on the element.\n * \n * @sample\n samples.collections.Collections.Filtering.filterIndexedTo\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <C : MutableCollection<in UInt>> UIntArray.filterIndexedTo(destination: C, predicate: (index: Int, UInt) -> Boolean): C {\n    for<each> indexed { index, element ->\n        if (predicate(index, element)) destination.add(element)\n    }\n    return destination\n}\n\n/**\n * Appends all elements matching the given [predicate] to the given [destination].\n * @param [predicate] function that takes the index of an element and the element itself\n * and returns the result of predicate evaluation on the element.\n * \n * @sample\n samples.collections.Collections.Filtering.filterIndexedTo\n
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```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <C : MutableCollection<in ULong>> ULongArray.filterIndexedTo(destination: C, predicate: (index: Int, ULong) ->
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Boolean): C {\n    for<each> indexed { index, element ->\n        if (predicate(index, element))\n destination.add(element)\n    }\n    return destination\n}\n\n/**\n * Appends all elements matching the given [predicate] to the given [destination].\n * @param [predicate] function that takes the index of an element and the element itself\n * and returns the result of predicate evaluation on the element.\n * \n * @sample\n samples.collections.Collections.Filtering.filterIndexedTo\n
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*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
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```
inline fun <C : MutableCollection<in UByte>> UByteArray.filterIndexedTo(destination: C, predicate: (index: Int, UByte) -> Boolean): C {\n    for<each> indexed { index, element ->\n        if (predicate(index, element))
```

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destination.add(element)\n    }\n    return destination\n}\n\n/**\n * Appends all elements matching the given [predicate] to the given [destination].\n * @param [predicate] function that takes the index of an element and the element itself\n * and returns the result of predicate evaluation on the element.\n * \n * @sample
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samples.collections.Collections.Filtering.filterIndexedTo\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <C :
MutableCollection<in UShort>> UShortArray.filterIndexedTo(destination: C, predicate: (index: Int, UShort) ->
Boolean): C {\n  forEachIndexed { index, element ->\n    if (predicate(index, element))
destination.add(element)\n  }\n  return destination\n}\n\n/**\n * Returns a list containing all elements not matching the given [predicate].\n * \n * @sample
samples.collections.Collections.Filtering.filter\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.filterNot(predicate: (UInt) -> Boolean): List<UInt> {\n  return filterNotTo(ArrayList<UInt>(),
predicate)\n}\n\n/**\n * Returns a list containing all elements not matching the given [predicate].\n * \n * @sample
samples.collections.Collections.Filtering.filter\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.filterNot(predicate: (ULong) -> Boolean): List<ULong> {\n  return filterNotTo(ArrayList<ULong>(),
predicate)\n}\n\n/**\n * Returns a list containing all elements not matching the given [predicate].\n * \n * @sample
samples.collections.Collections.Filtering.filter\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun UByteArray.filterNot(predicate: (UByte) -> Boolean): List<UByte> {\n  return
filterNotTo(ArrayList<UByte>(), predicate)\n}\n\n/**\n * Returns a list containing all elements not matching the
given [predicate].\n * \n * @sample samples.collections.Collections.Filtering.filter\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.filterNot(predicate: (UShort) -> Boolean): List<UShort> {\n  return
filterNotTo(ArrayList<UShort>(), predicate)\n}\n\n/**\n * Appends all elements not matching the given [predicate]
to the given [destination].\n * \n * @sample samples.collections.Collections.Filtering.filterTo\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <C :
MutableCollection<in UInt>> UIntArray.filterNotTo(destination: C, predicate: (UInt) -> Boolean): C {\n  for
(element in this) if (!predicate(element)) destination.add(element)\n  return destination\n}\n\n/**\n * Appends
all elements not matching the given [predicate] to the given [destination].\n * \n * @sample
samples.collections.Collections.Filtering.filterTo\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <C :
MutableCollection<in ULong>> ULongArray.filterNotTo(destination: C, predicate: (ULong) -> Boolean): C {\n  for
(element in this) if (!predicate(element)) destination.add(element)\n  return destination\n}\n\n/**\n * Appends
all elements not matching the given [predicate] to the given [destination].\n * \n * @sample
samples.collections.Collections.Filtering.filterTo\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <C :
MutableCollection<in UByte>> UByteArray.filterNotTo(destination: C, predicate: (UByte) -> Boolean): C {\n  for
(element in this) if (!predicate(element)) destination.add(element)\n  return destination\n}\n\n/**\n * Appends
all elements
not matching the given [predicate] to the given [destination].\n * \n * @sample
samples.collections.Collections.Filtering.filterTo\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <C :
MutableCollection<in UShort>> UShortArray.filterNotTo(destination: C, predicate: (UShort) -> Boolean): C {\n  for
(element in this) if (!predicate(element)) destination.add(element)\n  return destination\n}\n\n/**\n * Appends
all elements matching the given [predicate] to the given [destination].\n * \n * @sample
samples.collections.Collections.Filtering.filterTo\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <C :
MutableCollection<in UInt>> UIntArray.filterTo(destination: C, predicate: (UInt) -> Boolean): C {\n  for (element
in this) if (predicate(element)) destination.add(element)\n  return destination\n}\n\n/**\n * Appends all elements
matching the given [predicate] to the given [destination].\n

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* \n * @sample samples.collections.Collections.Filtering.filterTo\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <C :
MutableCollection<in ULong>> ULongArray.filterTo(destination: C, predicate: (ULong) -> Boolean): C {\n for
(element in this) if (predicate(element)) destination.add(element)\n return destination\n}\n\n/**\n * Appends all
elements matching the given [predicate] to the given [destination].\n * \n * @sample
samples.collections.Collections.Filtering.filterTo\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <C :
MutableCollection<in UByte>> UByteArray.filterTo(destination: C, predicate: (UByte) -> Boolean): C {\n for
(element in this) if (predicate(element)) destination.add(element)\n return destination\n}\n\n/**\n * Appends all
elements matching the given [predicate] to the given [destination].\n * \n * @sample
samples.collections.Collections.Filtering.filterTo\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <C :
MutableCollection<in UShort>> UShortArray.filterTo(destination: C, predicate: (UShort) -> Boolean): C {\n for
(element in this) if (predicate(element)) destination.add(element)\n return destination\n}\n\n/**\n * Returns a list
containing elements at indices in the specified [indices] range.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UIntArray.slice(indices: IntRange):
List<UInt> {\n if (indices.isEmpty()) return listOf()\n return copyOfRange(indices.start, indices.endInclusive +
1).asList()\n}\n\n/**\n * Returns a list containing elements at indices in the specified [indices] range.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun ULongArray.slice(indices: IntRange):
List<ULong> {\n if (indices.isEmpty()) return listOf()\n return copyOfRange(indices.start, indices.endInclusive
+ 1).asList()\n}\n\n/**\n *
Returns a list containing elements at indices in the specified [indices] range.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UByteArray.slice(indices: IntRange):
List<UByte> {\n if (indices.isEmpty()) return listOf()\n return copyOfRange(indices.start, indices.endInclusive
+ 1).asList()\n}\n\n/**\n * Returns a list containing elements at indices in the specified [indices] range.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UShortArray.slice(indices: IntRange):
List<UShort> {\n if (indices.isEmpty()) return listOf()\n return copyOfRange(indices.start, indices.endInclusive
+ 1).asList()\n}\n\n/**\n * Returns a list containing elements at specified [indices].\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UIntArray.slice(indices: Iterable<Int>):
List<UInt> {\n val size = indices.collectionSizeOrDefault(10)\n if (size == 0) return emptyList()\n val list =
ArrayList<UInt>(size)\n for (index
in indices) {\n list.add(get(index))\n }\n return list\n}\n\n/**\n * Returns a list containing elements at
specified [indices].\n *\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun
ULongArray.slice(indices: Iterable<Int>): List<ULong> {\n val size = indices.collectionSizeOrDefault(10)\n if
(size == 0) return emptyList()\n val list = ArrayList<ULong>(size)\n for (index in indices) {\n
list.add(get(index))\n }\n return list\n}\n\n/**\n * Returns a list containing elements at specified [indices].\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UByteArray.slice(indices: Iterable<Int>):
List<UByte> {\n val size = indices.collectionSizeOrDefault(10)\n if (size == 0) return emptyList()\n val list =
ArrayList<UByte>(size)\n for (index in indices) {\n list.add(get(index))\n }\n return list\n}\n\n/**\n *
Returns a list containing elements at specified [indices].\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic
fun UShortArray.slice(indices: Iterable<Int>): List<UShort> {\n val size = indices.collectionSizeOrDefault(10)\n
if (size == 0) return emptyList()\n val list = ArrayList<UShort>(size)\n for (index in indices) {\n
list.add(get(index))\n }\n return list\n}\n\n/**\n * Returns an array containing elements of this array at specified
[indices].\n *\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UIntArray.sliceArray(indices:
Collection<Int>): UIntArray {\n return UIntArray(storage.sliceArray(indices))\n}\n\n/**\n * Returns an array
containing elements of this array at specified [indices].\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun ULongArray.sliceArray(indices:

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Collection<Int>: ULongArray {\n  return ULongArray(storage.sliceArray(indices))\n}\n\n/**\n * Returns an array
containing elements of this array at specified [indices].\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun
  UByteArray.sliceArray(indices: Collection<Int>): UByteArray {\n  return
UByteArray(storage.sliceArray(indices))\n}\n\n/**\n * Returns an array containing elements of this array at
specified [indices].\n * \n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun
  UShortArray.sliceArray(indices: Collection<Int>): UShortArray {\n  return
UShortArray(storage.sliceArray(indices))\n}\n\n/**\n * Returns an array containing elements at indices in the
specified [indices] range.\n * \n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun
  UIntArray.sliceArray(indices: IntRange): UIntArray {\n  return UIntArray(storage.sliceArray(indices))\n}\n\n/**\n
 * Returns an array containing elements at indices in the specified [indices] range.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun ULongArray.sliceArray(indices: IntRange):
  ULongArray {\n  return ULongArray(storage.sliceArray(indices))\n}\n\n/**\n * Returns an array containing
elements at indices in the specified
  [indices] range.\n * \n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun
  UByteArray.sliceArray(indices: IntRange): UByteArray {\n  return
UByteArray(storage.sliceArray(indices))\n}\n\n/**\n * Returns an array containing elements at indices in the
specified [indices] range.\n * \n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun
  UShortArray.sliceArray(indices: IntRange): UShortArray {\n  return
UShortArray(storage.sliceArray(indices))\n}\n\n/**\n * Returns a list containing first [n] elements.\n * \n *
@throws IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.take\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UIntArray.take(n: Int): List<UInt> {\n
  require(n >= 0) { "Requested element count $n is less than zero." }\n  if (n == 0) return emptyList()\n  if (n >=
size) return toList()\n  if (n == 1) return listOf(this[0])\n  var count = 0\n  val list = ArrayList<UInt>(n)\n
  for (item in this) {\n    list.add(item)\n    if (++count == n)\n      break\n  }\n  return list\n}\n\n/**\n *
Returns a list containing first [n] elements.\n * \n * @throws IllegalArgumentException if [n] is negative.\n * \n *
@sample samples.collections.Collections.Transformations.take\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun ULongArray.take(n: Int): List<ULong> {\n
  require(n >= 0) { "Requested element count $n is less than zero." }\n  if (n == 0) return emptyList()\n  if (n >=
size) return toList()\n  if (n == 1) return listOf(this[0])\n  var count = 0\n  val list = ArrayList<ULong>(n)\n
  for (item in this) {\n    list.add(item)\n    if (++count == n)\n      break\n  }\n  return list\n}\n\n/**\n *
Returns a list containing first [n] elements.\n * \n * @throws IllegalArgumentException if [n] is negative.\n * \n *
@sample samples.collections.Collections.Transformations.take\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic
  fun UByteArray.take(n: Int): List<UByte> {\n  require(n >= 0) { "Requested element count $n is less than zero."
}\n  if (n == 0) return emptyList()\n  if (n >= size) return toList()\n  if (n == 1) return listOf(this[0])\n  var
count = 0\n  val list = ArrayList<UByte>(n)\n  for (item in this) {\n    list.add(item)\n    if (++count == n)\n
    break\n  }\n  return list\n}\n\n/**\n * Returns a list containing first [n] elements.\n * \n * @throws
IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.take\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UShortArray.take(n: Int): List<UShort> {\n
  require(n >= 0) { "Requested element count $n is less than zero." }\n  if (n == 0) return emptyList()\n  if (n >=
size) return toList()\n  if (n == 1) return listOf(this[0])\n  var count = 0\n  val list = ArrayList<UShort>(n)\n
  for (item in this) {\n    list.add(item)\n    if (++count == n)\n      break\n  }\n  return list\n}\n\n/**\n *
Returns a list containing last [n] elements.\n * \n * @throws IllegalArgumentException if [n] is negative.\n * \n *
@sample samples.collections.Collections.Transformations.take\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UIntArray.takeLast(n: Int): List<UInt> {\n

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require(n >= 0) { \"Requested element count $n is less than zero.\" } \n if (n == 0) return emptyList()\n val size =
size\n if (n >= size) return toList()\n if (n == 1) return listOf(this[size - 1])\n val list = ArrayList<UInt>(n)\n
for (index in size - n until size)\n list.add(this[index])\n return list\n}\n\n/**\n * Returns a list containing last
[n] elements.\n * \n * @throws IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.take\n
*\n\n@SinceKotlin(\"1.3\")\n@ExperimentalUnsignedTypes\npublic
fun ULongArray.takeLast(n: Int): List<ULong> {\n require(n >= 0) { \"Requested element count $n is less than
zero.\" } \n if (n == 0) return emptyList()\n val size = size\n if (n >= size) return toList()\n if (n == 1) return
listOf(this[size - 1])\n val list = ArrayList<ULong>(n)\n for (index in size - n until size)\n
list.add(this[index])\n return list\n}\n\n/**\n * Returns a list containing last [n] elements.\n * \n * @throws
IllegalArgumentExcep\n
tion if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.take\n
*\n\n@SinceKotlin(\"1.3\")\n@ExperimentalUnsignedTypes\npublic fun UByteArray.takeLast(n: Int): List<UByte>
{\n require(n >= 0) { \"Requested element count $n is less than zero.\" } \n if (n == 0) return emptyList()\n val
size = size\n if (n >= size) return toList()\n if (n == 1) return listOf(this[size - 1])\n val list =
ArrayList<UByte>(n)\n for (index in size - n until size)\n list.add(this[index])\n
return list\n}\n\n/**\n * Returns a list containing last [n] elements.\n * \n * @throws IllegalArgumentExcep\n
tion if [n] is negative.\n * \n * @sample samples.collections.Collections.Transformations.take\n
*\n\n@SinceKotlin(\"1.3\")\n@ExperimentalUnsignedTypes\npublic fun UShortArray.takeLast(n: Int): List<UShort>
{\n require(n >= 0) { \"Requested element count $n is less than zero.\" } \n if (n == 0) return emptyList()\n val
size = size\n if (n >= size) return toList()\n if (n == 1) return listOf(this[size - 1])\n val list =
ArrayList<UShort>(n)\n for (index in size - n until size)\n list.add(this[index])\n return list\n}\n\n/**\n *
Returns a list containing last elements satisfying the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.take\n
*\n\n@SinceKotlin(\"1.3\")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.takeLastWhile(predicate: (UInt) -> Boolean): List<UInt>
{\n for (index in lastIndex downTo 0) {\n if (!predicate(this[index])) {\n return drop(index + 1)\n
}\n }\n return toList()\n}\n\n/**\n * Returns a list containing last elements satisfying the given [predicate].\n * \n *
@sample samples.collections.Collections.Transformations.take\n
*\n\n@SinceKotlin(\"1.3\")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.takeLastWhile(predicate: (ULong) -> Boolean): List<ULong> {\n for (index in lastIndex downTo 0)
{\n if (!predicate(this[index])) {\n return drop(index + 1)\n }\n }\n return toList()\n}\n\n/**\n *
Returns a list containing last elements satisfying the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.take\n
*\n\n@SinceKotlin(\"1.3\")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.takeLastWhile(predicate: (UByte) -> Boolean): List<UByte> {\n for (index
in lastIndex downTo 0) {\n if (!predicate(this[index])) {\n return drop(index + 1)\n }\n }\n return
toList()\n}\n\n/**\n * Returns a list containing last elements satisfying the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.take\n
*\n\n@SinceKotlin(\"1.3\")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.takeLastWhile(predicate: (UShort) -> Boolean): List<UShort> {\n for (index in lastIndex downTo 0)
{\n if (!predicate(this[index])) {\n return drop(index + 1)\n }\n }\n return toList()\n}\n\n/**\n *
Returns a list containing first elements satisfying the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.take\n
*\n\n@SinceKotlin(\"1.3\")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.takeWhile(predicate: (UInt) -> Boolean): List<UInt> {\n val list = ArrayList<UInt>()\n
for (item in this) {\n if (!predicate(item))\n break\n list.add(item)\n }\n return list\n}\n\n/**\n *
Returns a list containing first elements satisfying the given [predicate].\n * \n * @sample

```

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samples.collections.Collections.Transformations.take\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.takeWhile(predicate: (ULong) -> Boolean): List<ULong> {\n  val list = ArrayList<ULong>()\n  for
(item in this) {\n    if (!predicate(item))\n      break\n    list.add(item)\n  }\n  return list\n}\n\n/**\n *
Returns a list containing first elements satisfying the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.take\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.takeWhile(predicate: (UByte) -> Boolean): List<UByte> {\n  val list = ArrayList<UByte>()\n  for
(item in this)
{\n    if (!predicate(item))\n      break\n    list.add(item)\n  }\n  return list\n}\n\n/**\n * Returns a list
containing first elements satisfying the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.take\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.takeWhile(predicate: (UShort) -> Boolean): List<UShort> {\n  val list = ArrayList<UShort>()\n  for
(item in this) {\n    if (!predicate(item))\n      break\n    list.add(item)\n  }\n  return list\n}\n\n/**\n *
Reverses elements in the array in-place.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.reverse(): Unit {\n  storage.reverse()\n}\n\n/**\n * Reverses elements in the array in-place.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.reverse(): Unit {\n  storage.reverse()\n}\n\n/**\n *
Reverses elements in the array in-place.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.reverse(): Unit {\n  storage.reverse()\n}\n\n/**\n * Reverses elements in the array in-place.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.reverse(): Unit {\n  storage.reverse()\n}\n\n/**\n * Reverses elements of the array in the specified
range in-place.\n * \n * @param fromIndex the start of the range (inclusive) to reverse.\n * @param toIndex the end
of the range (exclusive) to reverse.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero
or [toIndex] is greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater
than [toIndex].\n *\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun UIntArray.reverse(fromIndex: Int, toIndex:
Int): Unit {\n  storage.reverse(fromIndex, toIndex)\n}\n\n/**\n * Reverses elements of the array in the specified
range in-place.\n * \n * @param fromIndex the start of the range (inclusive) to reverse.\n * @param toIndex the end
of the range (exclusive) to reverse.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero
or [toIndex] is greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater
than [toIndex].\n *\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun ULongArray.reverse(fromIndex: Int, toIndex: Int): Unit {\n  storage.reverse(fromIndex,
toIndex)\n}\n\n/**\n * Reverses elements of the array in the specified range in-place.\n * \n * @param fromIndex
the start of the range (inclusive) to reverse.\n * @param toIndex the end of the range (exclusive) to reverse.\n * \n *
@throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater
than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.reverse(fromIndex: Int, toIndex: Int): Unit {\n  storage.reverse(fromIndex, toIndex)\n}\n\n/**\n *
Reverses elements of the array in the specified range in-place.\n * \n * @param fromIndex the start of the range
(inclusive) to reverse.\n * @param toIndex the end of the range (exclusive) to reverse.\n * \n * @throws
IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n *
@throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.reverse(fromIndex: Int, toIndex: Int): Unit {\n  storage.reverse(fromIndex, toIndex)\n}\n\n/**\n *

```

Returns a list with elements in reversed order.\n

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UIntArray.reversed(): List<UInt> {\n    if (isEmpty()) return emptyList()\n    val list = toMutableList()\n    list.reverse()\n    return list\n}\n\n/**\n * Returns a list with elements in reversed order.\n */\n*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun ULongArray.reversed(): List<ULong> {\n    if (isEmpty()) return emptyList()\n    val list = toMutableList()\n    list.reverse()\n    return list\n}\n\n/**\n * Returns a list with elements in reversed order.\n */
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UByteArray.reversed(): List<UByte> {\n    if (isEmpty()) return emptyList()\n    val list = toMutableList()\n    list.reverse()\n    return list\n}\n\n/**\n * Returns a list with elements in reversed order.\n */\n*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UShortArray.reversed(): List<UShort> {\n    if (isEmpty()) return emptyList()\n    val list = toMutableList()\n    list.reverse()\n    return list\n}\n\n/**\n * Returns an array with elements of this array in reversed order.\n */
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun UIntArray.reversedArray(): UIntArray {\n    return UIntArray(storage.reversedArray())\n}\n\n/**\n * Returns an array with elements of this array in reversed order.\n */
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun ULongArray.reversedArray(): ULongArray {\n    return ULongArray(storage.reversedArray())\n}\n\n/**\n * Returns an array with elements of this array in reversed order.\n */
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun UByteArray.reversedArray(): UByteArray {\n    return UByteArray(storage.reversedArray())\n}\n\n/**\n * Returns an array with elements of this array in reversed order.\n */
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun UShortArray.reversedArray(): UShortArray {\n    return UShortArray(storage.reversedArray())\n}\n\n/**\n * Randomly shuffles elements in this array in-place.\n */
```

```
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun UIntArray.shuffle(): Unit {\n    shuffle(Random)\n}\n\n/**\n * Randomly shuffles elements in this array in-place.\n */
```

```
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun ULongArray.shuffle(): Unit {\n    shuffle(Random)\n}\n\n/**\n * Randomly shuffles elements in this array in-place.\n */
```

```
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun UByteArray.shuffle(): Unit {\n    shuffle(Random)\n}\n\n/**\n * Randomly shuffles elements in this array in-place.\n */
```

```
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun UShortArray.shuffle(): Unit {\n    shuffle(Random)\n}\n\n/**\n * Randomly shuffles elements in this array in-place using the specified [random] instance as the source of randomness.\n * \n * See:
```

[https://en.wikipedia.org/wiki/Fisher%20%93Yates\\_shuffle#The\\_modern\\_algorithm](https://en.wikipedia.org/wiki/Fisher%20%93Yates_shuffle#The_modern_algorithm)\n

```
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun UIntArray.shuffle(random: Random): Unit {\n    for (i in lastIndex downTo 1) {\n        val j = random.nextInt(i + 1)\n        val copy = this[i]\n        this[i] = this[j]\n        this[j] = copy\n    }\n}\n\n/**\n * Randomly shuffles elements in this array in-place using the specified [random] instance as the source of randomness.\n * \n * See:
```

[https://en.wikipedia.org/wiki/Fisher%20%93Yates\\_shuffle#The\\_modern\\_algorithm](https://en.wikipedia.org/wiki/Fisher%20%93Yates_shuffle#The_modern_algorithm)\n

```
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun ULongArray.shuffle(random: Random): Unit {\n    for (i in lastIndex downTo 1) {\n        val j = random.nextInt(i + 1)\n        val copy = this[i]\n        this[i] = this[j]\n        this[j] = copy\n    }\n}\n\n/**\n * Randomly shuffles elements in this array in-place using the specified [random] instance as the source of randomness.\n * \n * See:
```

[https://en.wikipedia.org/wiki/Fisher%20%93Yates\\_shuffle#The\\_modern\\_algorithm](https://en.wikipedia.org/wiki/Fisher%20%93Yates_shuffle#The_modern_algorithm)\n

```
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun UByteArray.shuffle(random: Random): Unit {\n    for (i in lastIndex downTo 1) {\n        val j = random.nextInt(i + 1)\n        val copy = this[i]\n        this[i] = this[j]\n        this[j] = copy\n    }\n}\n\n/**\n * Randomly shuffles elements in this array in-place using the specified [random] instance as the source of randomness.\n * \n * See:
```

[https://en.wikipedia.org/wiki/Fisher%20%93Yates\\_shuffle#The\\_modern\\_algorithm](https://en.wikipedia.org/wiki/Fisher%20%93Yates_shuffle#The_modern_algorithm)\n



```

*^@SinceKotlin("1.4")^@ExperimentalUnsignedTypes^public fun UShortArray.shuffle(random: Random):
Unit {^n for (i in lastIndex downTo 1) {^n val j = random.nextInt(i + 1)^n val copy = this[i]^n this[i] =
this[j]^n this[j] = copy^n }^n}^n/^n * Sorts elements in the array in-place descending according to their
natural sort order.^n *^@SinceKotlin("1.3")^@ExperimentalUnsignedTypes^public
fun UIntArray.sortDescending(): Unit {^n if (size > 1) {^n sort()^n reverse()^n }^n}^n/^n * Sorts
elements in the array in-place descending according to their natural sort order.^n
*^@SinceKotlin("1.3")^@ExperimentalUnsignedTypes^public fun ULongArray.sortDescending(): Unit {^n if
(size > 1) {^n sort()^n reverse()^n }^n}^n/^n * Sorts elements in the array in-place descending
according to their natural sort order.^n *^@SinceKotlin("1.3")^@ExperimentalUnsignedTypes^public fun
UByteArray.sortDescending(): Unit {^n if (size > 1) {^n sort()^n reverse()^n }^n}^n/^n * Sorts
elements in the array in-place descending according to their natural sort order.^n
*^@SinceKotlin("1.3")^@ExperimentalUnsignedTypes^public fun UShortArray.sortDescending(): Unit {^n
if (size > 1) {^n sort()^n reverse()^n }^n}^n/^n * Returns a list of all elements sorted according to their
natural sort
order.^n *^@SinceKotlin("1.3")^@ExperimentalUnsignedTypes^public fun UIntArray.sorted(): List<UInt> {^n
return copyOf().apply { sort() }.asList()^n}^n/^n * Returns a list of all elements sorted according to their natural
sort order.^n *^@SinceKotlin("1.3")^@ExperimentalUnsignedTypes^public fun ULongArray.sorted():
List<ULong> {^n return copyOf().apply { sort() }.asList()^n}^n/^n * Returns a list of all elements sorted
according to their natural sort order.^n *^@SinceKotlin("1.3")^@ExperimentalUnsignedTypes^public fun
UByteArray.sorted(): List<UByte> {^n return copyOf().apply { sort() }.asList()^n}^n/^n * Returns a list of all
elements sorted according to their natural sort order.^n
*^@SinceKotlin("1.3")^@ExperimentalUnsignedTypes^public fun UShortArray.sorted(): List<UShort> {^n
return copyOf().apply { sort() }.asList()^n}^n/^n * Returns an array with all elements of this array sorted
according to their natural sort order.^n *^@SinceKotlin("1.3")^@ExperimentalUnsignedTypes^public
fun UIntArray.sortedArray(): UIntArray {^n if (isEmpty()) return this^n return this.copyOf().apply { sort()
}^n}^n/^n * Returns an array with all elements of this array sorted according to their natural sort order.^n
*^@SinceKotlin("1.3")^@ExperimentalUnsignedTypes^public fun ULongArray.sortedArray(): ULongArray
{^n if (isEmpty()) return this^n return this.copyOf().apply { sort() }^n}^n/^n * Returns an array with all
elements of this array sorted according to their natural sort order.^n
*^@SinceKotlin("1.3")^@ExperimentalUnsignedTypes^public fun UByteArray.sortedArray(): UByteArray {^n
if (isEmpty()) return this^n return this.copyOf().apply { sort() }^n}^n/^n * Returns an array with all elements
of this array sorted according to their natural sort order.^n
*^@SinceKotlin("1.3")^@ExperimentalUnsignedTypes^public fun UShortArray.sortedArray(): UShortArray
{^n if (isEmpty()) return this^n
return this.copyOf().apply { sort() }^n}^n/^n * Returns an array with all elements of this array sorted
descending according to their natural sort order.^n
*^@SinceKotlin("1.3")^@ExperimentalUnsignedTypes^public fun UIntArray.sortedArrayDescending():
UIntArray {^n if (isEmpty()) return this^n return this.copyOf().apply { sortDescending() }^n}^n/^n * Returns
an array with all elements of this array sorted descending according to their natural sort order.^n
*^@SinceKotlin("1.3")^@ExperimentalUnsignedTypes^public fun ULongArray.sortedArrayDescending():
ULongArray {^n if (isEmpty()) return this^n return this.copyOf().apply { sortDescending() }^n}^n/^n *
Returns an array with all elements of this array sorted descending according to their natural sort order.^n
*^@SinceKotlin("1.3")^@ExperimentalUnsignedTypes^public fun UByteArray.sortedArrayDescending():
UByteArray {^n if (isEmpty()) return this^n return this.copyOf().apply { sortDescending()
}^n}^n/^n * Returns an array with all elements of this array sorted descending according to their natural sort
order.^n *^@SinceKotlin("1.3")^@ExperimentalUnsignedTypes^public fun
UShortArray.sortedArrayDescending(): UShortArray {^n if (isEmpty()) return this^n return this.copyOf().apply {
sortDescending() }^n}^n/^n * Returns a list of all elements sorted descending according to their natural sort

```

order.\n \* \n \* The sort is `_stable_`. It means that equal elements preserve their order relative to each other after sorting.\n \* \n \* Since Kotlin("1.3")\n @ExperimentalUnsignedTypes\n public fun UIntArray.sortedDescending(): List<UInt> {\n return copyOf().apply { sort() }.reversed()\n }\n\n \*\*\n \* Returns a list of all elements sorted descending according to their natural sort order.\n \* \n \* The sort is `_stable_`. It means that equal elements preserve their order relative to each other after sorting.\n \* \n \* Since Kotlin("1.3")\n @ExperimentalUnsignedTypes\n public fun ULongArray.sortedDescending(): List<ULong> {\n return copyOf().apply { sort() }.reversed()\n }\n\n \*\*\n \* Returns a list of all elements sorted descending according to their natural sort order.\n \* \n \* The sort is `_stable_`. It means that equal elements preserve their order relative to each other after sorting.\n \* \n \* Since Kotlin("1.3")\n @ExperimentalUnsignedTypes\n public fun UByteArray.sortedDescending(): List<UByte> {\n return copyOf().apply { sort() }.reversed()\n }\n\n \*\*\n \* Returns a list of all elements sorted descending according to their natural sort order.\n \* \n \* The sort is `_stable_`. It means that equal elements preserve their order relative to each other after sorting.\n \* \n \* Since Kotlin("1.3")\n @ExperimentalUnsignedTypes\n public fun UShortArray.sortedDescending(): List<UShort> {\n return copyOf().apply { sort() }.reversed()\n }\n\n \*\*\n \* Returns an array of type [ByteArray], which is a view of this array where each element is a signed reinterpretation\n \* of the corresponding element of this array.\n \* \n \* Since Kotlin("1.3")\n @ExperimentalUnsignedTypes\n @kotlin.internal.InlineOnly\n public inline fun UByteArray.asByteArray(): ByteArray {\n return storage\n }\n\n \*\*\n \* Returns an array of type [IntArray], which is a view of this array where each element is a signed reinterpretation\n \* of the corresponding element of this array.\n \* \n \* Since Kotlin("1.3")\n @ExperimentalUnsignedTypes\n @kotlin.internal.InlineOnly\n public inline fun UIntArray.asIntArray(): IntArray {\n return storage\n }\n\n \*\*\n \* Returns a [List] that wraps the original array.\n \* \n \* Since Kotlin("1.3")\n @ExperimentalUnsignedTypes\n public expect fun UIntArray.asList(): List<UInt>\n\n \*\*\n \* Returns a [List] that wraps the original array.\n \* \n \* Since Kotlin("1.3")\n @ExperimentalUnsignedTypes\n public expect fun ULongArray.asList(): List<ULong>\n\n \*\*\n \* Returns a [List] that wraps the original array.\n \* \n \* Since Kotlin("1.3")\n @ExperimentalUnsignedTypes\n public expect fun UByteArray.asList(): List<UByte>\n\n \*\*\n \* Returns a [List] that wraps the original array.\n \* \n \* Since Kotlin("1.3")\n @ExperimentalUnsignedTypes\n public expect fun UShortArray.asList(): List<UShort>\n\n \*\*\n \* Returns an array of type [LongArray], which is a view of this array where each element is a signed reinterpretation\n \* of the corresponding element of this array.\n \* \n \* Since Kotlin("1.3")\n @ExperimentalUnsignedTypes\n @kotlin.internal.InlineOnly\n public inline fun ULongArray.asLongArray(): LongArray {\n return storage\n }\n\n \*\*\n \* Returns an array of type [ShortArray], which is a view of this array where each element is a signed reinterpretation\n \* of the corresponding element of this array.\n \* \n \* Since Kotlin("1.3")\n @ExperimentalUnsignedTypes\n @kotlin.internal.InlineOnly\n public inline fun UShortArray.asShortArray(): ShortArray {\n return storage\n }\n\n \*\*\n \* Returns an array of type [UByteArray], which is a view of this array where each element is an unsigned reinterpretation\n \* of the corresponding element of this array.\n \* \n \* Since Kotlin("1.3")\n @ExperimentalUnsignedTypes\n @kotlin.internal.InlineOnly\n public inline fun ByteArray.asUByteArray(): UByteArray {\n return UByteArray(this)\n }\n\n \*\*\n \* Returns an array of type [UIntArray], which is a view of this array where each element is an unsigned reinterpretation\n \* of the corresponding element of this array.\n \* \n \* Since Kotlin("1.3")\n @ExperimentalUnsignedTypes\n @kotlin.internal.InlineOnly\n public inline fun IntArray.asUIntArray(): UIntArray {\n return UIntArray(this)\n }\n\n \*\*\n \* Returns an array of type [ULongArray], which is a view of this array where each element is an unsigned reinterpretation\n \* of the corresponding element of this array.\n \* \n \* Since Kotlin("1.3")\n @ExperimentalUnsignedTypes\n @kotlin.internal.InlineOnly\n public inline fun LongArray.asULongArray(): ULongArray {\n return ULongArray(this)\n }\n\n \*\*\n \* Returns an array of type

[UShortArray],

```
which is a view of this array where each element is an unsigned reinterpretation\n * of the corresponding element of
this array.\n *^n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline
fun ShortArray.asUShortArray(): UShortArray {\n  return UShortArray(this)\n}\n\n/**\n * Returns `true` if the
two specified arrays are *structurally* equal to one another,\n * i.e. contain the same number of the same elements
in the same order.\n *^n@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation
warning.")\n@SinceKotlin("1.3")\n@DeprecatedSinceKotlin(hiddenSince =
"1.4")\n@ExperimentalUnsignedTypes\npublic infix fun UIntArray.contentEquals(other: UIntArray): Boolean {\n
return this.contentEquals(other)\n}\n\n/**\n * Returns `true` if the two specified arrays are *structurally* equal to
one another,\n * i.e. contain the same number of the same elements in the same order.\n *^n@Deprecated("Use
Kotlin compiler 1.4 to avoid deprecation
warning.")\n@SinceKotlin("1.3")\n@DeprecatedSinceKotlin(hiddenSince =
"1.4")\n@ExperimentalUnsignedTypes\npublic infix fun ULongArray.contentEquals(other: ULongArray):
Boolean {\n  return this.contentEquals(other)\n}\n\n/**\n * Returns `true` if the two specified arrays are
*structurally* equal to one another,\n * i.e. contain the same number of the same elements in the same order.\n
*^n@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation
warning.")\n@SinceKotlin("1.3")\n@DeprecatedSinceKotlin(hiddenSince =
"1.4")\n@ExperimentalUnsignedTypes\npublic infix fun UByteArray.contentEquals(other: UByteArray): Boolean
{\n  return this.contentEquals(other)\n}\n\n/**\n * Returns `true` if the two specified arrays are *structurally* equal
to one another,\n * i.e. contain the same number of the same elements in the same order.\n *^n@Deprecated("Use
Kotlin compiler 1.4 to avoid deprecation
warning.")\n@SinceKotlin("1.3")\n@DeprecatedSinceKotlin(hiddenSince =
"1.4")\n@ExperimentalUnsignedTypes\npublic
infix fun UShortArray.contentEquals(other: UShortArray): Boolean {\n  return
this.contentEquals(other)\n}\n\n/**\n * Returns `true` if the two specified arrays are *structurally* equal to one
another,\n * i.e. contain the same number of the same elements in the same order.\n *^n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic infix fun
UIntArray?.contentEquals(other:
UIntArray?): Boolean {\n  return this?.storage.contentEquals(other?.storage)\n}\n\n/**\n * Returns `true` if the two
specified arrays are *structurally* equal to one another,\n * i.e. contain the same number of the same elements in the
same order.\n *^n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic infix fun
ULongArray?.contentEquals(other: ULongArray?): Boolean {\n  return
this?.storage.contentEquals(other?.storage)\n}\n\n/**\n * Returns `true` if the two specified arrays are *structurally*
equal to one another,\n * i.e. contain the same number of the same elements
in the same order.\n *^n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic infix fun
UByteArray?.contentEquals(other: UByteArray?): Boolean {\n  return
this?.storage.contentEquals(other?.storage)\n}\n\n/**\n * Returns `true` if the two specified arrays are *structurally*
equal to one another,\n * i.e. contain the same number of the same elements in the same order.\n *^n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic infix fun
UShortArray?.contentEquals(other:
UShortArray?): Boolean {\n  return this?.storage.contentEquals(other?.storage)\n}\n\n/**\n * Returns a hash code
based on the contents of this array as if it is [List].\n *^n@Deprecated("Use Kotlin compiler 1.4 to avoid
deprecation warning.")\n@SinceKotlin("1.3")\n@DeprecatedSinceKotlin(hiddenSince =
"1.4")\n@ExperimentalUnsignedTypes\npublic fun UIntArray.contentHashCode(): Int {\n  return
this.contentHashCode()\n}\n\n/**\n * Returns a hash code based on the contents of this array as if it is [List].\n
*^n@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation
warning.")\n@SinceKotlin("1.3")\n@DeprecatedSinceKotlin(hiddenSince =
"1.4")\n@ExperimentalUnsignedTypes\npublic fun ULongArray.contentHashCode(): Int {\n  return
this.contentHashCode()\n}\n\n/**\n * Returns a hash code based on the contents of this array as if it is [List].\n
*^n@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation
```

```

warning.\")\n@SinceKotlin("1.3")\n@DeprecatedSinceKotlin(hiddenSince =
"1.4")\n@ExperimentalUnsignedTypes\npublic fun UByteArray.contentHashCode(): Int {\n  return
this.contentHashCode()\n}\n\n/**\n * Returns a hash code based on the contents of this array as if it is [List].\n
*\n *\n *\n *\n */\n@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation
warning.\")\n@SinceKotlin("1.3")\n@DeprecatedSinceKotlin(hiddenSince =
"1.4")\n@ExperimentalUnsignedTypes\npublic fun UShortArray.contentHashCode(): Int {\n  return
this.contentHashCode()\n}\n\n/**\n * Returns a hash code based
on the contents of this array as if it is [List].\n
*\n *\n *\n *\n */\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic
fun UIntArray?.contentHashCode(): Int {\n  return this?.storage.contentHashCode()\n}\n\n/**\n * Returns a hash
code based on the contents of this array as if it is [List].\n
*\n *\n *\n *\n */\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun
ULongArray?.contentHashCode(): Int {\n  return this?.storage.contentHashCode()\n}\n\n/**\n * Returns a hash code based on the contents of this array as if it
is [List].\n
*\n *\n *\n *\n */\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun
UByteArray?.contentHashCode(): Int {\n  return this?.storage.contentHashCode()\n}\n\n/**\n * Returns a hash
code based on the contents of this array as if it is [List].\n
*\n *\n *\n *\n */\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun
UShortArray?.contentHashCode(): Int {\n  return this?.storage.contentHashCode()\n}\n\n/**\n * Returns a string representation of the contents of the specified
array
as if it is [List].\n
*\n *\n *\n *\n */\n@sample samples.collections.Arrays.ContentOperations.contentToString\n
*\n *\n *\n *\n */\n@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation
warning.\")\n@SinceKotlin("1.3")\n@DeprecatedSinceKotlin(hiddenSince =
"1.4")\n@ExperimentalUnsignedTypes\npublic fun UIntArray.contentToString(): String {\n  return
this.contentToString()\n}\n\n/**\n * Returns a string representation of the contents of the specified array as if it is
[List].\n
*\n *\n *\n *\n */\n@sample samples.collections.Arrays.ContentOperations.contentToString\n
*\n *\n *\n *\n */\n@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation
warning.\")\n@SinceKotlin("1.3")\n@DeprecatedSinceKotlin(hiddenSince =
"1.4")\n@ExperimentalUnsignedTypes\npublic fun ULongArray.contentToString(): String {\n  return
this.contentToString()\n}\n\n/**\n * Returns a string representation of the contents of the specified array as if it is
[List].\n
*\n *\n *\n *\n */\n@sample samples.collections.Arrays.ContentOperations.contentToString\n
*\n *\n *\n *\n */\n@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation
warning.\")\n@SinceKotlin("1.3")\n@DeprecatedSinceKotlin(hiddenSince =
"1.4")\n@ExperimentalUnsignedTypes\npublic fun UByteArray.contentToString(): String {\n  return
this.contentToString()\n}\n\n/**\n * Returns a string representation of the contents of the specified array as if it is
[List].\n
*\n *\n *\n *\n */\n@sample samples.collections.Arrays.ContentOperations.contentToString\n
*\n *\n *\n *\n */\n@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation
warning.\")\n@SinceKotlin("1.3")\n@DeprecatedSinceKotlin(hiddenSince =
"1.4")\n@ExperimentalUnsignedTypes\npublic fun UShortArray.contentToString(): String {\n  return
this.contentToString()\n}\n\n/**\n * Returns a string representation of the contents of the specified array as if it is
[List].\n
*\n *\n *\n *\n */\n@sample samples.collections.Arrays.ContentOperations.contentToString\n
*\n *\n *\n *\n */\n@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation
warning.\")\n@SinceKotlin("1.3")\n@DeprecatedSinceKotlin(hiddenSince =
"1.4")\n@ExperimentalUnsignedTypes\npublic fun UIntArray?.contentToString(): String {\n  \n
return this?.joinToString(",
", "[", "]") ? "null"\n}\n\n/**\n * Returns a string representation of the contents of the specified array as if it is
[List].\n
*\n *\n *\n *\n */\n@sample samples.collections.Arrays.ContentOperations.contentToString\n
*\n *\n *\n *\n */\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun ULongArray?.contentToString(): String {\n  \n
return this?.joinToString(", ", "[", "]") ? "null"\n}\n\n/**\n * Returns a string representation of the contents of
the specified array as if it is [List].\n
*\n *\n *\n *\n */\n@sample
samples.collections.Arrays.ContentOperations.contentToString\n
*\n *\n *\n *\n */\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun UByteArray?.contentToString(): String {\n

```

```

return this?.joinToString(", ", "[", "]") ?: "null"
}

Returns a string representation of the contents of
the specified array as if it is [List].

@sample
samples.collections.Arrays.ContentOperations.contentToString

@SinceKotlin("1.4")@ExperimentalUnsignedTypes
public
fun UShortArray?.contentToString(): String {
    return this?.joinToString(", ", "[", "]") ?: "null"
}

Copies this array or its subrange into the [destination] array and returns that array.
It's allowed to pass the same array in the [destination] and even specify the subrange so that it overlaps with the destination range.
@param destination the array to copy to.
@param destinationOffset the position in the [destination] array to copy to, 0 by default.
@param startIndex the beginning (inclusive) of the subrange to copy, 0 by default.
@param endIndex the end (exclusive) of the subrange to copy, size of this array by default.
@throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of range of this array indices or when `startIndex > endIndex`.
@throws IndexOutOfBoundsException when the subrange doesn't fit into the [destination] array starting at the specified [destinationOffset],
* or when that index is out of the [destination] array indices range.
@return the [destination] array.

@SinceKotlin("1.3")@ExperimentalUnsignedTypes@kotlin.internal.InlineOnly
public inline fun
UIntArray.copyInto(destination: UIntArray, destinationOffset: Int = 0, startIndex: Int = 0, endIndex: Int = size):
UIntArray {
    storage.copyInto(destination.storage, destinationOffset, startIndex, endIndex)
    return destination
}

Copies this array or its subrange into the [destination] array and returns that array.
It's allowed to pass the same array in the [destination] and even specify the subrange so that it overlaps with the destination range.
@param destination the array to copy to.
@param destinationOffset the position in the [destination] array to copy to, 0 by default.
@param startIndex the beginning (inclusive) of the subrange to copy, 0 by default.
@param endIndex the end (exclusive) of the subrange to copy, size of this array by default.
@throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of range of this array indices or when `startIndex > endIndex`.
@throws IndexOutOfBoundsException when the subrange doesn't fit into the [destination] array starting at the specified [destinationOffset],
* or when that index is out of the [destination] array indices range.
@return the [destination] array.

@SinceKotlin("1.3")@ExperimentalUnsignedTypes@kotlin.internal.InlineOnly
public inline fun
ULongArray.copyInto(destination: ULongArray, destinationOffset: Int = 0, startIndex: Int = 0, endIndex: Int = size):
ULongArray {
    storage.copyInto(destination.storage, destinationOffset, startIndex, endIndex)
    return destination
}

Copies this array or its subrange into the [destination] array and returns that array.
It's allowed to pass the same array in the [destination] and even specify the subrange so that it overlaps with the destination range.
@param destination the array to copy to.
@param destinationOffset the position in the [destination] array to copy to, 0 by default.
@param startIndex the beginning (inclusive) of the subrange to copy, 0 by default.
@param endIndex the end (exclusive) of the subrange to copy, size of this array by default.
@throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of range of this array indices or when `startIndex > endIndex`.
@throws IndexOutOfBoundsException when the subrange doesn't fit into the [destination] array starting at the specified [destinationOffset],
* or when that index is out of the [destination] array indices range.
@return the [destination] array.

@SinceKotlin("1.3")@ExperimentalUnsignedTypes@kotlin.internal.InlineOnly
public inline fun
UByteArray.copyInto(destination: UByteArray, destinationOffset: Int = 0, startIndex:
Int = 0, endIndex: Int = size): UByteArray {
    storage.copyInto(destination.storage, destinationOffset, startIndex,
endIndex)
    return destination
}

Copies this array or its subrange into the [destination] array and returns that array.
It's allowed to pass the same array in the [destination] and even specify the subrange so that it overlaps with the destination range.
@param destination the array to copy to.
@param destinationOffset the position in the [destination] array to copy to, 0 by default.
@param startIndex the beginning (inclusive) of the subrange to copy, 0 by default.
@param endIndex the end (exclusive) of the

```

subrange to copy, size of this array by default.\n \* \n \* @throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of range of this array indices or when `startIndex > endIndex`.\n \* @throws IndexOutOfBoundsException when the subrange doesn't fit into the [destination] array starting at the specified [destinationOffset],\n \* or when that index is out of the [destination] array indices range.\n \* \n \* @return the [destination] array.\n

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun\nUShortArray.copyInto(destination: UShortArray, destinationOffset: Int = 0, startIndex: Int = 0, endIndex: Int =\nsize): UShortArray {\n    storage.copyInto(destination.storage, destinationOffset, startIndex, endIndex)\n    return\n    destination\n}\n\n/**\n * Returns new array which is a copy of the original array.\n * \n * @sample\n samples.collections.Arrays.CopyOfOperations.copyOfOf\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun\nUIntArray.copyOf(): UIntArray {\n    return UIntArray(storage.copyOf())\n}\n\n/**\n * Returns new array which is\n a copy of the original array.\n * \n * @sample\n samples.collections.Arrays.CopyOfOperations.copyOfOf\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic\ninline fun\nULongArray.copyOf(): ULongArray {\n    return ULongArray(storage.copyOf())\n}\n\n/**\n * Returns\n new array which is a copy of the original array.\n * \n * @sample\n samples.collections.Arrays.CopyOfOperations.copyOfOf\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun\nUByteArray.copyOf(): UByteArray {\n    return UByteArray(storage.copyOf())\n}\n\n/**\n * Returns new array\n which is a copy of the original array.\n * \n * @sample\n samples.collections.Arrays.CopyOfOperations.copyOfOf\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun\nUShortArray.copyOfOf(): UShortArray {\n    return UShortArray(storage.copyOf())\n}\n\n/**\n * Returns new array\n which is a copy of the original array, resized to the given [newSize].\n * The copy is either truncated or padded at\n the end with zero values if necessary.\n * \n * - If [newSize] is
```

less than the size of the original array, the copy array is truncated to the [newSize].\n \* - If [newSize] is greater than the size of the original array, the extra elements in the copy array are filled with zero values.\n

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun\nUIntArray.copyOfOf(newSize: Int): UIntArray {\n    return UIntArray(storage.copyOfOf(newSize))\n}\n\n/**\n * Returns new array which is a copy of the original array, resized to the given [newSize].\n * The copy is either\n truncated or padded at the end with zero values if necessary.\n * \n * - If [newSize] is less than the size of the\n original array, the copy array is truncated to the [newSize].\n * - If [newSize] is greater than the size of the original\n array, the extra elements in the copy array are filled with zero values.\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun\nULongArray.copyOfOf(newSize: Int): ULongArray\n\n{\n    return ULongArray(storage.copyOfOf(newSize))\n}\n\n/**\n * Returns new array which is a copy of the original\n array, resized to the given [newSize].\n * The copy is either truncated or padded at the end with zero values if\n necessary.\n * \n * - If [newSize] is less than the size of the original array, the copy array is truncated to the\n [newSize].\n * - If [newSize] is greater than the size of the original array, the extra elements in the copy array are\n filled with zero values.\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun\nUByteArray.copyOfOf(newSize: Int): UByteArray {\n    return UByteArray(storage.copyOfOf(newSize))\n}\n\n/**\n * Returns new array which is a copy of the original array, resized to the given [newSize].\n * The copy is either\n truncated or padded at the end with zero values if necessary.\n * \n * - If [newSize] is less than the size of the\n original array, the copy array is truncated to the [newSize].\n * - If [newSize]\n is greater than the size of the original array, the extra elements in the copy array are filled with zero values.\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun\nUShortArray.copyOfOf(newSize: Int): UShortArray {\n    return UShortArray(storage.copyOfOf(newSize))\n}\n\n/**\n * Returns a new array which is a copy of the specified range of the original array.\n * \n * @param fromIndex the start
```

of the range (inclusive) to copy.\n \* @param toIndex the end of the range (exclusive) to copy.\n \* \n \* @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n \* @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n

```

*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.copyOfRange(fromIndex: Int, toIndex: Int): UIntArray {\n    return
UIntArray(storage.copyOfRange(fromIndex, toIndex))\n}\n\n/**\n
* Returns a new array which is a copy of the specified range of the original array.\n * \n * @param fromIndex the
start of the range (inclusive) to copy.\n * @param toIndex the end of the range (exclusive) to copy.\n * \n *
@throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this
array.\n * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.copyOfRange(fromIndex: Int, toIndex: Int): ULongArray {\n    return
ULongArray(storage.copyOfRange(fromIndex, toIndex))\n}\n\n/**\n
* Returns a new array which is a copy of the
specified range of the original array.\n * \n * @param fromIndex the start of the range (inclusive) to copy.\n *
@param toIndex the end of the range (exclusive) to copy.\n * \n * @throws IndexOutOfBoundsException if
[fromIndex] is less than zero or [toIndex] is greater than the size of
this array.\n * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.copyOfRange(fromIndex: Int, toIndex: Int): UByteArray {\n    return
UByteArray(storage.copyOfRange(fromIndex, toIndex))\n}\n\n/**\n
* Returns a new array which is a copy of the
specified range of the original array.\n * \n * @param fromIndex the start of the range (inclusive) to copy.\n *
@param toIndex the end of the range (exclusive) to copy.\n * \n * @throws IndexOutOfBoundsException if
[fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n * @throws
IllegalArgumentException if [fromIndex] is greater than [toIndex].\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.copyOfRange(fromIndex: Int, toIndex: Int): UShortArray {\n    return
UShortArray(storage.copyOfRange(fromIndex, toIndex))\n}\n\n/**\n
* Fills this array or its subrange with the specified [element] value.\n * \n * @param fromIndex the start of the
range (inclusive) to fill, 0 by default.\n * @param toIndex the end of the range (exclusive) to fill, size of this
array by default.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is
greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UIntArray.fill(element: UInt, fromIndex:
Int = 0, toIndex: Int = size): Unit {\n    storage.fill(element.toInt(), fromIndex, toIndex)\n}\n\n/**\n
* Fills this array
or its subrange with the specified [element] value.\n * \n * @param fromIndex the start of the range (inclusive)
to fill, 0 by default.\n * @param toIndex the end of the range (exclusive) to fill, size of this array by
default.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than
zero or [toIndex] is greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is
greater than [toIndex].\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun
ULongArray.fill(element: ULong, fromIndex: Int = 0, toIndex: Int = size): Unit {\n    storage.fill(element.toLong(),
fromIndex, toIndex)\n}\n\n/**\n
* Fills this array or its subrange with the specified [element] value.\n * \n *
@param fromIndex the start of the range (inclusive) to fill, 0 by default.\n * @param toIndex the end of the
range (exclusive) to fill, size of this array by default.\n * \n * @throws IndexOutOfBoundsException if [fromIndex]
is less than zero or [toIndex] is greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex]
is greater than [toIndex].\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun
UByteArray.fill(element: UByte, fromIndex: Int = 0, toIndex: Int = size): Unit {\n    storage.fill(element.toByte(),
fromIndex,
toIndex)\n}\n\n/**\n
* Fills this array or its subrange with the specified [element] value.\n * \n * @param
fromIndex the start of the range (inclusive) to fill, 0 by default.\n * @param toIndex the end of the range (exclusive)

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to fill, size of this array by default.\n \* \n \* @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n \* @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n \*^@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UShortArray.fill(element: UShort, fromIndex: Int = 0, toIndex: Int = size): Unit {\n storage.fill(element.toShort(), fromIndex, toIndex)\n}\n\n\*\*\n \* Returns the range of valid indices for the array.\n\n\*^@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic inline val UIntArray.indices: IntRange\n get() = storage.indices\n\n\*\*\n \* Returns the range of valid indices for the array.\n\n\*^@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic inline val ULongArray.indices: IntRange\n get() = storage.indices\n\n\*\*\n \* Returns the range of valid indices for the array.\n\n\*^@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic inline val UShortArray.indices: IntRange\n get() = storage.indices\n\n\*\*\n \* Returns the last valid index for the array.\n\n\*^@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic inline val UIntArray.lastIndex: Int\n get() = storage.lastIndex\n\n\*\*\n \* Returns the last valid index for the array.\n\n\*^@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic inline val ULongArray.lastIndex: Int\n get() = storage.lastIndex\n\n\*\*\n \* Returns the last valid index for the array.\n\n\*^@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic inline val UByteArray.lastIndex: Int\n get() = storage.lastIndex\n\n\*\*\n \* Returns the last valid index for the array.\n\n\*^@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic inline val UShortArray.lastIndex: Int\n get() = storage.lastIndex\n\n\*\*\n \* Returns an array containing all elements of the original array and then the given [element].\n\n\*^@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline operator fun UIntArray.plus(element: UInt): UIntArray {\n return UIntArray(storage + element.toInt())\n}\n\n\*\*\n \* Returns an array containing all elements of the original array and then the given [element].\n\n\*^@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline operator fun ULongArray.plus(element: ULong): ULongArray {\n return ULongArray(storage + element.toLong())\n}\n\n\*\*\n \* Returns an array containing all elements of the original array and then the given [element].\n\n\*^@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline operator fun UByteArray.plus(element: UByte): UByteArray {\n return UByteArray(storage + element.toByte())\n}\n\n\*\*\n \* Returns an array containing all elements of the original array and then the given [element].\n\n\*^@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline operator fun UShortArray.plus(element: UShort): UShortArray {\n return UShortArray(storage + element.toShort())\n}\n\n\*\*\n \* Returns an array containing all elements of the original array and then all elements of the given [elements] collection.\n\n\*^@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic operator fun UIntArray.plus(elements: Collection<UInt>): UIntArray {\n var index = size\n val result = storage.copyOf(size + elements.size)\n for (element in elements) result[index++] = element.toInt()\n return UIntArray(result)\n}\n\n\*\*\n \* Returns an array containing all elements of the original array and then all elements of the given [elements] collection.\n\n\*^@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic operator fun ULongArray.plus(elements: Collection<ULong>): ULongArray {\n var index = size\n val result = storage.copyOf(size + elements.size)\n for (element in elements) result[index++] = element.toLong()\n return ULongArray(result)\n}\n\n\*\*\n \* Returns an array containing all elements of the original array and then all elements of the given [elements] collection.\n\n\*^@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic operator fun UByteArray.plus(elements: Collection<UByte>): UByteArray {\n var index = size\n val result = storage.copyOf(size + elements.size)\n for (element in elements) result[index++] = element.toByte()\n return UByteArray(result)\n}\n\n\*\*\n \* Returns an array containing all elements of the original array and then all elements of the given [elements] collection.\n\n\*^@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic



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operator fun UShortArray.plus(elements: Collection<UShort>): UShortArray {\n  var index = size\n  val result =
storage.copyOfOf(size + elements.size)\n  for (element in elements) result[index++] = element.toShort()\n  return
UShortArray(result)\n}\n\n/**\n * Returns an array containing all elements of the original array and then all
elements of the given [elements] array.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline operator fun
UIntArray.plus(elements: UIntArray): UIntArray {\n  return UIntArray(storage + elements.storage)\n}\n\n/**\n *
Returns an array containing all elements of the original array and then all elements of the given [elements] array.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline operator fun
ULongArray.plus(elements: ULongArray): ULongArray {\n  return ULongArray(storage +
elements.storage)\n}\n\n/**\n * Returns an array containing all elements
of the original array and then all elements of the given [elements] array.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline operator fun
UByteArray.plus(elements: UByteArray): UByteArray {\n  return UByteArray(storage +
elements.storage)\n}\n\n/**\n * Returns an array containing all elements of the original array and then all elements
of the given [elements] array.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline operator fun
UShortArray.plus(elements: UShortArray): UShortArray {\n  return UShortArray(storage +
elements.storage)\n}\n\n/**\n * Sorts the array in-place.\n * \n * @sample
samples.collections.Arrays.Sorting.sortArray\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic
fun UIntArray.sort(): Unit {\n  if (size > 1) sortArray(this, 0, size)\n}\n\n/**\n * Sorts the array in-place.\n * \n *
@sample samples.collections.Arrays.Sorting.sortArray\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic
fun ULongArray.sort(): Unit {\n  if (size > 1) sortArray(this, 0, size)\n}\n\n/**\n * Sorts the array in-place.\n * \n *
@sample samples.collections.Arrays.Sorting.sortArray\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UByteArray.sort(): Unit {\n  if (size > 1)
sortArray(this, 0, size)\n}\n\n/**\n * Sorts the array in-place.\n * \n * @sample
samples.collections.Arrays.Sorting.sortArray\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic
fun UShortArray.sort(): Unit {\n  if (size > 1) sortArray(this, 0, size)\n}\n\n/**\n * Sorts a range in the array in-
place.\n * \n * @param fromIndex the start of the range (inclusive) to sort, 0 by default.\n * @param toIndex the end
of the range (exclusive) to sort, size of this array by default.\n * \n * @throws IndexOutOfBoundsException if
[fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n * @throws
IllegalArgumentOutOfRangeException if
[fromIndex] is greater than [toIndex].\n * \n * @sample samples.collections.Arrays.Sorting.sortRangeOfArray\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun UIntArray.sort(fromIndex: Int = 0, toIndex:
Int = size): Unit {\n  AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n  sortArray(this, fromIndex,
toIndex)\n}\n\n/**\n * Sorts a range in the array in-place.\n * \n * @param fromIndex the start of the range
(inclusive) to sort, 0 by default.\n * @param toIndex the end of the range (exclusive) to sort, size of this array by
default.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than
the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n * \n *
@sample samples.collections.Arrays.Sorting.sortRangeOfArray\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun ULongArray.sort(fromIndex: Int = 0,
toIndex: Int = size): Unit {\n  AbstractList.checkRangeIndexes(fromIndex,
toIndex, size)\n  sortArray(this, fromIndex, toIndex)\n}\n\n/**\n * Sorts a range in the array in-place.\n * \n *
@param fromIndex the start of the range (inclusive) to sort, 0 by default.\n * @param toIndex the end of the range
(exclusive) to sort, size of this array by default.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is
less than zero or [toIndex] is greater than the size of this array.\n * @throws IllegalArgumentException if
[fromIndex] is greater than [toIndex].\n * \n * @sample samples.collections.Arrays.Sorting.sortRangeOfArray\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun UByteArray.sort(fromIndex: Int = 0,

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toIndex: Int = size): Unit { \n  AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n  sortArray(this,
fromIndex, toIndex)\n}\n\n/**\n * Sorts a range in the array in-place.\n * \n * @param fromIndex the start of the
range (inclusive) to sort, 0 by default.\n * @param toIndex the end of the range (exclusive)
to sort, size of this array by default.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero
or [toIndex] is greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater
than [toIndex].\n * \n * @sample samples.collections.Arrays.Sorting.sortRangeOfArray\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun UShortArray.sort(fromIndex: Int = 0,
toIndex: Int = size): Unit { \n  AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n  sortArray(this,
fromIndex, toIndex)\n}\n\n/**\n * Sorts elements of the array in the specified range in-place.\n * The elements are
sorted descending according to their natural sort order.\n * \n * @param fromIndex the start of the range (inclusive)
to sort.\n * @param toIndex the end of the range (exclusive) to sort.\n * \n * @throws IndexOutOfBoundsException
if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n * @throws
IllegalArgumentExcpion
if [fromIndex] is greater than [toIndex].\n *\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun
UIntArray.sortDescending(fromIndex: Int, toIndex: Int): Unit { \n  sort(fromIndex, toIndex)\n  reverse(fromIndex,
toIndex)\n}\n\n/**\n * Sorts elements of the array in the specified range in-place.\n * The elements are sorted
descending according to their natural sort order.\n * \n * @param fromIndex the start of the range (inclusive) to
sort.\n * @param toIndex the end of the range (exclusive) to sort.\n * \n * @throws IndexOutOfBoundsException if
[fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n * @throws
IllegalArgumentExcpion if [fromIndex] is greater than [toIndex].\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun ULongArray.sortDescending(fromIndex:
Int, toIndex: Int): Unit { \n  sort(fromIndex, toIndex)\n  reverse(fromIndex, toIndex)\n}\n\n/**\n * Sorts elements
of the array in the specified range
in-place.\n * The elements are sorted descending according to their natural sort order.\n * \n * @param fromIndex
the start of the range (inclusive) to sort.\n * @param toIndex the end of the range (exclusive) to sort.\n * \n *
@throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this
array.\n * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun UByteArray.sortDescending(fromIndex:
Int, toIndex: Int): Unit { \n  sort(fromIndex, toIndex)\n  reverse(fromIndex, toIndex)\n}\n\n/**\n * Sorts elements
of the array in the specified range in-place.\n * The elements are sorted descending according to their natural sort
order.\n * \n * @param fromIndex the start of the range (inclusive) to sort.\n * @param toIndex the end of the range
(exclusive) to sort.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is
greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater than
[toIndex].\n *\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun
UShortArray.sortDescending(fromIndex: Int, toIndex: Int): Unit { \n  sort(fromIndex, toIndex)\n  reverse(fromIndex,
toIndex)\n}\n\n/**\n * Returns an array of type [ByteArray], which is a copy of this array where
each element is a signed reinterpretation\n * of the corresponding element of this array.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.toByteArray(): ByteArray { \n  return storage.copyOf()\n}\n\n/**\n * Returns an array of type
[IntArray], which is a copy of this array where each element is a signed reinterpretation\n * of the corresponding
element of this array.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.toIntArray(): IntArray { \n  return storage.copyOf()\n}\n\n/**\n * Returns an array of type [LongArray], which is a copy of this array where each element is a signed
reinterpretation\n * of the corresponding element of this array.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.toLongArray(): LongArray { \n  return storage.copyOf()\n}\n\n/**\n * Returns an array of type
[ShortArray], which is a copy of this array where each element is a signed reinterpretation\n * of the corresponding

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element of this array.\n

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun\nUShortArray.toShortArray(): ShortArray {\n    return storage.copyOfOf()\n}\n\n/**\n * Returns a *typed* object array\n * containing all of the elements of this primitive array.\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UIntArray.toTypedArray(): Array<UInt>\n{\n    return Array(size) { index -> this[index] }\n}\n\n/**\n * Returns a *typed* object\n * array containing all of the elements of this primitive array.\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun ULongArray.toTypedArray():\nArray<ULong> {\n    return Array(size) { index -> this[index] }\n}\n\n/**\n * Returns a *typed* object array\n * containing all of the elements of this primitive array.\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UByteArray.toTypedArray():\nArray<UByte> {\n    return Array(size) { index -> this[index] }\n}\n\n/**\n * Returns a *typed* object array\n * containing all of the elements of this primitive array.\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UShortArray.toTypedArray():\nArray<UShort> {\n    return Array(size) { index -> this[index] }\n}\n\n/**\n * Returns an array of UByte containing\n * all of the elements of this generic array.\n *\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun\nArray<out UByte>.toUByteArray(): UByteArray {\n    return UByteArray(size) { index -> this[index]\n    }\n}\n\n/**\n * Returns an array of type [UByteArray], which is a copy of this array where each element is an\n * unsigned reinterpretation\n * of the corresponding element of this array.\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun\nByteArray.toUByteArray(): UByteArray {\n    return UByteArray(this.copyOf())\n}\n\n/**\n * Returns an array of\n * UInt containing all of the elements of this generic array.\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun Array<out UInt>.toUIntArray(): UIntArray\n{\n    return UIntArray(size) { index -> this[index] }\n}\n\n/**\n * Returns an array of type [UIntArray], which is a\n * copy of this array where each element is an unsigned reinterpretation\n * of the corresponding element of this\n * array.\n *\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun\nIntArray.toUIntArray(): UIntArray {\n    return UIntArray(this.copyOf())\n}\n\n/**\n * Returns an array of ULong containing all of the elements of this generic array.\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun\nLongArray.toULongArray(): ULongArray {\n    return ULongArray(this.copyOf())\n}\n\n/**\n * Returns an array of UShort containing all of the elements of this generic array.\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun Array<out ULong>.toULongArray():\nULongArray {\n    return ULongArray(size) { index -> this[index] }\n}\n\n/**\n * Returns an array of type\n * [ULongArray], which is a copy of this array where each element is an unsigned reinterpretation\n * of the\n * corresponding element of this array.\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun\nLongArray.toULongArray(): ULongArray {\n    return ULongArray(this.copyOf())\n}\n\n/**\n * Returns an array\n * of UShort containing all of the elements of this generic array.\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun Array<out UShort>.toUShortArray():\nUShortArray {\n    return UShortArray(size) { index -> this[index] }\n}\n\n/**\n * Returns an array of type\n * [UShortArray], which is a copy of this array where each element is an unsigned reinterpretation\n * of the\n * corresponding element of this array.\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun\nShortArray.toUShortArray(): UShortArray {\n    return UShortArray(this.copyOf())\n}\n\n/**\n * Returns a [Map]\n * where keys are elements from the given array and values are\n * produced by the [valueSelector] function applied to\n * each element.\n * \n * If any two elements are equal, the last one gets added to the map.\n * \n * The returned map\n * preserves the entry iteration order of the original array.\n * \n * @sample\n * samples.collections.Collections.Transformations.associateWith\n
```

```
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <V>\nUIntArray.associateWith(valueSelector: (UInt) -> V): Map<UInt, V> {\n    val result = LinkedHashMap<UInt,\n    V>(mapCapacity(size).coerceAtLeast(16))\n    return associateWithTo(result, valueSelector)\n}\n\n/**\n * Returns a
```

[Map] where keys are elements

from the given array and values are\n \* produced by the [valueSelector] function applied to each element.\n \* \n \* If any two elements are equal, the last one gets added to the map.\n \* \n \* The returned map preserves the entry iteration order of the original array.\n \* \n \* @sample

samples.collections.Collections.Transformations.associateWith\n

```
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <V>
```

```
ULongArray.associateWith(valueSelector: (ULong) -> V): Map<ULong, V> {\n    val result =\n    LinkedHashMap<ULong, V>(mapCapacity(size).coerceAtLeast(16))\n    return associateWithTo(result,
```

```
valueSelector)\n}\n\n/**\n * Returns a [Map] where keys are elements from the given array and values are\n * produced by the [valueSelector] function applied to each element.\n * \n * If any two elements are equal, the last one gets added to the map.\n * \n * The returned map preserves the entry iteration order of the original array.\n * \n *
```

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@sample
```

```
samples.collections.Collections.Transformations.associateWith\n
```

```
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <V>
```

```
UByteArray.associateWith(valueSelector: (UByte) -> V): Map<UByte, V> {\n    val result =\n    LinkedHashMap<UByte, V>(mapCapacity(size).coerceAtLeast(16))\n    return associateWithTo(result,
```

```
valueSelector)\n}\n\n/**\n * Returns a [Map] where keys are elements from the given array and values are\n * produced by the [valueSelector] function applied to each element.\n * \n * If any two elements are equal, the last one gets added to the map.\n * \n * The returned map preserves the entry iteration order of the original array.\n * \n *
```

```
@sample samples.collections.Collections.Transformations.associateWith\n
```

```
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <V>
```

```
UShortArray.associateWith(valueSelector: (UShort) -> V): Map<UShort, V> {\n    val result =
```

```
LinkedHashMap<UShort, V>(mapCapacity(size).coerceAtLeast(16))\n
```

```
    return associateWithTo(result, valueSelector)\n}\n\n/**\n * Populates and returns the [destination] mutable map with key-value pairs for each element of the given array,\n * where key is the element itself and value is provided by the [valueSelector] function applied to that key.\n * \n * If any two elements are equal, the last one overwrites the former value in the map.\n * \n * @sample
```

```
samples.collections.Collections.Transformations.associateWithTo\n
```

```
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <V, M >
```

```
MutableMap<in UInt, in V>> UIntArray.associateWithTo(destination: M, valueSelector: (UInt) -> V): M {\n    for (element in this) {\n        destination.put(element, valueSelector(element))\n    }\n    return destination\n}\n\n/**\n *
```

```
Populates and returns the [destination] mutable map with key-value pairs for each element of the given array,\n * where key is the element itself and value is provided
```

```
by the [valueSelector] function applied to that key.\n * \n * If any two elements are equal, the last one overwrites the former value in the map.\n * \n * @sample
```

```
samples.collections.Collections.Transformations.associateWithTo\n
```

```
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <V, M >
```

```
MutableMap<in ULong, in V>> ULongArray.associateWithTo(destination: M, valueSelector: (ULong) -> V): M
```

```
{\n    for (element in this) {\n        destination.put(element, valueSelector(element))\n    }\n    return destination\n}\n\n/**\n * Populates and returns the [destination] mutable map with key-value pairs for each element of the given array,\n * where key is the element itself and value is provided by the [valueSelector] function applied to that key.\n * \n * If any two elements are equal, the last one overwrites the former value in the map.\n * \n *
```

```
@sample samples.collections.Collections.Transformations.associateWithTo\n
```

```
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
```

```
inline fun <V, M : MutableMap<in UByte, in V>> UByteArray.associateWithTo(destination: M, valueSelector: (UByte) -> V): M {\n    for (element in this) {\n        destination.put(element, valueSelector(element))\n    }\n    return destination\n}\n\n/**\n *
```

```
Populates and returns the [destination] mutable map with key-value pairs for each element of the given array,\n * where key is the element itself and value is provided by the [valueSelector] function applied to that key.\n * \n * If any two elements are equal, the last one overwrites the former value in the map.\n * \n *
```

```
@sample samples.collections.Collections.Transformations.associateWithTo\n
```

```

*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <V, M :
MutableMap<in UShort, in V>> UShortArray.associateWithTo(destination: M, valueSelector: (UShort) -> V): M
{\n  for (element in this) {\n    destination.put(element,
valueSelector(element))\n  }\n  return destination\n}\n\n/**\n * Returns a single list of all elements yielded from
results of [transform] function being invoked on each element of original array.\n * \n * @sample
samples.collections.Collections.Transformations.flatMap\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>
UIntArray.flatMap(transform: (UInt) -> Iterable<R>): List<R> {\n  return flatMapTo(ArrayList<R>(),
transform)\n}\n\n/**\n * Returns a single list of all elements yielded from results of [transform] function being
invoked on each element of original array.\n * \n * @sample
samples.collections.Collections.Transformations.flatMap\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>
ULongArray.flatMap(transform: (ULong) -> Iterable<R>): List<R> {\n  return flatMapTo(ArrayList<R>(),
transform)\n}\n\n/**\n * Returns a single list of all elements yielded
from results of [transform] function being invoked on each element of original array.\n * \n * @sample
samples.collections.Collections.Transformations.flatMap\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>
UByteArray.flatMap(transform: (UByte) -> Iterable<R>): List<R> {\n  return flatMapTo(ArrayList<R>(),
transform)\n}\n\n/**\n * Returns a single list of all elements yielded from results of [transform] function being
invoked on each element of original array.\n * \n * @sample
samples.collections.Collections.Transformations.flatMap\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>
UShortArray.flatMap(transform: (UShort) -> Iterable<R>): List<R> {\n  return flatMapTo(ArrayList<R>(),
transform)\n}\n\n/**\n * Returns a single list of all elements yielded from results of [transform] function being
invoked on each element\n * and its index in the original array.\n * \n
* @sample samples.collections.Collections.Transformations.flatMapIndexed\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>
UIntArray.flatMapIndexed(transform: (index: Int, UInt) -> Iterable<R>): List<R> {\n  return
flatMapIndexedTo(ArrayList<R>(), transform)\n}\n\n/**\n * Returns a single list of all elements yielded from
results of [transform] function being invoked on each element\n * and its index in the original array.\n * \n *
* @sample samples.collections.Collections.Transformations.flatMapIndexed\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>
ULongArray.flatMapIndexed(transform: (index: Int, ULong) -> Iterable<R>): List<R> {\n  return
flatMapIndexedTo(ArrayList<R>(),
transform)\n}\n\n/**\n * Returns a single list of all elements yielded from results of [transform] function being
invoked on each element\n * and its index in the original array.\n * \n * @sample
samples.collections.Collections.Transformations.flatMapIndexed\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>
UByteArray.flatMapIndexed(transform: (index: Int, UByte) -> Iterable<R>): List<R> {\n  return
flatMapIndexedTo(ArrayList<R>(), transform)\n}\n\n/**\n * Returns a single list of all elements yielded from
results of [transform] function being invoked on each element\n * and its index in the original array.\n * \n *
* @sample samples.collections.Collections.Transformations.flatMapIndexed\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic

```

```

inline fun <R> UShortArray.flatMapIndexed(transform: (index: Int, UShort) -> Iterable<R>): List<R> {\n  return
flatMapIndexedTo(ArrayList<R>(), transform)\n}\n\n/**\n * Appends all elements yielded from results of
[transform] function being invoked on each element\n * and its index in the original array, to the given
[destination].\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R, C :
MutableCollection<in R>> UIntArray.flatMapIndexedTo(destination: C, transform: (index: Int, UInt) ->
Iterable<R>): C {\n  var index = 0\n  for (element in this) {\n    val list = transform(index++, element)\n
destination.addAll(list)\n  }\n  return destination\n}\n\n/**\n * Appends all elements yielded from results of
[transform] function being invoked on each element\n * and
its index in the original array, to the given [destination].\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R, C :
MutableCollection<in R>> ULongArray.flatMapIndexedTo(destination: C, transform: (index: Int, ULong) ->
Iterable<R>): C {\n  var index = 0\n  for (element in this) {\n    val list = transform(index++, element)\n
destination.addAll(list)\n  }\n  return destination\n}\n\n/**\n * Appends all elements yielded from results of
[transform] function being invoked on each element\n * and its index in the original
array, to the given [destination].\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R, C :
MutableCollection<in R>> UByteArray.flatMapIndexedTo(destination:
C, transform: (index: Int, UByte) -> Iterable<R>): C {\n  var index = 0\n  for (element in this) {\n    val list =
transform(index++, element)\n    destination.addAll(list)\n  }\n  return destination\n}\n\n/**\n * Appends all
elements yielded from results of [transform] function being invoked on each element\n * and its index in the original
array, to the given [destination].\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R, C :
MutableCollection<in R>> UShortArray.flatMapIndexedTo(destination: C, transform: (index: Int, UShort) ->
Iterable<R>): C {\n  var index = 0\n  for (element in this) {\n    val list = transform(index++, element)\n
destination.addAll(list)\n  }\n  return destination\n}\n\n/**\n * Appends all elements yielded from results of
[transform] function being invoked
on each element of original array, to the given [destination].\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R, C :
MutableCollection<in R>> UIntArray.flatMapTo(destination: C, transform: (UInt) -> Iterable<R>): C {\n  for
(element in this) {\n    val list = transform(element)\n    destination.addAll(list)\n  }\n  return
destination\n}\n\n/**\n * Appends all elements yielded from results of [transform] function being invoked on each
element of original array, to the given [destination].\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R, C :
MutableCollection<in R>> ULongArray.flatMapTo(destination: C, transform: (ULong) -> Iterable<R>): C {\n  for
(element in this) {\n    val list = transform(element)\n    destination.addAll(list)\n  }\n  return
destination\n}\n\n/**\n * Appends all elements yielded from results of [transform] function being
invoked on each element of original array, to the given [destination].\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R, C :
MutableCollection<in R>> UByteArray.flatMapTo(destination: C, transform: (UByte) -> Iterable<R>): C {\n  for
(element in this) {\n    val list = transform(element)\n    destination.addAll(list)\n  }\n  return
destination\n}\n\n/**\n * Appends all elements yielded from results of [transform] function being invoked on each
element of original array, to the given [destination].\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R, C :

```

```

MutableCollection<in R>> UShortArray.flatMapTo(destination: C, transform: (UShort) -> Iterable<R>): C { \n  for
(element in this) { \n    val list = transform(element)\n    destination.addAll(list)\n  }\n  return
destination\n}\n\n/**\n * Groups elements of the original array by the key returned by
the given [keySelector] function\n * applied to each element and returns a map where each group key is associated
with a list of corresponding elements.\n * \n * The returned map preserves the entry iteration order of the keys
produced from the original array.\n * \n * @sample samples.collections.Collections.Transformations.groupBy\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <K>
UIntArray.groupBy(keySelector: (UInt) -> K): Map<K, List<UInt>> { \n  return groupByTo(LinkedHashMap<K,
MutableList<UInt>>(), keySelector)\n}\n\n/**\n * Groups elements of the original array by the key returned by the
given [keySelector] function\n * applied to each element and returns a map where each group key is associated with
a list of corresponding elements.\n * \n * The returned map preserves the entry iteration order of the keys produced
from the original array.\n * \n * @sample samples.collections.Collections.Transformations.groupBy\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun <K> ULongArray.groupBy(keySelector: (ULong) -> K): Map<K, List<ULong>> { \n  return
groupByTo(LinkedHashMap<K, MutableList<ULong>>(), keySelector)\n}\n\n/**\n * Groups elements of the
original array by the key returned by the given [keySelector] function\n * applied to each element and returns a map
where each group key is associated with a list of corresponding elements.\n * \n * The returned map preserves the
entry iteration order of the keys produced from the original array.\n * \n * @sample
samples.collections.Collections.Transformations.groupBy\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <K>
UByteArray.groupBy(keySelector: (UByte) -> K): Map<K, List<UByte>> { \n  return
groupByTo(LinkedHashMap<K, MutableList<UByte>>(), keySelector)\n}\n\n/**\n * Groups elements of the
original array by the key returned by the given [keySelector]
function\n * applied to each element and returns a map where each group key is associated with a list of
corresponding elements.\n * \n * The returned map preserves the entry iteration order of the keys produced from the
original array.\n * \n * @sample samples.collections.Collections.Transformations.groupBy\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <K>
UShortArray.groupBy(keySelector: (UShort) -> K): Map<K, List<UShort>> { \n  return
groupByTo(LinkedHashMap<K, MutableList<UShort>>(), keySelector)\n}\n\n/**\n * Groups values returned by
the [valueTransform] function applied to each element of the original array\n * by the key returned by the given
[keySelector] function applied to the element\n * and returns a map where each group key is associated with a list of
corresponding values.\n * \n * The returned map preserves the entry iteration order of the keys produced from the
original array.\n * \n * @sample samples.collections.Collections.Transformations.groupByKeysAndValues\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <K, V>
UIntArray.groupBy(keySelector: (UInt) -> K, valueTransform: (UInt) -> V): Map<K, List<V>> { \n  return
groupByTo(LinkedHashMap<K, MutableList<V>>(), keySelector, valueTransform)\n}\n\n/**\n * Groups values
returned by the [valueTransform] function applied to each element of the original array\n * by the key returned by
the given [keySelector] function applied to the element\n * and returns a map where each group key is associated
with a list of corresponding values.\n * \n * The returned map preserves the entry iteration order of the keys
produced from the original array.\n * \n * @sample
samples.collections.Collections.Transformations.groupByKeysAndValues\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <K, V>
ULongArray.groupBy(keySelector: (ULong) -> K, valueTransform:
(ULong) -> V): Map<K, List<V>> { \n  return groupByTo(LinkedHashMap<K, MutableList<V>>(), keySelector,
valueTransform)\n}\n\n/**\n * Groups values returned by the [valueTransform] function applied to each element of
the original array\n * by the key returned by the given [keySelector] function applied to the element\n * and returns
a map where each group key is associated with a list of corresponding values.\n * \n * The returned map preserves
the entry iteration order of the keys produced from the original array.\n * \n * @sample

```

```

samples.collections.Collections.Transformations.groupByKeyAndValues\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <K, V>
UByteArray.groupBy(keySelector: (UByte) -> K, valueTransform: (UByte) -> V): Map<K, List<V>> {\n return
groupByTo(LinkedHashMap<K, MutableList<V>>(), keySelector, valueTransform)\n}\n\n/**\n * Groups values
returned by the [valueTransform] function applied to each element
of the original array\n * by the key returned by the given [keySelector] function applied to the element\n * and
returns a map where each group key is associated with a list of corresponding values.\n * \n * The returned map
preserves the entry iteration order of the keys produced from the original array.\n * \n * @sample
samples.collections.Collections.Transformations.groupByKeyAndValues\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <K, V>
UShortArray.groupBy(keySelector: (UShort) -> K, valueTransform: (UShort) -> V): Map<K, List<V>> {\n return
groupByTo(LinkedHashMap<K, MutableList<V>>(), keySelector, valueTransform)\n}\n\n/**\n * Groups elements
of the original array by the key returned by the given [keySelector] function\n * applied to each element and puts to
the [destination] map each group key associated with a list of corresponding elements.\n * \n * @return The
[destination] map.\n * \n * @sample samples.collections.Collections.Transformations.groupBy\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <K, M :
MutableMap<in K, MutableList<UInt>>> UIntArray.groupByTo(destination: M, keySelector: (UInt) -> K): M {\n
for (element in this) {\n val key = keySelector(element)\n val list = destination.getOrPut(key) {
ArrayList<UInt>() }\n list.add(element)\n }\n return destination}\n}\n\n/**\n * Groups elements of the
original array by the key returned by the given [keySelector] function\n * applied to each element and puts to the
[destination] map each group key associated with a list of corresponding elements.\n * \n * @return The
[destination] map.\n * \n * @sample samples.collections.Collections.Transformations.groupBy\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <K, M :
MutableMap<in K, MutableList<ULong>>> ULongArray.groupByTo(destination: M, keySelector: (ULong)
-> K): M {\n for (element in this) {\n val key = keySelector(element)\n val list =
destination.getOrPut(key) { ArrayList<ULong>() }\n list.add(element)\n }\n return destination}\n}\n\n/**\n *
Groups elements of the original array by the key returned by the given [keySelector] function\n * applied to each
element and puts to the [destination] map each group key associated with a list of corresponding elements.\n * \n *
@return The [destination] map.\n * \n * @sample samples.collections.Collections.Transformations.groupBy\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <K, M :
MutableMap<in K, MutableList<UByte>>> UByteArray.groupByTo(destination: M, keySelector: (UByte) -> K):
M {\n for (element in this) {\n val key = keySelector(element)\n val list = destination.getOrPut(key) {
ArrayList<UByte>() }\n list.add(element)\n }\n return destination}\n}\n\n/**\n * Groups elements
of the original array by the key returned by the given [keySelector] function\n * applied to each element and puts to
the [destination] map each group key associated with a list of corresponding elements.\n * \n * @return The
[destination] map.\n * \n * @sample samples.collections.Collections.Transformations.groupBy\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <K, M :
MutableMap<in K, MutableList<UShort>>> UShortArray.groupByTo(destination: M, keySelector: (UShort) -> K):
M {\n for (element in this) {\n val key = keySelector(element)\n val list = destination.getOrPut(key) {
ArrayList<UShort>() }\n list.add(element)\n }\n return destination}\n}\n\n/**\n * Groups values returned by
the [valueTransform] function applied to each element of the original array\n * by the key returned by the given
[keySelector] function applied to the element\n * and puts to the [destination] map each group key associated
with a list of corresponding values.\n * \n * @return The [destination] map.\n * \n * @sample
samples.collections.Collections.Transformations.groupByKeyAndValues\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <K, V,
M : MutableMap<in K, MutableList<V>>> UIntArray.groupByTo(destination: M, keySelector: (UInt) -> K,
valueTransform: (UInt) -> V): M {\n for (element in this) {\n val key = keySelector(element)\n val list =
destination.getOrPut(key) { ArrayList<V>() }\n list.add(valueTransform(element))\n }\n return

```



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destination\n}\n\n/**\n * Groups values returned by the [valueTransform] function applied to each element of the
original array\n * by the key returned by the given [keySelector] function applied to the element\n * and puts to the
[destination] map each group key associated with a list of corresponding values.\n * \n * @return The [destination]
map.\n * \n * @sample samples.collections.Collections.Transformations.groupByKeyAndValues\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <K, V,
M : MutableMap<in K, MutableList<V>>> ULongArray.groupByKeyTo(destination: M, keySelector: (ULong) -> K,
valueTransform: (ULong) -> V): M {\n    for (element in this) {\n        val key = keySelector(element)\n        val list
= destination.getOrPut(key) { ArrayList<V>() }\n        list.add(valueTransform(element))\n    }\n    return
destination\n}\n\n/**\n * Groups values returned by the [valueTransform] function applied to each element of the
original array\n * by the key returned by the given [keySelector] function applied to the element\n * and puts to the
[destination] map each group key associated with a list of corresponding values.\n * \n * @return The [destination]
map.\n * \n * @sample samples.collections.Collections.Transformations.groupByKeyAndValues\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun <K, V, M : MutableMap<in K, MutableList<V>>> UByteArray.groupByKeyTo(destination: M, keySelector:
(UByte) -> K, valueTransform: (UByte) -> V): M {\n    for (element in this) {\n        val key =
keySelector(element)\n        val list = destination.getOrPut(key) { ArrayList<V>() }\n
list.add(valueTransform(element))\n    }\n    return destination\n}\n\n/**\n * Groups values returned by the
[valueTransform] function applied to each element of the original array\n * by the key returned by the given
[keySelector] function applied to the element\n * and puts to the [destination] map each group key associated with a
list of corresponding values.\n * \n * @return The [destination] map.\n * \n * @sample
samples.collections.Collections.Transformations.groupByKeyAndValues\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <K, V,
M : MutableMap<in K, MutableList<V>>> UShortArray.groupByKeyTo(destination: M, keySelector:
(UShort) -> K, valueTransform: (UShort) -> V): M {\n    for (element in this) {\n        val key =
keySelector(element)\n        val list = destination.getOrPut(key) { ArrayList<V>() }\n
list.add(valueTransform(element))\n    }\n    return destination\n}\n\n/**\n * Returns a list containing the results of
applying the given [transform] function\n * to each element in the original array.\n * \n * @sample
samples.collections.Collections.Transformations.map\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>
UIntArray.map(transform: (UInt) -> R): List<R> {\n    return mapTo(ArrayList<R>(size), transform)\n}\n\n/**\n *
Returns a list containing the results of applying the given [transform] function\n * to each element in the original
array.\n * \n * @sample samples.collections.Collections.Transformations.map\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>
ULongArray.map(transform:
(ULong) -> R): List<R> {\n    return mapTo(ArrayList<R>(size), transform)\n}\n\n/**\n * Returns a list containing
the results of applying the given [transform] function\n * to each element in the original array.\n * \n * @sample
samples.collections.Collections.Transformations.map\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>
UByteArray.map(transform: (UByte) -> R): List<R> {\n    return mapTo(ArrayList<R>(size),
transform)\n}\n\n/**\n * Returns a list containing the results of applying the given [transform] function\n * to each
element in the original array.\n * \n * @sample samples.collections.Collections.Transformations.map\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>
UShortArray.map(transform: (UShort) -> R): List<R> {\n    return mapTo(ArrayList<R>(size),
transform)\n}\n\n/**\n * Returns a list containing the results of applying the given
[transform] function\n * to each element and its index in the original array.\n * @param [transform] function that
takes the index of an element and the element itself\n * and returns the result of the transform applied to the
element.\n *\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline
fun <R> UIntArray.mapIndexed(transform: (index: Int, UInt) -> R): List<R> {\n    return

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mapIndexedTo(ArrayList<R>(size), transform)\n}\n\n/**\n * Returns a list containing the results of applying the
given [transform] function\n * to each element and its index in the original array.\n * @param [transform] function
that takes the index of an element and the element itself\n * and returns the result of the transform applied to the
element.\n */\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline
fun <R> ULongArray.mapIndexed(transform: (index: Int, ULong) -> R): List<R> {\n    return
mapIndexedTo(ArrayList<R>(size),
transform)\n}\n\n/**\n * Returns a list containing the results of applying the given [transform] function\n * to each
element and its index in the original array.\n * @param [transform] function that takes the index of an element and
the element itself\n * and returns the result of the transform applied to the element.\n
*/\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>
UByteArray.mapIndexed(transform: (index: Int, UByte) -> R): List<R> {\n    return
mapIndexedTo(ArrayList<R>(size), transform)\n}\n\n/**\n * Returns a list containing the results of applying the
given [transform] function\n * to each element and its index in the original array.\n * @param [transform] function
that takes the index of an element and the element itself\n * and returns the result of the transform applied to the
element.\n */\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline
fun <R> UShortArray.mapIndexed(transform:
(index: Int, UShort) -> R): List<R> {\n    return mapIndexedTo(ArrayList<R>(size), transform)\n}\n\n/**\n *
Applies the given [transform] function to each element and its index in the original array\n * and appends the results
to the given [destination].\n * @param [transform] function that takes the index of an element and the element
itself\n * and returns the result of the transform applied to the element.\n
*/\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R, C :
MutableCollection<in R>> UIntArray.mapIndexedTo(destination: C, transform: (index: Int, UInt) -> R): C {\n    var
index = 0\n    for (item in this)\n        destination.add(transform(index++, item))\n    return destination\n}\n\n/**\n *
Applies the given [transform] function to each element and its index in the original array\n * and appends the results
to the given [destination].\n * @param [transform] function that takes the index of an element and the element
itself\n * and returns the result of the transform applied to the element.\n
*/\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R, C :
MutableCollection<in R>> ULongArray.mapIndexedTo(destination: C, transform: (index: Int, ULong) -> R): C {\n    var
index = 0\n    for (item in this)\n        destination.add(transform(index++, item))\n    return
destination\n}\n\n/**\n * Applies the given [transform] function to each element and its index in the original array\n
* and appends the results to the given [destination].\n * @param [transform] function that takes the index of an
element and the element itself\n * and returns the result of the transform applied to the element.\n
*/\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R, C :
MutableCollection<in R>> UByteArray.mapIndexedTo(destination: C, transform: (index: Int, UByte) -> R): C {\n    var
index = 0\n    for (item in this)\n        destination.add(transform(index++, item))\n    return destination\n}\n\n/**\n *
Applies the given [transform] function to each element and its index in the original array\n * and appends the results
to the given [destination].\n * @param [transform] function that takes the index of an element and the element
itself\n * and returns the result of the transform applied to the element.\n
*/\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R, C :
MutableCollection<in R>> UShortArray.mapIndexedTo(destination: C, transform: (index: Int, UShort) -> R): C {\n    var
index = 0\n    for (item in this)\n        destination.add(transform(index++, item))\n    return
destination\n}\n\n/**\n * Applies the given [transform] function to each element of the original array\n * and
appends the results to the given [destination].\n
*/\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R, C :
MutableCollection<in R>> UIntArray.mapTo(destination: C, transform: (UInt) -> R): C {\n    for (item in this)\n
destination.add(transform(item))\n    return destination\n}\n\n/**\n * Applies the given [transform] function to each

```

element of the original array\n \* and appends the results to the given [destination].\n

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R, C :  
MutableCollection<in R>> ULongArray.mapTo(destination: C, transform: (ULong) -> R): C {\n    for (item in  
this)\n        destination.add(transform(item))\n    return destination\n}\n\n/**\n * Applies the given [transform]  
function to each element of the original array\n * and appends the results to the given [destination].\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R, C :  
MutableCollection<in R>> UByteArray.mapTo(destination: C, transform: (UByte) -> R): C {\n    for (item in this)\n        destination.add(transform(item))\n    return destination\n}\n\n/**\n * Applies the given [transform] function to each element of the original array\n * and appends the results to the given [destination].\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R, C :  
MutableCollection<in R>> UShortArray.mapTo(destination: C, transform: (UShort) -> R): C {\n    for (item in  
this)\n        destination.add(transform(item))\n    return destination\n}\n\n/**\n * Returns a lazy [Iterable] that wraps  
each element of the original array\n * into an [IndexedValue] containing the index of that element and the element  
itself.\n *@\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UIntArray.withIndex():
```

```
Iterable<IndexedValue<UInt>> {\n    return IndexingIterable { iterator() }\n}\n\n/**\n * Returns a lazy [Iterable]  
that wraps each element of the original array\n * into an [IndexedValue] containing the index of that element and the  
element itself.\n *@\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic  
fun ULongArray.withIndex(): Iterable<IndexedValue<ULong>> {\n    return IndexingIterable { iterator()  
}\n}\n\n/**\n * Returns a lazy [Iterable] that wraps each element of the original array\n * into an [IndexedValue]  
containing the index of that element and the element itself.\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UByteArray.withIndex():  
Iterable<IndexedValue<UByte>> {\n    return IndexingIterable { iterator() }\n}\n\n/**\n * Returns a lazy [Iterable]  
that wraps each element of the original array\n * into an [IndexedValue] containing the index of that element and the  
element itself.\n *@\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UShortArray.withIndex():  
Iterable<IndexedValue<UShort>> {\n    return IndexingIterable { iterator() }\n}\n\n/**\n * Returns `true` if all  
elements match the given [predicate].\n * \n * Note that if the array contains no elements, the function returns  
`true`\n
```

\* because there are no elements in it that `_do not_` match the predicate.\n \* See a more detailed explanation of this  
logic concept in [`Vacuous truth`]([https://en.wikipedia.org/wiki/Vacuous\\_truth](https://en.wikipedia.org/wiki/Vacuous_truth)) article.\n \* \n \* @sample  
samples.collections.Collections.Aggregates.all\n

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun  
UIntArray.all(predicate: (UInt) -> Boolean): Boolean {\n    for (element in this) if (!predicate(element)) return  
false\n    return true\n}\n\n/**\n * Returns `true` if all elements match the given [predicate].\n * \n * Note that if the  
array contains no elements, the function returns `true`\n * because there are no elements in it that _do not_ match the  
predicate.\n * See a more detailed explanation of this logic concept in [Vacuous  
truth](https://en.wikipedia.org/wiki/Vacuous\_truth) article.\n * \n * @sample  
samples.collections.Collections.Aggregates.all\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic  
inline fun ULongArray.all(predicate: (ULong) -> Boolean): Boolean {\n    for (element in this) if  
(!predicate(element)) return false\n    return true\n}\n\n/**\n * Returns `true` if all elements match the given  
[predicate].\n * \n * Note that if the array contains no elements, the function returns `true`\n * because there are no  
elements in it that _do not_ match the predicate.\n * See a more detailed explanation of this logic concept in  
[Vacuous truth](https://en.wikipedia.org/wiki/Vacuous\_truth) article.\n * \n * @sample  
samples.collections.Collections.Aggregates.all\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun  
UByteArray.all(predicate: (UByte) -> Boolean): Boolean {\n    for (element in this) if (!predicate(element)) return  
false\n    return true\n}\n\n/**\n * Returns `true` if all elements match the given [predicate].\n * \n * Note that if the
```

array contains no elements, the function

returns `true` because there are no elements in it that `_do not_` match the predicate. See a more detailed explanation of this logic concept in ["Vacuous truth"](https://en.wikipedia.org/wiki/Vacuous\_truth) article.

@sample samples.collections.Collections.Aggregates.all

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun  
UShortArray.all(predicate: (UShort) -> Boolean): Boolean {\n    for (element in this) if (!predicate(element)) return  
false\n    return true\n}\n\n/**\n * Returns `true` if array has at least one element.\n * \n * @sample  
samples.collections.Collections.Aggregates.any\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun  
UIntArray.any(): Boolean {\n    return storage.any()\n}\n\n/**\n * Returns `true` if array has at least one element.\n * \n * @sample samples.collections.Collections.Aggregates.any\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic  
inline fun ULongArray.any(): Boolean {\n    return storage.any()\n}\n\n/**\n * Returns `true` if array has at least  
one element.\n * \n * @sample samples.collections.Collections.Aggregates.any\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun  
UByteArray.any(): Boolean {\n    return storage.any()\n}\n\n/**\n * Returns `true` if array has at least one  
element.\n * \n * @sample samples.collections.Collections.Aggregates.any\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun  
UShortArray.any(predicate: (UShort) -> Boolean): Boolean {\n    return storage.any()\n}\n\n/**\n * Returns `true` if at least one element matches  
the given [predicate].\n * \n * @sample samples.collections.Collections.Aggregates.anyWithPredicate\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun  
UIntArray.any(predicate: (UInt) -> Boolean): Boolean {\n    for (element in this) if (predicate(element)) return true\n    return false\n}\n\n/**\n * Returns `true` if at least one  
element matches the given [predicate].\n * \n * @sample  
samples.collections.Collections.Aggregates.anyWithPredicate\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun  
ULongArray.any(predicate: (ULong) -> Boolean): Boolean {\n    for (element in this) if (predicate(element)) return  
true\n    return false\n}\n\n/**\n * Returns `true` if at least one element matches the given [predicate].\n * \n *  
@sample samples.collections.Collections.Aggregates.anyWithPredicate\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun  
UByteArray.any(predicate: (UByte) -> Boolean): Boolean {\n    for (element in this) if (predicate(element)) return  
true\n    return false\n}\n\n/**\n * Returns `true` if at least one element matches the given [predicate].\n * \n *  
@sample samples.collections.Collections.Aggregates.anyWithPredicate\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun  
UShortArray.any(predicate: (UShort) -> Boolean): Boolean {\n    for (element in this) if (predicate(element)) return  
true\n    return false\n}\n\n/**\n * Returns the number of elements matching the given [predicate].\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun  
UIntArray.count(predicate: (UInt) -> Boolean): Int {\n    var count = 0\n    for (element in this) if  
(predicate(element)) ++count\n    return count\n}\n\n/**\n * Returns the number of elements matching the given  
[predicate].\n * \n * @sample\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic  
inline fun ULongArray.count(predicate: (ULong) -> Boolean): Int {\n    var count = 0\n    for (element in this) if  
(predicate(element)) ++count\n    return count\n}\n\n/**\n * Returns the number of elements  
matching the given [predicate].\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun  
UByteArray.count(predicate: (UByte) -> Boolean): Int {\n    var count = 0\n    for (element in this) if  
(predicate(element)) ++count\n    return count\n}\n\n/**\n * Returns the number of elements matching the given  
[predicate].\n * \n * @sample\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic  
inline fun UShortArray.count(predicate: (UShort) -> Boolean): Int {\n    var count = 0\n    for (element in this) if
```

(predicate(element)) ++count\n return count\n}\n\n/\*\*\n \* Accumulates value starting with [initial] value and applying [operation] from left to right\n \* to current accumulator value and each element.\n \* \n \* Returns the specified [initial] value if the array is empty.\n \* \n \* @param [operation] function that takes current accumulator value and an element, and calculates the next accumulator value.\n

```

*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun <R> UIntArray.fold(initial: R, operation: (acc: R, UInt) -> R): R {\n    var accumulator = initial\n    for
(element in this) accumulator = operation(accumulator, element)\n    return accumulator\n}\n\n/**\n * Accumulates
value starting with [initial] value and applying [operation] from left to right\n * to current accumulator value and
each element.\n * \n * Returns the specified [initial] value if the array is empty.\n * \n * @param [operation]
function that takes current accumulator value and an element, and calculates the next accumulator value.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>
ULongArray.fold(initial: R, operation: (acc: R, ULong) -> R): R {\n    var accumulator = initial\n    for (element in
this) accumulator = operation(accumulator, element)\n    return accumulator\n}\n\n/**\n * Accumulates value
starting with [initial] value
and applying [operation] from left to right\n * to current accumulator value and each element.\n * \n * Returns the
specified [initial] value if the array is empty.\n * \n * @param [operation] function that takes current accumulator
value and an element, and calculates the next accumulator value.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>
UByteArray.fold(initial: R, operation: (acc: R, UByte) -> R): R {\n    var accumulator = initial\n    for (element in
this) accumulator = operation(accumulator, element)\n    return accumulator\n}\n\n/**\n * Accumulates value
starting with [initial] value and applying [operation] from left to right\n * to current accumulator value and each
element.\n * \n * Returns the specified [initial] value if the array is empty.\n * \n * @param [operation] function
that takes current accumulator value and an element, and calculates the next accumulator value.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun <R> UShortArray.fold(initial: R, operation: (acc: R, UShort) -> R): R {\n    var accumulator = initial\n
for (element in this) accumulator = operation(accumulator, element)\n    return accumulator\n}\n\n/**\n *
Accumulates value starting with [initial] value and applying [operation] from left to right\n * to current accumulator
value and each element with its index in the original array.\n * \n * Returns the specified [initial] value if the
array is empty.\n * \n * @param [operation] function that takes the index of an element, current accumulator value\n *
and the element itself, and calculates the next accumulator value.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>
UIntArray.foldIndexed(initial: R, operation: (index: Int, acc: R, UInt) -> R): R {\n    var index = 0\n    var
accumulator = initial\n    for (element in this) accumulator = operation(index++,
accumulator, element)\n    return accumulator\n}\n\n/**\n * Accumulates value starting with [initial] value and
applying [operation] from left to right\n * to current accumulator value and each element with its index in the
original array.\n * \n * Returns the specified [initial] value if the array is empty.\n * \n * @param [operation]
function that takes the index of an element, current accumulator value\n * and the element itself, and calculates the
next accumulator value.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>
ULongArray.foldIndexed(initial: R, operation: (index: Int, acc: R, ULong) -> R): R {\n    var index = 0\n    var
accumulator = initial\n    for (element in this) accumulator = operation(index++, accumulator, element)\n    return
accumulator\n}\n\n/**\n * Accumulates value starting with [initial] value and applying [operation] from left to
right\n * to current accumulator value and each element with its index
in the original array.\n * \n * Returns the specified [initial] value if the array is empty.\n * \n * @param [operation]
function that takes the index of an element, current accumulator value\n * and the element itself, and calculates the
next accumulator value.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>
UByteArray.foldIndexed(initial: R, operation: (index: Int, acc: R, UByte) -> R): R {\n    var index = 0\n    var

```

accumulator = initial  
for (element in this) accumulator = operation(index++, accumulator, element)  
return accumulator  
\* Accumulates value starting with [initial] value and applying [operation] from left to right \* to current accumulator value and each element with its index in the original array.  
\* Returns the specified [initial] value if the array is empty.  
\* @param [operation] function that takes the index of an element, current accumulator value \* and the element itself, and calculates the next accumulator value.

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>\nUShortArray.foldIndexed(initial: R, operation: (index: Int, acc: R, UShort) -> R): R {\n    var index = 0\n    var accumulator = initial\n    for (element in this) accumulator = operation(index++, accumulator, element)\n    return accumulator\n}\n\n* Accumulates value starting with [initial] value and applying [operation] from right to left * to each element and current accumulator value.  
* Returns the specified [initial] value if the array is empty.  
* @param [operation] function that takes an element and current accumulator value, and calculates the next accumulator value.
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>\nUIntArray.foldRight(initial: R, operation: (UInt, acc: R) -> R): R {\n    var index = lastIndex\n    var accumulator = initial\n    while (index >= 0) {\n        accumulator = operation(get(index--), accumulator)\n    }\n    return accumulator\n}\n\n* Accumulates value starting with [initial] value and applying [operation] from right to left * to each element and current accumulator value.  
* Returns the specified [initial] value if the array is empty.  
* @param [operation] function that takes an element and current accumulator value, and calculates the next accumulator value.
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>\nULongArray.foldRight(initial: R, operation: (ULong, acc: R) -> R): R {\n    var index = lastIndex\n    var accumulator = initial\n    while (index >= 0) {\n        accumulator = operation(get(index--), accumulator)\n    }\n    return accumulator\n}\n\n* Accumulates value starting with [initial] value and applying [operation] from right to left * to each element and current accumulator value.  
* Returns the specified [initial] value if the array is empty.  
* @param [operation] function that takes an element and current accumulator value, and calculates the next accumulator value.
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>\nUByteArray.foldRight(initial: R, operation: (UByte, acc: R) -> R): R {\n    var index = lastIndex\n    var accumulator = initial\n    while (index >= 0) {\n        accumulator = operation(get(index--), accumulator)\n    }\n    return accumulator\n}\n\n* Accumulates value starting with [initial] value and applying [operation] from right to left * to each element and current accumulator value.  
* Returns the specified [initial] value if the array is empty.  
* @param [operation] function that takes an element and current accumulator value, and calculates the next accumulator value.
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>\nUShortArray.foldRight(initial: R, operation: (UShort, acc: R) -> R): R {\n    var index = lastIndex\n    var accumulator = initial\n    while (index >= 0) {\n        accumulator = operation(get(index--), accumulator)\n    }\n    return accumulator\n}\n\n* Accumulates value starting with [initial] value and applying [operation] from right to left * to each element with its index in the original array and current accumulator value.  
* Returns the specified [initial] value if the array is empty.  
* @param [operation] function that takes the index of an element, the element itself * and current accumulator value, and calculates the next accumulator value.
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>\nUIntArray.foldRightIndexed(initial: R, operation: (index: Int, UInt, acc: R) -> R): R {\n    var index = lastIndex\n    var accumulator = initial\n    while (index >= 0) {\n        accumulator = operation(index, get(index), accumulator)\n        --index\n    }\n    return accumulator\n}\n\n* Accumulates value starting with [initial] value and applying [operation] from right to left * to each element with its index in the original array and current accumulator value.  
* Returns the specified [initial] value if the array is empty.  
* @param
```

[operation] function that takes the index of an element, the element itself and current accumulator value, and calculates the next accumulator value.

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>\nULongArray.foldRightIndexed(initial: R, operation: (index: Int, ULong, acc: R) -> R): R {\n    var index =\n    lastIndex\n    var accumulator = initial\n    while (index >= 0) {\n        accumulator = operation(index, get(index),\n        accumulator)\n        --index\n    }\n    return accumulator\n}\n\n/**\n * Accumulates value starting with [initial]\n value and applying [operation]
```

from right to left to each element with its index in the original array and current accumulator value.

Returns the specified [initial] value if the array is empty.

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>\nUByteArray.foldRightIndexed(initial: R, operation: (index: Int, UByte, acc: R) -> R): R {\n    var index =\n    lastIndex\n    var accumulator = initial\n    while (index >= 0) {\n        accumulator = operation(index, get(index),\n        accumulator)\n        --index\n    }\n    return accumulator\n}\n\n/**\n * Accumulates value starting with [initial]\n value and applying [operation] from right to left\n * to each element with its index in the original array and current\n accumulator value.\n * Returns the specified [initial] value if the array is empty.
```

@param [operation] function that takes the index of an element, the element itself and current accumulator value, and calculates the next accumulator value.

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>\nUShortArray.foldRightIndexed(initial: R, operation: (index: Int, UShort, acc: R) -> R): R {\n    var index =\n    lastIndex\n    var accumulator = initial\n    while (index >= 0) {\n        accumulator = operation(index, get(index),\n        accumulator)\n        --index\n    }\n    return accumulator\n}\n\n/**\n * Performs the given [action] on each\n element.\n *\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline\nfun UIntArray.forEach(action: (UInt) -> Unit): Unit {\n    for (element in this) action(element)\n}\n\n/**\n * Performs the given [action] on each element.
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun\nULongArray.forEach(action:\n    (ULong) -> Unit): Unit {\n    for (element in this) action(element)\n}\n\n/**\n * Performs the given [action] on each\n element.\n *\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline\nfun UByteArray.forEach(action: (UByte) -> Unit): Unit {\n    for (element in this) action(element)\n}\n\n/**\n * Performs the given [action] on each element.
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun\nUShortArray.forEach(action: (UShort) -> Unit): Unit {\n    for (element in this) action(element)\n}\n\n/**\n * Performs the given [action] on each element, providing sequential index with the element.\n * @param [action]\n function that takes the index of an element and the element itself\n * and performs the action on the element.
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun\nUIntArray.forEachIndexed(action: (index: Int, UInt) -> Unit):\n    Unit {\n    var index = 0\n    for (item in this) action(index++, item)\n}\n\n/**\n * Performs the given [action] on\n each element, providing sequential index with the element.\n * @param [action] function that takes the index of an\n element and the element itself\n * and performs the action on the element.
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun\nULongArray.forEachIndexed(action: (index: Int, ULong) -> Unit): Unit {\n    var index = 0\n    for (item in this)\n    action(index++, item)\n}\n\n/**\n * Performs the given [action] on each element, providing sequential index with\n the element.\n * @param [action] function that takes the index of an element and the element itself\n * and performs\n the action on the element.
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun\nUByteArray.forEachIndexed(action: (index: Int, UByte) -> Unit): Unit {\n    var index = 0\n    for (item in
```

```

    this) action(index++, item)}\n\n/**\n * Performs the given [action] on each element, providing sequential index
with the element.\n * @param [action] function that takes the index of an element and the element itself\n * and
performs the action on the element.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.forEachIndexed(action: (index: Int, UShort) -> Unit): Unit {\n    var index = 0\n    for (item in this)
action(index++, item)\n}\n\n/**\n * Returns the largest element.\n * \n * @throws NoSuchElementException if the
array is empty.\n *\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxOrThrow-
U")\n@ExperimentalUnsignedTypes\n@Suppress("CONFLICTING_OVERLOADS")\npublic fun
UIntArray.max(): UInt {\n    if (isEmpty()) throw NoSuchElementException()\n    var max = this[0]\n    for (i in
1..lastIndex) {\n        val e = this[i]\n        if (max < e) max = e\n    }\n    return max\n}\n\n/**\n * Returns the largest
element.\n
* \n * @throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxOrThrow-
U")\n@ExperimentalUnsignedTypes\n@Suppress("CONFLICTING_OVERLOADS")\npublic fun
ULongArray.max(): ULong {\n    if (isEmpty()) throw NoSuchElementException()\n    var max = this[0]\n    for (i
in 1..lastIndex) {\n        val e = this[i]\n        if (max < e) max = e\n    }\n    return max\n}\n\n/**\n * Returns the
largest element.\n * \n * @throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxOrThrow-
U")\n@ExperimentalUnsignedTypes\n@Suppress("CONFLICTING_OVERLOADS")\npublic fun
UByteArray.max(): UByte {\n    if (isEmpty()) throw NoSuchElementException()\n    var max = this[0]\n    for (i in
1..lastIndex) {\n        val e = this[i]\n        if (max < e) max = e\n    }\n    return max\n}\n\n/**\n * Returns the largest
element.\n * \n * @throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxOrThrow-
U")\n@ExperimentalUnsignedTypes\n@Suppress("CONFLICTING_OVERLOADS")\npublic
fun UShortArray.max(): UShort {\n    if (isEmpty()) throw NoSuchElementException()\n    var max = this[0]\n
for (i in 1..lastIndex) {\n        val e = this[i]\n        if (max < e) max = e\n    }\n    return max\n}\n\n/**\n * Returns
the first element yielding the largest value of the given function.\n * \n * @throws NoSuchElementException if the
array is empty.\n * \n * @sample samples.collections.Collections.Aggregates.maxBy\n
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxByOrThrow-
U")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\n@Suppress("CONFLICTING_OVERLOADS
")\npublic inline fun <R : Comparable<R>> UIntArray.maxBy(selector: (UInt) -> R): UInt {\n    if (isEmpty())
throw NoSuchElementException()\n    var maxElem = this[0]\n    val lastIndex = this.lastIndex\n    if (lastIndex ==
0) return maxElem\n    var maxValue = selector(maxElem)\n
    for (i in 1..lastIndex) {\n        val e = this[i]\n        val v = selector(e)\n        if (maxValue < v) {\n
            maxElem
= e\n            maxValue = v\n        }\n    }\n    return maxElem\n}\n\n/**\n * Returns the first element yielding the
largest value of the given function.\n * \n * @throws NoSuchElementException if the array is empty.\n * \n *
@sample samples.collections.Collections.Aggregates.maxBy\n
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxByOrThrow-
U")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\n@Suppress("CONFLICTING_OVERLOADS
")\npublic inline fun <R : Comparable<R>> ULongArray.maxBy(selector: (ULong) -> R): ULong {\n    if
(isEmpty()) throw NoSuchElementException()\n    var maxElem = this[0]\n    val lastIndex = this.lastIndex\n    if
(lastIndex == 0) return maxElem\n    var maxValue = selector(maxElem)\n    for (i in 1..lastIndex) {\n        val e =
this[i]\n        val v = selector(e)\n        if (maxValue < v) {\n
            maxElem
= e\n            maxValue = v\n        }\n    }\n    return maxElem\n}\n\n/**\n * Returns the first element
yielding the largest value of the given function.\n * \n * @throws NoSuchElementException if the array is empty.\n
* \n * @sample samples.collections.Collections.Aggregates.maxBy\n
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxByOrThrow-
U")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\n@Suppress("CONFLICTING_OVERLOADS
")

```



```

\)\npublic inline fun <R : Comparable<R>> UByteArray.maxBy(selector: (UByte) -> R): UByte {\n  if
(isEmpty()) throw NoSuchElementException()\n  var maxElem = this[0]\n  val lastIndex = this.lastIndex\n  if
(lastIndex == 0) return maxElem\n  var maxValue = selector(maxElem)\n  for (i in 1..lastIndex) {\n    val e =
this[i]\n    val v = selector(e)\n    if (maxValue < v) {\n      maxElem = e\n      maxValue = v\n    }\n  }\n  return maxElem\n}\n\n/**\n * Returns the first element yielding the largest
value of the given function.\n * \n * @throws NoSuchElementException if the array is empty.\n * \n * @sample
samples.collections.Collections.Aggregates.maxBy\n
*/\n\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxByOrThrow")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\n@Suppress("CONFLICTING_OVERLOADS")\n\)\npublic inline fun <R : Comparable<R>> UShortArray.maxBy(selector: (UShort) -> R): UShort {\n  if
(isEmpty()) throw NoSuchElementException()\n  var maxElem = this[0]\n  val lastIndex = this.lastIndex\n  if
(lastIndex == 0) return maxElem\n  var maxValue = selector(maxElem)\n  for (i in 1..lastIndex) {\n    val e =
this[i]\n    val v = selector(e)\n    if (maxValue < v) {\n      maxElem = e\n      maxValue = v\n    }\n  }\n  return maxElem\n}\n\n/**\n * Returns the first element yielding the largest value of the given function or
`null` if there are no elements.\n * \n * @sample samples.collections.Collections.Aggregates.maxByOrNull\n
*/\n\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R :
Comparable<R>> UIntArray.maxByOrNull(selector: (UInt) -> R): UInt? {\n  if (isEmpty()) return null\n  var
maxElem = this[0]\n  val lastIndex = this.lastIndex\n  if (lastIndex == 0) return maxElem\n  var maxValue =
selector(maxElem)\n  for (i in 1..lastIndex) {\n    val e = this[i]\n    val v = selector(e)\n    if (maxValue < v)
{\n      maxElem = e\n      maxValue = v\n    }\n  }\n  return maxElem\n}\n\n/**\n * Returns the first
element yielding the largest value of the given function or `null` if there are no elements.\n * \n * @sample
samples.collections.Collections.Aggregates.maxByOrNull\n
*/\n\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R :
Comparable<R>> ULongArray.maxByOrNull(selector: (ULong) -> R): ULong? {\n  if (isEmpty()) return null\n  var
maxElem = this[0]\n
  val lastIndex = this.lastIndex\n  if (lastIndex == 0) return maxElem\n  var maxValue = selector(maxElem)\n
for (i in 1..lastIndex) {\n    val e = this[i]\n    val v = selector(e)\n    if (maxValue < v) {\n      maxElem =
e\n      maxValue = v\n    }\n  }\n  return maxElem\n}\n\n/**\n * Returns the first element yielding the
largest value of the given function or `null` if there are no elements.\n * \n * @sample
samples.collections.Collections.Aggregates.maxByOrNull\n
*/\n\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R :
Comparable<R>> UByteArray.maxByOrNull(selector: (UByte) -> R): UByte? {\n  if (isEmpty()) return null\n  var
maxElem = this[0]\n  val lastIndex = this.lastIndex\n  if (lastIndex == 0) return maxElem\n  var maxValue =
selector(maxElem)\n  for (i in 1..lastIndex) {\n    val e = this[i]\n    val v = selector(e)\n    if (maxValue < v)
{\n      maxElem
= e\n      maxValue = v\n    }\n  }\n  return maxElem\n}\n\n/**\n * Returns the first element yielding the
largest value of the given function or `null` if there are no elements.\n * \n * @sample
samples.collections.Collections.Aggregates.maxByOrNull\n
*/\n\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R :
Comparable<R>> UShortArray.maxByOrNull(selector: (UShort) -> R): UShort? {\n  if (isEmpty()) return null\n  var
maxElem = this[0]\n  val lastIndex = this.lastIndex\n  if (lastIndex == 0) return maxElem\n  var maxValue =
selector(maxElem)\n  for (i in 1..lastIndex) {\n    val e = this[i]\n    val v = selector(e)\n    if (maxValue < v)
{\n      maxElem = e\n      maxValue = v\n    }\n  }\n  return maxElem\n}\n\n/**\n * Returns the largest
value among all values produced by [selector] function\n * applied to each element in the array.\n * \n * If any of
values produced by [selector]
function is `NaN`, the returned result is `NaN`.\n * \n * @throws NoSuchElementException if the array is empty.\n
*/\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun

```

```

UIntArray.maxOf(selector: (UInt) -> Double): Double {
    if (isEmpty()) throw NoSuchElementException()
    var maxValue = selector(this[0])
    for (i in 1..lastIndex) {
        val v = selector(this[i])
        maxValue = maxOf(maxValue, v)
    }
    return maxValue
}

/**
 * Returns the largest value among all values produced
 * by [selector] function
 * applied to each element in the array.
 * If any of values produced by [selector]
 * function is `NaN`, the returned result is `NaN`.
 * @throws NoSuchElementException if the array is empty.
 */
@SinceKotlin("1.4")
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolution
ByLambdaReturnType
@ExperimentalUnsignedTypes
@kotlin.internal.InlineOnly
public
inline fun ULongArray.maxOf(selector: (ULong) -> Double): Double {
    if (isEmpty()) throw
    NoSuchElementException()
    var maxValue = selector(this[0])
    for (i in 1..lastIndex) {
        val v =
    selector(this[i])
        maxValue = maxOf(maxValue, v)
    }
    return maxValue
}

/**
 * Returns the
 * largest value among all values produced by [selector] function
 * applied to each element in the array.
 * If any of values produced by [selector] function is `NaN`, the returned
 * result is `NaN`.
 * @throws
 * NoSuchElementException if the array is empty.
 */
@SinceKotlin("1.4")
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolution
ByLambdaReturnType
@ExperimentalUnsignedTypes
@kotlin.internal.InlineOnly
public
inline fun
    UByteArray.maxOf(selector: (UByte) -> Double): Double {
    if (isEmpty()) throw NoSuchElementException()
    var maxValue =
    selector(this[0])
    for (i in 1..lastIndex) {
        val v = selector(this[i])
        maxValue = maxOf(maxValue, v)
    }
    return maxValue
}

/**
 * Returns the largest value among all values produced by [selector] function
 * applied to each element in the array.
 * If any of values produced by [selector] function is `NaN`, the returned
 * result is `NaN`.
 * @throws NoSuchElementException if the array is empty.
 */
@SinceKotlin("1.4")
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolution
ByLambdaReturnType
@ExperimentalUnsignedTypes
@kotlin.internal.InlineOnly
public
inline fun
    UShortArray.maxOf(selector: (UShort) -> Double): Double {
    if (isEmpty()) throw
    NoSuchElementException()
    var maxValue = selector(this[0])
    for (i in 1..lastIndex) {
        val v =
    selector(this[i])
        maxValue = maxOf(maxValue, v)
    }
    return maxValue
}

/**
 * Returns the
 * largest value among all values produced by [selector]
 * function
 * applied to each element in the array.
 * If any of values produced by [selector] function is `NaN`,
 * the returned result is `NaN`.
 * @throws NoSuchElementException if the array is empty.
 */
@SinceKotlin("1.4")
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolution
ByLambdaReturnType
@ExperimentalUnsignedTypes
@kotlin.internal.InlineOnly
public
inline fun
    UIntArray.maxOf(selector: (UInt) -> Float): Float {
    if (isEmpty()) throw NoSuchElementException()
    var
    maxValue = selector(this[0])
    for (i in 1..lastIndex) {
        val v = selector(this[i])
        maxValue =
    maxOf(maxValue, v)
    }
    return maxValue
}

/**
 * Returns the largest value among all values produced
 * by [selector] function
 * applied to each element in the array.
 * If any of values produced by [selector]
 * function is `NaN`, the returned result is `NaN`.
 * @throws NoSuchElementException if the array is empty.
 */
@SinceKotlin("1.4")
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolution
ByLambdaReturnType
@ExperimentalUnsignedTypes
@kotlin.internal.InlineOnly
public
inline fun
    ULongArray.maxOf(selector: (ULong) -> Float): Float {
    if (isEmpty()) throw
    NoSuchElementException()
    var maxValue = selector(this[0])
    for (i in 1..lastIndex) {
        val v =
    selector(this[i])
        maxValue = maxOf(maxValue, v)
    }
    return maxValue
}

/**
 * Returns the
 * largest value among all values produced by [selector] function
 * applied to each element in the array.
 * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.
 * @throws
 * NoSuchElementException if the array is empty.
 */
@SinceKotlin("1.4")
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolution
ByLambdaReturnType
@ExperimentalUnsignedTypes
@kotlin.internal.InlineOnly
public
inline fun
    UByteArray.maxOf(selector: (UByte)

```

```

-> Float): Float {
    if (isEmpty()) throw NoSuchElementException()
    var maxValue = selector(this[0])
    for (i in 1..lastIndex) {
        val v = selector(this[i])
        maxValue = maxOf(maxValue, v)
    }
    return
maxValue
}

Returns the largest value among all values produced by [selector] function
* applied to each element in the array.
* If any of values produced by [selector] function is `NaN`, the returned result is
`NaN`.
* @throws NoSuchElementException if the array is empty.

@SinceKotlin("1.4")
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolution
ByLambdaReturnType
@ExperimentalUnsignedTypes
@kotlin.internal.InlineOnly
public inline fun
UShortArray.maxOf(selector: (UShort) -> Float): Float {
    if (isEmpty()) throw NoSuchElementException()
    var maxValue = selector(this[0])
    for (i in 1..lastIndex) {
        val v = selector(this[i])
        maxValue =
maxOf(maxValue, v)
    }

    return maxValue
}

Returns the largest value among all values produced by [selector] function
* applied to each element in the array.
* @throws NoSuchElementException if the array is empty.

@SinceKotlin("1.4")
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolution
ByLambdaReturnType
@ExperimentalUnsignedTypes
@kotlin.internal.InlineOnly
public inline fun <R :
Comparable<R>> UIntArray.maxOf(selector: (UInt) -> R): R {
    if (isEmpty()) throw
NoSuchElementException()
    var maxValue = selector(this[0])
    for (i in 1..lastIndex) {
        val v =
selector(this[i])
        if (maxValue < v) {
            maxValue = v
        }
    }
    return maxValue
}

Returns the largest value among all values produced by [selector] function
* applied to each element in the
array.
* @throws NoSuchElementException if the array is empty.

@SinceKotlin("1.4")
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolution
ByLambdaReturnType
@ExperimentalUnsignedTypes
@kotlin.internal.InlineOnly
public
inline fun <R : Comparable<R>> ULongArray.maxOf(selector: (ULong) -> R): R {
    if (isEmpty()) throw
NoSuchElementException()
    var maxValue = selector(this[0])
    for (i in 1..lastIndex) {
        val v =
selector(this[i])
        if (maxValue < v) {
            maxValue = v
        }
    }
    return maxValue
}

Returns the largest value among all values produced by [selector] function
* applied to each element in the
array.
* @throws NoSuchElementException if the array is empty.

@SinceKotlin("1.4")
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolution
ByLambdaReturnType
@ExperimentalUnsignedTypes
@kotlin.internal.InlineOnly
public inline fun <R :
Comparable<R>> UByteArray.maxOf(selector: (UByte) -> R): R {
    if (isEmpty()) throw
NoSuchElementException()
    var maxValue = selector(this[0])

    for (i in 1..lastIndex) {
        val v = selector(this[i])
        if (maxValue < v) {
            maxValue = v
        }
    }
    return maxValue
}

Returns the largest value among all values produced by [selector] function
*
applied to each element in the array.
* @throws NoSuchElementException if the array is empty.

@SinceKotlin("1.4")
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolution
ByLambdaReturnType
@ExperimentalUnsignedTypes
@kotlin.internal.InlineOnly
public inline fun <R :
Comparable<R>> UShortArray.maxOf(selector: (UShort) -> R): R {
    if (isEmpty()) throw
NoSuchElementException()
    var maxValue = selector(this[0])
    for (i in 1..lastIndex) {
        val v =
selector(this[i])
        if (maxValue < v) {
            maxValue = v
        }
    }
    return maxValue
}

Returns the largest value among all values produced by [selector] function
* applied to each element in the
array or `null` if there are no elements.
* If any of values produced by [selector] function is `NaN`, the
returned result is `NaN`.

@SinceKotlin("1.4")
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolution
ByLambdaReturnType
@ExperimentalUnsignedTypes
@kotlin.internal.InlineOnly
public inline fun
UIntArray.maxOfOrNull(selector: (UInt) -> Double): Double? {
    if (isEmpty()) return null
    var maxValue =
selector(this[0])
    for (i in 1..lastIndex) {
        val v = selector(this[i])
        maxValue = maxOf(maxValue, v)
    }
    return maxValue
}

Returns the largest value among all values produced by [selector] function
*
applied to each element in the array or `null` if there are no elements.
* If any of values produced by [selector]
function is `NaN`, the returned result is `NaN`.

```

```

*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun ULongArray.maxOrNull(selector: (ULong) -> Double): Double? {\n if (isEmpty()) return null\n
var maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n maxValue =
maxOf(maxValue, v)\n }\n return maxValue\n}\n\n/**\n * Returns the largest value among all values produced
by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n * \n * If any of
values produced by [selector] function is `NaN`, the returned result is `NaN`.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.maxOrNull(selector: (UByte) -> Double): Double? {\n if (isEmpty()) return null\n var maxValue
= selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n
maxValue = maxOf(maxValue, v)\n }\n return maxValue\n}\n\n/**\n * Returns the largest value among all
values produced by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n *
*\n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.maxOrNull(selector: (UShort) -> Double): Double? {\n if (isEmpty()) return null\n var
maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n maxValue =
maxOf(maxValue, v)\n }\n return maxValue\n}\n\n/**\n * Returns the largest value among all values produced
by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n * \n * If any of
values produced by [selector] function is `NaN`, the returned result is `NaN`.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.maxOrNull(selector: (UInt) -> Float): Float? {\n if (isEmpty()) return null\n var maxValue =
selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n maxValue = maxOf(maxValue, v)\n
}\n return maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n *
applied to each element in the array or `null` if there are no elements.\n * \n * If any of values produced by [selector]
function is `NaN`, the returned result is `NaN`.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun ULongArray.maxOrNull(selector: (ULong) -> Float): Float? {\n if (isEmpty()) return null\n var
maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n maxValue =
maxOf(maxValue, v)\n }\n return maxValue\n}\n\n/**\n * Returns the largest value among all values produced
by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n * \n * If any of
values produced by [selector] function is `NaN`, the returned result is `NaN`.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.maxOrNull(selector: (UByte) -> Float): Float? {\n if (isEmpty()) return null\n var maxValue =
selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n maxValue = maxOf(maxValue, v)\n
}\n return
maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to
each element in the array or `null` if there are no elements.\n * \n * If any of values produced by [selector] function
is `NaN`, the returned result is `NaN`.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.maxOrNull(selector: (UShort) -> Float): Float? {\n if (isEmpty()) return null\n var maxValue =
selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n maxValue = maxOf(maxValue, v)\n
}\n return maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n *
applied to each element in the array or `null` if there are no elements.\n * \n * If any of values produced by [selector]
function is `NaN`, the returned result is `NaN`.\n

```

```

applied to each element in the array or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun <R : Comparable<R>> UIntArray.maxOrNull(selector: (UInt) -> R): R? {\n if (isEmpty()) return
null\n var maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n if
(maxValue < v) {\n maxValue = v\n }\n }\n return maxValue\n}\n/**\n * Returns the largest value
among all values produced by [selector] function\n * applied to each element in the array or `null` if there are no
elements.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R :
Comparable<R>> ULongArray.maxOrNull(selector: (ULong) -> R): R? {\n if (isEmpty()) return null\n var
maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n
if (maxValue < v) {\n maxValue = v\n }\n }\n return maxValue\n}\n/**\n * Returns the largest
value among all values produced by [selector] function\n * applied to each element in the array or `null` if there are
no elements.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R :
Comparable<R>> UByteArray.maxOrNull(selector: (UByte) -> R): R? {\n if (isEmpty()) return null\n var
maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n if (maxValue < v) {\n
maxValue = v\n }\n }\n return maxValue\n}\n/**\n * Returns the largest value among all values
produced by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun <R : Comparable<R>> UShortArray.maxOrNull(selector: (UShort) -> R): R? {\n if (isEmpty())
return null\n var maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n if
(maxValue < v) {\n maxValue = v\n }\n }\n return maxValue\n}\n/**\n * Returns the largest value
according to the provided [comparator]\n * among all values produced by [selector] function applied to each
element in the array.\n * \n * @throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>
UIntArray.maxOfWith(comparator: Comparator<in R>, selector: (UInt) -> R): R {\n if (isEmpty()) throw
NoSuchElementException()\n
var maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n if
(comparator.compare(maxValue, v) < 0) {\n maxValue = v\n }\n }\n return maxValue\n}\n/**\n *
Returns the largest value according to the provided [comparator]\n * among all values produced by [selector]
function applied to each element in the array.\n * \n * @throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>
ULongArray.maxOfWith(comparator: Comparator<in R>, selector: (ULong) -> R): R {\n if (isEmpty()) throw
NoSuchElementException()\n var maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v =
selector(this[i])\n if (comparator.compare(maxValue, v) < 0) {\n maxValue = v\n
}\n }\n return maxValue\n}\n/**\n * Returns the largest value according to the provided [comparator]\n *
among all values produced by [selector] function applied to each element in the array.\n * \n * @throws
NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>
UByteArray.maxOfWith(comparator: Comparator<in R>, selector: (UByte) -> R): R {\n if (isEmpty()) throw
NoSuchElementException()\n var maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v =

```

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selector(this[i])\n    if (comparator.compare(maxValue, v) < 0) {\n        maxValue = v\n    }\n }\n return
maxValue\n}\n\n/**\n * Returns the largest value according to the provided [comparator]\n * among all values
produced by [selector] function applied to each element in the array.\n * \n
* @throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>
UShortArray.maxOfWith(comparator: Comparator<in R>, selector: (UShort) -> R): R {\n    if (isEmpty()) throw
NoSuchElementException()\n    var maxValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v =
selector(this[i])\n        if (comparator.compare(maxValue, v) < 0) {\n            maxValue = v\n        }\n    }\n return
maxValue\n}\n\n/**\n * Returns the largest value according to the provided [comparator]\n * among all values
produced by [selector] function applied to each element in the array or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun <R> UIntArray.maxOfWithOrNull(comparator: Comparator<in R>, selector: (UInt) -> R): R? {\n    if
(isEmpty()) return null\n    var maxValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v =
selector(this[i])\n        if (comparator.compare(maxValue, v) < 0) {\n            maxValue = v\n        }\n    }\n return
maxValue\n}\n\n/**\n * Returns the largest value according to the provided [comparator]\n * among all values
produced by [selector] function applied to each element in the array or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>
ULongArray.maxOfWithOrNull(comparator: Comparator<in R>, selector: (ULong) -> R): R? {\n    if (isEmpty())
return null\n    var maxValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n
        if (comparator.compare(maxValue, v) < 0) {\n            maxValue = v\n        }\n    }\n return
maxValue\n}\n\n/**\n * Returns the largest value according to the provided [comparator]\n * among all values
produced by [selector] function applied to each element in the array or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>
UByteArray.maxOfWithOrNull(comparator: Comparator<in R>, selector: (UByte) -> R): R? {\n    if (isEmpty())
return null\n    var maxValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n
        if (comparator.compare(maxValue, v) < 0) {\n            maxValue = v\n        }\n    }\n return
maxValue\n}\n\n/**\n * Returns the largest value according to the provided [comparator]\n * among all values
produced by [selector] function applied to each element in the array or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>
UShortArray.maxOfWithOrNull(comparator: Comparator<in R>, selector: (UShort) -> R): R? {\n    if (isEmpty())
return null\n    var maxValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v = selector(this[i])\n
        if (comparator.compare(maxValue, v) < 0) {\n            maxValue = v\n        }\n    }\n return
maxValue\n}\n\n/**\n * Returns the largest element or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun UIntArray.maxOrNull(): UInt? {\n    if
(isEmpty()) return null\n    var max = this[0]\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        if (max < e) max
= e\n    }\n    return max\n}\n\n/**\n * Returns
the largest element or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun ULongArray.maxOrNull(): ULong? {\n    if
(isEmpty()) return null\n    var max = this[0]\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        if (max < e) max
= e\n    }\n    return max\n}\n\n/**\n * Returns the largest element or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun UByteArray.maxOrNull(): UByte? {\n    if
(isEmpty()) return null\n    var max = this[0]\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        if (max < e) max
= e\n    }\n    return max\n}\n\n/**\n * Returns the largest element or `null` if there are no elements.\n

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*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun UShortArray.maxOrNull(): UShort? {\n if
(isEmpty()) return null\n var max = this[0]\n for (i in 1..lastIndex) {\n val e = this[i]\n if (max < e) max
= e\n }\n return
max\n}\n\n/**\n * Returns the first element having the largest value according to the provided [comparator].\n * \n
*\n * @throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxWithOrThrow-
U")\n@ExperimentalUnsignedTypes\n@Suppress("CONFLICTING_OVERLOADS")\npublic fun
UIntArray.maxWith(comparator: Comparator<in UInt>): UInt {\n if (isEmpty()) throw
NoSuchElementException()\n var max = this[0]\n for (i in 1..lastIndex) {\n val e = this[i]\n if
(comparator.compare(max, e) < 0) max = e\n }\n return max\n}\n\n/**\n * Returns the first element having the
largest value according to the provided [comparator].\n * \n * @throws NoSuchElementException if the array is
empty.\n
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxWithOrThrow-
U")\n@ExperimentalUnsignedTypes\n@Suppress("CONFLICTING_OVERLOADS")\npublic fun
ULongArray.maxWith(comparator: Comparator<in ULong>): ULong {\n if (isEmpty()) throw
NoSuchElementException()\n
var max = this[0]\n for (i in 1..lastIndex) {\n val e = this[i]\n if (comparator.compare(max, e) < 0) max
= e\n }\n return max\n}\n\n/**\n * Returns the first element having the largest value according to the provided
[comparator].\n * \n * @throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxWithOrThrow-
U")\n@ExperimentalUnsignedTypes\n@Suppress("CONFLICTING_OVERLOADS")\npublic fun
UByteArray.maxWith(comparator: Comparator<in UByte>): UByte {\n if (isEmpty()) throw
NoSuchElementException()\n var max = this[0]\n for (i in 1..lastIndex) {\n val e = this[i]\n if
(comparator.compare(max, e) < 0) max = e\n }\n return max\n}\n\n/**\n * Returns the first element having the
largest value according to the provided [comparator].\n * \n * @throws NoSuchElementException if the array is
empty.\n
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxWithOrThrow-
U")\n@ExperimentalUnsignedTypes\n@Suppress("CONFLICTING_OVERLOADS")\npublic
fun UShortArray.maxWith(comparator: Comparator<in UShort>): UShort {\n if (isEmpty()) throw
NoSuchElementException()\n var max = this[0]\n for (i in 1..lastIndex) {\n val e = this[i]\n if
(comparator.compare(max, e) < 0) max = e\n }\n return max\n}\n\n/**\n * Returns the first element having the
largest value according to the provided [comparator] or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun UIntArray.maxWithOrNull(comparator:
Comparator<in UInt>): UInt? {\n if (isEmpty()) return null\n var max = this[0]\n for (i in 1..lastIndex) {\n
val e = this[i]\n if (comparator.compare(max, e) < 0) max = e\n }\n return max\n}\n\n/**\n * Returns the
first element having the largest value according to the provided [comparator] or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic
fun ULongArray.maxWithOrNull(comparator: Comparator<in ULong>): ULong? {\n if (isEmpty()) return null\n
var max = this[0]\n for (i in 1..lastIndex) {\n val e = this[i]\n if (comparator.compare(max, e) < 0) max =
e\n }\n return max\n}\n\n/**\n * Returns the first element having the largest value according to the provided
[comparator] or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun UByteArray.maxWithOrNull(comparator:
Comparator<in UByte>): UByte? {\n if (isEmpty()) return null\n var max = this[0]\n for (i in 1..lastIndex) {\n
val e = this[i]\n if (comparator.compare(max, e) < 0) max = e\n }\n return max\n}\n\n/**\n * Returns the
first element having the largest value according to the provided [comparator] or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun UShortArray.maxWithOrNull(comparator:
Comparator<in UShort>):
UShort? {\n if (isEmpty()) return null\n var max = this[0]\n for (i in 1..lastIndex) {\n val e = this[i]\n
if (comparator.compare(max, e) < 0) max = e\n }\n return max\n}\n\n/**\n * Returns the smallest element.\n * \n
*\n * @throws NoSuchElementException if the array is empty.\n

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*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minOrThrow-
U")\n@ExperimentalUnsignedTypes\n@Suppress("CONFLICTING_OVERLOADS")\npublic fun
UIntArray.min(): UInt {\n    if (isEmpty()) throw NoSuchElementException()\n    var min = this[0]\n    for (i in
1..lastIndex) {\n        val e = this[i]\n        if (min > e) min = e\n    }\n    return min\n}\n\n/**\n * Returns the smallest
element.\n * \n * @throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minOrThrow-
U")\n@ExperimentalUnsignedTypes\n@Suppress("CONFLICTING_OVERLOADS")\npublic fun
ULongArray.min(): ULong {\n    if (isEmpty()) throw NoSuchElementException()\n    var
min = this[0]\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        if (min > e) min = e\n    }\n    return
min\n}\n\n/**\n * Returns the smallest element.\n * \n * @throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minOrThrow-
U")\n@ExperimentalUnsignedTypes\n@Suppress("CONFLICTING_OVERLOADS")\npublic fun
UByteArray.min(): UByte {\n    if (isEmpty()) throw NoSuchElementException()\n    var min = this[0]\n    for (i in
1..lastIndex) {\n        val e = this[i]\n        if (min > e) min = e\n    }\n    return min\n}\n\n/**\n * Returns the smallest
element.\n * \n * @throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minOrThrow-
U")\n@ExperimentalUnsignedTypes\n@Suppress("CONFLICTING_OVERLOADS")\npublic fun
UShortArray.min(): UShort {\n    if (isEmpty()) throw NoSuchElementException()\n    var min = this[0]\n    for (i in
1..lastIndex) {\n        val e = this[i]\n
        if (min > e) min = e\n    }\n    return min\n}\n\n/**\n * Returns the first element yielding the smallest value of
the given function.\n * \n * @throws NoSuchElementException if the array is empty.\n * \n * @sample
samples.collections.Collections.Aggregates.minBy\n
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minByOrThrow-
U")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\n@Suppress("CONFLICTING_OVERLOADS
")\npublic inline fun <R : Comparable<R>> UIntArray.minBy(selector: (UInt) -> R): UInt {\n    if (isEmpty())
throw NoSuchElementException()\n    var minElem = this[0]\n    val lastIndex = this.lastIndex\n    if (lastIndex ==
0) return minElem\n    var minValue = selector(minElem)\n    for (i in 1..lastIndex) {\n        val e = this[i]\n        val
v = selector(e)\n        if (minValue > v) {\n            minElem = e\n            minValue = v\n        }\n    }\n    return
minElem\n}\n\n/**\n * Returns the first element yielding the smallest value of the given function.\n
* \n * @throws NoSuchElementException if the array is empty.\n * \n * @sample
samples.collections.Collections.Aggregates.minBy\n
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minByOrThrow-
U")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\n@Suppress("CONFLICTING_OVERLOADS
")\npublic inline fun <R : Comparable<R>> ULongArray.minBy(selector: (ULong) -> R): ULong {\n    if
(isEmpty()) throw NoSuchElementException()\n    var minElem = this[0]\n    val lastIndex = this.lastIndex\n    if
(lastIndex == 0) return minElem\n    var minValue = selector(minElem)\n    for (i in 1..lastIndex) {\n        val e =
this[i]\n        val v = selector(e)\n        if (minValue > v) {\n            minElem = e\n            minValue = v\n        }\n
    }\n    return minElem\n}\n\n/**\n * Returns the first element yielding the smallest value of the given function.\n
* \n * @throws NoSuchElementException if the array is empty.\n * \n * @sample
samples.collections.Collections.Aggregates.minBy\n
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minByOrThrow-
U")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\n@Suppress("CONFLICTING_OVERLOADS
")\npublic inline fun <R : Comparable<R>> UByteArray.minBy(selector: (UByte) -> R): UByte {\n    if
(isEmpty()) throw NoSuchElementException()\n    var minElem = this[0]\n    val lastIndex = this.lastIndex\n    if
(lastIndex == 0) return minElem\n    var minValue = selector(minElem)\n    for (i in 1..lastIndex) {\n        val e =
this[i]\n        val v = selector(e)\n        if (minValue > v) {\n            minElem = e\n            minValue = v\n        }\n
    }\n    return minElem\n}\n\n/**\n * Returns the first element yielding the smallest value of the given function.\n
* \n * @throws NoSuchElementException if the array is empty.\n * \n * @sample

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samples.collections.Collections.Aggregates.minBy\n
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minByOrThrow-
U")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\n@Suppress("CONFLICTING_OVERLOADS
")\npublic
inline fun <R : Comparable<R>> UShortArray.minBy(selector: (UShort) -> R): UShort {\n if (isEmpty()) throw
NoSuchElementException()\n var minElem = this[0]\n val lastIndex = this.lastIndex\n if (lastIndex == 0)
return minElem\n var minValue = selector(minElem)\n for (i in 1..lastIndex) {\n val e = this[i]\n val v =
selector(e)\n if (minValue > v) {\n minElem = e\n minValue = v\n }\n }\n return
minElem\n}\n\n/**\n * Returns the first element yielding the smallest value of the given function or `null` if there
are no elements.\n * \n * @sample samples.collections.Collections.Aggregates.minByOrNull\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R :
Comparable<R>> UIntArray.minByOrNull(selector: (UInt) -> R): UInt? {\n if (isEmpty()) return null\n var
minElem = this[0]\n val lastIndex = this.lastIndex\n if
(lastIndex == 0) return minElem\n var minValue = selector(minElem)\n for (i in 1..lastIndex) {\n val e =
this[i]\n val v = selector(e)\n if (minValue > v) {\n minElem = e\n minValue = v\n }\n }\n
return minElem\n}\n\n/**\n * Returns the first element yielding the smallest value of the given function or
`null` if there are no elements.\n * \n * @sample samples.collections.Collections.Aggregates.minByOrNull\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R :
Comparable<R>> ULongArray.minByOrNull(selector: (ULong) -> R): ULong? {\n if (isEmpty()) return null\n
var minElem = this[0]\n val lastIndex = this.lastIndex\n if (lastIndex == 0) return minElem\n var minValue =
selector(minElem)\n for (i in 1..lastIndex) {\n val e = this[i]\n val v = selector(e)\n if (minValue > v)
{\n minElem = e\n minValue = v\n }\n }\n
return minElem\n}\n\n/**\n * Returns the first element yielding the smallest value of the given function or
`null` if there are no elements.\n * \n * @sample samples.collections.Collections.Aggregates.minByOrNull\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R :
Comparable<R>> UByteArray.minByOrNull(selector: (UByte) -> R): UByte? {\n if (isEmpty()) return null\n
var minElem = this[0]\n val lastIndex = this.lastIndex\n if (lastIndex == 0) return minElem\n var minValue =
selector(minElem)\n for (i in 1..lastIndex) {\n val e = this[i]\n val v = selector(e)\n if (minValue > v)
{\n minElem = e\n minValue = v\n }\n }\n
return minElem\n}\n\n/**\n * Returns the first
element yielding the smallest value of the given function or `null` if there are no elements.\n * \n * @sample
samples.collections.Collections.Aggregates.minByOrNull\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun <R : Comparable<R>> UShortArray.minByOrNull(selector: (UShort) -> R): UShort? {\n if (isEmpty())
return null\n var minElem = this[0]\n val lastIndex = this.lastIndex\n if (lastIndex == 0) return minElem\n
var minValue = selector(minElem)\n for (i in 1..lastIndex) {\n val e = this[i]\n val v = selector(e)\n if
(minValue > v) {\n minElem = e\n minValue = v\n }\n }\n
return minElem\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n *
applied to each element in the array.\n * \n * If any of values produced by [selector] function is `NaN`, the
returned result is `NaN`.\n * \n * @throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun UIntArray.minOf(selector: (UInt) -> Double): Double {\n if (isEmpty()) throw
NoSuchElementException()\n var minValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v =
selector(this[i])\n minValue = minOf(minValue, v)\n }\n
return minValue\n}\n\n/**\n * Returns the smallest
value among all values produced by [selector] function\n * applied to each element in the array.\n * \n * If any
of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n * \n * @throws
NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution

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ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.minOf(selector: (ULong) -> Double): Double {\n  if (isEmpty()) throw NoSuchElementException()\n  var minValue = selector(this[0])\n  for (i in 1..lastIndex) {\n    val
v = selector(this[i])\n    minValue = minOf(minValue, v)\n  }\n  return minValue\n}\n\n/**\n * Returns the
smallest value among all values produced by [selector] function\n * applied to each element in the array.\n * \n * If
any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n * \n * @throws
NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.minOf(selector: (UByte) -> Double): Double {\n  if (isEmpty()) throw NoSuchElementException()\n
var minValue = selector(this[0])\n  for (i in 1..lastIndex) {\n    val v = selector(this[i])\n    minValue =
minOf(minValue, v)\n  }\n  return minValue\n}\n\n/**\n * Returns the smallest value among all values produced
by [selector] function\n * applied to each element in the array.\n * \n * If any of values produced by [selector]
function is `NaN`, the returned result is `NaN`.\n * \n * @throws
NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.minOf(selector: (UShort) -> Double): Double {\n  if (isEmpty()) throw NoSuchElementException()\n
var minValue = selector(this[0])\n  for (i in 1..lastIndex) {\n    val v = selector(this[i])\n    minValue =
minOf(minValue, v)\n  }\n  return minValue\n}\n\n/**\n * Returns the smallest value among all values produced
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ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun UIntArray.minOf(selector: (UInt) -> Float): Float {\n  if (isEmpty()) throw
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ULongArray.minOf(selector: (ULong) -> Float): Float {\n  if (isEmpty()) throw NoSuchElementException()\n
var minValue = selector(this[0])\n  for (i in 1..lastIndex) {\n    val v = selector(this[i])\n    minValue =
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UShortArray.minOf(selector: (UShort) -> Float): Float {\n  if (isEmpty()) throw NoSuchElementException()\n

```

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var minValue = selector(this[0])\n for (i in 1..lastIndex) {\n     val v = selector(this[i])\n     minValue =
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inline fun <R : Comparable<R>> UIntArray.minOf(selector: (UInt) -> R): R {\n if (isEmpty()) throw
NoSuchElementException()\n var minValue = selector(this[0])\n for (i in 1..lastIndex) {\n     val v =
selector(this[i])\n     if (minValue > v) {\n         minValue = v\n     }\n } return minValue\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n * applied to each element in the
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ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R :
Comparable<R>> ULongArray.minOf(selector: (ULong) -> R): R {\n if (isEmpty()) throw
NoSuchElementException()\n var minValue = selector(this[0])\n for (i in 1..lastIndex) {\n     val v =
selector(this[i])\n     if (minValue > v) {\n         minValue = v\n     }\n } return minValue\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n * applied to each element in the
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Comparable<R>> UShortArray.minOf(selector: (UShort) -> R): R {\n if (isEmpty()) throw
NoSuchElementException()\n var minValue = selector(this[0])\n for (i in 1..lastIndex) {\n     val v =
selector(this[i])\n     if (minValue > v) {\n         minValue = v\n     }\n } return minValue\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n * applied to each element in the array
or `null` if there are no elements.\n * If any of values produced by [selector] function is `NaN`, the returned
result is `NaN`.\n
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ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun UIntArray.minOfOrNull(selector: (UInt) -> Double): Double? {\n if (isEmpty()) return null\n var
minValue = selector(this[0])\n for (i in 1..lastIndex) {\n     val v = selector(this[i])\n     minValue =
minOf(minValue, v)\n } return minValue\n}\n\n/**\n * Returns the smallest value among all values produced
by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n * If any of
values produced by [selector] function is `NaN`, the returned result is `NaN`.\n
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ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.minOfOrNull(selector: (ULong) -> Double): Double? {\n if (isEmpty()) return null\n var minValue
= selector(this[0])\n for (i in 1..lastIndex) {\n     val v = selector(this[i])\n     minValue =
minOf(minValue, v)\n } return minValue\n}\n\n/**\n * Returns the smallest value among all
values produced by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n *
If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution

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ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.minOfOrNull(selector: (UByte) -> Double): Double? {\n  if (isEmpty()) return null\n  var minValue
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UShortArray.minOfOrNull(selector: (UShort) -> Double): Double? {\n  if (isEmpty()) return null\n  var minValue
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minValue = selector(this[0])\n  for (i in 1..lastIndex) {\n    val v = selector(this[i])\n    minValue =
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Comparable<R>> UIntArray.minOfOrNull(selector: (UInt) -> R): R? {\n  if (isEmpty()) return null\n  var
minValue = selector(this[0])\n  for
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```

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```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>\nUIntArray.minOfWith(comparator: Comparator<in R>, selector: (UInt) -> R): R {\n    if (isEmpty()) throw\n    NoSuchElementException()\n    var minValue = selector(this[0])\n    for (i in 1..lastIndex) {\n        val v =\n        selector(this[i])\n        if (comparator.compare(minValue, v) > 0) {\n            minValue = v\n        }\n    }\n    return\n    minValue\n}\n\n/**\n * Returns the\n * smallest value according to the provided [comparator]\n * among all values produced by [selector] function applied\n * to each element in the array.\n * \n * @throws NoSuchElementException if the array is empty.
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```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
```

```

<R> UShortArray.minOfWith(comparator: Comparator<in R>, selector: (UShort) -> R): R {
    if (isEmpty())
        throw NoSuchElementException()
    var minValue = selector(this[0])
    for (i in 1..lastIndex) {
        val v = selector(this[i])
        if (comparator.compare(minValue, v) > 0) {
            minValue = v
        }
    }
    return minValue
}

Returns the smallest value according to the provided [comparator] among all values produced by [selector] function applied to each element in the array or `null` if there are no elements.

@SinceKotlin("1.4")
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolutionByLambdaReturnType
@ExperimentalUnsignedTypes
@kotlin.internal.InlineOnly
public inline fun <R>
UIntArray.minOfWithOrNull(comparator: Comparator<in R>, selector: (UInt) -> R): R? {
    if (isEmpty()) return null
    var minValue = selector(this[0])
    for (i in 1..lastIndex) {
        val v = selector(this[i])
        if (comparator.compare(minValue, v) > 0) {
            minValue = v
        }
    }
    return minValue
}

Returns the smallest value according to the provided [comparator] among all values produced by [selector] function applied to each element in the array or `null` if there are no elements.

@SinceKotlin("1.4")
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolutionByLambdaReturnType
@ExperimentalUnsignedTypes
@kotlin.internal.InlineOnly
public inline fun <R>
ULongArray.minOfWithOrNull(comparator: Comparator<in R>, selector: (ULong) -> R): R? {
    if (isEmpty()) return null
    var minValue = selector(this[0])
    for (i in 1..lastIndex) {
        val v = selector(this[i])
        if (comparator.compare(minValue, v) > 0) {
            minValue = v
        }
    }
    return minValue
}

Returns the smallest value according to the provided [comparator] among all values produced by [selector] function applied to each element in the array or `null` if there are no elements.

@SinceKotlin("1.4")
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@kotlin.internal.InlineOnly
public inline fun <R>
UByteArray.minOfWithOrNull(comparator: Comparator<in R>, selector: (UByte) -> R): R? {
    if (isEmpty()) return null
    var minValue = selector(this[0])
    for (i in 1..lastIndex) {
        val v = selector(this[i])
        if (comparator.compare(minValue, v) > 0) {
            minValue = v
        }
    }
    return minValue
}

Returns the smallest value according to the provided [comparator] among all values produced by [selector] function applied to each element in the array or `null` if there are no elements.

@SinceKotlin("1.4")
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolutionByLambdaReturnType
@ExperimentalUnsignedTypes
@kotlin.internal.InlineOnly
public inline fun <R>
UShortArray.minOfWithOrNull(comparator: Comparator<in R>, selector: (UShort) -> R): R? {
    if (isEmpty()) return null
    var minValue = selector(this[0])
    for (i in 1..lastIndex) {
        val v = selector(this[i])
        if (comparator.compare(minValue, v) > 0) {
            minValue = v
        }
    }
    return minValue
}

Returns the smallest element or `null` if there are no elements.

@SinceKotlin("1.4")
@ExperimentalUnsignedTypes
public fun UIntArray.minOrNull(): UInt? {
    if (isEmpty()) return null
    var min = this[0]
    for (i in 1..lastIndex) {
        val e = this[i]
        if (min > e) min = e
    }
    return min
}

Returns the smallest element or `null` if there are no elements.

@SinceKotlin("1.4")
@ExperimentalUnsignedTypes
public fun ULongArray.minOrNull(): ULong? {
    if (isEmpty()) return null
    var min = this[0]
    for (i in 1..lastIndex) {
        val e = this[i]
        if (min > e) min = e
    }
    return min
}

Returns the smallest element or `null` if there are no elements.

@SinceKotlin("1.4")
@ExperimentalUnsignedTypes
public fun UByteArray.minOrNull(): UByte? {
    if (isEmpty()) return null
    var min = this[0]
    for (i in 1..lastIndex) {
        val e = this[i]
        if (min > e) min = e
    }
    return min
}

Returns the smallest element or `null` if there are no elements.

@SinceKotlin("1.4")
@ExperimentalUnsignedTypes
public fun UShortArray.minOrNull(): UShort? {
    if (isEmpty()) return null
    var min = this[0]
    for (i in 1..lastIndex) {
        val e = this[i]
        if (min > e) min = e
    }
    return min
}

Returns the first element having the smallest value according to the provided [comparator].

@throws NoSuchElementException if the array is empty.

@SinceKotlin("1.7")
@kotlin.jvm.JvmName("minWithOrThrow")
@ExperimentalUnsignedTypes
@Suppress("CONFLICTING_OVERLOADS")
public

```

```

fun UIntArray.minWith(comparator: Comparator<in UInt>): UInt {
    if (isEmpty()) throw NoSuchElementException()
    var min = this[0]
    for (i in 1..lastIndex) {
        val e = this[i]
        if (comparator.compare(min, e) > 0) min = e
    }
    return min
}
/**
 * Returns the first element having the smallest value according to the provided [comparator].
 * @throws NoSuchElementException if the array is empty.
 */
@SinceKotlin("1.7")
@kotlin.jvm.JvmName("minWithOrThrow-
U")
@ExperimentalUnsignedTypes
@Suppress("CONFLICTING_OVERLOADS")
public fun
ULongArray.minWith(comparator: Comparator<in ULong>): ULong {
    if (isEmpty()) throw NoSuchElementException()
    var min = this[0]
    for (i in 1..lastIndex) {
        val e = this[i]
        if (comparator.compare(min, e) > 0) min = e
    }
    return min
}
/**
 * Returns the first element having the smallest value according
to the provided [comparator].
 * @throws NoSuchElementException if the array is empty.
 */
@SinceKotlin("1.7")
@kotlin.jvm.JvmName("minWithOrThrow-
U")
@ExperimentalUnsignedTypes
@Suppress("CONFLICTING_OVERLOADS")
public fun
UByteArray.minWith(comparator: Comparator<in UByte>): UByte {
    if (isEmpty()) throw NoSuchElementException()
    var min = this[0]
    for (i in 1..lastIndex) {
        val e = this[i]
        if (comparator.compare(min, e) > 0) min = e
    }
    return min
}
/**
 * Returns the first element having the smallest value according to the provided [comparator].
 * @throws NoSuchElementException if the array is empty.
 */
@SinceKotlin("1.7")
@kotlin.jvm.JvmName("minWithOrThrow-
U")
@ExperimentalUnsignedTypes
@Suppress("CONFLICTING_OVERLOADS")
public fun
UShortArray.minWith(comparator: Comparator<in UShort>): UShort {
    if (isEmpty()) throw NoSuchElementException()
    var min = this[0]
    for (i in 1..lastIndex) {
        val e = this[i]
        if (comparator.compare(min, e) > 0) min = e
    }
    return min
}
/**
 * Returns the first element having the smallest value according to the provided [comparator] or `null` if there are no elements.
 */
@SinceKotlin("1.4")
@ExperimentalUnsignedTypes
public fun UIntArray.minWithOrNull(comparator:
Comparator<in UInt>): UInt? {
    if (isEmpty()) return null
    var min = this[0]
    for (i in 1..lastIndex) {
        val e = this[i]
        if (comparator.compare(min, e) > 0) min = e
    }
    return min
}
/**
 * Returns the first element having the smallest value according to the provided [comparator] or `null` if there are no elements.
 */
@SinceKotlin("1.4")
@ExperimentalUnsignedTypes
public fun ULongArray.minWithOrNull(comparator:
Comparator<in ULong>): ULong? {
    if (isEmpty()) return null
    var min = this[0]
    for (i in 1..lastIndex) {
        val e = this[i]
        if (comparator.compare(min, e) > 0) min = e
    }
    return min
}
/**
 * Returns the first element having the smallest value according to the provided [comparator] or `null` if there are no elements.
 */
@SinceKotlin("1.4")
@ExperimentalUnsignedTypes
public fun UByteArray.minWithOrNull(comparator:
Comparator<in UByte>): UByte? {
    if (isEmpty()) return null
    var min = this[0]
    for (i in 1..lastIndex) {
        val e = this[i]
        if (comparator.compare(min, e) > 0) min = e
    }
    return min
}
/**
 * Returns the first element having the smallest value according to the provided [comparator] or `null` if there are no elements.
 */
@SinceKotlin("1.4")
@ExperimentalUnsignedTypes
public fun UShortArray.minWithOrNull(comparator:
Comparator<in UShort>): UShort? {
    if (isEmpty()) return null
    var min = this[0]
    for (i in 1..lastIndex) {
        val e = this[i]
        if (comparator.compare(min, e) > 0) min = e
    }
    return min
}
/**
 * Returns `true` if the array has no elements.
 * @sample samples.collections.Collections.Aggregates.none
 */
@SinceKotlin("1.3")
@ExperimentalUnsignedTypes
@kotlin.internal.InlineOnly
public inline fun
UIntArray.none(): Boolean {
    return isEmpty()
}
/**
 * Returns `true` if the array has no elements.
 * @sample samples.collections.Collections.Aggregates.none
 */
@SinceKotlin("1.3")
@ExperimentalUnsignedTypes
@kotlin.internal.InlineOnly
public inline fun
ULongArray.none(): Boolean {
    return isEmpty()
}
/**
 * Returns `true` if the array has no elements.
 * @sample samples.collections.Collections.Aggregates.none
 */
@SinceKotlin("1.3")
@ExperimentalUnsignedTypes
@kotlin.internal.InlineOnly
public inline fun

```

```

UByteArray.none(): Boolean {\n  return isEmpty()\n}\n\n/**\n * Returns `true` if the array has no elements.\n * \n
 * @sample samples.collections.Collections.Aggregates.none\n
*\n\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun UShortArray.none(): Boolean {\n  return isEmpty()\n}\n\n/**\n * Returns `true` if no elements match
the given [predicate].\n * \n * @sample samples.collections.Collections.Aggregates.noneWithPredicate\n
*\n\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.none(predicate: (UInt) -> Boolean): Boolean {\n  for (element in this) if (predicate(element)) return
false\n  return true\n}\n\n/**\n * Returns `true` if no elements match the given [predicate].\n * \n * @sample
samples.collections.Collections.Aggregates.noneWithPredicate\n
*\n\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.none(predicate: (ULong) -> Boolean): Boolean {\n  for (element in this) if (predicate(element)) return
false\n  return true\n}\n\n/**\n * Returns `true` if no elements match the given [predicate].\n * \n * @sample
samples.collections.Collections.Aggregates.noneWithPredicate\n
*\n\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.none(predicate: (UByte) -> Boolean): Boolean {\n  for (element in this) if (predicate(element)) return
false\n  return true\n}\n\n/**\n * Returns `true` if no elements match the given [predicate].\n * \n * @sample
samples.collections.Collections.Aggregates.noneWithPredicate\n
*\n\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.none(predicate: (UShort) -> Boolean): Boolean {\n  for (element in this) if (predicate(element))
return false\n  return true\n}\n\n/**\n * Performs the given [action] on each element and returns the array itself
afterwards.\n * \n\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun UIntArray.onEach(action: (UInt) -> Unit): UIntArray {\n  return apply { for (element in this)
action(element) }\n}\n\n/**\n * Performs the given
[action] on each element and returns the array itself afterwards.\n
*\n\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.onEach(action: (ULong) -> Unit): ULongArray {\n  return apply { for (element in this)
action(element) }\n}\n\n/**\n * Performs the given [action] on each element and returns the array itself
afterwards.\n * \n\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun UByteArray.onEach(action: (UByte) -> Unit): UByteArray {\n  return apply { for (element in this)
action(element) }\n}\n\n/**\n * Performs the given [action] on each element and returns the array itself
afterwards.\n * \n\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun UShortArray.onEach(action: (UShort) -> Unit): UShortArray {\n  return apply { for (element in this)
action(element) }\n}\n\n/**\n * Performs the given [action] on each element, providing
sequential index with the element,\n * and returns the array itself afterwards.\n * @param [action] function that
takes the index of an element and the element itself\n * and performs the action on the element.\n
*\n\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.onEachIndexed(action: (index: Int, UInt) -> Unit): UIntArray {\n  return apply {
forEachIndexed(action) }\n}\n\n/**\n * Performs the given [action] on each element, providing sequential index
with the element,\n * and returns the array itself afterwards.\n * @param [action] function that takes the index of an
element and the element itself\n * and performs the action on the element.\n
*\n\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.onEachIndexed(action: (index: Int, ULong) -> Unit): ULongArray {\n  return apply {
forEachIndexed(action) }\n}\n\n/**\n * Performs the given [action] on each element, providing
sequential index with the element,\n * and returns the array itself afterwards.\n * @param [action] function that
takes the index of an element and the element itself\n * and performs the action on the element.\n
*\n\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.onEachIndexed(action: (index: Int, UByte) -> Unit): UByteArray {\n  return apply {
forEachIndexed(action) }\n}\n\n/**\n * Performs the given [action] on each element, providing sequential index

```



with the element,`\n *` and returns the array itself afterwards.`\n *` @param [action] function that takes the index of an element and the element itself`\n *` and performs the action on the element.`\n`

```
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun  
UShortArray.onEachIndexed(action: (index: Int, UShort) -> Unit): UShortArray {\n    return apply {  
        forEachIndexed(action) }\n    }\n}\n/**\n * Accumulates value starting with the  
 * first element and applying [operation] from left to right\n * to current accumulator value and each element.\n * \n * Throws an exception if this array is empty. If the array can be empty in an expected way,\n * please use [reduceOrNull] instead. It returns `null` when its receiver is empty.\n * \n * @param [operation] function that takes  
 * current accumulator value and an element,\n * and calculates the next accumulator value.\n * \n * @sample  
 * samples.collections.Collections.Aggregates.reduce\n */
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun  
UIntArray.reduce(operation: (acc: UInt, UInt) -> UInt): UInt {\n    if (isEmpty())\n        throw  
        UnsupportedOperationException("Empty array can't be reduced.")\n    var accumulator = this[0]\n    for (index in  
        1..lastIndex) {\n        accumulator = operation(accumulator, this[index])\n    }\n    return accumulator\n}\n/**\n * Accumulates value starting with the first element and applying  
 * [operation] from left to right\n * to current accumulator value and each element.\n * \n * Throws an exception if  
 * this array is empty. If the array can be empty in an expected way,\n * please use [reduceOrNull] instead. It returns  
 * `null` when its receiver is empty.\n * \n * @param [operation] function that takes current accumulator value and an  
 * element,\n * and calculates the next accumulator value.\n * \n * @sample  
 * samples.collections.Collections.Aggregates.reduce\n */
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun  
ULongArray.reduce(operation: (acc: ULong, ULong) -> ULong): ULong {\n    if (isEmpty())\n        throw  
        UnsupportedOperationException("Empty array can't be reduced.")\n    var accumulator = this[0]\n    for (index in  
        1..lastIndex) {\n        accumulator = operation(accumulator, this[index])\n    }\n    return accumulator\n}\n/**\n * Accumulates value starting with the first element and applying [operation] from left to  
 * right\n * to current accumulator value and each element.\n * \n * Throws an exception if this array is empty. If the  
 * array can be empty in an expected way,\n * please use [reduceOrNull] instead. It returns `null` when its receiver is  
 * empty.\n * \n * @param [operation] function that takes current accumulator value and an element,\n * and calculates  
 * the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduce\n */
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun  
UByteArray.reduce(operation: (acc: UByte, UByte) -> UByte): UByte {\n    if (isEmpty())\n        throw  
        UnsupportedOperationException("Empty array can't be reduced.")\n    var accumulator = this[0]\n    for (index in  
        1..lastIndex) {\n        accumulator = operation(accumulator, this[index])\n    }\n    return accumulator\n}\n/**\n * Accumulates value starting with the first element and applying [operation] from left to right\n * to current  
 * accumulator  
 * value and each element.\n * \n * Throws an exception if this array is empty. If the array can be empty in an  
 * expected way,\n * please use [reduceOrNull] instead. It returns `null` when its receiver is empty.\n * \n * @param  
 * [operation] function that takes current accumulator value and an element,\n * and calculates the next accumulator  
 * value.\n * \n * @sample samples.collections.Collections.Aggregates.reduce\n */
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun  
UShortArray.reduce(operation: (acc: UShort, UShort) -> UShort): UShort {\n    if (isEmpty())\n        throw  
        UnsupportedOperationException("Empty array can't be reduced.")\n    var accumulator = this[0]\n    for (index in  
        1..lastIndex) {\n        accumulator = operation(accumulator, this[index])\n    }\n    return accumulator\n}\n/**\n * Accumulates value starting with the first element and applying [operation] from left to right\n * to current  
 * accumulator value and each  
 * element with its index in the original array.\n * \n * Throws an exception if this array is empty. If the array can be  
 * empty in an expected way,\n * please use [reduceIndexedOrNull] instead. It returns `null` when its receiver is  
 * empty.\n * \n * @param [operation] function that takes the index of an element, current accumulator value and the
```

element itself,\n \* and calculates the next accumulator value.\n \* \n \* @sample

samples.collections.Collections.Aggregates.reduce\n

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun\nUIntArray.reduceIndexed(operation: (index: Int, acc: UInt, UInt) -> UInt): UInt {\n    if (isEmpty())\n        throw\n        UnsupportedOperationException("Empty array can't be reduced.")\n    var accumulator = this[0]\n    for (index in\n        1..lastIndex) {\n        accumulator = operation(index, accumulator, this[index])\n    }\n    return\n    accumulator\n}\n\n/**\n * Accumulates value starting with the first element and applying
```

```
[operation] from left to right\n * to current accumulator value and each element with its index in the original\n    array.\n * \n * Throws an exception if this array is empty. If the array can be empty in an expected way,\n * please\n    use [reduceIndexedOrNull] instead. It returns `null` when its receiver is empty.\n * \n * @param [operation]\n    function that takes the index of an element, current accumulator value and the element itself,\n * and calculates the\n    next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduce\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun\nULongArray.reduceIndexed(operation: (index: Int, acc: ULong, ULong) -> ULong): ULong {\n    if (isEmpty())\n        throw UnsupportedOperationException("Empty array can't be reduced.")\n    var accumulator = this[0]\n    for\n        (index in 1..lastIndex) {\n        accumulator = operation(index, accumulator, this[index])\n    }\n    return\n    accumulator\n}\n\n/**\n
```

```
* Accumulates value starting with the first element and applying [operation] from left to right\n * to current\n    accumulator value and each element with its index in the original array.\n * \n * Throws an exception if this array is\n    empty. If the array can be empty in an expected way,\n * please use [reduceIndexedOrNull] instead. It returns `null`\n    when its receiver is empty.\n * \n * @param [operation] function that takes the index of an element, current\n    accumulator value and the element itself,\n * and calculates the next accumulator value.\n * \n * @sample\n    samples.collections.Collections.Aggregates.reduce\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun\nUByteArray.reduceIndexed(operation: (index: Int, acc: UByte, UByte) -> UByte): UByte {\n    if (isEmpty())\n        throw UnsupportedOperationException("Empty array can't be reduced.")\n    var accumulator = this[0]\n    for\n        (index in 1..lastIndex) {\n        accumulator\n            = operation(index, accumulator, this[index])\n    }\n    return accumulator\n}\n\n/**\n * Accumulates value starting\n    with the first element and applying [operation] from left to right\n * to current accumulator value and each element\n    with its index in the original array.\n * \n * Throws an exception if this array is\n    empty. If the array can be empty in\n    an expected way,\n * please use [reduceIndexedOrNull] instead. It returns `null` when its receiver is empty.\n * \n * @param [operation] function that takes the index of an element, current accumulator value and the element itself,\n * and calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduce\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun\nUShortArray.reduceIndexed(operation: (index: Int, acc: UShort, UShort) -> UShort): UShort {\n    if (isEmpty())\n        throw UnsupportedOperationException("Empty array can't be reduced.")\n    var accumulator = this[0]\n    for (index in 1..lastIndex) {\n        accumulator = operation(index, accumulator,\n            this[index])\n    }\n    return accumulator\n}\n\n/**\n * Accumulates value starting with the first element and\n    applying [operation] from left to right\n * to current accumulator value and each element with its index in the\n    original array.\n * \n * Returns `null` if the array is empty.\n * \n * @param [operation] function that takes the index\n    of an element, current accumulator value and the element itself,\n * and calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduceOrNull\n
```

```
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun\nUIntArray.reduceIndexedOrNull(operation: (index: Int, acc: UInt, UInt) -> UInt): UInt? {\n    if (isEmpty())\n        return null\n    var accumulator = this[0]\n    for (index in 1..lastIndex) {\n        accumulator = operation(index,\n            accumulator,\n
```

```
this[index])\n    }\n    return accumulator\n}\n\n/**\n * Accumulates value starting with the first element and\n    applying [operation] from left to right\n * to current accumulator value and each element with its index in the
```

original array.\n \* \n \* Returns `null` if the array is empty.\n \* \n \* @param [operation] function that takes the index of an element, current accumulator value and the element itself,\n \* and calculates the next accumulator value.\n \* \n \* @sample samples.collections.Collections.Aggregates.reduceOrNull\n

```

*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.reduceIndexedOrNull(operation: (index: Int, acc: ULong, ULong) -> ULong): ULong? {\n if
(isEmpty())\n return null\n var accumulator = this[0]\n for (index in 1..lastIndex) {\n accumulator =
operation(index, accumulator, this[index])\n }\n return accumulator\n}\n\n/**\n * Accumulates value starting
with the first element
and applying [operation] from left to right\n * to current accumulator value and each element with its index in the
original array.\n * \n * Returns `null` if the array is empty.\n * \n * @param [operation] function that takes the index
of an element, current accumulator value and the element itself,\n * and calculates the next accumulator value.\n * \n *
@sample samples.collections.Collections.Aggregates.reduceOrNull\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.reduceIndexedOrNull(operation: (index: Int, acc: UByte, UByte) -> UByte): UByte? {\n if
(isEmpty())\n return null\n var accumulator = this[0]\n for (index in 1..lastIndex) {\n accumulator =
operation(index, accumulator, this[index])\n }\n return accumulator\n}\n\n/**\n * Accumulates value starting
with the first element and applying [operation] from left to right\n * to current accumulator value and each element
with its index in
the original array.\n * \n * Returns `null` if the array is empty.\n * \n * @param [operation] function that takes the
index of an element, current accumulator value and the element itself,\n * and calculates the next accumulator
value.\n * \n * @sample samples.collections.Collections.Aggregates.reduceOrNull\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.reduceIndexedOrNull(operation: (index: Int, acc: UShort, UShort) -> UShort): UShort? {\n if
(isEmpty())\n return null\n var accumulator = this[0]\n for (index in 1..lastIndex) {\n accumulator =
operation(index, accumulator, this[index])\n }\n return accumulator\n}\n\n/**\n * Accumulates value starting
with the first element and applying [operation] from left to right\n * to current accumulator value and each
element.\n * \n * Returns `null` if the array is empty.\n * \n * @param [operation] function that takes current
accumulator value and
an element,\n * and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceOrNull\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalStdlibApi::class)\n
@kotlin.internal.InlineOnly\npublic inline fun UIntArray.reduceOrNull(operation: (acc: UInt, UInt) -> UInt): UInt?
{\n if (isEmpty())\n return null\n var accumulator = this[0]\n for (index in 1..lastIndex) {\n
accumulator = operation(accumulator, this[index])\n }\n return accumulator\n}\n\n/**\n * Accumulates value
starting with the first element and applying [operation] from left to right\n * to current accumulator value and each
element.\n * \n * Returns `null` if the array is empty.\n * \n * @param [operation] function that takes current
accumulator value and an element,\n * and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceOrNull\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalStdlibApi::class)\n
@kotlin.internal.InlineOnly\npublic
inline fun ULongArray.reduceOrNull(operation: (acc: ULong, ULong) -> ULong): ULong? {\n if (isEmpty())\n
return null\n var accumulator = this[0]\n for (index in 1..lastIndex) {\n accumulator =
operation(accumulator, this[index])\n }\n return accumulator\n}\n\n/**\n * Accumulates value starting with the
first element and applying [operation] from left to right\n * to current accumulator value and each element.\n * \n *
Returns `null` if the array is empty.\n * \n * @param [operation] function that takes current accumulator value and
an element,\n * and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceOrNull\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalStdlibApi::class)\n

```

```

@kotlin.internal.InlineOnly\npublic inline fun UByteArray.reduceOrNull(operation: (acc:
UByte, UByte) -> UByte): UByte? {\n if (isEmpty())\n return null\n var accumulator = this[0]\n for
(index in 1..lastIndex) {\n accumulator = operation(accumulator, this[index])\n }\n return
accumulator\n}\n\n/**\n * Accumulates value starting with the first element and applying [operation] from left to
right\n * to current accumulator value and each element.\n * \n * Returns `null` if the array is empty.\n * \n *
@param [operation] function that takes current accumulator value and an element,\n * and calculates the next
accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduceOrNull\n
*/\n\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalStdlibApi::class)\n
@kotlin.internal.InlineOnly\npublic inline fun UShortArray.reduceOrNull(operation: (acc: UShort, UShort) ->
UShort): UShort? {\n if (isEmpty())\n return null\n var accumulator = this[0]\n for (index in 1..lastIndex)
{\n accumulator
= operation(accumulator, this[index])\n }\n return accumulator\n}\n\n/**\n * Accumulates value starting with
the last element and applying [operation] from right to left\n * to each element and current accumulator value.\n * \n
* Throws an exception if this array is empty. If the array can be empty in an expected way,\n * please use
[reduceRightOrNull] instead. It returns `null` when its receiver is empty.\n * \n * @param [operation] function that
takes an element and current accumulator value,\n * and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceRight\n
*/\n\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.reduceRight(operation: (UInt, acc: UInt) -> UInt): UInt {\n var index = lastIndex\n if (index < 0)
throw UnsupportedOperationException("Empty array can't be reduced.")\n var accumulator = get(index--)\n
while (index >= 0) {\n accumulator
= operation(get(index--), accumulator)\n }\n return accumulator\n}\n\n/**\n * Accumulates value starting with
the last element and applying [operation] from right to left\n * to each element and current accumulator value.\n * \n
* Throws an exception if this array is empty. If the array can be empty in an expected way,\n * please use
[reduceRightOrNull] instead. It returns `null` when its receiver is empty.\n * \n * @param [operation] function that
takes an element and current accumulator value,\n * and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceRight\n
*/\n\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.reduceRight(operation: (ULong, acc: ULong) -> ULong): ULong {\n var index = lastIndex\n if
(index < 0) throw UnsupportedOperationException("Empty array can't be reduced.")\n var accumulator =
get(index--)\n while (index >= 0) {\n accumulator
= operation(get(index--), accumulator)\n }\n return accumulator\n}\n\n/**\n * Accumulates value starting with
the last element and applying [operation] from right to left\n * to each element and current accumulator value.\n * \n
* Throws an exception if this array is empty. If the array can be empty in an expected way,\n * please use
[reduceRightOrNull] instead. It returns `null` when its receiver is empty.\n * \n * @param [operation] function that
takes an element and current accumulator value,\n * and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceRight\n
*/\n\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.reduceRight(operation: (UByte, acc: UByte) -> UByte): UByte {\n var index = lastIndex\n if (index
< 0) throw UnsupportedOperationException("Empty array can't be reduced.")\n var accumulator = get(index--)\n
while (index >= 0) {\n
accumulator = operation(get(index--), accumulator)\n }\n return accumulator\n}\n\n/**\n * Accumulates value
starting with the last element and applying [operation] from right to left\n * to each element and current accumulator
value.\n * \n * Throws an exception if this array is empty. If the array can be empty in an expected way,\n * please
use [reduceRightOrNull] instead. It returns `null` when its receiver is empty.\n * \n * @param [operation] function
that takes an element and current accumulator value,\n * and calculates the next accumulator value.\n * \n *
@sample samples.collections.Collections.Aggregates.reduceRight\n
*/\n\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun

```

```

UShortArray.reduceRight(operation: (UShort, acc: UShort) -> UShort): UShort {
    var index = lastIndex
    if (index < 0) throw UnsupportedOperationException("Empty array can't be reduced.")
    var accumulator = get(index--)
    while (index >= 0)
    {
        accumulator = operation(get(index--), accumulator)
    }
    return accumulator
}

Accumulates value starting with the last element and applying [operation] from right to left to each element with its index in the original array and current accumulator value.
Throws an exception if this array is empty. If the array can be empty in an expected way, please use [reduceRightIndexedOrNull] instead. It returns `null` when its receiver is empty.
@param [operation] function that takes the index of an element, the element itself and current accumulator value, and calculates the next accumulator value.
@sample
samples.collections.Collections.Aggregates.reduceRight

*/
@SinceKotlin("1.3")
@ExperimentalUnsignedTypes
@kotlin.internal.InlineOnly
public inline fun
UIntArray.reduceRightIndexed(operation: (index: Int, UInt, acc: UInt) -> UInt): UInt {
    var index = lastIndex
    if (index < 0) throw UnsupportedOperationException("Empty array can't be reduced.")
    var accumulator = get(index--)
    while (index >= 0) {
        accumulator = operation(index, get(index), accumulator)
        --index
    }
    return accumulator
}

Accumulates value starting with the last element and applying [operation] from right to left to each element with its index in the original array and current accumulator value.
Throws an exception if this array is empty. If the array can be empty in an expected way, please use [reduceRightIndexedOrNull] instead. It returns `null` when its receiver is empty.
@param [operation] function that takes the index of an element, the element itself and current accumulator value, and calculates the next accumulator value.
@sample
samples.collections.Collections.Aggregates.reduceRight

*/
@SinceKotlin("1.3")
@ExperimentalUnsignedTypes
@kotlin.internal.InlineOnly
public inline fun
ULongArray.reduceRightIndexed(operation: (index: Int, ULong, acc: ULong) -> ULong): ULong {
    var index = lastIndex
    if (index < 0) throw UnsupportedOperationException("Empty array can't be reduced.")
    var accumulator = get(index--)
    while (index >= 0) {
        accumulator = operation(index, get(index), accumulator)
        --index
    }
    return accumulator
}

Accumulates value starting with the last element and applying [operation] from right to left to each element with its index in the original array and current accumulator value.
Throws an exception if this array is empty. If the array can be empty in an expected way, please use [reduceRightIndexedOrNull] instead. It returns `null` when its receiver is empty.
@param [operation] function that takes the index of an element, the element itself and current accumulator value, and calculates the next accumulator value.
@sample
samples.collections.Collections.Aggregates.reduceRight

*/
@SinceKotlin("1.3")
@ExperimentalUnsignedTypes
@kotlin.internal.InlineOnly
public inline fun
ubyteArray.reduceRightIndexed(operation: (index: Int, UByte, acc: UByte) -> UByte): UByte {
    var index = lastIndex
    if (index < 0) throw UnsupportedOperationException("Empty array can't be reduced.")
    var accumulator = get(index--)
    while (index >= 0) {
        accumulator = operation(index, get(index), accumulator)
        --index
    }
    return accumulator
}

Accumulates value starting with the last element and applying [operation] from right to left to each element with its index in the original array and current accumulator value.
Throws an exception if this array is empty. If the array can be empty in an expected way, please use [reduceRightIndexedOrNull] instead. It returns `null` when its receiver is empty.
@param [operation] function that takes the index of an element, the element itself and current accumulator value, and calculates the next accumulator value.
@sample
samples.collections.Collections.Aggregates.reduceRight

*/
@SinceKotlin("1.3")
@ExperimentalUnsignedTypes
@kotlin.internal.InlineOnly
public inline fun
UShortArray.reduceRightIndexed(operation: (index: Int, UShort, acc: UShort) -> UShort): UShort {
    var index = lastIndex
    if (index < 0) throw UnsupportedOperationException("Empty array can't be reduced.")
    var accumulator = get(index--)
    while (index >= 0) {
        accumulator = operation(index, get(index), accumulator)
        --index
    }
    return accumulator
}

Accumulates value starting with the last

```

element and applying [operation] from right to left\n \* to each element with its index in the original array and current accumulator value.\n \* \n \* Returns `null` if the array is empty.\n \* \n \* @param [operation] function that takes the index of an element, the element itself and current accumulator value,\n \* and calculates the next accumulator value.\n \* \n

\* @sample samples.collections.Collections.Aggregates.reduceRightOrNull\n

```
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun\nUIntArray.reduceRightIndexedOrNull(operation: (index: Int, UInt, acc: UInt) -> UInt): UInt? {\n    var index =\n    lastIndex\n    if (index < 0) return null\n    var accumulator = get(index--)\n    while (index >= 0) {\n        accumulator = operation(index, get(index), accumulator)\n        --index\n    }\n    return accumulator\n}\n\n/*\n * Accumulates value starting with the last element and applying [operation] from right to left\n * to each element with its index in the original array and current accumulator value.\n * \n * Returns `null` if the array is empty.\n * \n * @param [operation] function that takes the index of an element, the element itself and current accumulator value,\n * and calculates the next accumulator value.\n * \n * @sample
```

samples.collections.Collections.Aggregates.reduceRightOrNull\n

```
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic\ninline fun ULongArray.reduceRightIndexedOrNull(operation: (index: Int, ULong, acc: ULong) -> ULong): ULong?\n{\n    var index = lastIndex\n    if (index < 0) return null\n    var accumulator = get(index--)\n    while (index >= 0)\n    {\n        accumulator = operation(index, get(index), accumulator)\n        --index\n    }\n    return\n    accumulator\n}\n\n/*\n * Accumulates value starting with the last element and applying [operation] from right to\n    left\n * to each element with its index in the original array and current accumulator value.\n * \n * Returns `null` if\n    the array is empty.\n * \n * @param [operation] function that takes the index of an element, the element itself and\n    current accumulator value,\n * and calculates the next accumulator value.\n * \n * @sample
```

samples.collections.Collections.Aggregates.reduceRightOrNull\n

```
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic\ninline fun UByteArray.reduceRightIndexedOrNull(operation: (index: Int, UByte, acc: UByte) -> UByte):\n    UByte?\n{\n    var index = lastIndex\n    if (index < 0) return null\n    var accumulator = get(index--)\n    while (index >= 0)\n    {\n        accumulator = operation(index, get(index), accumulator)\n        --index\n    }\n    return\n    accumulator\n}\n\n/*\n * Accumulates value starting with the last element and applying [operation] from right to\n    left\n * to each element with its index in the original array and current accumulator value.\n * \n * Returns `null` if\n    the array is empty.\n * \n * @param [operation] function that takes the index of an element, the element itself and\n    current accumulator value,\n * and calculates the next accumulator value.\n * \n * @sample
```

samples.collections.Collections.Aggregates.reduceRightOrNull\n

```
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun\nUShortArray.reduceRightIndexedOrNull(operation: (index:\n    Int, UShort, acc: UShort) -> UShort): UShort? {\n    var index = lastIndex\n    if (index < 0) return null\n    var\n    accumulator = get(index--)\n    while (index >= 0) {\n        accumulator = operation(index, get(index),\n        accumulator)\n        --index\n    }\n    return accumulator\n}\n\n/*\n * Accumulates value starting with the last\n    element and applying [operation] from right to left\n * to each element and current accumulator value.\n * \n * Returns `null` if the array is empty.\n * \n * @param [operation] function that takes an element and current\n    accumulator value,\n * and calculates the next accumulator value.\n * \n * @sample
```

samples.collections.Collections.Aggregates.reduceRightOrNull\n

```
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun UIntArray.reduceRightOrNull(operation: (UInt, acc: UInt) -> UInt):\n    UInt?\n{\n    var index = lastIndex\n    if (index < 0) return null\n    var\n    accumulator = get(index--)\n    while (index >= 0) {\n        accumulator = operation(get(index--), accumulator)\n    }\n    return accumulator\n}\n\n/*\n * Accumulates value starting with the last element and applying [operation]\n    from right to left\n * to each element and current accumulator value.\n * \n * Returns `null` if the array is empty.\n * \n * @param [operation] function that takes an element and current accumulator value,\n * and calculates the next
```

```

accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduceRightOrNull\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalStdlibApi::class)\n
@kotlin.internal.InlineOnly\npublic inline fun ULongArray.reduceRightOrNull(operation: (ULong, acc: ULong) ->
ULong): ULong? {\n    var index = lastIndex\n    if (index < 0) return null\n    var accumulator = get(index--)\n
while (index >= 0) {\n        accumulator = operation(get(index--), accumulator)\n    }\n    return
accumulator}\n}\n\n/**\n * Accumulates value starting with the last element and applying [operation] from right to
left\n * to each element and current accumulator value.\n * \n * Returns `null` if the array is empty.\n * \n * @param
[operation] function that takes an element and current accumulator value,\n * and calculates the next accumulator
value.\n * \n * @sample samples.collections.Collections.Aggregates.reduceRightOrNull\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalStdlibApi::class)\n
@kotlin.internal.InlineOnly\npublic inline fun UByteArray.reduceRightOrNull(operation: (UByte, acc: UByte) ->
UByte): UByte? {\n    var index = lastIndex\n    if (index < 0) return null\n    var accumulator = get(index--)\n
while (index >= 0) {\n        accumulator = operation(get(index--), accumulator)\n    }\n    return
accumulator}\n}\n\n/**\n * Accumulates value starting with the last element and applying [operation] from right to
left\n * to each element
and current accumulator value.\n * \n * Returns `null` if the array is empty.\n * \n * @param [operation] function
that takes an element and current accumulator value,\n * and calculates the next accumulator value.\n * \n *
@sample samples.collections.Collections.Aggregates.reduceRightOrNull\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalStdlibApi::class)\n
@kotlin.internal.InlineOnly\npublic inline fun UShortArray.reduceRightOrNull(operation: (UShort, acc: UShort) ->
UShort): UShort? {\n    var index = lastIndex\n    if (index < 0) return null\n    var accumulator = get(index--)\n
while (index >= 0) {\n        accumulator = operation(get(index--), accumulator)\n    }\n    return
accumulator}\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying
[operation] from left to right\n * to each element and current accumulator value that starts with [initial] value.\n * \n
* Note that `acc` value passed to [operation]
function should not be mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n * @param
[operation] function that takes current accumulator value and an element, and calculates the next accumulator
value.\n * \n * @sample samples.collections.Collections.Aggregates.runningFold\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>
UIntArray.runningFold(initial: R, operation: (acc: R, UInt) -> R): List<R> {\n    if (isEmpty()) return
listOf(initial)\n    val result = ArrayList<R>(size + 1).apply { add(initial) }\n    var accumulator = initial\n    for
(element in this) {\n        accumulator = operation(accumulator, element)\n        result.add(accumulator)\n    }\n
return result}\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying
[operation] from left to right\n * to each element and current accumulator value that starts with [initial] value.\n * \n
* Note that
`acc` value passed to [operation] function should not be mutated;\n * otherwise it would affect the previous value in
resulting list.\n * \n * @param [operation] function that takes current accumulator value and an element, and
calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.runningFold\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>
ULongArray.runningFold(initial: R, operation: (acc: R, ULong) -> R): List<R> {\n    if (isEmpty()) return
listOf(initial)\n    val result = ArrayList<R>(size + 1).apply { add(initial) }\n    var accumulator = initial\n    for
(element in this) {\n        accumulator = operation(accumulator, element)\n        result.add(accumulator)\n    }\n
return result}\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying
[operation] from left to right\n * to each element and current accumulator value that starts with
[initial] value.\n * \n * Note that `acc` value passed to [operation] function should not be mutated;\n * otherwise it
would affect the previous value in resulting list.\n * \n * @param [operation] function that takes current accumulator
value and an element, and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.runningFold\n

```

```

*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>
UByteArray.runningFold(initial: R, operation: (acc: R, UByte) -> R): List<R> {\n if (isEmpty()) return
listOf(initial)\n val result = ArrayList<R>(size + 1).apply { add(initial) }\n var accumulator = initial\n for
(element in this) {\n accumulator = operation(accumulator, element)\n result.add(accumulator)\n }\n
return result\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying
[operation] from left to right\n * to each element and current
accumulator value that starts with [initial] value.\n * \n * Note that `acc` value passed to [operation] function should
not be mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n * @param [operation]
function that takes current accumulator value and an element, and calculates the next accumulator value.\n * \n *
@sample samples.collections.Collections.Aggregates.runningFold\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>
UShortArray.runningFold(initial: R, operation: (acc: R, UShort) -> R): List<R> {\n if (isEmpty()) return
listOf(initial)\n val result = ArrayList<R>(size + 1).apply { add(initial) }\n var accumulator = initial\n for
(element in this) {\n accumulator = operation(accumulator, element)\n result.add(accumulator)\n }\n
return result\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying
[operation] from left to right\n *
to each element, its index in the original array and current accumulator value that starts with [initial] value.\n * \n
* Note that `acc` value passed to [operation] function should not be mutated;\n * otherwise it would affect the
previous value in resulting list.\n * \n * @param [operation] function that takes the index of an element, current
accumulator value\n * and the element itself, and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.runningFold\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>
UIntArray.runningFoldIndexed(initial: R, operation: (index: Int, acc: R, UInt) -> R): List<R> {\n if (isEmpty())
return listOf(initial)\n val result = ArrayList<R>(size + 1).apply { add(initial) }\n var accumulator = initial\n
for (index in indices) {\n accumulator = operation(index, accumulator, this[index])\n
result.add(accumulator)\n }\n
return result\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying
[operation] from left to right\n * to each element, its index in the original array and current accumulator value that
starts with [initial] value.\n * \n * Note that `acc` value passed to [operation] function should not be mutated;\n *
otherwise it would affect the previous value in resulting list.\n * \n * @param [operation] function that takes the
index of an element, current accumulator value\n * and the element itself, and calculates the next accumulator
value.\n * \n * @sample samples.collections.Collections.Aggregates.runningFold\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>
ULongArray.runningFoldIndexed(initial: R, operation: (index: Int, acc: R, ULong) -> R): List<R> {\n if
(isEmpty()) return listOf(initial)\n val result = ArrayList<R>(size + 1).apply { add(initial) }\n var accumulator =
initial\n for
(index in indices) {\n accumulator = operation(index, accumulator, this[index])\n result.add(accumulator)\n
}\n return result\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying
[operation] from left to right\n * to each element, its index in the original array and current accumulator value that
starts with [initial] value.\n * \n * Note that `acc` value passed to [operation] function should not be mutated;\n *
otherwise it would affect the previous value in resulting list.\n * \n * @param [operation] function that takes the
index of an element, current accumulator value\n * and the element itself, and calculates the next accumulator
value.\n * \n * @sample samples.collections.Collections.Aggregates.runningFold\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>
UByteArray.runningFoldIndexed(initial: R, operation: (index: Int, acc: R, UByte) -> R): List<R> {\n if
(isEmpty())
return listOf(initial)\n val result = ArrayList<R>(size + 1).apply { add(initial) }\n var accumulator = initial\n
for (index in indices) {\n accumulator = operation(index, accumulator, this[index])\n
}

```



```

result.add(accumulator)\n    }\n    return result\n}\n\n/**\n * Returns a list containing successive accumulation
values generated by applying [operation] from left to right\n * to each element, its index in the original array and
current accumulator value that starts with [initial] value.\n * \n * Note that `acc` value passed to [operation] function
should not be mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n * @param [operation]
function that takes the index of an element, current accumulator value\n * and the element itself, and calculates the
next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.runningFold\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun <R> UShortArray.runningFoldIndexed(initial: R, operation: (index: Int, acc: R, UShort) -> R): List<R>
{\n    if (isEmpty()) return listOf(initial)\n    val result = ArrayList<R>(size + 1).apply { add(initial) }\n    var
accumulator = initial\n    for (index in indices) {\n        accumulator = operation(index, accumulator, this[index])\n
        result.add(accumulator)\n    }\n    return result\n}\n\n/**\n * Returns a list containing successive accumulation
values generated by applying [operation] from left to right\n * to each element and current accumulator value that
starts with the first element of this array.\n * \n * Note that `acc` value passed to [operation] function should not be
mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n * @param [operation] function that
takes current accumulator value and an element, and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.runningReduce\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.runningReduce(operation: (acc: UInt, UInt) -> UInt): List<UInt> {\n    if (isEmpty()) return
emptyList()\n    var accumulator = this[0]\n    val result = ArrayList<UInt>(size).apply { add(accumulator) }\n    for
(index in 1 until size) {\n        accumulator = operation(accumulator, this[index])\n        result.add(accumulator)\n
    }\n    return result\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying
[operation] from left to right\n * to each element and current accumulator value that starts with the first element of
this array.\n * \n * Note that `acc` value passed to [operation] function should not be mutated;\n * otherwise it would
affect the previous value in resulting list.\n * \n * @param [operation] function that takes current accumulator value
and an element, and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.runningReduce\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.runningReduce(operation: (acc: ULong, ULong) -> ULong): List<ULong> {\n    if (isEmpty()) return
emptyList()\n    var accumulator = this[0]\n    val result = ArrayList<ULong>(size).apply { add(accumulator) }\n    for
(index in 1 until size) {\n        accumulator = operation(accumulator, this[index])\n        result.add(accumulator)\n
    }\n    return result\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying
[operation] from left to right\n * to each element and current accumulator value that starts with the first element of
this array.\n * \n * Note that `acc` value passed to [operation] function should not be mutated;\n * otherwise it would
affect the previous value in resulting list.\n * \n * @param [operation] function that takes current accumulator value
and an element,
and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.runningReduce\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.runningReduce(operation: (acc: UByte, UByte) -> UByte): List<UByte> {\n    if (isEmpty()) return
emptyList()\n    var accumulator = this[0]\n    val result = ArrayList<UByte>(size).apply { add(accumulator) }\n    for
(index in 1 until size) {\n        accumulator = operation(accumulator, this[index])\n        result.add(accumulator)\n
    }\n    return result\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying
[operation] from left to right\n * to each element and current accumulator value that starts with the first element of
this array.\n * \n * Note that `acc` value passed to [operation] function should not be mutated;\n * otherwise it would
affect the previous value in resulting list.\n * \n * @param [operation]
function that takes current accumulator value and an element, and calculates the next accumulator value.\n * \n *
@sample samples.collections.Collections.Aggregates.runningReduce\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun

```

```

UShortArray.runningReduce(operation: (acc: UShort, UShort) -> UShort): List<UShort> {\n  if (isEmpty()) return
emptyList()\n  var accumulator = this[0]\n  val result = ArrayList<UShort>(size).apply { add(accumulator) }\n
for (index in 1 until size) {\n    accumulator = operation(accumulator, this[index])\n    result.add(accumulator)\n
  }\n  return result\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying
[operation] from left to right\n * to each element, its index in the original array and current accumulator value that
starts with the first element of this array.\n * \n * Note that `acc` value passed to [operation] function should not be
mutated;\n
* otherwise it would affect the previous value in resulting list.\n * \n * @param [operation] function that takes the
index of an element, current accumulator value\n * and the element itself, and calculates the next accumulator
value.\n * \n * @sample samples.collections.Collections.Aggregates.runningReduce\n
*/\n\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.runningReduceIndexed(operation: (index: Int, acc: UInt, UInt) -> UInt): List<UInt> {\n  if (isEmpty())
return emptyList()\n  var accumulator = this[0]\n  val result = ArrayList<UInt>(size).apply { add(accumulator)
}\n  for (index in 1 until size) {\n    accumulator = operation(index, accumulator, this[index])\n
result.add(accumulator)\n  }\n  return result\n}\n\n/**\n * Returns a list containing successive accumulation
values generated by applying [operation] from left to right\n * to each element, its index in the original array and
current
accumulator value that starts with the first element of this array.\n * \n * Note that `acc` value passed to [operation]
function should not be mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n * @param
[operation] function that takes the index of an element, current accumulator value\n * and the element itself, and
calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.runningReduce\n
*/\n\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.runningReduceIndexed(operation: (index: Int, acc: ULong, ULong) -> ULong): List<ULong> {\n  if
(isEmpty()) return emptyList()\n  var accumulator = this[0]\n  val result = ArrayList<ULong>(size).apply {
add(accumulator) }\n  for (index in 1 until size) {\n    accumulator = operation(index, accumulator, this[index])\n
result.add(accumulator)\n  }\n  return result\n}\n\n/**\n * Returns a list containing
successive accumulation values generated by applying [operation] from left to right\n * to each element, its index in
the original array and current accumulator value that starts with the first element of this array.\n * \n * Note that
`acc` value passed to [operation] function should not be mutated;\n * otherwise it would affect the previous value in
resulting list.\n * \n * @param [operation] function that takes the index of an element, current accumulator value\n *
and the element itself, and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.runningReduce\n
*/\n\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.runningReduceIndexed(operation: (index: Int, acc: UByte, UByte) -> UByte): List<UByte> {\n  if
(isEmpty()) return emptyList()\n  var accumulator = this[0]\n  val result = ArrayList<UByte>(size).apply {
add(accumulator) }\n  for (index in 1 until size) {\n
accumulator = operation(index, accumulator, this[index])\n    result.add(accumulator)\n  }\n  return
result\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying [operation] from
left to right\n * to each element, its index in the original array and current accumulator value that starts with the
first
element of this array.\n * \n * Note that `acc` value passed to [operation] function should not be mutated;\n *
otherwise it would affect the previous value in resulting list.\n * \n * @param [operation] function that takes the
index of an element, current accumulator value\n * and the element itself, and calculates the next accumulator
value.\n * \n * @sample samples.collections.Collections.Aggregates.runningReduce\n
*/\n\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.runningReduceIndexed(operation: (index: Int, acc: UShort, UShort) -> UShort): List<UShort> {\n  if
(isEmpty())

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return emptyList()\n    var accumulator = this[0]\n    val result = ArrayList<UShort>(size).apply { add(accumulator)
}\n    for (index in 1 until size) {\n        accumulator = operation(index, accumulator, this[index])\n
result.add(accumulator)\n    }\n    return result\n}\n\n/**\n * Returns a list containing successive accumulation
values generated by applying [operation] from left to right\n * to each element and current accumulator value that
starts with [initial] value.\n * \n * Note that `acc` value passed to [operation] function should not be mutated;\n *
otherwise it would affect the previous value in resulting list.\n * \n * @param [operation] function that takes current
accumulator value and an element, and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.scan\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalStdlibApi::class)\n
@kotlin.internal.InlineOnly\npublic inline fun <R>
UIntArray.scan(initial: R, operation: (acc: R, UInt) -> R): List<R> {\n    return runningFold(initial,
operation)\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying [operation]
from left to right\n * to each element and current accumulator value that starts with [initial] value.\n * \n * Note that
`acc` value passed to [operation] function should not be mutated;\n * otherwise it would affect the previous value in
resulting list.\n * \n * @param [operation] function that takes current accumulator value and an element, and
calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.scan\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalStdlibApi::class)\n
@kotlin.internal.InlineOnly\npublic inline fun <R> ULongArray.scan(initial: R, operation: (acc: R, ULong) -> R):
List<R> {\n    return runningFold(initial, operation)\n}\n\n/**\n * Returns a list containing successive accumulation
values generated by applying [operation] from left to right\n * to each element and current accumulator value that
starts with [initial] value.\n * \n * Note that `acc` value passed to [operation] function should not be mutated;\n *
otherwise it would affect the previous value in resulting list.\n * \n * @param [operation] function that takes current
accumulator value and an element, and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.scan\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalStdlibApi::class)\n
@kotlin.internal.InlineOnly\npublic inline fun <R> UByteArray.scan(initial: R, operation: (acc: R, UByte) -> R):
List<R> {\n    return runningFold(initial, operation)\n}\n\n/**\n * Returns a list containing successive accumulation
values generated by applying [operation] from left to right\n * to each element and current accumulator value that
starts with [initial] value.\n * \n * Note that
`acc` value passed to [operation] function should not be mutated;\n * otherwise it would affect the previous value in
resulting list.\n * \n * @param [operation] function that takes current accumulator value and an element, and
calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.scan\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalStdlibApi::class)\n
@kotlin.internal.InlineOnly\npublic inline fun <R> UShortArray.scan(initial: R, operation: (acc: R, UShort) -> R):
List<R> {\n    return runningFold(initial, operation)\n}\n\n/**\n * Returns a list containing successive accumulation
values generated by applying [operation] from left to right\n * to each element, its index in the original array and
current accumulator value that starts with [initial] value.\n * \n * Note that `acc` value passed to [operation] function
should not be mutated;\n * otherwise it would affect the previous value in resulting list.\n
*\n * @param [operation] function that takes the index of an element, current accumulator value\n * and the
element itself, and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.scan\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalStdlibApi::class)\n
@kotlin.internal.InlineOnly\npublic inline fun <R> UIntArray.scanIndexed(initial: R, operation: (index: Int, acc: R,
UInt) -> R): List<R> {\n    return runningFoldIndexed(initial, operation)\n}\n\n/**\n * Returns a list containing
successive accumulation values generated by applying [operation] from left to right\n * to each element, its index in
the original array and current accumulator value that starts with [initial] value.\n * \n * Note that `acc` value passed
to [operation] function should not be mutated;\n * otherwise it would affect the previous value in resulting list.\n
*\n * @param [operation] function that takes the index of an element,

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current accumulator value\n \* and the element itself, and calculates the next accumulator value.\n \* \n \* @sample samples.collections.Collections.Aggregates.scan\n

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*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun <R> ULongArray.scanIndexed(initial: R, operation: (index: Int, acc: R, ULong) -> R): List<R> {\n    return runningFoldIndexed(initial, operation)\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying [operation] from left to right\n * to each element, its index in the original array and current accumulator value that starts with [initial] value.\n * \n * Note that `acc` value passed to [operation] function should not be mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n * @param [operation] function that takes the index of an element, current accumulator value\n * and the element itself, and calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.scan\n
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*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun <R> UByteArray.scanIndexed(initial: R, operation: (index: Int, acc: R, UByte) -> R): List<R> {\n    return runningFoldIndexed(initial, operation)\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying [operation] from left to right\n * to each element, its index in the original array and current accumulator value that starts with [initial] value.\n * \n * Note that `acc` value passed to [operation] function should not be mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n * @param [operation] function that takes the index of an element, current accumulator value\n * and the element itself, and calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.scan\n
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*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun <R> UShortArray.scanIndexed(initial: R, operation: (index: Int, acc: R, UShort) -> R): List<R> {\n    return runningFoldIndexed(initial, operation)\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each element in the array.\n * \n *\n * @Deprecated("Use sumOf instead.", ReplaceWith("this.sumOf(selector)"))\n@DeprecatedSinceKotlin(warningSince = "1.5")\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun UIntArray.sumBy(selector: (UInt) -> UInt): UInt {\n    var sum: UInt = 0u\n    for (element in this) {\n        sum += selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each element in the array.\n * \n *\n * @Deprecated("Use sumOf instead.", ReplaceWith("this.sumOf(selector)"))\n@DeprecatedSinceKotlin(warningSince = "1.5")\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun ULongArray.sumBy(selector: (ULong) -> UInt): UInt {\n    var sum: UInt = 0u\n    for (element in this) {\n        sum += selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each element in the array.\n * \n *\n * @Deprecated("Use sumOf instead.", ReplaceWith("this.sumOf(selector)"))\n@DeprecatedSinceKotlin(warningSince = "1.5")\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun UByteArray.sumBy(selector: (UByte) -> UInt): UInt {\n    var sum: UInt = 0u\n    for (element in this) {\n        sum += selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each element in the array.\n * \n *\n * @Deprecated("Use sumOf instead.", ReplaceWith("this.sumOf(selector)"))\n@DeprecatedSinceKotlin(warningSince = "1.5")\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun UShortArray.sumBy(selector: (UShort) -> UInt): UInt {\n    var sum: UInt = 0u\n    for (element in this) {\n        sum += selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each element in the array.\n * \n *\n * @Deprecated("Use sumOf instead.", ReplaceWith("this.sumOf(selector)"))\n@DeprecatedSinceKotlin(warningSince = "1.5")\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun UIntArray.sumByDouble(selector: (UInt) -> Double): Double {\n    var sum: Double = 0.0\n    for (element in this) {\n        sum += selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values produced by

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[selector] function applied to each element in the array.\n *^@Deprecated("Use sumOf instead.",
ReplaceWith("this.sumOf(selector)")\n@DeprecatedSinceKotlin(warningSince =
"1.5")\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.sumByDouble(selector: (ULong) -> Double): Double {\n    var sum: Double = 0.0\n    for (element in
this) {\n        sum += selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values produced by
[selector] function applied to each element in the array.\n *^@Deprecated("Use sumOf instead.",
ReplaceWith("this.sumOf(selector)")\n@DeprecatedSinceKotlin(warningSince =
"1.5")\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.sumByDouble(selector: (UByte) -> Double): Double {\n    var sum: Double = 0.0\n    for (element in
this) {\n        sum += selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values produced by
[selector] function applied to each element in the array.\n *^@Deprecated("Use
sumOf instead.", ReplaceWith("this.sumOf(selector)")\n@DeprecatedSinceKotlin(warningSince =
"1.5")\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.sumByDouble(selector: (UShort) -> Double): Double {\n    var sum: Double = 0.0\n    for (element in
this) {\n        sum += selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values produced by
[selector] function applied to each element in the array.\n
*^@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@Suppress("INAPPLICABLE_JVM_NAME")\n@kotlin.jvm.JvmName("sumOfDouble")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun UIntArray.sumOf(selector:
(UInt) -> Double): Double {\n    var sum: Double = 0.toDouble()\n    for (element in this) {\n        sum +=
selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum
of all values produced by [selector] function applied to each element in the array.\n
*^@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@Suppress("INAPPLICABLE_JVM_NAME")\n@kotlin.jvm.JvmName("sumOfDouble")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun ULongArray.sumOf(selector:
(ULong) -> Double): Double {\n    var sum: Double = 0.toDouble()\n    for (element in this) {\n        sum +=
selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function
applied to each element in the array.\n
*^@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@Suppress("INAPPLICABLE_JVM_NAME")\n@kotlin.jvm.JvmName("sumOfDouble")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun UByteArray.sumOf(selector:
(UByte) -> Double): Double {\n
    var sum: Double = 0.toDouble()\n    for (element in this) {\n        sum += selector(element)\n    }\n    return
sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each element in the
array.\n
*^@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@Suppress("INAPPLICABLE_JVM_NAME")\n@kotlin.jvm.JvmName("sumOfDouble")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun UShortArray.sumOf(selector:
(UShort) -> Double): Double {\n    var sum: Double = 0.toDouble()\n    for (element in this) {\n        sum +=
selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function
applied to each element in the array.\n
*^@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@Suppress("INAPPLICABLE_JVM_NAME")\n@kotlin.jvm.JvmName("sumOfInt")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun UIntArray.sumOf(selector: (UInt) -> Int): Int {\n    var sum: Int = 0.toInt()\n    for (element in this) {\n
        sum += selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector]
function applied to each element in the array.\n
*^@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution

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ByLambdaReturnType\n@Suppress(\"INAPPLICABLE_JVM_NAME\")\n@kotlin.jvm.JvmName(\"sumOfInt\")\n
@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun ULongArray.sumOf(selector:
(ULong) -> Int): Int {\n    var sum: Int = 0.toInt()\n    for (element in this) {\n        sum += selector(element)\n    }\n
return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each element in
the array.\n
*\n@SinceKotlin(\"1.4\")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@Suppress(\"INAPPLICABLE_JVM_NAME\")\n@kotlin.jvm.JvmName(\"sumOfInt\")\n
@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun UByteArray.sumOf(selector: (UByte) -> Int): Int {\n    var sum: Int = 0.toInt()\n    for (element in this)
{\n        sum += selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values produced by
[selector] function applied to each element in the array.\n
*\n@SinceKotlin(\"1.4\")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@Suppress(\"INAPPLICABLE_JVM_NAME\")\n@kotlin.jvm.JvmName(\"sumOfInt\")\n
@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun UShortArray.sumOf(selector:
(UShort) -> Int): Int {\n    var sum: Int = 0.toInt()\n    for (element in this) {\n        sum += selector(element)\n    }\n
return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function
applied to each element in the array.\n
*\n@SinceKotlin(\"1.4\")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@Suppress(\"INAPPLICABLE_JVM_NAME\")\n@kotlin.jvm.JvmName(\"sumOfLong\")
\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun UIntArray.sumOf(selector: (UInt)
-> Long): Long {\n    var sum: Long = 0.toLong()\n    for (element in this) {\n        sum += selector(element)\n    }\n
return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each element in
the array.\n
*\n@SinceKotlin(\"1.4\")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@Suppress(\"INAPPLICABLE_JVM_NAME\")\n@kotlin.jvm.JvmName(\"sumOfLong\")
\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun ULongArray.sumOf(selector:
(ULong) -> Long): Long {\n    var sum: Long = 0.toLong()\n    for (element in this) {\n
sum += selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector]
function applied to each element in the array.\n
*\n@SinceKotlin(\"1.4\")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@Suppress(\"INAPPLICABLE_JVM_NAME\")\n@kotlin.jvm.JvmName(\"sumOfLong\")
\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun UByteArray.sumOf(selector:
(UByte) -> Long): Long {\n    var sum: Long = 0.toLong()\n    for (element in this) {\n        sum +=
selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function
applied to each element in the array.\n
*\n@SinceKotlin(\"1.4\")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@Suppress(\"INAPPLICABLE_JVM_NAME\")\n@kotlin.jvm.JvmName(\"sumOfLong\")
\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline
fun UShortArray.sumOf(selector: (UShort) -> Long): Long {\n    var sum: Long = 0.toLong()\n    for (element in
this) {\n        sum += selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values produced by
[selector] function applied to each element in the array.\n
*\n@SinceKotlin(\"1.5\")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@Suppress(\"INAPPLICABLE_JVM_NAME\")\n@kotlin.jvm.JvmName(\"sumOfUInt\")\n
\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.Inline
Only\npublic inline fun UIntArray.sumOf(selector: (UInt) -> UInt): UInt {\n    var sum: UInt = 0.toUInt()\n    for
(element in this) {\n        sum += selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values
produced by [selector] function applied to each element in the array.\n
*\n@SinceKotlin(\"1.5\")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution

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ByLambdaReturnType\n@Suppress(\"INAPPLICABLE_JVM_NAME\")\n@kotlin.jvm.JvmName(\"sumOfUInt\")\n\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.Inline\nOnly\npublic\n\n    inline fun ULongArray.sumOf(selector: (ULong) -> UInt): UInt {\n        var sum: UInt = 0.toUInt()\n        for (element in this) {\n            sum += selector(element)\n        }\n        return sum\n    }\n\n    /**\n     * Returns the sum of all values produced by [selector] function applied to each element in the array.\n     */\n\n    *\n@SinceKotlin(\"1.5\")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@Suppress(\"INAPPLICABLE_JVM_NAME\")\n@kotlin.jvm.JvmName(\"sumOfUInt\")\n\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.Inline\nOnly\npublic inline fun UByteArray.sumOf(selector: (UByte) -> UInt): UInt {\n    var sum: UInt = 0.toUInt()\n    for (element in this) {\n        sum += selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each element in the array.\n */\n\n    *\n@SinceKotlin(\"1.5\")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@Suppress(\"INAPPLICABLE_JVM_NAME\")\n@kotlin.jvm.JvmName(\"sumOfUShort\")\n\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.Inline\nOnly\npublic inline fun UShortArray.sumOf(selector: (UShort) -> UInt): UInt {\n    var sum: UInt = 0.toUInt()\n    for (element in this) {\n        sum += selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each element in the array.\n */\n\n    *\n@SinceKotlin(\"1.5\")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@Suppress(\"INAPPLICABLE_JVM_NAME\")\n@kotlin.jvm.JvmName(\"sumOfULong\")\n\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.Inline\nOnly\npublic\n\n    inline fun UIntArray.sumOf(selector: (UInt) -> ULong): ULong {\n        var sum: ULong = 0.toULong()\n        for (element in this) {\n            sum += selector(element)\n        }\n        return sum\n    }\n\n    /**\n     * Returns the sum of all values produced by [selector] function applied to each element in the array.\n     */\n\n    *\n@SinceKotlin(\"1.5\")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@Suppress(\"INAPPLICABLE_JVM_NAME\")\n@kotlin.jvm.JvmName(\"sumOfULong\")\n\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.Inline\nOnly\npublic inline fun ULongArray.sumOf(selector: (ULong) -> ULong): ULong {\n    var sum: ULong = 0.toULong()\n    for (element in this) {\n        sum += selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each element in the array.\n */\n\n    *\n@SinceKotlin(\"1.5\")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@Suppress(\"INAPPLICABLE_JVM_NAME\")\n@kotlin.jvm.JvmName(\"sumOfULong\")\n\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.Inline\nOnly\npublic\n\n    inline fun UByteArray.sumOf(selector: (UByte) -> ULong): ULong {\n        var sum: ULong = 0.toULong()\n        for (element in this) {\n            sum += selector(element)\n        }\n        return sum\n    }\n\n    /**\n     * Returns the sum of all values produced by [selector] function applied to each element in the array.\n     */\n\n    *\n@SinceKotlin(\"1.5\")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@Suppress(\"INAPPLICABLE_JVM_NAME\")\n@kotlin.jvm.JvmName(\"sumOfULong\")\n\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.Inline\nOnly\npublic inline fun UShortArray.sumOf(selector: (UShort) -> ULong): ULong {\n    var sum: ULong = 0.toULong()\n    for (element in this) {\n        sum += selector(element)\n    }\n    return sum\n}\n\n/**\n * Returns a list of pairs built from the elements of `this` array and the [other] array with the same index.\n * The returned list has length of the shortest collection.\n * @sample\n * samples.collections.Iterables.Operations.zipIterable\n */\n\n    *\n@SinceKotlin(\"1.3\")\n@ExperimentalUnsignedTypes\npublic infix fun <R> UIntArray.zip(other: Array<out

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R>): List<Pair<UInt, R>> {\n    return zip(other) { t1, t2 -> t1 to t2 }\n}\n\n/**\n * Returns a list of pairs built from
the elements of `this` array and the [other] array with the same index.\n * The returned list has length of the shortest
collection.\n * \n * @sample samples.collections.Iterables.Operations.zipIterable\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic infix fun <R> ULongArray.zip(other:
Array<out R>): List<Pair<ULong, R>> {\n    return zip(other) { t1, t2 -> t1 to t2 }\n}\n\n/**\n *
Returns a list of pairs built from the elements of `this` array and the [other] array with the same index.\n * The
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*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic infix fun <R> UShortArray.zip(other:
Array<out R>): List<Pair<UShort, R>> {\n    return zip(other) { t1, t2 -> t1 to t2 }\n}\n\n/**\n * Returns a list of
values built from the elements of `this` array and the [other] array with the same index\n * using the provided
[transform] function applied to each pair of elements.\n * The returned list has length of the shortest collection.\n *
\n * @sample samples.collections.Iterables.Operations.zipIterableWithTransform\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R, V>
UIntArray.zip(other: Array<out R>, transform: (a: UInt, b: R) -> V): List<V> {\n    val size = minOf(size,
other.size)\n    val list = ArrayList<V>(size)\n    for (i in 0 until size) {\n        list.add(transform(this[i],
other[i]))\n    }\n    return list\n}\n\n/**\n * Returns a list of values built from the elements of `this` array and the
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*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun <R, V> ULongArray.zip(other: Array<out R>, transform: (a: ULong, b: R) -> V): List<V> {\n    val size
= minOf(size, other.size)\n    val list = ArrayList<V>(size)\n    for (i in 0 until size) {\n
list.add(transform(this[i], other[i]))\n    }\n    return list\n}\n\n/**\n * Returns a list of values built from the
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*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R, V>
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samples.collections.Iterables.Operations.zipIterableWithTransform\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R, V>
UShortArray.zip(other: Array<out R>, transform: (a: UShort, b: R) -> V): List<V> {\n    val size = minOf(size,
other.size)\n    val list = ArrayList<V>(size)\n    for (i in 0 until size) {\n        list.add(transform(this[i],
other[i]))\n    }\n    return list\n}\n\n/**\n * Returns a list of pairs built from the elements of `this` collection and
[other] array with the same index.\n * The returned list has length of the shortest collection.\n * \n * @sample
samples.collections.Iterables.Operations.zipIterable\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic
infix fun <R> UIntArray.zip(other: Iterable<R>): List<Pair<UInt, R>> {\n    return zip(other) { t1, t2 -> t1 to t2
}\n}\n\n/**\n * Returns a list of pairs built from the elements of `this` collection and [other] array with the same
index.\n * The returned list has length of the shortest collection.\n * \n * @sample

```



samples.collections.Iterables.Operations.zipIterable

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic infix fun <R> ULongArray.zip(other:  
Iterable<R>): List<Pair<ULong, R>> {\n    return zip(other) { t1, t2 -> t1 to t2 }\n}\n\n/**\n * Returns a list of pairs  
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*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic infix fun <R> UByteArray.zip(other:  
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    t2 -> t1 to t2 }\n}\n\n/**\n * Returns a list of pairs built from the elements of `this` collection and [other] array with  
the same index.\n * The returned list has length of the shortest collection.\n * \n * @sample  
samples.collections.Iterables.Operations.zipIterable
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic infix fun <R> UShortArray.zip(other:  
Iterable<R>): List<Pair<UShort, R>> {\n    return zip(other) { t1, t2 -> t1 to t2 }\n}\n\n/**\n * Returns a list of  
values built from the elements of `this` array and the [other] collection with the same index\n * using the provided  
[transform] function applied to each pair of elements.\n * The returned list has length of the shortest collection.\n * \n * @sample samples.collections.Iterables.Operations.zipIterableWithTransform
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R, V>  
UIntArray.zip(other: Iterable<R>, transform: (a: UInt, b: R) -> V): List<V> {\n    val  
    arraySize = size\n    val list = ArrayList<V>(minOf(other.collectionSizeOrDefault(10), arraySize))\n    var i = 0\n    for (element in other) {\n        if (i >= arraySize) break\n        list.add(transform(this[i++], element))\n    }\n    return  
list\n}\n\n/**\n * Returns a list of values built from the elements of `this` array and the [other] collection with the  
same index\n * using the provided [transform] function applied to each pair of elements.\n * The returned list has  
length of the shortest collection.\n * \n * @sample
```

samples.collections.Iterables.Operations.zipIterableWithTransform

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R, V>  
ULongArray.zip(other: Iterable<R>, transform: (a: ULong, b: R) -> V): List<V> {\n    val arraySize = size\n    val  
list = ArrayList<V>(minOf(other.collectionSizeOrDefault(10), arraySize))\n    var i = 0\n    for (element in other)  
{\n        if (i >= arraySize) break\n        list.add(transform(this[i++],  
element))\n    }\n    return list\n}\n\n/**\n * Returns a list of values built from the elements of `this` array and the  
[other] collection with the same index\n * using the provided [transform] function applied to each pair of  
elements.\n * The returned list has length of the shortest collection.\n * \n * @sample
```

samples.collections.Iterables.Operations.zipIterableWithTransform

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R, V>  
UByteArray.zip(other: Iterable<R>, transform: (a: UByte, b: R) -> V): List<V> {\n    val arraySize = size\n    val list  
= ArrayList<V>(minOf(other.collectionSizeOrDefault(10), arraySize))\n    var i = 0\n    for (element in other) {\n        if (i >= arraySize) break\n        list.add(transform(this[i++], element))\n    }\n    return list\n}\n\n/**\n * Returns a  
list of values built from the elements of `this` array and the [other] collection with the same index\n * using the  
provided
```

```
[transform] function applied to each pair of elements.\n * The returned list has length of the shortest collection.\n * \n * @sample samples.collections.Iterables.Operations.zipIterableWithTransform
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R, V>  
UShortArray.zip(other: Iterable<R>, transform: (a: UShort, b: R) -> V): List<V> {\n    val arraySize = size\n    val  
list = ArrayList<V>(minOf(other.collectionSizeOrDefault(10), arraySize))\n    var i = 0\n    for (element in other)  
{\n        if (i >= arraySize) break\n        list.add(transform(this[i++], element))\n    }\n    return list\n}\n\n/**\n * Returns a list of pairs built from the elements of `this` array and the [other] array with the same index.\n * The  
returned list has length of the shortest collection.\n * \n * @sample
```

samples.collections.Iterables.Operations.zipIterable

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic infix fun UIntArray.zip(other:
```

```

    UIntArray): List<Pair<UInt, UInt>> {\n    return zip(other) { t1, t2 -> t1 to t2 }\n}\n\n/**\n * Returns a list of pairs
built from the elements of `this` array and the [other] array with the same index.\n * The returned list has length of
the shortest collection.\n * \n * @sample samples.collections.Iterables.Operations.zipIterable\n
*/\n\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic infix fun ULongArray.zip(other: ULongArray):
List<Pair<ULong, ULong>> {\n    return zip(other) { t1, t2 -> t1 to t2 }\n}\n\n/**\n * Returns a list of pairs built
from the elements of `this` array and the [other] array with the same index.\n * The returned list has length of the
shortest collection.\n * \n * @sample samples.collections.Iterables.Operations.zipIterable\n
*/\n\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic infix fun UByteArray.zip(other: UByteArray):
List<Pair<UByte, UByte>> {\n    return zip(other) { t1, t2 -> t1 to t2 }\n}\n\n/**\n * Returns a list of pairs built
from
the elements of `this` array and the [other] array with the same index.\n * The returned list has length of the shortest
collection.\n * \n * @sample samples.collections.Iterables.Operations.zipIterable\n
*/\n\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic infix fun UShortArray.zip(other: UShortArray):
List<Pair<UShort, UShort>> {\n    return zip(other) { t1, t2 -> t1 to t2 }\n}\n\n/**\n * Returns a list of values built
from the elements of `this` array and the [other] array with the same index\n * using the provided [transform]
function applied to each pair of elements.\n * The returned list has length of the shortest array.\n * \n * @sample
samples.collections.Iterables.Operations.zipIterableWithTransform\n
*/\n\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <V>
UIntArray.zip(other: UIntArray, transform: (a: UInt, b: UInt) -> V): List<V> {\n    val size = minOf(size,
other.size)\n    val list = ArrayList<V>(size)\n    for
(i in 0 until size) {\n        list.add(transform(this[i], other[i]))\n    }\n    return list\n}\n\n/**\n * Returns a list of
values built from the elements of `this` array and the [other] array with the same index\n * using the provided
[transform] function applied to each pair of elements.\n * The returned list has length of the shortest array.\n * \n *
@sample samples.collections.Iterables.Operations.zipIterableWithTransform\n
*/\n\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <V>
ULongArray.zip(other: ULongArray, transform: (a: ULong, b: ULong) -> V): List<V> {\n    val size = minOf(size,
other.size)\n    val list = ArrayList<V>(size)\n    for (i in 0 until size) {\n        list.add(transform(this[i], other[i]))\n
    }\n    return list\n}\n\n/**\n * Returns a list of values built from the elements of `this` array and the [other] array
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*/\n\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <V>
UByteArray.zip(other: UByteArray, transform: (a: UByte, b: UByte) -> V): List<V> {\n    val size = minOf(size,
other.size)\n    val list = ArrayList<V>(size)\n    for (i in 0 until size) {\n        list.add(transform(this[i], other[i]))\n
    }\n    return list\n}\n\n/**\n * Returns a list of values built from the elements of `this` array and the [other] array
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samples.collections.Iterables.Operations.zipIterableWithTransform\n
*/\n\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <V>
UShortArray.zip(other: UShortArray, transform:
(a: UShort, b: UShort) -> V): List<V> {\n    val size = minOf(size, other.size)\n    val list = ArrayList<V>(size)\n
for (i in 0 until size) {\n        list.add(transform(this[i], other[i]))\n    }\n    return list\n}\n\n/**\n * Returns the sum
of all elements in the array.\n
*/\n\n@kotlin.jvm.JvmName("sumOfUInt")\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedT
ypes::class)\npublic fun Array<out UInt>.sum(): UInt {\n    var sum: UInt = 0u\n    for (element in this) {\n        sum
+= element\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all elements in the array.\n
*/\n\n@kotlin.jvm.JvmName("sumOfULong")\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsigned
Types::class)\npublic fun Array<out ULong>.sum(): ULong {\n    var sum: ULong = 0uL\n    for (element in this)

```

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{\n    sum += element\n } \n    return sum\n}\n\n/**\n * Returns the sum of all elements in the array.\n
*\n@kotlin.jvm.JvmName("sumOfUByte")\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsigned
Types::class)\npublic
fun Array<out UByte>.sum(): UInt {\n    var sum: UInt = 0u\n    for (element in this) {\n        sum += element\n
}\n    return sum\n}\n\n/**\n * Returns the sum of all elements in the array.\n
*\n@kotlin.jvm.JvmName("sumOfUShort")\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsigned
Types::class)\npublic fun Array<out UShort>.sum(): UInt {\n    var sum: UInt = 0u\n    for (element in this) {\n
sum += element\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all elements in the array.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.sum(): UInt {\n    return storage.sum().toUInt()\n}\n\n/**\n * Returns the sum of all elements in the
array.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.sum(): ULong {\n    return storage.sum().toULong()\n}\n\n/**\n * Returns the sum of all elements in
the array.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline
fun UByteArray.sum(): UInt {\n    return sumOf { it.toUInt() }\n}\n\n/**\n * Returns the sum of all elements in the
array.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.sum(): UInt {\n    return sumOf { it.toUInt() }\n}\n\n", "*/\n * Copyright 2010-2022 JetBrains s.r.o. and
Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that
can be found in the license/LICENSE.txt file.\n
*\n\n@file:kotlin.jvm.JvmMultifileClass\n@file:kotlin.jvm.JvmName("UCollectionsKt")\n\npackage
kotlin.collections\n\n/\n// NOTE: THIS FILE IS AUTO-GENERATED by the GenerateStandardLib.kt\n// See:
https://github.com/JetBrains/kotlin/tree/master/libraries/stdlib\n\n\nimport kotlin.random.*\nimport
kotlin.ranges.contains\nimport kotlin.ranges.reversed\n\n\n/**\n * Returns an array
of UByte containing all of the elements of this collection.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun Collection<UByte>.toUByteArray():
UByteArray {\n    val result = UByteArray(size)\n    var index = 0\n    for (element in this)\n        result[index++] =
element\n    return result\n}\n\n/**\n * Returns an array of UInt containing all of the elements of this collection.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun Collection<UInt>.toUIntArray(): UIntArray
{\n    val result = UIntArray(size)\n    var index = 0\n    for (element in this)\n        result[index++] = element\n
return result\n}\n\n/**\n * Returns an array of ULong containing all of the elements of this collection.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun Collection<ULong>.toULongArray():
ULongArray {\n    val result = ULongArray(size)\n    var index = 0\n    for (element in this)\n        result[index++] =
element\n    return result\n}\n\n\n/**\n * Returns an array of UShort containing all of the elements of this collection.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun Collection<UShort>.toUShortArray():
UShortArray {\n    val result = UShortArray(size)\n    var index = 0\n    for (element in this)\n        result[index++] =
element\n    return result\n}\n\n\n/**\n * Returns the sum of all elements in the collection.\n
*\n@kotlin.jvm.JvmName("sumOfUInt")\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedT
ypes::class)\npublic fun Iterable<UInt>.sum(): UInt {\n    var sum: UInt = 0u\n    for (element in this) {\n        sum
+= element\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all elements in the collection.\n
*\n@kotlin.jvm.JvmName("sumOfULong")\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsigned
Types::class)\npublic fun Iterable<ULong>.sum(): ULong {\n    var sum: ULong = 0uL\n    for (element in this) {\n
sum += element\n    }\n    return sum\n}\n\n\n/**\n * Returns
the sum of all elements in the collection.\n
*\n@kotlin.jvm.JvmName("sumOfUByte")\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsigned
Types::class)\npublic fun Iterable<UByte>.sum(): UInt {\n    var sum: UInt = 0u\n    for (element in this) {\n
sum += element\n    }\n    return sum\n}\n\n\n/**\n * Returns the sum of all elements in the collection.\n
*\n@kotlin.jvm.JvmName("sumOfUShort")\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsigned
Types::class)\npublic fun Iterable<UShort>.sum(): UInt {\n    var sum: UInt = 0u\n    for (element in this) {\n
sum += element\n    }\n    return sum\n}\n\n\n

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sum += element\n    }\n    return sum\n}\n\n",/*\n * Copyright 2010-2022 JetBrains s.r.o. and Kotlin Programming
Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n
*\n\n@file:kotlin.jvm.JvmMultifileClass\n@file:kotlin.jvm.JvmName("\uComparisonsKt")\n\npackage
kotlin.comparisons\n\n/\n// NOTE: THIS FILE IS AUTO-GENERATED
by the GenerateStandardLib.kt\n// See: https://github.com/JetBrains/kotlin/tree/master/libraries/stdlib\n\nimport
kotlin.random.*\n\n/**\n * Returns the greater of two values.\n
*\n\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun maxOf(a: UInt, b:
UInt): UInt {\n    return if (a >= b) a else b\n}\n\n/**\n * Returns the greater of two values.\n
*\n\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun maxOf(a: ULong,
b: ULong): ULong {\n    return if (a >= b) a else b\n}\n\n/**\n * Returns the greater of two values.\n
*\n\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun maxOf(a: UByte,
b: UByte): UByte {\n    return if (a >= b) a else b\n}\n\n/**\n * Returns the greater of two values.\n
*\n\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun maxOf(a: UShort,
b: UShort): UShort {\n    return if (a >= b) a else b\n}\n\n/**\n * Returns
the greater of three values.\n
*\n\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\n
public inline fun maxOf(a: UInt, b: UInt, c: UInt): UInt {\n    return maxOf(a, maxOf(b, c))\n}\n\n/**\n * Returns
the greater of three values.\n
*\n\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\n
public inline fun maxOf(a: ULong, b: ULong, c: ULong): ULong {\n    return maxOf(a, maxOf(b, c))\n}\n\n/**\n *
Returns the greater of three values.\n
*\n\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\n
public inline fun maxOf(a: UByte, b: UByte, c: UByte): UByte {\n    return maxOf(a, maxOf(b, c))\n}\n\n/**\n *
Returns the greater of three values.\n
*\n\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\n
public inline fun maxOf(a: UShort, b: UShort, c: UShort): UShort {\n    return maxOf(a,
maxOf(b, c))\n}\n\n/**\n * Returns the greater of the given values.\n
*\n\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun maxOf(a: UInt, vararg other: UInt): UInt
{\n    var max = a\n    for (e in other) max = maxOf(max, e)\n    return max\n}\n\n/**\n * Returns the greater of the
given values.\n
*\n\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun maxOf(a: ULong, vararg
other: ULong): ULong {\n    var max = a\n    for (e in other) max = maxOf(max, e)\n    return max\n}\n\n/**\n *
Returns the greater of the given values.\n
*\n\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun
maxOf(a: UByte, vararg other: UByte): UByte {\n    var max = a\n    for (e in other) max = maxOf(max, e)\n
return max\n}\n\n/**\n * Returns the greater of the given values.\n
*\n\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun maxOf(a: UShort, vararg other: UShort):
UShort {\n    var max = a\n    for (e in other) max = maxOf(max, e)\n    return max\n}\n\n/**\n * Returns the
smaller of two values.\n
*\n\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun minOf(a: UInt, b:
UInt): UInt {\n    return if (a <= b) a else b\n}\n\n/**\n * Returns the smaller of two values.\n
*\n\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun minOf(a: ULong,
b: ULong): ULong {\n    return if (a <= b) a else b\n}\n\n/**\n * Returns the smaller of two values.\n
*\n\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun minOf(a: UByte,
b: UByte): UByte {\n    return if (a <= b) a else b\n}\n\n/**\n * Returns the smaller of two values.\n
*\n\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun minOf(a: UShort,
b: UShort): UShort {\n    return if (a <= b) a else b\n}\n\n/**\n * Returns the smaller of three values.\n
*\n\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\n
public inline

```

```

fun minOf(a: UInt, b: UInt, c: UInt): UInt {
    return minOf(a, minOf(b, c))
}

Returns the smaller of three values.

@SinceKotlin("1.5")
@WasExperimental(ExperimentalUnsignedTypes::class)
@kotlin.internal.InlineOnly
public inline fun minOf(a: ULong, b: ULong, c: ULong): ULong {
    return minOf(a, minOf(b, c))
}

Returns the smaller of three values.

@SinceKotlin("1.5")
@WasExperimental(ExperimentalUnsignedTypes::class)
@kotlin.internal.InlineOnly
public inline fun minOf(a: UByte, b: UByte, c: UByte): UByte {
    return minOf(a, minOf(b, c))
}

Returns the smaller of three values.

@SinceKotlin("1.5")
@WasExperimental(ExperimentalUnsignedTypes::class)
@kotlin.internal.InlineOnly
public inline fun minOf(a: UShort, b: UShort, c: UShort): UShort {
    return minOf(a, minOf(b, c))
}

Returns the smaller of the given values.

@SinceKotlin("1.4")
@ExperimentalUnsignedTypes
public fun minOf(a: UInt, vararg
    other: UInt): UInt {
    var min = a
    for (e in other) min = minOf(min, e)
    return min
}

Returns the smaller of the given values.

@SinceKotlin("1.4")
@ExperimentalUnsignedTypes
public fun minOf(a: ULong, vararg other: ULong): ULong {
    var min = a
    for (e in other) min = minOf(min, e)
    return min
}

Returns the smaller of the given values.

@SinceKotlin("1.4")
@ExperimentalUnsignedTypes
public fun minOf(a: UByte, vararg other: UByte):
    UByte {
    var min = a
    for (e in other) min = minOf(min, e)
    return min
}

Returns the smaller of the given values.

@SinceKotlin("1.4")
@ExperimentalUnsignedTypes
public fun minOf(a: UShort, vararg
    other: UShort): UShort {
    var min = a
    for (e in other) min = minOf(min, e)
    return min
}

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can be found in the license/LICENSE.txt file.

@file:kotlin.jvm.JvmMultifileClass
@file:kotlin.jvm.JvmName("URangesKt")
package
kotlin.ranges
NOTE: THIS FILE IS AUTO-GENERATED by the GenerateStandardLib.kt
See:
https://github.com/JetBrains/kotlin/tree/master/libraries/stdlib
nimport kotlin.random.*
Returns the
first element.
* @throws NoSuchElementException if the progression is empty.

@SinceKotlin("1.7")
public fun UIntProgression.first(): UInt {
    if (isEmpty())
        throw
        NoSuchElementException("Progression $this is empty.")
    return this.first()
}

Returns the first
element.
* @throws NoSuchElementException if the progression is empty.

@SinceKotlin("1.7")
public fun ULongProgression.first(): ULong {
    if (isEmpty())
        throw
        NoSuchElementException("Progression $this is empty.")
    return this.first()
}

Returns the first
element, or `null` if the progression is
empty.

@SinceKotlin("1.7")
public fun UIntProgression.firstOrNull(): UInt? {
    return if (isEmpty())
        null else this.first()
}

Returns the first element, or `null` if the progression is empty.

@SinceKotlin("1.7")
public fun ULongProgression.firstOrNull(): ULong? {
    return if (isEmpty()) null else
        this.first()
}

Returns the last element.
* @throws NoSuchElementException if the progression is
empty.
* @sample samples.collections.Collections.Elements.last

@SinceKotlin("1.7")
public fun
    UIntProgression.last(): UInt {
    if (isEmpty())
        throw NoSuchElementException("Progression $this is
        empty.")
    return this.last()
}

Returns the last element.
* @throws NoSuchElementException if
the progression is empty.
* @sample samples.collections.Collections.Elements.last

@SinceKotlin("1.7")
public fun ULongProgression.last(): ULong {
    if (isEmpty())
        throw
        NoSuchElementException("Progression
        $this is empty.")
    return this.last()
}

Returns the last element, or `null` if the progression is empty.
* @sample samples.collections.Collections.Elements.last

@SinceKotlin("1.7")
public fun
    UIntProgression.lastOrNull(): UInt? {
    return if (isEmpty()) null else this.last()
}

Returns the last
element, or `null` if the progression is empty.
* @sample samples.collections.Collections.Elements.last

@SinceKotlin("1.7")
public fun ULongProgression.lastOrNull(): ULong? {
    return if (isEmpty()) null else

```

```

this.last()\n\n/**\n * Returns a random element from this range.\n * \n * @throws IllegalArgumentException if this
range is empty.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\n
npublic inline fun UIntRange.random(): UInt {\n    return random(Random)\n}\n\n/**\n * Returns a random element
from this range.\n * \n * @throws IllegalArgumentException if this
range is empty.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\n
npublic inline fun ULongRange.random(): ULong {\n    return random(Random)\n}\n\n/**\n * Returns a random
element from this range using the specified source of randomness.\n * \n * @throws IllegalArgumentException if
this range is empty.\n *\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n
npublic fun UIntRange.random(random: Random): UInt {\n    try {\n        return random.nextUInt(this)\n    }
catch(e:
IllegalArgumentException) {\n        throw NoSuchElementException(e.message)\n    }\n}\n\n/**\n * Returns a
random element from this range using the specified source of randomness.\n * \n * @throws
IllegalArgumentException if this range is empty.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n
npublic fun ULongRange.random(random: Random): ULong {\n    try {\n        return random.nextULong(this)\n
    }
catch(e: IllegalArgumentException) {\n        throw NoSuchElementException(e.message)\n    }\n}\n\n/**\n *
Returns a random element from this range, or `null` if this range is empty.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalStdlibApi::class,
ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\n
npublic inline fun UIntRange.randomOrNull():
UInt? {\n    return randomOrNull(Random)\n}\n\n/**\n * Returns a random element from this range, or `null` if
this
range is empty.\n *\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalStdlibApi::class,
ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\n
npublic inline fun ULongRange.randomOrNull():
ULong? {\n    return randomOrNull(Random)\n}\n\n/**\n * Returns a random element from this range using the
specified source of randomness, or `null` if this range is empty.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalStdlibApi::class,
ExperimentalUnsignedTypes::class)\n
npublic fun UIntRange.randomOrNull(random:
Random): UInt? {\n    if (isEmpty())\n        return null\n    return random.nextUInt(this)\n}\n\n/**\n * Returns a
random element from this range using the specified source of randomness, or `null` if this range is empty.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalStdlibApi::class,
ExperimentalUnsignedTypes::class)\n
npublic fun ULongRange.randomOrNull(random: Random): ULong? {\n    if
(isEmpty())\n        return null\n    return random.nextULong(this)\n}\n\n/**\n * Returns `true` if this range contains
the specified [element].\n * \n * Always returns `false` if the [element] is `null`.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\n
npublic inline operator fun UIntRange.contains(element: UInt?): Boolean {\n    return element != null &&
contains(element)\n}\n\n/**\n * Returns `true` if this range contains the specified [element].\n * \n * Always
returns
`false` if the [element] is `null`.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\n
npublic
inline operator fun ULongRange.contains(element: ULong?): Boolean {\n    return element != null &&
contains(element)\n}\n\n/**\n * Checks if the specified [value] belongs to this range.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n
npublic operator fun
UIntRange.contains(value: UByte): Boolean {\n    return contains(value.toUInt())\n}\n\n/**\n * Checks if the
specified [value] belongs to this range.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n
npublic operator fun
ULongRange.contains(value: UByte): Boolean {\n    return contains(value.toULong())\n}\n\n/**\n * Checks if the
specified [value] belongs to this range.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n
npublic operator fun

```

```

ULongRange.contains(value: UInt): Boolean { \n  return contains(value.toULong())\n}\n\n/**\n * Checks if the specified [value] belongs to this range.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic operator fun
UIntRange.contains(value: ULong): Boolean { \n  return (value shr UInt.SIZE_BITS) == 0uL &&
contains(value.toUInt())\n}\n\n/**\n * Checks if the specified [value] belongs to this range.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic operator fun
UIntRange.contains(value: UShort): Boolean { \n  return contains(value.toUInt())\n}\n\n/**\n * Checks if the
specified [value] belongs to this range.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic operator fun
ULongRange.contains(value: UShort): Boolean { \n  return contains(value.toULong())\n}\n\n/**\n * Returns a
progression from this value down to the specified [to] value with the step -1.\n * \n * The [to] value should be less
than or equal to `this` value.\n * If the [to] value is greater than `this` value the
returned progression is empty.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic infix fun
UByte.downTo(to: UByte): UIntProgression { \n  return UIntProgression.fromClosedRange(this.toUInt(),
to.toUInt(), -1)\n}\n\n/**\n * Returns a progression from this value down to the specified [to] value with the step -
1.\n * \n * The [to] value should be less than or equal to `this` value.\n * If the [to] value is greater than `this` value
the returned progression is empty.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic infix fun
UInt.downTo(to: UInt): UIntProgression { \n  return UIntProgression.fromClosedRange(this, to, -1)\n}\n\n/**\n *
Returns a progression from this value down to the specified [to] value with the step -1.\n * \n * The [to] value should
be less than or equal to `this` value.\n * If the [to] value is greater than `this` value the returned progression is
empty.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic
infix fun ULong.downTo(to: ULong): ULongProgression { \n  return ULongProgression.fromClosedRange(this,
to, -1L)\n}\n\n/**\n * Returns a progression from this value down to the specified [to] value with the step -1.\n * \n
* The [to] value should be less than or equal to `this` value.\n * If the [to] value is greater than `this` value the
returned progression is empty.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic infix fun
UShort.downTo(to: UShort): UIntProgression { \n  return UIntProgression.fromClosedRange(this.toUInt(),
to.toUInt(), -1)\n}\n\n/**\n * Returns a progression that goes over the same range in the opposite direction with the
same step.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun
UIntProgression.reversed(): UIntProgression { \n  return UIntProgression.fromClosedRange(last, first, -
step)\n}\n\n/**\n * Returns a progression that goes over the same range in the opposite direction with the same step.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun
ULongProgression.reversed(): ULongProgression { \n  return ULongProgression.fromClosedRange(last, first, -
step)\n}\n\n/**\n * Returns a progression that goes over the same range with the given step.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic infix fun
UIntProgression.step(step: Int): UIntProgression { \n  checkStepIsPositive(step > 0, step)\n  return
UIntProgression.fromClosedRange(first, last, if (this.step > 0) step else -step)\n}\n\n/**\n * Returns a progression
that goes over the same range with the given step.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic infix fun
ULongProgression.step(step: Long): ULongProgression { \n  checkStepIsPositive(step > 0, step)\n  return
ULongProgression.fromClosedRange(first, last, if (this.step > 0)
step else -step)\n}\n\n/**\n * Returns a range from this value up to but excluding the specified [to] value.\n * \n * If
the [to] value is less than or equal to `this` value, then the returned range is empty.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic infix fun
UByte.until(to: UByte): UIntRange { \n  if (to <= UByte.MIN_VALUE) return UIntRange.EMPTY\n  return

```

```

this.toUInt() .. (to - 1u).toUInt()\n\n/**\n * Returns a range from this value up to but excluding the specified [to]
value.\n * \n * If the [to] value is less than or equal to `this` value, then the returned range is empty.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic infix fun UInt.until(to:
UInt): UIntRange {\n    if (to <= UInt.MIN_VALUE) return UIntRange.EMPTY\n    return this .. (to -
1u).toUInt()\n}\n\n/**\n * Returns a range from this value up to but excluding the specified [to] value.\n * \n * If the
[to] value is less than or
equal to `this` value, then the returned range is empty.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic infix fun
ULong.until(to: ULong): ULongRange {\n    if (to <= ULong.MIN_VALUE) return ULongRange.EMPTY\n
return this .. (to - 1u).toULong()\n}\n\n/**\n * Returns a range from this value up to but excluding the specified [to]
value.\n * \n * If the [to] value is less than or equal to `this` value, then the returned range is empty.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic infix fun
UShort.until(to: UShort): UIntRange {\n    if (to <= UShort.MIN_VALUE) return UIntRange.EMPTY\n    return
this.toUInt() .. (to - 1u).toUInt()\n}\n\n/**\n * Ensures that this value is not less than the specified
[minimumValue].\n * \n * @return this value if it's greater than or equal to the [minimumValue] or the
[minimumValue] otherwise.\n * \n * @sample samples.comparisons.ComparableOps.coerceAtLeastUnsigned\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic
fun UInt.coerceAtLeast(minimumValue: UInt): UInt {\n    return if (this < minimumValue) minimumValue else
this\n}\n\n/**\n * Ensures that this value is not less than the specified [minimumValue].\n * \n * @return this value
if it's greater than or equal to the [minimumValue] or the [minimumValue] otherwise.\n * \n * @sample
samples.comparisons.ComparableOps.coerceAtLeastUnsigned\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun
ULong.coerceAtLeast(minimumValue: ULong): ULong {\n    return if (this < minimumValue) minimumValue else
this\n}\n\n/**\n * Ensures that this value is not less than the specified [minimumValue].\n * \n * @return this value
if it's greater than or equal to the [minimumValue] or the [minimumValue] otherwise.\n * \n * @sample
samples.comparisons.ComparableOps.coerceAtLeastUnsigned\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic
fun UByte.coerceAtLeast(minimumValue: UByte): UByte {\n    return if (this < minimumValue) minimumValue
else this\n}\n\n/**\n * Ensures that this value is not less than the specified [minimumValue].\n * \n * @return this
value if it's greater than or equal to the [minimumValue] or the [minimumValue] otherwise.\n * \n * @sample
samples.comparisons.ComparableOps.coerceAtLeastUnsigned\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun
UShort.coerceAtLeast(minimumValue: UShort): UShort {\n    return if (this < minimumValue) minimumValue else
this\n}\n\n/**\n * Ensures that this value is not greater than the specified [maximumValue].\n * \n * @return this
value if it's less than or equal to the [maximumValue] or the [maximumValue] otherwise.\n * \n * @sample
samples.comparisons.ComparableOps.coerceAtMostUnsigned\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun
UInt.coerceAtMost(maximumValue:
UInt): UInt {\n    return if (this > maximumValue) maximumValue else this\n}\n\n/**\n * Ensures that this value is
not greater than the specified [maximumValue].\n * \n * @return this value if it's less than or equal to the
[maximumValue] or the [maximumValue] otherwise.\n * \n * @sample
samples.comparisons.ComparableOps.coerceAtMostUnsigned\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun
ULong.coerceAtMost(maximumValue: ULong): ULong {\n    return if (this > maximumValue) maximumValue else
this\n}\n\n/**\n * Ensures that this value is not greater than the specified [maximumValue].\n * \n * @return this
value if it's less than or equal to the [maximumValue] or the [maximumValue] otherwise.\n * \n * @sample
samples.comparisons.ComparableOps.coerceAtMostUnsigned\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun

```



```

UByte.coerceAtMost(maximumValue: UByte): UByte {
    return if (this > maximumValue) maximumValue
    else this
}
/**
 * Ensures that this value is not greater than the specified [maximumValue].
 * @return this value if it's less than or equal to the [maximumValue] or the [maximumValue] otherwise.
 * @sample samples.comparisons.ComparableOps.coerceAtMostUnsigned
 */
@SinceKotlin("1.5")
@WasExperimental(ExperimentalUnsignedTypes::class)
public fun
UShort.coerceAtMost(maximumValue: UShort): UShort {
    return if (this > maximumValue) maximumValue
    else this
}
/**
 * Ensures that this value lies in the specified range [minimumValue]..[maximumValue].
 * @return this value if it's in the range, or [minimumValue] if this value is less than [minimumValue], or
 * [maximumValue] if this value is greater than [maximumValue].
 * @sample samples.comparisons.ComparableOps.coerceInUnsigned
 */
@SinceKotlin("1.5")
@WasExperimental(ExperimentalUnsignedTypes::class)
public fun
UInt.coerceIn(minimumValue: UInt, maximumValue: UInt): UInt {
    if (minimumValue > maximumValue) throw IllegalArgumentException("Cannot coerce value to an empty range: maximum
    $maximumValue is less than minimum $minimumValue.")
    if (this < minimumValue) return minimumValue
    if (this > maximumValue) return maximumValue
    return this
}
/**
 * Ensures that this value lies in the
 * specified range [minimumValue]..[maximumValue].
 * @return this value if it's in the range, or
 * [minimumValue] if this value is less than [minimumValue], or [maximumValue] if this value is greater than
 * [maximumValue].
 * @sample samples.comparisons.ComparableOps.coerceInUnsigned
 */
@SinceKotlin("1.5")
@WasExperimental(ExperimentalUnsignedTypes::class)
public fun
ULong.coerceIn(minimumValue: ULong, maximumValue: ULong): ULong {
    if (minimumValue >
    maximumValue) throw IllegalArgumentException("Cannot coerce value to an empty range: maximum
    $maximumValue is less than minimum $minimumValue.")
    if (this < minimumValue) return minimumValue
    if (this > maximumValue) return maximumValue
    return this
}
/**
 * Ensures that this value lies in the
 * specified range [minimumValue]..[maximumValue].
 * @return this value if it's in the range, or
 * [minimumValue] if this value is less than [minimumValue], or [maximumValue] if this value is greater than
 * [maximumValue].
 * @sample samples.comparisons.ComparableOps.coerceInUnsigned
 */
@SinceKotlin("1.5")
@WasExperimental(ExperimentalUnsignedTypes::class)
public fun
UByte.coerceIn(minimumValue: UByte, maximumValue: UByte): UByte {
    if (minimumValue >
    maximumValue) throw IllegalArgumentException("Cannot coerce value to an empty range: maximum
    $maximumValue is less than minimum $minimumValue.")
    if (this < minimumValue) return minimumValue
    if (this > maximumValue) return maximumValue
    return this
}
/**
 * Ensures that this value lies in the
 * specified range [minimumValue]..[maximumValue].
 * @return this value if it's in the range,
 * or [minimumValue] if this value is less than [minimumValue], or [maximumValue] if this value is greater than
 * [maximumValue].
 * @sample samples.comparisons.ComparableOps.coerceInUnsigned
 */
@SinceKotlin("1.5")
@WasExperimental(ExperimentalUnsignedTypes::class)
public fun
UShort.coerceIn(minimumValue: UShort, maximumValue: UShort): UShort {
    if (minimumValue >
    maximumValue) throw IllegalArgumentException("Cannot coerce value to an empty range: maximum
    $maximumValue is less than minimum $minimumValue.")
    if (this < minimumValue) return minimumValue
    if (this > maximumValue) return maximumValue
    return this
}
/**
 * Ensures that this value lies in the
 * specified [range].
 * @return this value if it's in the [range], or `range.start` if this value is less than
 * `range.start`, or `range.endInclusive` if this value is greater than `range.endInclusive`.
 * @sample samples.comparisons.ComparableOps.coerceInUnsigned
 */
@SinceKotlin("1.5")
@WasExperimental(ExperimentalUnsignedTypes::class)
public
fun UInt.coerceIn(range: ClosedRange<UInt>): UInt {
    if (range is ClosedFloatingPointRange) {
        return
        this.coerceIn<UInt>(range)
    }
    if (range.isEmpty()) throw IllegalArgumentException("Cannot coerce value to
    an empty range: $range.")
    return when {
        this < range.start -> range.start
        this > range.endInclusive -
        > range.endInclusive
        else -> this
    }
}
/**
 * Ensures that this value lies in the specified [range].
 * @return this value if it's in the [range], or `range.start` if this value is less than `range.start`, or
 */

```

```

`range.endInclusive` if this value is greater than `range.endInclusive`. \n * \n * @sample
samples.comparisons.ComparableOps.coerceInUnsigned\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun
ULong.coerceIn(range: ClosedRange<ULong>): ULong {\n    if (range is ClosedFloatingPointRange) {\n        return
this.coerceIn<ULong>(range)\n    }\n    if (range.isEmpty()) throw IllegalArgumentException("Cannot coerce value to an empty range: $range.")\n
return when {\n        this < range.start -> range.start\n        this > range.endInclusive -> range.endInclusive\n
else -> this\n    }\n}\n\n", /*\n * Copyright 2010-2022 JetBrains s.r.o. and Kotlin Programming Language
contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n
*\n@\n@file:kotlin.jvm.JvmMultifileClass\n@file:kotlin.jvm.JvmName("USequencesKt")\n\npackage
kotlin.sequences\n\n/\n// NOTE: THIS FILE IS AUTO-GENERATED by the GenerateStandardLib.kt\n// See:
https://github.com/JetBrains/kotlin/tree/master/libraries/stdlib\n\nimport kotlin.random.*\n\n/**\n * Returns the
sum of all elements in the sequence.\n * \n * The operation is _terminal_.\n
*\n@kotlin.jvm.JvmName("sumOfUInt")\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedT
ypes::class)\npublic
fun Sequence<UInt>.sum(): UInt {\n    var sum: UInt = 0u\n    for (element in this) {\n        sum += element\n    }\n
return sum\n}\n\n/**\n * Returns the sum of all elements in the sequence.\n * \n * The operation is _terminal_.\n
*\n@kotlin.jvm.JvmName("sumOfULong")\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsigned
Types::class)\npublic fun Sequence<ULong>.sum(): ULong {\n    var sum: ULong = 0uL\n    for (element in this)
{\n        sum += element\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all elements in the sequence.\n * \n *
The operation is _terminal_.\n
*\n@kotlin.jvm.JvmName("sumOfUByte")\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsigned
Types::class)\npublic fun Sequence<UByte>.sum(): UInt {\n    var sum: UInt = 0u\n    for (element in this) {\n
sum += element\n    }\n    return sum\n}\n\n/**\n * Returns the sum of all elements in the sequence.\n * \n * The
operation is _terminal_.\n
*\n@kotlin.jvm.JvmName("sumOfUShort")\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsigned
Types::class)\npublic
fun Sequence<UShort>.sum(): UInt {\n    var sum: UInt = 0u\n    for (element in this) {\n        sum += element\n
}\n    return sum\n}\n\n", /*\n * Copyright 2010-2020 JetBrains s.r.o. and Kotlin Programming Language
contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n */\n\npackage kotlin\n\npublic expect open class Error : Throwable {\n
    constructor()\n    constructor(message: String?)\n    constructor(message: String?, cause: Throwable?)\n
    constructor(cause: Throwable?)\n}\n\npublic expect open class Exception : Throwable {\n    constructor()\n
    constructor(message: String?)\n    constructor(message: String?, cause: Throwable?)\n    constructor(cause:
Throwable?)\n}\n\npublic expect open class RuntimeException : Exception {\n    constructor()\n    constructor(message:
String?)\n    constructor(message: String?, cause: Throwable?)\n}\n\npublic expect open class
IllegalStateException : RuntimeException {\n    constructor()\n    constructor(message: String?)\n
    constructor(message: String?, cause: Throwable?)\n    constructor(cause: Throwable?)\n}\n\npublic expect open
class IllegalArgumentException : RuntimeException {\n    constructor()\n    constructor(message: String?)\n
    constructor(message: String?, cause: Throwable?)\n    constructor(cause: Throwable?)\n}\n\npublic expect open
class IllegalStateException : RuntimeException {\n    constructor()\n    constructor(message: String?)\n
    constructor(message: String?, cause: Throwable?)\n    constructor(cause: Throwable?)\n}\n\npublic expect open
class IndexOutOfBoundsException : RuntimeException {\n    constructor()\n    constructor(message:
String?)\n}\n\npublic expect open class ConcurrentModificationException : RuntimeException {\n    constructor()\n
    constructor(message: String?)\n    constructor(message: String?, cause: Throwable?)\n    constructor(cause:
Throwable?)\n}\n\npublic expect open class UnsupportedOperationException : RuntimeException {\n
    constructor()\n    constructor(message: String?)\n

```

```

    constructor(message: String?, cause: Throwable?)\n    constructor(cause: Throwable?)\n}\n\npublic expect open
class NumberFormatException : IllegalArgumentException {\n    constructor()\n    constructor(message:
String?)\n}\n\npublic expect open class NullPointerException : RuntimeException {\n    constructor()\n
constructor(message: String?)\n}\n\npublic expect open class ClassCastException : RuntimeException {\n
constructor()\n    constructor(message: String?)\n}\n\npublic expect open class AssertionError : Error {\n
constructor()\n    constructor(message: Any?)\n}\n\npublic expect open class NoSuchElementException :
RuntimeException {\n    constructor()\n    constructor(message: String?)\n}\n\n@SinceKotlin("1.3")\npublic
expect open class ArithmeticException : RuntimeException {\n    constructor()\n    constructor(message:
String?)\n}\n\n@Deprecated("This exception type is not supposed to be thrown or caught in common code and will
be removed from kotlin-stdlib-common
soon.\", level = DeprecationLevel.ERROR)\npublic expect open class NoWhenBranchMatchedException :
RuntimeException {\n    constructor()\n    constructor(message: String?)\n    constructor(message: String?, cause:
Throwable?)\n    constructor(cause: Throwable?)\n}\n\n@Deprecated("This exception type is not supposed to be
thrown or caught in common code and will be removed from kotlin-stdlib-common soon.\", level =
DeprecationLevel.ERROR)\npublic expect class UninitializedPropertyAccessException : RuntimeException {\n
constructor()\n    constructor(message: String?)\n    constructor(message: String?, cause: Throwable?)\n
constructor(cause: Throwable?)\n}\n\n/**\n * Thrown after invocation of a function or property that was expected to
return `Nothing`, but returned something instead.\n */\n\n@SinceKotlin("1.4")\n@PublishedApi\ninternal class
KotlinNothingValueException : RuntimeException {\n    constructor(): super()\n    constructor(message: String?):
super(message)\n    constructor(message:
String?, cause: Throwable?): super(message, cause)\n    constructor(cause: Throwable?):
super(cause)\n}\n\n/**\n * Returns the detailed description of this throwable with its stack trace.\n */\n * The
detailed description includes:\n * - the short description (see [Throwable.toString]) of this throwable;\n * - the
complete stack trace;\n * - detailed descriptions of the exceptions that were [suppressed][suppressedExceptions] in
order to deliver this exception;\n * - the detailed description of each throwable in the [Throwable.cause] chain.\n
*/\n\n@SinceKotlin("1.4")\npublic expect fun Throwable.stackTraceToString(): String\n\n/**\n * Prints the [detailed
description][Throwable.stackTraceToString] of this throwable to the standard output or standard error output.\n
*/\n\n@SinceKotlin("1.4")\n@Suppress("EXTENSION_SHADOWED_BY_MEMBER")\npublic expect fun
Throwable.printStackTrace(): Unit\n\n/**\n * When supported by the platform, adds the specified exception to the
list of exceptions that were\n * suppressed in order to deliver this exception.\n
*/\n\n@SinceKotlin("1.4")\n@Suppress("EXTENSION_SHADOWED_BY_MEMBER")\npublic expect fun
Throwable.addSuppressed(exception: Throwable)\n\n/**\n * Returns a list of all exceptions that were suppressed in
order to deliver this exception.\n */\n * The list can be empty:\n * - if no exceptions were suppressed;\n * - if the
platform doesn't support suppressed exceptions;\n * - if this [Throwable] instance has disabled the suppression.\n
*/\n\n@SinceKotlin("1.4")\npublic expect val Throwable.suppressedExceptions: List<Throwable>\n", "/*\n *
Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is
governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\npackage
kotlin.js\nimport kotlin.annotation.AnnotationTarget.*\n\n/**\n * Gives a declaration (a function, a property or a
class) specific name in JavaScript.\n */\n\n@Target(CLASS,
FUNCTION, PROPERTY, CONSTRUCTOR, PROPERTY_GETTER,
PROPERTY_SETTER)\n@OptionalExpectation\npublic expect annotation class JsName(val name: String)\n\n/**\n *
Marks experimental JS export annotations.\n */\n * Note that behavior of these annotations will likely be changed
in the future.\n */\n * Usages of such annotations will be reported as warnings unless an explicit opt-in with\n * the
[OptIn] annotation, e.g. `@OptIn(ExperimentalJsExport::class)`,\n * or with the `opt-
in=kotlin.js.ExperimentalJsExport` compiler option is given.\n */\n\n@RequiresOptIn(level =
RequiresOptIn.Level.WARNING)\n@MustBeDocumented\n@Retention(AnnotationRetention.BINARY)\n@Since
Kotlin("1.4")\npublic annotation class ExperimentalJsExport\n\n/**\n * Exports top-level declaration on JS
platform.\n */\n * Compiled module exposes declarations that are marked with this annotation without name

```

mangling.

- \* This annotation can be applied to either files or top-level declarations.
- \* It is currently prohibited to export the following kinds of declarations:
  - \* `expect` declarations
  - \* inline functions with reified type parameters
  - \* suspend functions
  - \* secondary constructors without `@JsName`
  - \* extension properties
  - \* enum classes
  - \* annotation classes
- \* Signatures of exported declarations must only contain "exportable" types:
  - \* `dynamic`, `Any`, `String`, `Boolean`, `Byte`, `Short`, `Int`, `Float`, `Double`
  - \* `BooleanArray`, `ByteArray`, `ShortArray`, `IntArray`, `FloatArray`, `DoubleArray`
  - \* `Array<exportable-type>`
  - \* Function types with exportable parameters and return types
  - \* `external` or `@JsExport` classes and interfaces
  - \* Nullable counterparts of types above
  - \* Unit return type. Must not be nullable
- \* This annotation is experimental, meaning that restrictions mentioned above are subject to change.

```

*\/@ExperimentalJsExport@Retention(AnnotationRetention.BINARY)@Target(CLASS,
PROPERTY, FUNCTION, FILE)@SinceKotlin("1.4")@OptionalExpectation
public expect annotation class JsExport() {
    /* Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.
    Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.
    */
    package kotlin.io
    /** Prints the line separator to the standard output stream.
    */
    public expect fun println()
    /** Prints the given [message] and the line separator to the standard output stream.
    */
    public expect fun println(message: Any?)
    /** Prints the given [message] to the standard output stream.
    */
    public expect fun print(message: Any?)
    /** Reads a line of input from the standard input stream and returns it,
    or throws a [RuntimeException] if EOF has already been reached when [readln] is called.
    LF or CRLF is treated as the line terminator. Line terminator is not included in the returned string.
    Currently this function is not supported in Kotlin/JS and throws [UnsupportedOperationException].
    */
    @SinceKotlin("1.6")
    public expect fun readln(): String
    /** Reads a line of input from the standard input stream and returns it,
    or return `null` if EOF has already been reached when [readlnOrNull] is called.
    LF or CRLF is treated as the line terminator. Line terminator is not included in the returned string.
    Currently this function is not supported in Kotlin/JS and throws [UnsupportedOperationException].
    */
    @SinceKotlin("1.6")
    public expect fun readlnOrNull(): String?
}
internal class ReadAfterEOFException(message: String?) :
    RuntimeException(message)
internal expect interface Serializable {
    /* Copyright 2010-2020 JetBrains s.r.o. and Kotlin Programming Language contributors.
    Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.
    */
    package kotlin.collections
    import kotlin.internal.PlatformDependent
    /**
    * Classes that inherit from this interface can be represented as a sequence of elements that can
    * be iterated over.
    * @param T the type of element being iterated over. The iterator is covariant in its element type.
    */
    public interface Iterable<out T> {
        /**
        * Returns an iterator over the elements of this object.
        */
        public operator fun iterator(): Iterator<T>
    }
    /**
    * Classes that inherit from this interface can be represented as a sequence of elements that can
    * be iterated over and that supports removing elements during iteration.
    * @param T the type of element being iterated over. The mutable iterator is invariant in its element type.
    */
    public interface MutableIterable<out T> : Iterable<T> {
        /**
        * Returns an iterator over the elements of this sequence that supports removing elements during iteration.
        */
        override fun iterator(): MutableIterator<T>
    }
    /**
    * A generic collection of elements. Methods in this interface support only read-only access to the collection;
    * read/write access is supported through the [MutableCollection] interface.
    * @param E the type of elements contained in the collection. The collection is covariant in its element type.
    */
    public interface Collection<out E> : Iterable<E> {
        // Query Operations
        /**
        * Returns the size of the collection.
        */
        public val size: Int
        /**
        * Returns `true` if the collection is empty (contains no elements), `false` otherwise.
        */
        public fun isEmpty(): Boolean
        /**
        * Checks if the specified element is contained in this collection.
        */
        public operator fun contains(element: @UnsafeVariance E): Boolean
        /**
        * override fun iterator(): Iterator<E>
        // Bulk Operations
        /**
        * Checks if all elements in the specified collection are contained in this collection.
        */
        public fun containsAll(elements: Collection<@UnsafeVariance E>): Boolean
    }
}

```

```

* A generic collection of elements that supports adding and removing elements.\n *\n * @param E the type of
elements contained in the collection. The mutable collection is invariant in its element type.\n */\npublic interface
MutableCollection<E> : Collection<E>, MutableIterable<E> {\n // Query Operations\n override fun iterator():
MutableIterator<E>\n\n // Modification Operations\n /**\n * Adds the specified element to the collection.\n
*\n * @return `true` if the element has been added, `false` if the collection does not support duplicates\n * and
the element is already contained in the collection.\n */\n public fun add(element: E): Boolean\n\n /**\n *
Removes a single instance of the specified element from this\n * collection, if it is present.\n *\n * @return
`true` if the element has been successfully removed; `false` if it was not present in the collection.\n */\n public
fun remove(element: E): Boolean\n\n // Bulk Modification Operations\n /**\n * Adds all of the elements of the specified collection to this
collection.\n *\n * @return `true` if any of the specified elements was added to the collection, `false` if the
collection was not modified.\n */\n public fun addAll(elements: Collection<E>): Boolean\n\n /**\n *
Removes all of this collection's elements that are also contained in the specified collection.\n *\n * @return
`true` if any of the specified elements was removed from the collection, `false` if the collection was not modified.\n
*/\n public fun removeAll(elements: Collection<E>): Boolean\n\n /**\n * Retains only the elements in this
collection that are contained in the specified collection.\n *\n * @return `true` if any element was removed
from the collection, `false` if the collection was not modified.\n */\n public fun retainAll(elements:
Collection<E>): Boolean\n\n /**\n * Removes all elements
from this collection.\n */\n public fun clear(): Unit\n}\n\n/**\n * A generic ordered collection of elements.
Methods in this interface support only read-only access to the list;\n * read/write access is supported through the
[MutableList] interface.\n * @param E the type of elements contained in the list. The list is covariant in its element
type.\n */\npublic interface List<out E> : Collection<E> {\n // Query Operations\n\n override val size: Int\n
override fun isEmpty(): Boolean\n override fun contains(element: @UnsafeVariance E): Boolean\n override fun
iterator(): Iterator<E>\n\n // Bulk Operations\n override fun containsAll(elements: Collection<@UnsafeVariance
E>): Boolean\n\n // Positional Access Operations\n /**\n * Returns the element at the specified index in the
list.\n */\n public operator fun get(index: Int): E\n\n // Search Operations\n /**\n * Returns the index of
the first occurrence of the specified element in the list,
or -1 if the specified\n * element is not contained in the list.\n */\n public fun indexOf(element:
@UnsafeVariance E): Int\n\n /**\n * Returns the index of the last occurrence of the specified element in the list,
or -1 if the specified\n * element is not contained in the list.\n */\n public fun lastIndexOf(element:
@UnsafeVariance E): Int\n\n // List Iterators\n /**\n * Returns a list iterator over the elements in this list (in
proper sequence).\n */\n public fun listIterator(): ListIterator<E>\n\n /**\n * Returns a list iterator over the
elements in this list (in proper sequence), starting at the specified [index].\n */\n public fun listIterator(index:
Int): ListIterator<E>\n\n // View\n /**\n * Returns a view of the portion of this list between the specified
[fromIndex] (inclusive) and [toIndex] (exclusive).\n * The returned list is backed by this list, so non-structural
changes in the returned list are
reflected in this list, and vice-versa.\n *\n * Structural changes in the base list make the behavior of the view
undefined.\n */\n public fun subList(fromIndex: Int, toIndex: Int): List<E>\n}\n\n/**\n * A generic ordered
collection of elements that supports adding and removing elements.\n * @param E the type of elements contained in
the list. The mutable list is invariant in its element type.\n */\npublic interface MutableList<E> : List<E>,
MutableCollection<E> {\n // Modification Operations\n /**\n * Adds the specified element to the end of this
list.\n *\n * @return `true` because the list is always modified as the result of this operation.\n */\n override
fun add(element: E): Boolean\n\n override fun remove(element: E): Boolean\n\n // Bulk Modification
Operations\n /**\n * Adds all of the elements of the specified collection to the end of this list.\n *\n * The
elements are appended in the order they appear in the [elements]
collection.\n *\n * @return `true` if the list was changed as the result of the operation.\n */\n override fun
addAll(elements: Collection<E>): Boolean\n\n /**\n * Inserts all of the elements of the specified collection
[elements] into this list at the specified [index].\n *\n * @return `true` if the list was changed as the result of the

```

```

operation.\n    */\n    public fun addAll(index: Int, elements: Collection<E>): Boolean\n\n    override fun\n    removeAll(elements: Collection<E>): Boolean\n\n    override fun retainAll(elements: Collection<E>): Boolean\n\n    override fun clear(): Unit\n\n    // Positional Access Operations\n    /**\n     * Replaces the element at the specified\n     * position in this list with the specified element.\n     *\n     * @return the element previously at the specified\n     * position.\n     */\n    public operator fun set(index: Int, element: E): E\n\n    /**\n     * Inserts an element into the list\n     * at the specified [index].\n     */\n    public\n    fun add(index: Int, element: E): Unit\n\n    /**\n     * Removes an element at the specified [index] from the list.\n     *\n     * @return the element that has been removed.\n     */\n    public fun removeAt(index: Int): E\n\n    // List\n    Iterators\n    override fun listIterator(): MutableListIterator<E>\n\n    override fun listIterator(index: Int):\n    MutableListIterator<E>\n\n    // View\n    override fun subList(fromIndex: Int, toIndex: Int):\n    MutableList<E>\n\n    /**\n     * A generic unordered collection of elements that does not support duplicate\n     * elements.\n     * Methods in this interface support only read-only access to the set;\n     * read/write access is supported\n     * through the [MutableSet] interface.\n     * @param E the type of elements contained in the set. The set is covariant in\n     * its element type.\n     */\n    public interface Set<out E> : Collection<E> {\n    // Query Operations\n    override val size:\n    Int\n    override fun isEmpty(): Boolean\n    override fun contains(element: @UnsafeVariance\n    E): Boolean\n    override fun iterator(): Iterator<E>\n\n    // Bulk Operations\n    override fun containsAll(elements:\n    Collection<@UnsafeVariance E>): Boolean\n\n    /**\n     * A generic unordered collection of elements that does not\n     * support duplicate elements, and supports\n     * adding and removing elements.\n     * @param E the type of elements\n     * contained in the set. The mutable set is invariant in its element type.\n     */\n    public interface MutableSet<E> : Set<E>,\n    MutableCollection<E> {\n    // Query Operations\n    override fun iterator(): MutableIterator<E>\n\n    //\n    Modification Operations\n    /**\n     * Adds the specified element to the set.\n     *\n     * @return `true` if the\n     * element has been added, `false` if the element is already contained in the set.\n     */\n    override fun add(element:\n    E): Boolean\n\n    override fun remove(element: E): Boolean\n\n    // Bulk Modification Operations\n    override\n    fun addAll(elements: Collection<E>): Boolean\n    override fun removeAll(elements:\n    Collection<E>): Boolean\n    override fun retainAll(elements: Collection<E>): Boolean\n    override fun clear():\n    Unit\n\n    /**\n     * A collection that holds pairs of objects (keys and values) and supports efficiently retrieving\n     * the value corresponding to each key. Map keys are unique; the map holds only one value for each key.\n     * Methods\n     * in this interface support only read-only access to the map; read-write access is supported through\n     * the\n     * [MutableMap] interface.\n     * @param K the type of map keys. The map is invariant in its key type, as it\n     * can\n     * accept key as a parameter (of [containsKey] for example) and return it in [keys] set.\n     * @param V the type of map\n     * values. The map is covariant in its value type.\n     */\n    public interface Map<K, out V> {\n    // Query Operations\n    /**\n     * Returns the number of key/value pairs in the map.\n     */\n    public val size: Int\n\n    /**\n     * Returns\n     * `true` if the map is empty (contains no elements), `false` otherwise.\n     */\n    public fun isEmpty(): Boolean\n\n    /**\n     * Returns `true` if the map contains the specified [key].\n     */\n    public fun containsKey(key: K): Boolean\n\n    /**\n     * Returns `true` if the map maps one or more keys to\n     * the specified [value].\n     */\n    public fun containsValue(value: @UnsafeVariance V): Boolean\n\n    /**\n     * Returns the value corresponding to the given [key], or `null` if such a key is not present in the map.\n     */\n    public operator fun get(key: K): V?\n\n    /**\n     * Returns the value corresponding to the given [key], or\n     * [defaultValue] if such a key is not present in the map.\n     *\n     * @since JDK 1.8\n     */\n    @SinceKotlin("1.1")\n    @PlatformDependent\n    public fun getOrDefault(key: K, defaultValue:\n    @UnsafeVariance V): V {\n    // See default implementation in JDK sources\n    throw\n    NotImplementedError()\n    }\n\n    // Views\n    /**\n     * Returns a read-only [Set] of all keys in this map.\n     */\n    public val keys: Set<K>\n\n    /**\n     * Returns a read-only [Collection] of all values in this map. Note that this\n     * collection may contain duplicate values.\n     */\n    public val values: Collection<V>\n\n    /**\n     * Returns a read-\n     * only [Set] of all key/value pairs in this map.\n     */\n    public val entries: Set<Map.Entry<K, V>>\n\n    /**\n     * Represents a key/value pair held by a [Map].\n     */\n    public interface Entry<out K, out V> {\n    /**\n     * Returns the key of this key/value pair.\n     */\n    public val key: K\n\n    /**\n     * Returns the value of\n     * this key/value pair.\n     */\n    public val value: V\n    }\n\n    /**\n     * A modifiable collection that holds pairs

```

of objects (keys and values) and supports efficiently retrieving the value corresponding to each key. Map keys are unique; the map holds only one value for each key. @param K the type of map keys. The map is invariant in its key type. @param V the

type of map values. The mutable map is invariant in its value type. `public interface MutableMap<K, V> : Map<K, V> {`  
// Modification Operations  
/\*\* Associates the specified [value] with the specified [key] in the map.  
\* @return the previous value associated with the key, or `null` if the key was not present in the map.  
\*/  
public fun put(key: K, value: V): V?  
/\*\* Removes the specified key and its corresponding value from this map.  
\* @return the previous value associated with the key, or `null` if the key was not present in the map.  
\*/  
public fun remove(key: K): V?  
/\*\* Removes the entry for the specified key only if it is mapped to the specified value.  
\* @return true if entry was removed  
\*/  
@SinceKotlin("1.1")  
@PlatformDependent  
public fun remove(key: K, value: V): Boolean {  
// See default implementation in JDK sources  
return true  
}

// Bulk Modification Operations  
/\*\* Updates this map with key/value pairs from the specified map [from].  
\*/  
public fun putAll(from: Map<out K, V>): Unit  
/\*\* Removes all elements from this map.  
\*/  
public fun clear(): Unit  
// Views  
/\*\* Returns a [MutableSet] of all keys in this map.  
\*/  
override val keys: MutableSet<K>  
/\*\* Returns a [MutableCollection] of all values in this map. Note that this collection may contain duplicate values.  
\*/  
override val values:

MutableCollection<V>  
/\*\* Returns a [MutableSet] of all key/value pairs in this map.  
\*/  
override val entries: MutableSet<MutableMap.MutableEntry<K, V>>  
/\*\* Represents a key/value pair held by a [MutableMap].  
\*/  
public interface MutableEntry<K, V> : Map.Entry<K, V> {  
/\*\* Changes the value associated with the key of this entry.  
\*/  
\* @return the previous value corresponding to the key.  
\*/  
public fun setValue(newValue: V): V

}  
}"}  
/\* Copyright 2010-2015 JetBrains s.r.o. Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at <http://www.apache.org/licenses/LICENSE-2.0> Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

package kotlin  
The type with only one value: the `Unit` object. This type corresponds to the `void` type in Java.  
public object Unit {  
override fun toString() = "kotlin.Unit"  
}"}  
/\* Copyright 2010-2015 JetBrains s.r.o. Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at <http://www.apache.org/licenses/LICENSE-2.0> Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

package kotlin.annotation  
import kotlin.annotation.AnnotationTarget  
/\*\* Contains the list of code elements which are the possible annotation targets  
\*/  
public enum class AnnotationTarget {  
/\*\* Class, interface or object, annotation class is also included  
\*/  
CLASS,  
/\*\* Annotation class only  
\*/  
ANNOTATION\_CLASS,  
/\*\* Generic type parameter  
\*/  
TYPE\_PARAMETER,  
/\*\* Property  
\*/  
PROPERTY,  
/\*\* Field, including property's backing field  
\*/  
FIELD,  
/\*\* Local variable  
\*/  
LOCAL\_VARIABLE,  
/\*\* Value parameter of a function or a constructor  
\*/  
VALUE\_PARAMETER,  
/\*\* Constructor only (primary or secondary)  
\*/  
CONSTRUCTOR,  
/\*\* Function (constructors are not included)  
\*/  
FUNCTION,  
/\*\* Property getter only  
\*/  
PROPERTY\_GETTER,  
/\*\* Property setter only  
\*/  
PROPERTY\_SETTER,  
/\*\* Type usage  
\*/  
TYPE,  
/\*\* Any expression  
\*/  
EXPRESSION,  
/\*\* File  
\*/  
FILE,  
/\*\* Type alias  
\*/  
@SinceKotlin("1.1")  
TYPEALIAS

/\*\* Contains the list of possible annotation's retentions.  
\*/  
\* Determines how an annotation is stored in binary output.  
\*/  
public enum class AnnotationRetention {  
/\*\* Annotation isn't stored

```

in binary output */\n SOURCE,\n /** Annotation is stored in binary output, but invisible for reflection */\n
BINARY,\n /** Annotation is stored
in binary output and visible for reflection (default retention) */\n RUNTIME\n}\n\n/**\n * This meta-annotation
indicates the kinds of code elements which are possible targets of an annotation.\n *\n * If the target meta-annotation
is not present on an annotation declaration, the annotation is applicable to the following elements:\n * [CLASS],
[PROPERTY], [FIELD], [LOCAL_VARIABLE], [VALUE_PARAMETER], [CONSTRUCTOR], [FUNCTION],
[PROPERTY_GETTER], [PROPERTY_SETTER].\n *\n * @property allowedTargets list of allowed annotation
targets\n */\n@Target(AnnotationTarget.ANNOTATION_CLASS)\n@MustBeDocumented\npublic annotation
class Target(vararg val allowedTargets: AnnotationTarget)\n\n/**\n * This meta-annotation determines whether an
annotation is stored in binary output and visible for reflection. By default, both are true.\n *\n * @property value
necessary annotation retention (RUNTIME, BINARY or SOURCE)\n
*/\n@Target(AnnotationTarget.ANNOTATION_CLASS)\npublic annotation class Retention(val
value: AnnotationRetention = AnnotationRetention.RUNTIME)\n\n/**\n * This meta-annotation determines that an
annotation is applicable twice or more on a single code element\n
*/\n@Target(AnnotationTarget.ANNOTATION_CLASS)\npublic annotation class Repeatable\n\n/**\n * This
meta-annotation determines that an annotation is a part of public API and therefore should be included in the
generated\n * documentation for the element to which the annotation is applied.\n
*/\n@Target(AnnotationTarget.ANNOTATION_CLASS)\npublic annotation class MustBeDocumented\n","/*\n *
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governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*/\n\n@JsName("arrayIterator")\ninternal fun arrayIterator(array: dynamic, type: String?) = when (type) {\n null
-> {\n val arr: Array<dynamic> = array\n object : Iterator<dynamic> {\n var index =
0\n override fun hasNext() = index < arr.size\n override fun next() = if (index < arr.size) arr[index++]
else throw NoSuchElementException("$index")\n }
}\n "BooleanArray" ->
booleanArrayIterator(array)\n "ByteArray" -> byteArrayIterator(array)\n "ShortArray" ->
shortArrayIterator(array)\n "CharArray" -> charArrayIterator(array)\n "IntArray" -> intArrayIterator(array)\n
"LongArray" -> longArrayIterator(array)\n "FloatArray" -> floatArrayIterator(array)\n "DoubleArray" ->
doubleArrayIterator(array)\n else -> throw IllegalStateException("Unsupported type argument for arrayIterator:
$type")\n}\n\n@JsName("booleanArrayIterator")\ninternal fun booleanArrayIterator(array: BooleanArray) =
object : BooleanIterator() {\n var index = 0\n override fun hasNext() = index < array.size\n override fun
nextBoolean() = if (index < array.size) array[index++] else throw
NoSuchElementException("$index")\n}\n\n@JsName("byteArrayIterator")\ninternal
fun byteArrayIterator(array: ByteArray) = object : ByteIterator() {\n var index = 0\n override fun hasNext() =
index < array.size\n override fun nextByte() = if (index < array.size) array[index++] else throw
NoSuchElementException("$index")\n}\n\n@JsName("shortArrayIterator")\ninternal fun
shortArrayIterator(array: ShortArray) = object : ShortIterator() {\n var index = 0\n override fun hasNext() =
index < array.size\n override fun nextShort() = if (index < array.size) array[index++] else throw
NoSuchElementException("$index")\n}\n\n@JsName("charArrayIterator")\ninternal fun charArrayIterator(array:
CharArray) = object : CharIterator() {\n var index = 0\n override fun hasNext() = index < array.size\n override
fun nextChar() = if (index < array.size) array[index++] else throw
NoSuchElementException("$index")\n}\n\n@JsName("intArrayIterator")\ninternal fun intArrayIterator(array:
IntArray) = object : IntIterator()
{\n var index = 0\n override fun hasNext() = index < array.size\n override fun nextInt() = if (index <
array.size) array[index++] else throw
NoSuchElementException("$index")\n}\n\n@JsName("floatArrayIterator")\ninternal fun
floatArrayIterator(array: FloatArray) = object : FloatIterator() {\n var index = 0\n override fun hasNext() = index
< array.size\n override fun nextFloat() = if (index < array.size) array[index++] else throw
NoSuchElementException("$index")\n}\n\n@JsName("doubleArrayIterator")\ninternal fun

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doubleArrayIterator(array: DoubleArray) = object : DoubleIterator() {
    var index = 0
    override fun hasNext() = index < array.size
    override fun nextDouble() = if (index < array.size) array[index++] else throw
    NoSuchElementException("$index")
}
@JsName("longArrayIterator")
internal fun longArrayIterator(array: LongArray) = object : LongIterator() {
    var index = 0
    override fun hasNext() = index < array.size
    override fun
        nextLong() = if (index < array.size) array[index++] else throw
    NoSuchElementException("$index")
}
@JsName("PropertyMetadata")
internal class PropertyMetadata(@JsName("callableName") val name: String)
@JsName("noWhenBranchMatched")
internal fun noWhenBranchMatched(): Nothing = throw
    NoWhenBranchMatchedException()
@JsName("subSequence")
internal fun subSequence(c: CharSequence, startIndex: Int, endIndex: Int): CharSequence {
    if (c is String) {
        return c.substring(startIndex, endIndex)
    } else {
        return c.asDynamic().`subSequence_vux9f0` (startIndex, endIndex)
    }
}
@JsName("captureStack")
internal fun captureStack(@Suppress("UNUSED_PARAMETER") baseClass: JsClass<in Throwable>, instance: Throwable) {
    if (js("Error").captureStackTrace) {
        // Using uncropped stack traces due to KT-37563.
        // Precise stack traces are implemented in JS IR compiler and stdlib
        js("Error").captureStackTrace(instance);
    } else {
        instance.asDynamic().stack = js("new Error()").stack;
    }
}
@JsName("newThrowable")
internal fun newThrowable(message: String?, cause: Throwable?): Throwable {
    val throwable = js("new Error()")
    throwable.message = if (jsTypeOf(message) == "undefined") {
        if (cause != null) cause.toString() else null
    } else {
        message
    }
    throwable.cause = cause
    throwable.name = "Throwable"
    return throwable
}
@JsName("BoxedChar")
internal class BoxedChar(val c: Int) : Comparable<Int> {
    override fun equals(other: Any?): Boolean {
        return other is BoxedChar && c == other.c
    }
    override fun hashCode(): Int {
        return c
    }
    override fun toString(): String {
        return js("this.c").unsafeCast<Char>().toString()
    }
    override fun compareTo(other: Int): Int {
        return js("this.c - other").unsafeCast<Int>()
    }
}
@JsName("valueOf")
public fun valueOf(): Int {
    return c
}
@kotlin.internal.InlineOnly
internal inline fun <T> concat(args: Array<T>): T {
    val typed = js("Array")(args.size)
    for (i in args.indices) {
        val arr = args[i]
        if (arr !is Array<*>) {
            typed[i] = js("[]").slice.call(arr)
        } else {
            typed[i] = arr
        }
    }
    return js("[]").concat.apply(js("[]"), typed);
}
/** Concat regular Array's and TypedArray's into an Array.
 *
 * @PublishedApi
 * @JsName("arrayConcat")
 * @Suppress("UNUSED_PARAMETER")
 * internal fun <T> arrayConcat(a: T, b: T): T {
    return concat(js("arguments"))
}
/** Concat primitive arrays. Main use:
 *
 * prepare vararg arguments.
 * For compatibility with 1.1.0 the arguments may be a mixture of Array's and
 * TypedArray's.
 * If the first argument is TypedArray (Byte-, Short-, Char-, Int-, Float-, and DoubleArray)
 * returns a TypedArray, otherwise an Array.
 * If the first argument
 * has the $type$ property (Boolean-, Char-, and LongArray) copy its value to result.$type$.
 * If the first argument
 * is a regular Array without the $type$ property default to arrayConcat.
 *
 * @PublishedApi
 * @JsName("primitiveArrayConcat")
 * @Suppress("UNUSED_PARAMETER")
 * internal fun <T> primitiveArrayConcat(a: T, b: T): T {
    val args: Array<T> = js("arguments")
    if (a is Array<*> && a.asDynamic().`$type$` === undefined) {
        return concat(args)
    } else {
        var size = 0
        for (i in args.indices) {
            size += args[i].asDynamic().length as Int
        }
        val result = js("new a.constructor(size)")
        kotlin.copyArrayType(a, result)
        size = 0
        for (i in args.indices) {
            val arr = args[i].asDynamic()
            for (j in 0 until arr.length) {
                result[size++] = arr[j]
            }
        }
        return result
    }
}
@JsName("booleanArrayOf")
internal fun booleanArrayOf() = withType("BooleanArray", js("[]").slice.call(arguments))
@JsName("charArrayOf")
internal fun charArrayOf() = withType("CharArray", js("new Uint16Array(arguments)"))
@JsName("longArrayOf")
internal fun longArrayOf() = withType("LongArray",

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js("[].slice.call(arguments)")\n\n@JsName("withType")\n\n@kotlin.internal.InlineOnly\n\ninternal inline fun
withType(type: String, array: dynamic): dynamic {\n    array.`$type$` = type\n    return array\n}\n\n"/*\n * Copyright
2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed
by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\npackage kotlin.js\n\n/**\n *
Function corresponding to JavaScript's `typeof` operator\n
*\n\n@kotlin.internal.InlineOnly\n\n@Suppress("UNUSED_PARAMETER")\n\npublic inline fun jsTypeOf(a: Any?):
String = js("typeof a")\n\n"/*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language
contributors.\n
* Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*\n\n@file:Suppress("UNUSED_PARAMETER", "NOTHING_TO_INLINE")\n\npackage kotlin\n\n/**\n *
Returns an empty array of the specified type [T].\n */\n\npublic inline fun <T> emptyArray(): Array<T> =
js("[]")\n\n\n@library\n\npublic fun <T> arrayOf(vararg elements: T): Array<T> =
definedExternally\n\n\n@library\n\npublic fun doubleArrayOf(vararg elements: Double): DoubleArray =
definedExternally\n\n\n@library\n\npublic fun floatArrayOf(vararg elements: Float): FloatArray =
definedExternally\n\n\n@library\n\npublic fun longArrayOf(vararg elements: Long): LongArray =
definedExternally\n\n\n@library\n\npublic fun intArrayOf(vararg elements: Int): IntArray =
definedExternally\n\n\n@library\n\npublic fun charArrayOf(vararg elements: Char): CharArray =
definedExternally\n\n\n@library\n\npublic fun shortArrayOf(vararg elements: Short): ShortArray =
definedExternally\n\n\n@library\n\npublic fun byteArrayOf(vararg
elements: Byte): ByteArray = definedExternally\n\n\n@library\n\npublic fun booleanArrayOf(vararg elements:
Boolean): BooleanArray = definedExternally\n\n\n/**\n * Creates a new instance of the [Lazy] that uses the specified
initialization function [initializer].\n */\n\npublic actual fun <T> lazy(initializer: () -> T): Lazy<T> =
UnsafeLazyImpl(initializer)\n\n\n/**\n * Creates a new instance of the [Lazy] that uses the specified initialization
function [initializer].\n * The [mode] parameter is ignored.\n */\n\npublic actual fun <T> lazy(mode:
LazyThreadSafetyMode, initializer: () -> T): Lazy<T> = UnsafeLazyImpl(initializer)\n\n\n/**\n * Creates a new
instance of the [Lazy] that uses the specified initialization function [initializer].\n * The [lock] parameter is
ignored.\n */\n\npublic actual fun <T> lazy(lock: Any?, initializer: () -> T): Lazy<T> =
UnsafeLazyImpl(initializer)\n\n\n\ninternal fun fillFrom(src: dynamic, dst: dynamic): dynamic {\n    val srcLen: Int =
src.length\n    val
dstLen: Int = dst.length\n    var index: Int = 0\n    while (index < srcLen && index < dstLen) dst[index] =
src[index++]\n    return dst\n}\n\n\ninternal fun arrayCopyResize(source: dynamic, newSize: Int, defaultValue:
Any?): dynamic {\n    val result = source.slice(0, newSize)\n    copyArrayType(source, result)\n    var index: Int =
source.length\n    if (newSize > index) {\n        result.length = newSize\n        while (index < newSize)
result[index++] = defaultValue\n    }\n    return result\n}\n\n\ninternal fun <T> arrayPlusCollection(array: dynamic,
collection: Collection<T>): dynamic {\n    val result = array.slice()\n    result.length += collection.size\n    copyArrayType(array, result)\n    var index: Int = array.length\n    for (element in collection) result[index++] =
element\n    return result\n}\n\n\ninternal fun <T> fillFromCollection(dst: dynamic, startIndex: Int, collection:
Collection<T>): dynamic {\n    var index = startIndex\n    for (element in collection) dst[index++]
= element\n    return dst\n}\n\n\ninternal inline fun copyArrayType(from: dynamic, to: dynamic) {\n    if
(from.`$type$` !== undefined) {\n        to.`$type$` = from.`$type$`\n    }\n}\n\n\ninternal inline fun jsIsType(obj:
dynamic, jsClass: dynamic) = js("Kotlin").isType(obj, jsClass),"/*\n * Copyright 2010-2021 JetBrains s.r.o. and
Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that
can be found in the license/LICENSE.txt file.\n */\n\npackage kotlin\n\n/**\n * Creates a Char with the specified
[code].\n */\n\n * @sample samples.text.Chars.charFromCode\n
*\n\n@SinceKotlin("1.5")\n\n@WasExperimental(ExperimentalStdlibApi::class)\n\n@kotlin.internal.InlineOnly\n\npublic
actual inline fun Char(code: UShort): Char {\n    return code.toInt().toChar()\n}\n\n"/*\n * Copyright 2010-2018
JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the
Apache 2.0 license that can be found in the license/LICENSE.txt

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file.\n *\n\npackage kotlin.coroutines\n\nimport
kotlin.coroutines.intrinsics.COROUTINE_SUSPENDED\n\n@SinceKotlin("1.3")\n\n@JsName("CoroutineImpl")\n
ninternal abstract class CoroutineImpl(private val resultContinuation: Continuation<Any?>) : Continuation<Any?>
{\n    protected var state = 0\n    protected var exceptionState = 0\n    protected var result: Any? = null\n    protected
var exception: Throwable? = null\n    protected var finallyPath: Array<Int>? = null\n\n    public override val context:
CoroutineContext = resultContinuation.context\n\n    private var intercepted_: Continuation<Any?>? = null\n\n
public fun intercepted(): Continuation<Any?> =\n        intercepted_\n        ?:\n    (context[ContinuationInterceptor]?.interceptContinuation(this) ?: this)\n        .also { intercepted_ = it }\n\n
override fun resumeWith(result: Result<Any?>) {\n        var current = this\n        var currentResult: Any? =
result.getOrNull()\n        var currentException:
Throwable? = result.exceptionOrNull()\n        // This loop unrolls recursion in current.resumeWith(param) to
make saner and shorter stack traces on resume\n        while (true) {\n            with(current) {\n                val
completion = resultContinuation\n                // Set result and exception fields in the current continuation\n
if (currentException == null) {\n                    this.result = currentResult\n                    } else {\n                        state =
exceptionState\n                        exception = currentException\n                    }\n                    try {\n                        val
outcome = doResume()\n                        if (outcome === COROUTINE_SUSPENDED) return\n
currentResult = outcome\n                        currentException = null\n                    } catch (exception: dynamic) { // Catch
all exceptions\n                        currentResult = null\n                        currentException =
exception.unsafeCast<Throwable>()\n
                    }\n                    releaseIntercepted() // this state machine instance is terminating\n                    if (completion
is CoroutineImpl) {\n                        // unrolling recursion via loop\n                        current = completion\n                    }
else {\n                        // top-level completion reached -- invoke and return\n                        currentException?.let {\n
                            completion.resumeWithException(it)\n                            } ?: completion.resume(currentResult)\n
return\n                    }\n                }\n                }\n                }\n                private fun releaseIntercepted() {\n                    val intercepted =
intercepted_\n                    if (intercepted != null && intercepted != this) {\n
context[ContinuationInterceptor]!!.releaseInterceptedContinuation(intercepted)\n                    }\n                    this.intercepted_ =
CompletedContinuation // just in case\n                }\n                protected abstract fun doResume(): Any?\n            }\n\n
ninternal object
CompletedContinuation
: Continuation<Any?> {\n    override val context: CoroutineContext\n        get() = error("This continuation is
already complete")\n\n    override fun resumeWith(result: Result<Any?>) {\n        error("This continuation is
already complete")\n    }\n\n    override fun toString(): String = "This continuation is already
complete"\n}\n\n
/*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n *
Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*\n\n@file:Suppress("UNCHECKED_CAST", "RedundantVisibilityModifier")\n\npackage kotlin\n\nimport
kotlin.contracts.*\nimport kotlin.internal.InlineOnly\nimport kotlin.jvm.JvmField\nimport
kotlin.jvm.JvmInline\nimport kotlin.jvm.JvmName\n\n/**\n * A discriminated union that encapsulates a successful
outcome with a value of type [T]\n * or a failure with an arbitrary [Throwable] exception.\n
*\n\n@SinceKotlin("1.3")\n\n@JvmInline\npublic
value class Result<out T> @PublishedApi internal constructor(\n    @PublishedApi\n    internal val value: Any?\n)
: Serializable {\n    // discovery\n    /**\n     * Returns `true` if this instance represents a successful outcome.\n     *
In this case [isFailure] returns `false`.\n     */\n    public val isSuccess: Boolean get() = value != Failure\n    /**\n     * Returns `true` if this instance represents a failed outcome.\n     *
In this case [isSuccess] returns `false`.\n     */\n    public val isFailure: Boolean get() = value is Failure\n    // value & exception retrieval\n    /**\n     * Returns the
encapsulated value if this instance represents [success][Result.isSuccess] or `null`\n     * if it is
[failure][Result.isFailure].\n     */\n     * This function is a shorthand for `getOrElse { null }` (see [getOrElse]) or\n
     * `fold(onSuccess = { it }, onFailure = { null })` (see [fold]).\n     */\n     @InlineOnly\n    public inline fun
getOrNull(): T? =\n        when

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    { \n      isFailure -> null \n      else -> value as T \n    } \n \n /** \n * Returns the encapsulated
[Throwable] exception if this instance represents [failure][isFailure] or `null` \n * if it is [success][isSuccess]. \n
* \n * This function is a shorthand for `fold(onSuccess = { null }, onFailure = { it })` (see [fold]). \n * \n public
fun exceptionOrNull(): Throwable? = \n when (value) { \n is Failure -> value.exception \n else ->
null \n } \n \n /** \n * Returns a string `Success(v)` if this instance represents [success][Result.isSuccess] \n
* where `v` is a string representation of the value or a string `Failure(x)` if \n * it is [failure][isFailure] where `x` is
a string representation of the exception. \n * \n public override fun toString(): String = \n when (value) { \n
is Failure -> value.toString() // `Failure($exception)` \n else -> `Success($value)` \n } \n \n
// companion with constructors \n \n /** \n * Companion object for [Result] class that contains its constructor
functions \n * [success] and [failure]. \n * \n public companion object { \n \n /** \n * Returns an instance
that encapsulates the given [value] as successful value. \n * \n
@Suppress("INAPPLICABLE_JVM_NAME") \n @InlineOnly \n @JvmName("success") \n public
inline fun <T> success(value: T): Result<T> = \n Result(value) \n \n /** \n * Returns an instance that
encapsulates the given [Throwable] [exception] as failure. \n * \n
@Suppress("INAPPLICABLE_JVM_NAME") \n @InlineOnly \n @JvmName("failure") \n public
inline fun <T> failure(exception: Throwable): Result<T> = \n Result(createFailure(exception)) \n } \n \n
internal class Failure( \n @JvmField \n val exception: Throwable \n ) : Serializable { \n override fun
equals(other:
Any?): Boolean = other is Failure && exception == other.exception \n override fun hashCode(): Int =
exception.hashCode() \n override fun toString(): String = `Failure($exception)` \n } \n \n \n /** \n * Creates an
instance of internal marker [Result.Failure] class to \n * make sure that this class is not exposed in ABI. \n
* \n @PublishedApi \n @SinceKotlin("1.3") \n internal fun createFailure(exception: Throwable): Any = \n
Result.Failure(exception) \n \n /** \n * Throws exception if the result is failure. This internal function minimizes \n
* inlined bytecode for [getOrThrow] and makes sure that in the future we can \n * add some exception-augmenting
logic here (if needed). \n * \n @PublishedApi \n @SinceKotlin("1.3") \n internal fun Result<*>.throwOnFailure() { \n
if (value is Result.Failure) throw value.exception \n } \n \n /** \n * Calls the specified function [block] and returns its
encapsulated result if invocation was successful, \n * catching any [Throwable] exception that was thrown
from the [block] function execution and encapsulating it as a failure. \n
* \n @InlineOnly \n @SinceKotlin("1.3") \n public inline fun <R> runCatching(block: () -> R): Result<R> { \n
return try { \n Result.success(block()) \n } catch (e: Throwable) { \n Result.failure(e) \n } \n } \n \n /** \n
* Calls the specified function [block] with `this` value as its receiver and returns its encapsulated result if invocation
was successful, \n * catching any [Throwable] exception that was thrown from the [block] function execution and
encapsulating it as a failure. \n * \n @InlineOnly \n @SinceKotlin("1.3") \n public inline fun <T, R>
T.runCatching(block: T.() -> R): Result<R> { \n return try { \n Result.success(block()) \n } catch (e:
Throwable) { \n Result.failure(e) \n } \n } \n \n // -- extensions --- \n \n /** \n * Returns the encapsulated value if this
instance represents [success][Result.isSuccess] or throws the encapsulated [Throwable] exception \n * if it is
[failure][Result.isFailure]. \n
* \n * This function is a shorthand for `getOrElse { throw it }` (see [getOrElse]). \n
* \n @InlineOnly \n @SinceKotlin("1.3") \n public inline fun <T> Result<T>.getOrThrow(): T { \n
throwOnFailure() \n return value as T \n } \n \n /** \n * Returns the encapsulated value if this instance represents
[success][Result.isSuccess] or the \n * result of [onFailure] function for the encapsulated [Throwable] exception if it
is [failure][Result.isFailure]. \n * \n * Note, that this function rethrows any [Throwable] exception thrown by
[onFailure] function. \n * \n * This function is a shorthand for `fold(onSuccess = { it }, onFailure = onFailure)` (see
[fold]). \n * \n @InlineOnly \n @SinceKotlin("1.3") \n public inline fun <R, T : R> Result<T>.getOrElse(onFailure:
(exception: Throwable) -> R): R { \n contract { \n callsInPlace(onFailure,
InvocationKind.AT_MOST_ONCE) \n } \n return when (val exception = exceptionOrNull()) { \n null ->
value as T \n else -> onFailure(exception) \n }

```

`} }`  
`}\n\n/**\n * Returns the encapsulated value if this instance represents [success][Result.isSuccess] or the\n * [defaultValue] if it is [failure][Result.isFailure].\n *\n * This function is a shorthand for `getOrElse { defaultValue }` (see [getOrElse]).\n *\n @InlineOnly\n @SinceKotlin("1.3")\n public inline fun <R, T : R> Result<T>.getOrElse(defaultValue: R): R {\n if (isFailure) return defaultValue\n return value as T\n }\n\n/**\n * Returns the result of [onSuccess] for the encapsulated value if this instance represents [success][Result.isSuccess] or the result of [onFailure] function for the encapsulated [Throwable] exception if it is [failure][Result.isFailure].\n *\n * Note, that this function rethrows any [Throwable] exception thrown by [onSuccess] or by [onFailure] function.\n *\n @InlineOnly\n @SinceKotlin("1.3")\n public inline fun <R, T> Result<T>.fold(\n onSuccess: (value: T) -> R,\n onFailure: (exception: Throwable) -> R): R {\n contract {\n callsInPlace(onSuccess, InvocationKind.AT_MOST_ONCE)\n callsInPlace(onFailure, InvocationKind.AT_MOST_ONCE)\n }\n return when (val exception = exceptionOrNull()) {\n null -> onSuccess(value as T)\n else -> onFailure(exception)\n }\n }\n\n// transformation\n\n/**\n * Returns the encapsulated result of the given [transform] function applied to the encapsulated value\n * if this instance represents [success][Result.isSuccess] or the\n * original encapsulated [Throwable] exception if it is [failure][Result.isFailure].\n *\n * Note, that this function rethrows any [Throwable] exception thrown by [transform] function.\n * See [mapCatching] for an alternative that encapsulates exceptions.\n *\n @InlineOnly\n @SinceKotlin("1.3")\n public inline fun <R, T> Result<T>.map(transform: (value: T) -> R): Result<R> {\n contract {\n callsInPlace(transform, InvocationKind.AT_MOST_ONCE)\n }\n return when {\n isSuccess -> Result.success(transform(value as T))\n else -> Result(value)\n }\n }\n\n/**\n * Returns the encapsulated result of the given [transform] function applied to the encapsulated value\n * if this instance represents [success][Result.isSuccess] or the\n * original encapsulated [Throwable] exception if it is [failure][Result.isFailure].\n *\n * This function catches any [Throwable] exception thrown by [transform] function and encapsulates it as a failure.\n * See [map] for an alternative that rethrows exceptions from `transform` function.\n *\n @InlineOnly\n @SinceKotlin("1.3")\n public inline fun <R, T> Result<T>.mapCatching(transform: (value: T) -> R): Result<R> {\n return when {\n isSuccess -> runCatching { transform(value as T) }\n else -> Result(value)\n }\n }\n\n/**\n * Returns the encapsulated result of the given [transform] function applied to the encapsulated [Throwable] exception\n * if this instance represents [failure][Result.isFailure] or the\n * original encapsulated value if it is [success][Result.isSuccess].\n *\n * Note, that this function rethrows any [Throwable] exception thrown by [transform] function.\n * See [recoverCatching] for an alternative that encapsulates exceptions.\n *\n @InlineOnly\n @SinceKotlin("1.3")\n public inline fun <R, T : R> Result<T>.recover(transform: (exception: Throwable) -> R): Result<R> {\n contract {\n callsInPlace(transform, InvocationKind.AT_MOST_ONCE)\n }\n return when (val exception = exceptionOrNull()) {\n null -> this\n else -> Result.success(transform(exception))\n }\n }\n\n/**\n * Returns the encapsulated result of the given [transform] function applied to the encapsulated [Throwable] exception\n * if this instance represents [failure][Result.isFailure] or the\n * original encapsulated value if it is [success][Result.isSuccess].\n *\n * This function catches any [Throwable] exception thrown by [transform] function and encapsulates it as a failure.\n * See [recover] for an alternative that rethrows exceptions.\n *\n @InlineOnly\n @SinceKotlin("1.3")\n public inline fun <R, T : R> Result<T>.recoverCatching(transform: (exception: Throwable) -> R): Result<R> {\n return when (val exception = exceptionOrNull()) {\n null -> this\n else -> runCatching { transform(exception) }\n }\n }\n\n// "peek" onto value/exception and pipe\n\n/**\n * Performs the given [action] on the encapsulated [Throwable] exception if this instance represents [failure][Result.isFailure].\n * Returns the original `Result` unchanged.\n *\n @InlineOnly\n @SinceKotlin("1.3")\n public inline fun <T> Result<T>.onFailure(action: (exception: Throwable) -> Unit): Result<T> {\n contract {\n callsInPlace(action, InvocationKind.AT_MOST_ONCE)\n }\n exceptionOrNull()?.let { action(it) }\n return this\n }\n\n/**\n * Performs the given [action] on the encapsulated value if this instance represents [success][Result.isSuccess].\n * Returns the original `Result` unchanged.\n */`

```

*^@InlineOnly^@SinceKotlin("1.3")^public inline fun <T> Result<T>.onSuccess(action: (value: T) -> Unit):
Result<T> {^n contract {^n callsInPlace(action, InvocationKind.AT_MOST_ONCE)^n }^n if (isSuccess)
action(value as T)^n return this^}^n// -----^n"/^n * Copyright 2010-2020 JetBrains s.r.o. and Kotlin
Programming Language contributors.^n * Use of this source code is governed by the Apache 2.0 license that can be
found in the license/LICENSE.txt file.^n/^n^package kotlin.coroutines^nimport kotlin.contracts.^nimport
kotlin.coroutines.intrinsics.^nimport kotlin.internal.InlineOnly^nim/^n * Interface representing a continuation after
a suspension point that returns a value of type `T`.^n/^@SinceKotlin("1.3")^public interface Continuation<in
T> {^n /**^n * The context of the coroutine that corresponds to this continuation.^n/^n public val context:
CoroutineContext^}^n /**^n * Resumes the execution of the
corresponding coroutine passing a successful or failed [result] as the^n * return value of the last suspension
point.^n/^n public fun resumeWith(result: Result<T>)^}^n/^n/**^n * Classes and interfaces marked with this
annotation are restricted when used as receivers for extension^n * `suspend` functions. These `suspend` extensions
can only invoke other member or extension `suspend` functions on this particular^n * receiver and are restricted
from calling arbitrary suspension functions.^n
/^@SinceKotlin("1.3")^@Target(AnnotationTarget.CLASS)^@Retention(AnnotationRetention.BINARY)^npu
blic annotation class RestrictsSuspension^}^n/^n/**^n * Resumes the execution of the corresponding coroutine passing
[value] as the return value of the last suspension point.^n/^@SinceKotlin("1.3")^@InlineOnly^public inline
fun <T> Continuation<T>.resume(value: T): Unit =^n resumeWith(Result.success(value))^}^n/^n/**^n * Resumes the
execution of the corresponding coroutine so that the
[exception] is re-thrown right after the^n * last suspension point.^n
/^@SinceKotlin("1.3")^@InlineOnly^public inline fun <T>
Continuation<T>.resumeWithException(exception: Throwable): Unit =^n
resumeWith(Result.failure(exception))^}^n/^n/**^n * Creates a [Continuation] instance with the given [context] and
implementation of [resumeWith] method.^n/^@SinceKotlin("1.3")^@InlineOnly^public inline fun <T>
Continuation(^n context: CoroutineContext,^n crossinline resumeWith: (Result<T>) -> Unit)^n): Continuation<T>
=^n object : Continuation<T> {^n override val context: CoroutineContext^n get() = context^}^n
override fun resumeWith(result: Result<T>) =^n resumeWith(result)^}^n/^n/**^n * Creates a coroutine
without a receiver and with result type [T].^n * This function creates a new, fresh instance of suspendable
computation every time it is invoked.^n *^n * To start executing the created coroutine, invoke `resume(Unit)` on the
returned
[Continuation] instance.^n * The [completion] continuation is invoked when the coroutine completes with a result
or an exception.^n * Subsequent invocation of any resume function on the resulting continuation will produce an
[IllegalStateException].^n/^@SinceKotlin("1.3")^@Suppress("UNCHECKED_CAST")^public fun <T>
(suspend () -> T).createCoroutine(^n completion: Continuation<T>)^n): Continuation<Unit> =^n
SafeContinuation(createCoroutineUnintercepted(completion).intercepted(), COROUTINE_SUSPENDED)^}^n/^n/**^n
* Creates a coroutine with receiver type [R] and result type [T].^n * This function creates a new, fresh instance of
suspendable computation every time it is invoked.^n *^n * To start executing the created coroutine, invoke
`resume(Unit)` on the returned [Continuation] instance.^n * The [completion] continuation is invoked when the
coroutine completes with a result or an exception.^n * Subsequent invocation of any resume function on the resulting
continuation will
produce an [IllegalStateException].^n/^@SinceKotlin("1.3")^@Suppress("UNCHECKED_CAST")^public
fun <R, T> (suspend R.() -> T).createCoroutine(^n receiver: R,^n completion: Continuation<T>)^n):
Continuation<Unit> =^n SafeContinuation(createCoroutineUnintercepted(receiver, completion).intercepted(),
COROUTINE_SUSPENDED)^}^n/^n/**^n * Starts a coroutine without a receiver and with result type [T].^n * This
function creates and starts a new, fresh instance of suspendable computation every time it is invoked.^n * The
[completion] continuation is invoked when the coroutine completes with a result or an exception.^n
/^@SinceKotlin("1.3")^@Suppress("UNCHECKED_CAST")^public fun <T> (suspend () ->
T).startCoroutine(^n completion: Continuation<T>)^n) {^n

```

```

createCoroutineUnintercepted(completion).intercepted().resume(Unit)\n}\n\n/**\n * Starts a coroutine with receiver
type [R] and result type [T].\n * This function creates and starts a new, fresh instance of suspendable
computation every time it is invoked.\n * The [completion] continuation is invoked when the coroutine completes
with a result or an exception.\n */\n@SinceKotlin("1.3")\n@Suppress("UNCHECKED_CAST")\npublic fun <R,
T> (suspend R.() -> T).startCoroutine(\n receiver: R,\n completion: Continuation<T>)\n {\n
createCoroutineUnintercepted(receiver, completion).intercepted().resume(Unit)\n}\n\n/**\n * Obtains the current
continuation instance inside suspend functions and suspends\n * the currently running coroutine.\n */\n * In this
function both [Continuation.resume] and [Continuation.resumeWithException] can be used either synchronously
in\n * the same stack-frame where the suspension function is run or asynchronously later in the same thread or\n *
from a different thread of execution. Subsequent invocation of any resume function will produce an
[IllegalStateException].\n */\n@SinceKotlin("1.3")\n@InlineOnly\npublic suspend inline fun <T>
suspendCoroutine(crossinline block: (Continuation<T>)\n
-> Unit): T {\n contract { callsInPlace(block, InvocationKind.EXACTLY_ONCE) }\n return
suspendCoroutineUninterceptedOrReturn { c: Continuation<T> ->\n val safe =
SafeContinuation(c.intercepted())\n block(safe)\n safe.getOrThrow()\n }\n}\n\n/**\n * Returns the
context of the current coroutine.\n */\n@SinceKotlin("1.3")\n@Suppress("WRONG_MODIFIER_TARGET")\n@InlineOnly\npublic suspend inline
val coroutineContext: CoroutineContext\n get() {\n throw NotImplementedError("Implemented as
intrinsic")\n }\n"/\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n
* Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*/\n\npackage kotlin.coroutines.intrinsics\n\nimport kotlin.coroutines.*\nimport kotlin.internal.InlineOnly\n\n/**\n *
Starts an unintercepted coroutine without a receiver and with result type [T] and executes it until its
first suspension.\n * Returns the result of the coroutine or throws its exception if it does not suspend or
[COROUTINE_SUSPENDED] if it suspends.\n * In the latter case, the [completion] continuation is invoked when
the coroutine completes with a result or an exception.\n */\n * The coroutine is started directly in the invoker's thread
without going through the [ContinuationInterceptor] that might\n * be present in the completion's
[CoroutineContext]. It is the invoker's responsibility to ensure that a proper invocation\n * context is established.\n
*/\n * This function is designed to be used from inside of [suspendCoroutineUninterceptedOrReturn] to resume the
execution of the suspended\n * coroutine using a reference to the suspending function.\n */\n@SinceKotlin("1.3")\n@InlineOnly\npublic actual inline fun <T> (suspend () ->
T).startCoroutineUninterceptedOrReturn(\n completion: Continuation<T>)\n): Any? =
this.asDynamic()(completion, false)\n\n/**\n * Starts an unintercepted coroutine
with receiver type [R] and result type [T] and executes it until its first suspension.\n * Returns the result of the
coroutine or throws its exception if it does not suspend or [COROUTINE_SUSPENDED] if it suspends.\n * In the
latter case, the [completion] continuation is invoked when the coroutine completes with a result or an exception.\n
*/\n * The coroutine is started directly in the invoker's thread without going through the [ContinuationInterceptor]
that might\n * be present in the completion's [CoroutineContext]. It is the invoker's responsibility to ensure that a
proper invocation\n * context is established.\n */\n * This function is designed to be used from inside of
[suspendCoroutineUninterceptedOrReturn] to resume the execution of the suspended\n * coroutine using a reference
to the suspending function.\n */\n@SinceKotlin("1.3")\n@InlineOnly\npublic actual inline fun <R, T> (suspend
R.() -> T).startCoroutineUninterceptedOrReturn(\n receiver: R,\n completion: Continuation<T>)\n):
Any? = this.asDynamic()(receiver, completion, false)\n\n@InlineOnly\ninternal actual inline fun <R, P, T>
(suspend R.(P) -> T).startCoroutineUninterceptedOrReturn(\n receiver: R,\n param: P,\n completion:
Continuation<T>)\n): Any? = this.asDynamic()(receiver, param, completion, false)\n\n/**\n * Creates unintercepted
coroutine without receiver and with result type [T].\n * This function creates a new, fresh instance of suspendable
computation every time it is invoked.\n */\n * To start executing the created coroutine, invoke `resume(Unit)` on the
returned [Continuation] instance.\n * The [completion] continuation is invoked when coroutine completes with
result or exception.\n */\n * This function returns unintercepted continuation.\n * Invocation of `resume(Unit)` starts

```

coroutine immediately in the invoker's call stack without going through the [ContinuationInterceptor] that might be present in the completion's [CoroutineContext]. It is the invoker's responsibility to ensure that a proper invocation context is established. Note that [completion] of this function may get invoked in an arbitrary context. [Continuation.intercepted] can be used to acquire the intercepted continuation. Invocation of `resume(Unit)` on intercepted continuation guarantees that execution of both the coroutine and [completion] happens in the invocation context established by [ContinuationInterceptor]. Repeated invocation of any resume function on the resulting continuation corrupts the state machine of the coroutine and may result in arbitrary behaviour or exception.

```

@SinceKotlin("1.3")
public actual fun <T>
(suspend () -> T).createCoroutineUnintercepted(
    completion: Continuation<T>): Continuation<Unit> =
    // Kotlin/JS suspend lambdas have an extra parameter `suspended`
    if (this.asDynamic().length == 2) {
        // When `suspended` is true the continuation is created, but not executed
        this.asDynamic()(completion, true)
    } else {
        createCoroutineFromSuspendFunction(completion) {
            this.asDynamic()(completion)
        }
    }

```

\* Creates unintercepted coroutine with receiver type [R] and result type [T]. This function creates a new, fresh instance of suspendable computation every time it is invoked. To start executing the created coroutine, invoke `resume(Unit)` on the returned [Continuation] instance. The [completion] continuation is invoked when coroutine completes with result or exception. This function returns unintercepted continuation. Invocation of `resume(Unit)` starts coroutine immediately in the invoker's call stack without going through the [ContinuationInterceptor] that might be present in the completion's [CoroutineContext]. It is the invoker's responsibility to ensure that a proper invocation context is established. Note that [completion] of this function may get invoked in an arbitrary context.

\* [Continuation.intercepted] can be used to acquire the intercepted continuation. Invocation of `resume(Unit)` on intercepted continuation guarantees that execution of both the coroutine and [completion] happens in the invocation context established by [ContinuationInterceptor]. Repeated invocation of any resume function on the resulting continuation corrupts the state machine of the coroutine and may result in arbitrary behaviour or exception.

```

@SinceKotlin("1.3")
public actual fun <R, T> (suspend R.() ->
T).createCoroutineUnintercepted(
    receiver: R,
    completion: Continuation<T>): Continuation<Unit> =
    // Kotlin/JS suspend lambdas have an extra parameter `suspended`
    if (this.asDynamic().length == 3) {
        // When `suspended` is true the continuation is created, but not executed
        this.asDynamic()(receiver, completion, true)
    } else {
        createCoroutineFromSuspendFunction(completion) {
            this.asDynamic()(receiver, completion)
        }
    }

```

\* Intercepts this continuation with [ContinuationInterceptor]. This function shall be used on the immediate result of [createCoroutineUnintercepted] or [suspendCoroutineUninterceptedOrReturn], in which case it checks for [ContinuationInterceptor] in the continuation's [context][Continuation.context], invokes [ContinuationInterceptor.interceptContinuation], caches and returns the result. If this function is invoked on other [Continuation] instances it returns `this` continuation unchanged.

```

@SinceKotlin("1.3")
public actual fun <T> Continuation<T>.intercepted(): Continuation<T> =
    (this as? CoroutineImpl)?.intercepted() ?:
    this
private inline fun <T> createCoroutineFromSuspendFunction(
    completion: Continuation<T>,
    crossinline block: () -> Any?): Continuation<Unit> {
    @Suppress("UNCHECKED_CAST")
    return object
        : CoroutineImpl(completion as Continuation<Any?>) {
        override fun doResume(): Any? {
            exception?.let { throw it }
            return block()
        }
    }
}

```

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\* package kotlin.js // Mirrors signature from JS IR BE // Used for  
js.translator/testData/box/number/mulInt32.kt @library @JsName("imulEmulated") @Suppress("UNUSED\_PARAMETER")  
internal fun imul(x: Int, y: Int): Int =  
definedExternally  
@Suppress("NOTHING\_TO\_INLINE")  
internal inline fun isArrayish(o: dynamic) =  
js("Kotlin").isArrayish(o)

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```

*\n\n\n@file:Suppress("UNUSED_PARAMETER")\n\npackage kotlin.js\n\n@kotlin.internal.InlineOnly\n\ninternal inline fun jsDeleteProperty(obj: Any, property: Any) {\n    js("delete obj[property]")\n}\n\n\n@kotlin.internal.InlineOnly\n\ninternal inline fun jsBitwiseOr(lhs: Any?, rhs: Any?): Int =\n    js("lhs | rhs").unsafeCast<Int>(), /*\n    * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n    * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n    */\n\npackage kotlin.math\n\n/**\n    * Returns this value with the sign bit same as of the [sign] value.\n    * If [sign] is `NaN` the sign of the result is undefined.\n    */\n\n@SinceKotlin("1.2")\n\npublic actual fun Double.withSign(sign: Double): Double {\n    val thisSignBit = js("Kotlin").doubleSignBit(this).unsafeCast<Int>()\n    val newSignBit = js("Kotlin").doubleSignBit(sign).unsafeCast<Int>()\n    return if (thisSignBit == newSignBit) this else -this\n}, /*\n    * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n    * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n    */\n\npackage kotlin\n\n/**\n    * Returns a bit representation of the specified floating-point value as [Long]\n    * according to the IEEE 754 floating-point "double format" bit layout.\n    */\n\n@SinceKotlin("1.2")\n\n@library("doubleToBits")\n\npublic actual fun Double.toBits(): Long = definedExternally\n\n/**\n    * Returns a bit representation of the specified floating-point value as [Long]\n    * according to the IEEE 754 floating-point "double format" bit layout,\n    * preserving `NaN` values exact layout.\n    */\n\n@SinceKotlin("1.2")\n\n@library("doubleToRawBits")\n\npublic actual fun Double.toRawBits(): Long = definedExternally\n\n/**\n    * Returns the [Double] value corresponding to a given bit representation.\n    */\n\n@SinceKotlin("1.2")\n\n@kotlin.internal.InlineOnly\n\npublic actual inline fun Double.Companion.fromBits(bits: Long): Double = js("Kotlin").doubleFromBits(bits).unsafeCast<Double>()\n\n/**\n    * Returns a bit representation of the specified floating-point value as [Int]\n    * according to the IEEE 754 floating-point "single format" bit layout.\n    * Note that in Kotlin/JS [Float] range is wider than "single format" bit layout can represent,\n    * so some [Float] values may overflow, underflow or loose their accuracy after conversion to bits and back.\n    */\n\n@SinceKotlin("1.2")\n\n@library("floatToBits")\n\npublic actual fun Float.toBits(): Int = definedExternally\n\n/**\n    * Returns a bit representation of the specified floating-point value as [Int]\n    * according to the IEEE 754 floating-point "single format" bit layout,\n    * preserving `NaN` values exact layout.\n    * Note that in Kotlin/JS [Float] range is wider than "single format" bit layout can represent,\n    * so some [Float] values may overflow, underflow or loose their accuracy after conversion to bits and back.\n    */\n\n@SinceKotlin("1.2")\n\n@library("floatToRawBits")\n\npublic actual fun Float.toRawBits(): Int = definedExternally\n\n/**\n    * Returns the [Float] value corresponding to a given bit representation.\n    */\n\n@SinceKotlin("1.2")\n\n@kotlin.internal.InlineOnly\n\npublic actual inline fun Float.Companion.fromBits(bits: Int): Float = js("Kotlin").floatFromBits(bits).unsafeCast<Float>()\n\n\n@Suppress("NOTHING_TO_INLINE")\n\ninternal inline fun Long(low: Int, high: Int) = js("Kotlin").Long.fromBits(low, high).unsafeCast<Long>()\n\ninternal inline val Long.low: Int get() = this.asDynamic().getLowBits().unsafeCast<Int>()\n\ninternal inline val Long.high: Int get() = this.asDynamic().getHighBits().unsafeCast<Int>()\n\n", /*\n    * Copyright 2010-2020 JetBrains s.r.o. and Kotlin Programming Language contributors.\n    * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n    */\n\nimport kotlin.reflect.KClass\n\n@PublishedApi\n\ninternal fun <T : Annotation> KClass<*>.findAssociatedObject(@Suppress("UNUSED_PARAMETER") annotationClass: KClass<T>): Any? {\n    // This API is not supported in js-v1. Return `null` to be source-compatible with js-ir.\n    return null\n}\n\n", /*\n    * Copyright 2010-2019 JetBrains s.r.o. and Kotlin Programming Language contributors.\n    * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n    */\n\npackage kotlin.text\n\n/**\n    * Returns a string representation of this [Long] value in the specified [radix].\n    * @throws IllegalArgumentException when [radix] is not a valid radix for number to string conversion.\n    */

```

```

*\n@SinceKotlin("1.2")\npublic actual fun Long.toString(radix: Int): String =
asDynamic().toString(checkRadix(radix))", /*\n * Copyright 2010-2021 JetBrains s.r.o. and Kotlin Programming
Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n */\n\npackage
kotlin.js\n\n@PublishedApi\n@Suppress("NOTHING_TO_INLINE")\n@JsPolyfill("\n\n"nif (typeof
Array.prototype.fill
=== "undefined") {\n // Polyfill from https://developer.mozilla.org/en-
US/docs/Web/JavaScript/Reference/Global_Objects/Array/fill#Polyfill\n Object.defineProperty(Array.prototype,
'fill', {\n value: function (value) {\n // Steps 1-2.\n if (this == null) {\n throw new
TypeError('this is null or not defined');\n }\n\n var O = Object(this);\n\n // Steps 3-5.\n
var len = O.length >>> 0;\n\n // Steps 6-7.\n var start = arguments[1];\n var relativeStart = start
>> 0;\n\n // Step 8.\n var k = relativeStart < 0 ?\n Math.max(len + relativeStart, 0) :\n
Math.min(relativeStart, len);\n\n // Steps 9-10.\n var end = arguments[2];\n var
relativeEnd = end === undefined ?\n len : end >> 0;\n\n // Step 11.\n var finalValue
= relativeEnd < 0 ?\n Math.max(len + relativeEnd, 0) :\n Math.min(relativeEnd,
len);\n\n // Step 12.\n while (k < finalValue) {\n O[k] = value;\n k++;\n }\n\n
// Step 13.\n return O;\n }\n });\n\n[Int8Array, Int16Array, Uint16Array, Int32Array,
Float32Array, Float64Array].forEach(function (TypedArray) {\n if (typeof TypedArray.prototype.fill ===
"undefined") {\n Object.defineProperty(TypedArray.prototype, 'fill', {\n value: Array.prototype.fill\n
});\n }\n})\n\n"")\n\ninternal inline fun Any.nativeFill(element: Any?, fromIndex: Int, toIndex: Int): Unit {\n
asDynamic().fill(element, fromIndex, toIndex)\n}\n", /*\n * Copyright 2010-2021 JetBrains s.r.o. and Kotlin
Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be
found in the license/LICENSE.txt
file.\n */\n\npackage
kotlin.js\n\n@PublishedApi\n@Suppress("NOTHING_TO_INLINE")\n@JsPolyfill("\n\n"n[Int8Array,
Int16Array, Uint16Array, Int32Array, Float32Array, Float64Array].forEach(function (TypedArray) {\n if (typeof
TypedArray.prototype.sort === "undefined") {\n Object.defineProperty(TypedArray.prototype, 'sort', {\n
value: function(compareFunction) {\n compareFunction = compareFunction || function (a, b) {\n
if (a < b) return -1;\n if (a > b) return 1;\n if (a === b) {\n if (a !== 0) return
0;\n var ia = 1 / a;\n return ia === 1 / b ? 0 : (ia < 0 ? -1 : 1);\n }\n
return a !== a ? (b !== b ? 0 : 1) : -1\n }\n return Array.prototype.sort.call(this, compareFunction
|| totalOrderComparator);\n }\n });\n }\n})\n\n"")\n\ninternal
inline fun Any.nativeSort(noinline comparison: (a: dynamic, b: dynamic) -> Int = js("undefined")): Unit {\n
asDynamic().sort(comparison)\n}\n", /*\n * Copyright 2010-2021 JetBrains s.r.o. and Kotlin Programming Language
contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n */\n\npackage kotlin.text\n\n/\n\n// NOTE: THIS FILE IS AUTO-GENERATED by the
GenerateUnicodeData.kt\n// See: https://github.com/JetBrains/kotlin/tree/master/libraries/stdlib\n\n/\n\n// 1343 ranges
totally\n\nprivate object Category {\n val decodedRangeStart: IntArray\n val decodedRangeCategory: IntArray\n
\n init {\n val toBase64 =
"\n\n"ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789+\n\n val fromBase64 =
IntArray(128)\n for (i in toBase64.indices) {\n fromBase64[toBase64[i].code] = i\n }\n\n //
rangeStartDiff.length = 1482\n val rangeStartDiff
=
"\n\n"gBCFEDCKCDCaDDaDBhBCEEDDDDDDEDXBHYBH5BRwBGDCHDCIDFHDCHFDCDEIRTEE7BGHDDJI
CBbSEMOfGERwDEDDDDDECEFCRBjBFDCYFFCCzBvBjBBFC3BOhDBmBDGpBDDCtBBJlBEECLGDFC
LDCgBBKVKEDiDDHCFECECKCEODBebC5CLBOKhBJDDDDWEBHFCEFCPBZDEL1BVBSLPBgBB2BDB
DICFBHKCKCPDBHEDWBHEDDDDEDEDIBDGDCKCCGDDDCGECWBFMDDCEDDDCHDDHKDDBK
DBHFCEWBFGBDDDFEDBPDDKCHBGDCHEDWBFGBDCEDEDBHDDGDCKCGJEGDBFDDFDDDDDME

```



```

Int {
    return when {
        code < 0x20 -> code
        code < 0x400 -> if ((ch and 1) == 1) code shr 5 else code
        and 0x1f
        else -> when (ch % 3) {
            2 -> code shr 10
            1 -> (code shr 5) and 0x1f
            else -> code and 0x1f
        }
    }
}

/**
 * Returns the Unicode general category of this character
 * as an Int.
 */
internal fun Char.getCategoryValue(): Int {
    val ch = this.code
    val index =
        binarySearchRange(Category.decodedRangeStart, ch)
    val start = Category.decodedRangeStart[index]
    val code = Category.decodedRangeCategory[index]
    val value = categoryValueFrom(code, ch - start)
    return if (value == 17) CharCategory.UNASSIGNED.value else value
}

internal fun decodeVarLenBase64(base64:
String, fromBase64: IntArray, resultLength: Int): IntArray {
    val result = IntArray(resultLength)
    var index = 0
    var int = 0
    var shift = 0
    for (char in base64) {
        val sixBit = fromBase64[char.code]
        int = int or ((sixBit and 0x1f) shl shift)
        if (sixBit < 0x20) {
            result[index++] = int
            int = 0
            shift = 0
        } else {
            shift += 5
        }
    }
    return result
}

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 */
package kotlin.collections

// NOTE: THIS FILE IS AUTO-GENERATED by the
GenerateStandardLib.kt
// See: https://github.com/JetBrains/kotlin/tree/master/libraries/stdlib
import
kotlin.js.*
import kotlin.ranges.contains
import kotlin.ranges.reversed

/**
 * Reverses elements in the list in-
 * place.
 */
public actual fun <T> MutableList<T>.reverse(): Unit {
    val midPoint = (size / 2) - 1
    if (midPoint < 0) return
    var reverseIndex = lastIndex
    for (index in 0..midPoint) {
        val tmp = this[index]
        this[index] = this[reverseIndex]
        this[reverseIndex] = tmp
        reverseIndex--
    }
}

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 * contributors.
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 * license/LICENSE.txt file.
 */
package kotlin.text

// NOTE: THIS FILE IS AUTO-GENERATED by the
GenerateUnicodeData.kt
// See: https://github.com/JetBrains/kotlin/tree/master/libraries/stdlib
// 37 ranges
totally
private object Digit {
    internal val rangeStart = arrayOf(
        0x0030, 0x0660, 0x06f0, 0x07c0,
        0x0966, 0x09e6, 0x0a66, 0x0ae6, 0x0b66, 0x0be6, 0x0c66, 0x0ce6, 0x0d66, 0x0de6, 0x0e50, 0x0ed0, 0x0f20,
        0x1040, 0x1090, 0x17e0,
        0x1810, 0x1946, 0x19d0, 0x1a80, 0x1a90, 0x1b50, 0x1bb0, 0x1c40, 0x1c50,
        0xa620, 0xa8d0, 0xa900, 0xa9d0, 0xa9f0, 0xaa50, 0xabf0, 0xff10,
    )
}

/**
 * Returns the index of the
 * largest element in [array] smaller or equal to the specified [needle],
 * or -1 if [needle] is smaller than the smallest
 * element in [array].
 */
internal fun binarySearchRange(array: IntArray, needle: Int): Int {
    var bottom = 0
    var top = array.size - 1
    var middle = -1
    var value = 0
    while (bottom <= top) {
        middle = (bottom +
        top) / 2
        value = array[middle]
        if (needle > value)
            bottom = middle + 1
        else if (needle ==
        value)
            return middle
        else
            top = middle - 1
    }
    return middle - (if (needle < value) 1 else 0)
}

/**
 * Returns an integer from 0..9 indicating the digit this character represents,
 * or -1 if this character
 * is not a digit.
 */
internal fun Char.digitToIntImpl(): Int {
    val ch = this.code
    val index =
        binarySearchRange(Digit.rangeStart, ch)
    val diff = ch - Digit.rangeStart[index]
    return if (diff < 10) diff else -
    1
}

/**
 * Returns
 * `true` if this character is a digit.
 */
internal fun Char.isDigitImpl(): Boolean {
    return digitToIntImpl() >=
    0
}

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 */
package kotlin.text

// NOTE: THIS FILE IS AUTO-GENERATED by the GenerateUnicodeData.kt
// See: https://github.com/JetBrains/kotlin/tree/master/libraries/stdlib
// 222 ranges
totally
private object Letter {
    val decodedRangeStart: IntArray
    val decodedRangeLength: IntArray
    val decodedRangeCategory:
    IntArray
    init {
        val toBase64 =
        "\"ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789+/"
        val fromBase64 =
        IntArray(128)
        for (i in toBase64.indices) {
            fromBase64[toBase64[i].code] = i
        }
        rangeStartDiff.length = 356
        val rangeStartDiff
        =
        "\"hCgBpCQGYHZH5BRpBPPPPPRMP5BPPICPP6BkEPPPPcXPzBvBrB3BOiDoBHwD+E3DauCnFmBmB2D

```

```

6E1BIBTiBmBIBP5BhBiBrBvBjBqBnBPRtBiCmCtBIB0BmB5BiB7BmBgEmChBZgCoEoGVpBsFrhBPqKQ2B
wBYoFgB4CJuTiEvBuCuDrF5DgEgFIJ1DgFmBQtBsBRGsB+BPiBID1EIjDPRPPPPPPPPGQSQS/DxENVNU+
B9zCwBwBPPCkDPNnBPqDYY1R8B7FkFgTgwGgwUwmBgKwBuBScmEP/BPPPPPrBP8B7F1B/ErBqC6B7B
iBmBfQsBUwCw/KwqIwLwETPcPjQgJxFgB1BsD"\n    val diff = decodeVarLenBase64(rangeStartDiff,
fromBase64, 222)\n    val start = IntArray(diff.size)\n    for (i in diff.indices) {\n        if (i == 0) start[i] =
diff[i]\n        else start[i] = start[i - 1] + diff[i]\n    }\n    decodedRangeStart = start\n    \n    //
rangeLength.length = 328\n    val rangeLength =
\"aaMBXHYH5BRpBPPPPPRMP5BPPICPPzBDOOPPcXPzBvBjB3B0hDmBBpB7DoDYxB+EiBP1DoExBkB
QhBekBPmBgBhBctBiBMWOOXhCsBpBkBUV3Ba4BkB0DiCgBXgBtD4FSdBfPhBPpKP0BvBXjEQ2CGsT8Dh
BtCqDpFvD1D3E0lrD2EkBjRBD0BsB+BPiBIB1EIjDPPPPPPPPPPGPPMNLsBNPNPKCvBvBPPCkDPBmBPh
DXXgD4B6FzEgDguG9vUtkB9JcuBSckEP/BPPPPPPBPf4FrBjEhBpC3B5BKaWPrBOWck/KsCuLqDHPbPxPsFt
EaaqDL\""\n
    decodedRangeLength = decodeVarLenBase64(rangeLength, fromBase64, 222)\n    \n    //
rangeCategory.length = 959\n    val rangeCategory =
\"GFjgggUHGFFZZZmzpz5qB6s6020B60ptltB6smt2sB60mz22B1+vv+8BZZ5s2850BW5q1ymtB506smzBF3q1
q1qB1q1q1+Bgii4wDTm74g3KigxqM60q1q1Bq1o1q1BF1qlrqrBZ2q5wprBGFZWWZGHFsjiioLowgmOowjkw
CkgoiIk7ligGogioBkwwiYkzj2oNoi+sbkwj04DghhkQ8wgiYkgoioDsgnkwC4gikQ//v+85BkwvoIsgoyl4ygu0whiw
Eowri4CoghsJowgqYowgm4DkwgsY/nwnzPowhmYkg6wI8yggZswikwHgxgmIoxgqYkwgk4DkxgmIkgoioBsgsso
BgzyI8g9gL8g9kI0wgwJoxgkoC0wgioFkw/wI0w53iF4gioYowjmgBHGq1qkgwBF1q1q8qBHwghuIwghyKk0go
QkwgoQk3goQHGFHkyg0pBgxj6IoinkxDswno7Ikwhz9Bo0gioB8z48Rwli0xN0mpjoX8w78pDwltoqKHFGGwwg
sIHfH3q1q16BFHWFZ1q10q1B2qlwq1B1q10q1B2q1yq1B6q1gq1Biq1qhxBir1qp1Bqt1q1qB1g1q1+B//3q16B///q
1qBH/qlq9Bholq9B1i00a1q10qD1op1HkwmigEigiy6Cptogq1Bixo1kDq7/j00B2qgoBWGFm1lz50B6s5q1+BG
WhggzhwBFFhgk4//Bo2jigE8wguI8wguI8wguUog1qoB4qjmIwwi2KkgYHHH4IBgiFWkgIWoghssMmz5smrBZ
3q1y50B5sm7gzBtz1smzB5smz50BqzqtmzB5sgzqzBF2/9//5BowgoIwmnkzPkwgk4C8ys65BkgoqI0wgy6FghquZo
2giY0ghiIsgH24B4ghsQ8QF/v1q1OFs0O8iCHHF1qggz/B8wg6Iznv+//B08QgohsjK0QGfK7hsQ4gB\""\n
    decodedRangeCategory = decodeVarLenBase64(rangeCategory, fromBase64, 222)\n    }\n}\n\n/*\n * Returns
`true` if this character is a letter.\n */\ninternal fun Char.isLetterImpl(): Boolean {\n    return getLetterType() !=
0\n}\n}\n\n/*\n * Returns `true` if this character is a lower case letter, or it has contributory property
`Other_Lowercase`.\n */\ninternal fun Char.isLowercaseImpl(): Boolean {\n    return getLetterType() == 1 ||
code.isOtherLowercase()\n}\n}\n\n/*\n * Returns `true` if this character is an upper case letter, or it has contributory
property `Other_Uppercase`.\n */\ninternal fun Char.isUppercaseImpl(): Boolean {\n    return getLetterType() == 2
|| code.isOtherUppercase()\n}\n}\n\n/*\n * Returns\n * - `1` if the character is a lower case letter,\n * - `2` if the
character is an
upper case letter,\n * - `3` if the character is a letter but not a lower or upper case letter,\n * - `0` otherwise.\n
*/\nprivate fun Char.getLetterType(): Int {\n    val ch = this.code\n    val index =
binarySearchRange(Letter.decodedRangeStart, ch)\n    val rangeStart = Letter.decodedRangeStart[index]\n    val
rangeEnd = rangeStart + Letter.decodedRangeLength[index] - 1\n    val code =
Letter.decodedRangeCategory[index]\n    if (ch > rangeEnd) {\n        return 0\n    }\n    val lastTwoBits = code
and 0x3\n    if (lastTwoBits == 0) { // gap pattern\n        var shift = 2\n        var threshold = rangeStart\n        for (i
in 0..1) {\n            threshold += (code shr shift) and 0x7f\n            if (threshold > ch) {\n                return 3\n
}\n            shift += 7\n            threshold += (code shr shift) and 0x7f\n            if (threshold > ch) {\n                return
0\n            }\n            shift += 7\n        }\n        return 3\n    }\n    if (code <= 0x7) {\n        return lastTwoBits\n    }\n    val distance = (ch - rangeStart)\n    val shift = if (code <=
0x1F) distance % 2 else distance\n    return (code shr (2 * shift)) and 0x3\n}\n}\n\n\"/>\n\n * Copyright 2010-2021
JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the
Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\npackage kotlin.text\n\n/\n\n NOTE:
THIS FILE IS AUTO-GENERATED by the GenerateUnicodeData.kt\n\n// See:
https://github.com/JetBrains/kotlin/tree/master/libraries/stdlib\n\n/\n\nprivate object OtherLowercase {\n    internal

```

```

val otherLowerStart = intArrayOf(0x00aa, 0x00ba, 0x02b0, 0x02c0, 0x02e0, 0x0345, 0x037a, 0x1d2c,
0x1d78, 0x1d9b, 0x2071, 0x207f, 0x2090, 0x2170, 0x24d0, 0x2c7c, 0xa69c, 0xa770, 0xa7f8, 0xab5c, \n
)\n
internal val otherLowerLength = intArrayOf(1, 1, 9, 2, 5, 1, 1, 63, 1, 37, 1, 1, 13, 16, 26, 2, 2, 1, 2, 4, \n
)\n)\n\ninternal
fun Int.isOtherLowercase(): Boolean {\n    val index = binarySearchRange(OtherLowercase.otherLowerStart,
this)\n    return index >= 0 && this < OtherLowercase.otherLowerStart[index] +
OtherLowercase.otherLowerLength[index]\n}\n\n", "/*\n * Copyright 2010-2021 JetBrains s.r.o. and Kotlin
Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be
found in the license/LICENSE.txt file.\n *\n *\npackage kotlin.text\n*\n *\n// NOTE: THIS FILE IS AUTO-
GENERATED by the GenerateUnicodeData.kt\n *\n// See:
https://github.com/JetBrains/kotlin/tree/master/libraries/stdlib\n *\n *\n\ninternal fun Int.isOtherUppercase(): Boolean
{\n    return this in 0x2160..0x216f\n        || this in 0x24b6..0x24cf\n}\n\n", "/*\n * Copyright 2010-2022 JetBrains
s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0
license that can be found in the license/LICENSE.txt file.\n *\n *\npackage kotlin.text\n *\n *\n// NOTE:
THIS FILE IS AUTO-GENERATED by the GenerateStandardLib.kt\n *\n *\n// See:
https://github.com/JetBrains/kotlin/tree/master/libraries/stdlib\n *\n *\n\nimport kotlin.js.*\n *\n *\n * Returns a
character at the given [index] or throws an [IndexOutOfBoundsException] if the [index] is out of bounds of this char
sequence.\n *\n *\n * @sample samples.collections.Collections.Elements.elementAt\n *\n *\npublic actual fun
CharSequence.elementAt(index: Int): Char {\n    return elementAtOrElse(index) { throw
IndexOutOfBoundsException("index: $index, length: $length}") }\n}\n\n", "/*\n * Copyright 2010-2021 JetBrains
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license that can be found in the license/LICENSE.txt file.\n *\n *\npackage kotlin.text\n *\n *\n// NOTE: THIS FILE IS
AUTO-GENERATED by the GenerateUnicodeData.kt\n *\n *\n// See:
https://github.com/JetBrains/kotlin/tree/master/libraries/stdlib\n *\n *\n// 4 ranges totally\n\ninternal fun
Char.titlecaseCharImpl():
Char {\n    val code = this.code\n    // Letters repeating <Lu, Lt, Ll> sequence and code of the Lt is a multiple of 3,
e.g. <\u01c4, \u01c5, \u01c6>\n    if (code in 0x01c4..0x01cc || code in 0x01f1..0x01f3) {\n        return (3 * ((code +
1) / 3)).toChar()\n    }\n    // Lower case letters whose title case mapping equivalent is equal to the original letter\n
if (code in 0x10d0..0x10fa || code in 0x10fd..0x10ff) {\n        return this\n    }\n    return uppercaseChar()\n}\n\n", "/*\n *
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governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n *\n *\npackage
kotlin.collections\n *\n *\n// NOTE: THIS FILE IS AUTO-GENERATED by the GenerateStandardLib.kt\n *\n *\n// See:
https://github.com/JetBrains/kotlin/tree/master/libraries/stdlib\n *\n *\n\nimport kotlin.js.*\n\nimport
kotlin.ranges.contains\n\nimport kotlin.ranges.reversed\n *\n *\n *\n * Returns an element
at the given [index] or throws an [IndexOutOfBoundsException] if the [index] is out of bounds of this array.\n *\n *\n
 * @sample samples.collections.Collections.Elements.elementAt\n
*\n *\n\n@SinceKotlin("1.3")\n\n@ExperimentalUnsignedTypes\n\npublic actual fun UIntArray.elementAt(index: Int):
UInt {\n    return elementAtOrElse(index) { throw IndexOutOfBoundsException("index: $index, size: $size") }\n}\n}\n\n", "/*\n *
Returns an element at the given [index] or throws an [IndexOutOfBoundsException] if the [index] is
out of bounds of this array.\n *\n *\n * @sample samples.collections.Collections.Elements.elementAt\n
*\n *\n\n@SinceKotlin("1.3")\n\n@ExperimentalUnsignedTypes\n\npublic actual fun ULongArray.elementAt(index: Int):
ULong {\n    return elementAtOrElse(index) { throw IndexOutOfBoundsException("index: $index, size: $size") }\n}\n}\n\n", "/*\n *
Returns an element at the given [index] or throws an [IndexOutOfBoundsException] if the [index] is
out of bounds of this array.\n *\n *\n * @sample samples.collections.Collections.Elements.elementAt\n
*\n *\n\n@SinceKotlin("1.3")\n\n@ExperimentalUnsignedTypes\n\npublic actual fun UByteArray.elementAt(index: Int):
UByte {\n    return elementAtOrElse(index) { throw IndexOutOfBoundsException("index: $index, size: $size") }\n}\n}\n\n", "/*\n *
Returns an element at the given [index] or throws an [IndexOutOfBoundsException] if the [index] is
out of bounds of this array.\n *\n *\n * @sample samples.collections.Collections.Elements.elementAt\n

```

```

*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic actual fun UShortArray.elementAt(index: Int):
UShort {\n    return elementAtOrElse(index) { throw IndexOutOfBoundsException("index: $index, size: $size")}
}\n}\n\n/**\n * Returns a [List] that wraps the original array.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic actual fun UIntArray.asList(): List<UInt> {\n
return object : AbstractList<UInt>(), RandomAccess {\n    override val size: Int get() = this@asList.size\n
override fun
isEmpty(): Boolean = this@asList.isEmpty()\n    override fun contains(element: UInt): Boolean =
this@asList.contains(element)\n    override fun get(index: Int): UInt {\n
AbstractList.checkElementIndex(index, size)\n        return this@asList[index]\n    }\n    override fun
indexOf(element: UInt): Int {\n        @Suppress("USELESS_CAST")\n        if ((element as Any?) !is UInt)
return -1\n        return this@asList.indexOf(element)\n    }\n    override fun lastIndexOf(element: UInt): Int
{\n        @Suppress("USELESS_CAST")\n        if ((element as Any?) !is UInt) return -1\n        return
this@asList.lastIndexOf(element)\n    }\n}\n}\n\n/**\n * Returns a [List] that wraps the original array.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic actual fun ULongArray.asList(): List<ULong>
{\n    return object : AbstractList<ULong>(), RandomAccess {\n        override val size: Int get() = this@asList.size\n
override fun isEmpty(): Boolean = this@asList.isEmpty()\n        override fun contains(element: ULong):
Boolean = this@asList.contains(element)\n        override fun get(index: Int): ULong {\n
AbstractList.checkElementIndex(index, size)\n            return this@asList[index]\n        }\n        override fun
indexOf(element: ULong): Int {\n            @Suppress("USELESS_CAST")\n            if ((element as Any?) !is
ULong) return -1\n            return this@asList.indexOf(element)\n        }\n        override fun lastIndexOf(element:
ULong): Int {\n            @Suppress("USELESS_CAST")\n            if ((element as Any?) !is ULong) return -1\n
return this@asList.lastIndexOf(element)\n        }\n    }\n}\n}\n\n/**\n * Returns a [List] that wraps the original
array.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic actual fun UByteArray.asList():
List<UByte> {\n    return object : AbstractList<UByte>(), RandomAccess {\n        override val size:
Int get() = this@asList.size\n        override fun isEmpty(): Boolean = this@asList.isEmpty()\n        override fun
contains(element: UByte): Boolean = this@asList.contains(element)\n        override fun get(index: Int): UByte {\n
AbstractList.checkElementIndex(index, size)\n            return this@asList[index]\n        }\n        override fun
indexOf(element: UByte): Int {\n            @Suppress("USELESS_CAST")\n            if ((element as Any?) !is
UByte) return -1\n            return this@asList.indexOf(element)\n        }\n        override fun lastIndexOf(element:
UByte): Int {\n            @Suppress("USELESS_CAST")\n            if ((element as Any?) !is UByte) return -1\n
return this@asList.lastIndexOf(element)\n        }\n    }\n}\n}\n\n/**\n * Returns a [List] that wraps the original array.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic actual fun UShortArray.asList(): List<UShort>
{\n    return object : AbstractList<UShort>(), RandomAccess
{\n        override val size: Int get() = this@asList.size\n        override fun isEmpty(): Boolean =
this@asList.isEmpty()\n        override fun contains(element: UShort): Boolean = this@asList.contains(element)\n
override fun get(index: Int): UShort {\n            AbstractList.checkElementIndex(index, size)\n            return
this@asList[index]\n        }\n        override fun indexOf(element: UShort): Int {\n            @Suppress("USELESS_CAST")\n
if ((element as Any?) !is UShort) return -1\n            return
this@asList.indexOf(element)\n        }\n        override fun lastIndexOf(element: UShort): Int {\n            @Suppress("USELESS_CAST")\n
if ((element as Any?) !is UShort) return -1\n            return
this@asList.lastIndexOf(element)\n        }\n    }\n}\n}\n\n"/*\n * Copyright 2010-2021 JetBrains s.r.o. and Kotlin
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found in the
license/LICENSE.txt file.\n
*/\n\npackage kotlin.text\n\n/\n// NOTE: THIS FILE IS AUTO-GENERATED by the
GenerateUnicodeData.kt\n// See: https://github.com/JetBrains/kotlin/tree/master/libraries/stdlib\n\n/\n\n9 ranges
totally\n\n/**\n * Returns `true` if this character is a whitespace.\n
*\n@internal fun Char.isWhitespaceImpl(): Boolean
{\n    val ch = this.code\n    return ch in 0x0009..0x000d\n        || ch in 0x001c..0x0020\n        || ch == 0x00a0\n
|| ch > 0x1000 && (\n        ch == 0x1680\n        || ch in 0x2000..0x200a\n        || ch == 0x2028\n

```



```

        || ch == 0x2029\n        || ch == 0x202f\n        || ch == 0x205f\n        || ch == 0x3000\n
    )\n}\n", "/*\n * Copyright 2010-2020 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this
source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*/\n\npackage kotlin\n\n\npublic
actual fun interface Comparator<T> {\n    @JsName("compare")\n    public actual fun compare(a: T, b: T):
Int\n}\n", "/*\n * Copyright 2010-2020 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of
this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*/\n\npackage kotlin.js\n\nimport
kotlin.annotation.AnnotationTarget.*\n\n@Target(FUNCTION)\n@Deprecated("Use inline extension function with
body using dynamic")\npublic annotation class nativeGetter\n\n@Target(FUNCTION)\n@Deprecated("Use inline
extension function with body using dynamic")\npublic annotation class
nativeSetter\n\n@Target(FUNCTION)\n@Deprecated("Use inline extension function with body using
dynamic")\npublic annotation class nativeInvoke\n\n@Target(CLASS, FUNCTION, PROPERTY)\n\ninternal
annotation class library(public val name: String = "")\n\n@Target(CLASS)\n\ninternal annotation class
marker\n\n/*\n * Gives a declaration (a function, a property
or a class) specific name in JavaScript.\n * This may be useful in the following cases:\n * * There are two
functions for which the compiler gives same name in JavaScript, you can\n *   mark one with `@JsName(...)` to
prevent the compiler from reporting error.\n * * You are writing a JavaScript library in Kotlin. The compiler
produces mangled names\n *   for functions with parameters, which is unnatural for usual JavaScript developer.\n *
You can put `@JsName(...)` on functions you want to be available from JavaScript.\n * * For some reason you
want to rename declaration, e.g. there's common term in JavaScript\n *   for a concept provided by the declaration,
which is uncommon in Kotlin.\n * Example:\n * ```\n * kotlin\n * class Person(val name: String) {\n *     fun
hello() {\n *         println("Hello $name!")\n *     }\n *     @JsName("helloWithGreeting")\n *     fun
hello(greeting: String) {\n *         println("$greeting $name!")\n *     }\n * }\n * ```\n * @property name the name which compiler uses both for declaration itself and for all references to
the declaration.\n *     It's required to denote a valid JavaScript identifier.\n *
*/\n\n@Retention(AnnotationRetention.BINARY)\n@Target(CLASS, FUNCTION, PROPERTY, CONSTRUCTOR,
PROPERTY_GETTER, PROPERTY_SETTER)\n\npublic actual annotation class JsName(actual val name:
String)\n\n/*\n * Denotes an `external` declaration that must be imported from native JavaScript library.\n *
The compiler produces the code relevant for the target module system, for example, in case of CommonJS,\n * it
will import the declaration via the `require(...)` function.\n * The annotation can be used on top-level external
declarations (classes, properties, functions) and files.\n * In case of file (which can't be `external`) the following rule
applies: all the declarations in\n * the file must be `external`. By applying `@JsModule(...)` on a file you tell the
compiler to import a
JavaScript object\n * that contain all the declarations from the file.\n * Example:\n * ```\n * kotlin\n *
@JsModule("jquery")\n * external abstract class JQuery() {\n *     // some declarations here\n * }\n *
@JsModule("jquery")\n * external fun JQuery(element: Element): JQuery\n * ```\n * @property import name
of a module to import declaration from.\n *     It is not interpreted by the Kotlin compiler, it's passed as is
directly to the target module system.\n * @see JsNonModule\n
*/\n\n@Retention(AnnotationRetention.BINARY)\n@Target(CLASS, PROPERTY, FUNCTION, FILE)\n\npublic
annotation class JsModule(val import: String)\n\n/*\n * Denotes an `external` declaration that can be used without
module system.\n * By default, an `external` declaration is available regardless your target module system.\n *
However, by applying [JsModule] annotation you can make a declaration unavailable to *plain* module system.\n *
Some JavaScript libraries are distributed both as
a standalone downloadable piece of JavaScript and as a module available\n * as an npm package.\n * To tell the
Kotlin compiler to accept both cases, you can augment [JsModule] with the `@JsNonModule` annotation.\n *
For example:\n * ```\n * kotlin\n * @JsModule("jquery")\n * @JsNonModule\n * @JsName("$")\n * external
abstract class JQuery() {\n *     // some declarations here\n * }\n * @JsModule("jquery")\n * @JsNonModule\n

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* @JsName("$")\n * external fun JQuery(element: Element): JQuery\n * ```\n * @see JsModule\n
*@\n@Retention(AnnotationRetention.BINARY)\n@Target(CLASS, PROPERTY, FUNCTION, FILE)\npublic
annotation class JsNonModule\n\n/**\n * Adds prefix to `external` declarations in a source file.\n * JavaScript
does not have concept of packages (namespaces). They are usually emulated by nested objects.\n * The compiler
turns references to `external` declarations either to plain unprefix names (in case of *plain* modules)\n * or to
plain imports.\n * However,
if a JavaScript library provides its declarations in packages, you won't be satisfied with this.\n * You can tell the
compiler to generate additional prefix before references to `external` declarations using the `@JsQualifier(...)`\n *
annotation.\n * Note that a file marked with the `@JsQualifier(...)` annotation can't contain non-`external`
declarations.\n * Example:\n * ```\n * @file:JsQualifier("my.jsPackageName")\n * package
some.kotlinPackage\n * external fun foo(x: Int)\n * external fun bar(): String\n * ```\n * @property value
the qualifier to add to the declarations in the generated code.\n * It must be a sequence of valid JavaScript
identifiers separated by the `.` character.\n * Examples of valid qualifiers are: `foo`, `bar.Baz`, `_$0.f`.\n *
*@\n@Retention(AnnotationRetention.BINARY)\n@Target(AnnotationTarget.FILE)\npublic
annotation class JsQualifier(val value: String)\n\n/**\n * Exports top-level declaration
on JS platform.\n * Compiled module exposes declarations that are marked with this annotation without name
mangling.\n * This annotation can be applied to either files or top-level declarations.\n * It is currently
prohibited to export the following kinds of declarations:\n * * `expect` declarations\n * * inline functions with
reified type parameters\n * * suspend functions\n * * secondary constructors without `@JsName`\n * *
extension properties\n * * enum classes\n * * annotation classes\n * Signatures of exported declarations must
only contain "exportable" types:\n * * `dynamic`, `Any`, `String`, `Boolean`, `Byte`, `Short`, `Int`, `Float`,
`Double`\n * * `BooleanArray`, `ByteArray`, `ShortArray`, `IntArray`, `FloatArray`, `DoubleArray`\n * *
`Array<exportable-type>`\n * * Function types with exportable parameters and return types\n * * `external` or
`@JsExport` classes and interfaces\n * * Nullable counterparts of types above\n
* * Unit return type. Must not be nullable\n * This annotation is experimental, meaning that restrictions
mentioned above are subject to change.\n
*@\n@ExperimentalJsExport\n@Retention(AnnotationRetention.BINARY)\n@Target(CLASS, PROPERTY,
FUNCTION, FILE)\n@SinceKotlin("1.3")\npublic actual annotation class JsExport\n\n/**\n * Forces a top-level
property to be initialized eagerly, opposed to lazily on the first access to file and/or property.\n
*@\n@ExperimentalStdlibApi\n@Retention(AnnotationRetention.BINARY)\n@Target(AnnotationTarget.PROPER
TY)\n@SinceKotlin("1.6")\n@Deprecated("This annotation is a temporal migration assistance and may be
removed in the future releases, please consider filing an issue about the case where it is needed")\npublic annotation
class EagerInitialization", /*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language
contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt
file.\n */\npackage kotlin.jvm\n\n// these are used in common generated code in stdlib\n\n// TODO: find how to
deprecate these ones\n\n@Target(AnnotationTarget.FIELD)\n@Retention(AnnotationRetention.SOURCE)\npublic
actual annotation class Volatile\n\n@Target(AnnotationTarget.FUNCTION,
AnnotationTarget.PROPERTY_GETTER,
AnnotationTarget.PROPERTY_SETTER)\n@Retention(AnnotationRetention.SOURCE)\npublic actual annotation
class Synchronized\n", /*\n * Copyright 2010-2020 JetBrains s.r.o. and Kotlin Programming Language
contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n */\npackage kotlin.collections\n\n/**\n * Provides a skeletal implementation of the
[MutableCollection] interface.\n * @param E the type of elements contained in the collection. The collection is
invariant in its element type.\n */\npublic actual abstract class AbstractMutableCollection<E> protected actual
constructor() : AbstractCollection<E>(),
MutableCollection<E> {\n\n actual abstract override fun add(element: E): Boolean\n\n actual override fun
remove(element: E): Boolean {\n\n checkIsMutable()\n\n val iterator = iterator()\n\n while

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(iterator.hasNext()) {\n        if (iterator.next() == element) {\n            iterator.remove()\n            return true\n        }\n    }\n    return false\n }\n\n actual override fun addAll(elements: Collection<E>): Boolean {\n    checkIsMutable()\n    var modified = false\n    for (element in elements) {\n        if (add(element)) modified = true\n    }\n    return modified\n }\n\n actual override fun removeAll(elements: Collection<E>): Boolean {\n    checkIsMutable()\n    return (this as MutableIterable<E>).removeAll { it in elements }\n }\n\n actual override fun retainAll(elements: Collection<E>): Boolean {\n    checkIsMutable()\n    return (this as MutableIterable<E>).removeAll\n    {\n        !it in elements\n    }\n }\n\n actual override fun clear(): Unit {\n    checkIsMutable()\n    val iterator = this.iterator()\n    while (iterator.hasNext()) {\n        iterator.next()\n        iterator.remove()\n    }\n }\n\n @Deprecated("Provided so that subclasses inherit this function", level = DeprecationLevel.HIDDEN)\n @JsName("toJSON")\n protected fun toJSON(): Any = this.toArray()\n\n /**\n  * This method is called every time when a mutating method is called on this mutable collection.\n  * Mutable collections that are built (frozen) must throw `UnsupportedOperationException`.\n  */\n internal open fun checkIsMutable(): Unit {\n }\n\n /**\n  * Copyright 2010-2020 JetBrains s.r.o. and Kotlin Programming Language contributors.\n  * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n  */\n\n /**\n  * Based on GWT AbstractList\n  * Copyright 2007 Google Inc.\n  */\n\n package kotlin.collections\n\n /**\n  * Provides a skeletal implementation of the [MutableList] interface.\n  */\n @param E the type of elements contained in the list. The list is invariant in its element type.\n\n /**\n  * public actual abstract class AbstractMutableList<E> protected actual constructor():\n  AbstractMutableCollection<E>(), MutableList<E> {\n    protected var modCount: Int = 0\n\n    abstract override fun add(index: Int, element: E): Unit\n    abstract override fun removeAt(index: Int): E\n    abstract override fun set(index: Int, element: E): E\n\n    /**\n     * Adds the specified element to the end of this list.\n     */\n @return `true` because the list is always modified as the result of this operation.\n\n actual override fun add(element: E): Boolean {\n    checkIsMutable()\n    add(size, element)\n    return true\n }\n\n actual override fun addAll(index: Int, elements: Collection<E>): Boolean {\n    AbstractList.checkPositionIndex(index, size)\n    checkIsMutable()\n    var _index = index\n    var changed = false\n    for (e in elements) {\n        add(_index++, e)\n        changed = true\n    }\n    return changed\n }\n\n actual override fun clear() {\n    checkIsMutable()\n    removeRange(0, size)\n }\n\n actual override fun removeAll(elements: Collection<E>): Boolean {\n    checkIsMutable()\n    return removeAll { it in elements }\n }\n\n actual override fun retainAll(elements: Collection<E>): Boolean {\n    checkIsMutable()\n    return removeAll { it !in elements }\n }\n\n\n actual override fun iterator(): MutableIterator<E> = IteratorImpl()\n\n actual override fun contains(element: E): Boolean = indexOf(element) >= 0\n\n actual override fun indexOf(element: E): Int {\n    for (index in 0..lastIndex) {\n        if (get(index) == element) {\n            return index\n        }\n    }\n    return -1\n }\n\n actual override fun lastIndexOf(element: E): Int {\n    for (index in lastIndex downTo 0) {\n        if (get(index) == element) {\n            return index\n        }\n    }\n    return -1\n }\n\n\n actual override fun listIterator(): MutableListIterator<E> = listIterator(0)\n\n actual override fun listIterator(index: Int): MutableListIterator<E> = ListIteratorImpl(index)\n\n\n actual override fun subList(fromIndex: Int, toIndex: Int): MutableList<E> = SubList(this, fromIndex, toIndex)\n\n /**\n  * Removes the range of elements from this list starting from [fromIndex] and ending with but not including [toIndex].\n  */\n\n protected open fun removeRange(fromIndex: Int, toIndex: Int) {\n    val iterator = listIterator(fromIndex)\n    repeat(toIndex - fromIndex) {\n        iterator.next()\n        iterator.remove()\n    }\n }\n\n /**\n  * Compares this list with another list instance with the ordered structural equality.\n  */\n @return true, if [other] instance is a [List] of the same size, which contains the same elements in the same order.\n\n override fun equals(other: Any?): Boolean {\n    if (other === this) return true\n    if (other !is List<*>) return false\n\n    return AbstractList.orderedEquals(this, other)\n }\n\n /**\n  * Returns the hash code value for this list.\n  */\n override fun hashCode(): Int = AbstractList.orderedHashCode(this)\n\n\n private open inner class IteratorImpl : MutableIterator<E> {\n    /**\n     * the index of the item that will be returned on the next call to [next]()\n     */\n protected var index = 0\n\n /** the

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index of the item that was returned on the previous call to [next]() * or [ListIterator.previous]() (for
`ListIterator`),\n      * -1 if no such item exists\n      */\n      protected var last = -1\n      override fun
hasNext(): Boolean = index < size\n\n      override fun next(): E {\n          if (!hasNext()) throw NoSuchElementException()\n          last = index++\n          return get(last)\n      }\n      override fun remove() {\n          check(last != -1) { \"Call next() or previous()
before removing element from the iterator.\" }\n          removeAt(last)\n          index = last\n          last = -1\n      }\n      /**\n       * Implementation of `MutableListIterator` for abstract lists.\n       */\n      private inner class
ListIteratorImpl(index: Int) : IteratorImpl(), MutableListIterator<E> {\n          init {\n              AbstractList.checkPositionIndex(index, this@AbstractMutableList.size)\n              this.index = index\n          }\n          override fun hasPrevious(): Boolean = index > 0\n          override fun nextIndex(): Int = index\n          override fun
previous(): E {\n              if (!hasPrevious()) throw NoSuchElementException()\n              last = --index\n              return get(last)\n          }\n          override fun previousIndex(): Int = index - 1\n          override fun add(element: E) {\n              add(index, element)\n              index++\n              last = -1\n          }\n          override fun set(element: E) {\n              check(last != -1) { \"Call next() or previous() before updating element value with the iterator.\" }\n              set(last,
element)\n          }\n          private class SubList<E>(private val list: AbstractMutableList<E>, private val
fromIndex: Int, toIndex: Int) : AbstractMutableList<E>(), RandomAccess {\n              private var _size: Int = 0\n              init {\n                  AbstractList.checkRangeIndexes(fromIndex, toIndex, list.size)\n                  this._size = toIndex -
fromIndex\n              }\n              override fun add(index: Int, element: E) {\n                  AbstractList.checkPositionIndex(index, _size)\n                  list.add(fromIndex + index, element)\n                  _size++\n              }\n              override fun get(index: Int): E {\n                  AbstractList.checkElementIndex(index, _size)\n                  return list[fromIndex + index]\n              }\n              override fun removeAt(index: Int): E {\n                  AbstractList.checkElementIndex(index, _size)\n                  val result
= list.removeAt(fromIndex + index)\n                  _size--\n                  return result\n              }\n              override fun set(index:
Int, element: E): E {\n                  AbstractList.checkElementIndex(index, _size)\n                  return list.set(fromIndex +
index, element)\n              }\n              override val size: Int get() = _size\n              internal override fun checkIsMutable():
Unit = list.checkIsMutable()\n          }\n      }\n      /**\n       * Copyright 2010-2020 JetBrains s.r.o. and Kotlin Programming
Language contributors.\n       * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n       */\n      /**\n       * Based on GWT AbstractMap\n       * Copyright 2007 Google Inc.\n       */\n      package kotlin.collections\n      /**\n       * Provides
a skeletal implementation of the [MutableMap] interface.\n       */\n      /**\n       * The implementor is required to implement
[entries] property, which should return mutable set of map entries, and [put] function.\n       */\n      /**\n       * @param K the type of
map keys. The map is invariant in its key type.\n       */\n      /**\n       * @param V the type of map values. The map is invariant in its
value type.\n       */\n      public actual abstract class AbstractMutableMap<K, V> protected actual constructor() :
AbstractMap<K, V>(), MutableMap<K, V> {\n          /**\n           * A mutable [Map.Entry] shared by several [Map]
implementations.\n           */\n          internal open class SimpleEntry<K, V>(override val key: K, value: V) :
MutableMap.MutableEntry<K, V> {\n              constructor(entry: Map.Entry<K, V>) : this(entry.key, entry.value)\n              private var _value = value\n              override val value: V get() = _value\n              override fun setValue(newValue:
V): V {\n                  // Should check if the map containing this entry is mutable.\n                  // However, to not
increase entry memory footprint it might be worthwhile not to check it here and\n                  // force subclasses that
implement `build()` (freezing) operation to implement their own `MutableEntry`.\n                  this@AbstractMutableMap.checkIsMutable()\n                  val oldValue = this._value\n                  this._value = newValue\n                  return oldValue\n              }\n              override fun hashCode(): Int = entryHashCode(this)\n              override fun
toString(): String = entryToString(this)\n              override fun equals(other: Any?): Boolean = entryEquals(this,
other)\n          }\n          // intermediate abstract class to workaround KT-43321\n          internal abstract class
AbstractEntrySet<E : Map.Entry<K, V>, K, V> : AbstractMutableSet<E>() {\n              final override fun
contains(element: E): Boolean = containsEntry(element)\n              abstract fun containsEntry(element: Map.Entry<K,
V>): Boolean\n              final override fun remove(element: E): Boolean = removeEntry(element)\n              abstract fun

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removeEntry(element: Map.Entry<K, V>): Boolean\n    }\n\n    actual override fun clear() {\n        entries.clear()\n    }\n\n    private var _keys: MutableSet<K>? = null\n    actual override val keys: MutableSet<K>\n        get() {\n        if (_keys == null) {\n            _keys = object : AbstractMutableSet<K>() {\n                override fun\n                add(element: K): Boolean = throw UnsupportedOperationException("Add is not supported on keys")\n            }\n        }\n        override fun clear() {\n            this@AbstractMutableMap.clear()\n        }\n        override\n        operator fun contains(element: K): Boolean = containsKey(element)\n        override operator fun iterator():\n        MutableIterator<K> {\n            val entryIterator = entries.iterator()\n            return object :\n            MutableIterator<K> {\n                override fun hasNext(): Boolean = entryIterator.hasNext()\n\n                override fun next(): K = entryIterator.next().key\n                override fun remove() =\n                entryIterator.remove()\n            }\n        }\n        override fun remove(element: K): Boolean\n        {\n            checkIsMutable()\n            if (containsKey(element)) {\n                this@AbstractMutableMap.remove(element)\n                return true\n            }\n            return\n            false\n        }\n        override val size: Int get() = this@AbstractMutableMap.size\n        override fun checkIsMutable(): Unit = this@AbstractMutableMap.checkIsMutable()\n    }\n    }\n\n    return _keys!!\n    }\n\n    actual abstract override fun put(key: K, value: V): V?\n    actual override fun\n    putAll(from: Map<out K, V>) {\n        checkIsMutable()\n        for ((key, value) in from) {\n            put(key,\n            value)\n        }\n    }\n\n    private var _values: MutableCollection<V>? = null\n    actual override val values:\n    MutableCollection<V>\n        get() {\n        if (_values == null) {\n            _values = object :\n            AbstractMutableCollection<V>() {\n                override fun add(element: V): Boolean = throw\n                UnsupportedOperationException("Add is not supported on values")\n            }\n        }\n        override fun clear() =\n        this@AbstractMutableMap.clear()\n        override operator fun contains(element: V): Boolean =\n        containsValue(element)\n        override operator fun iterator(): MutableIterator<V> {\n            val\n            entryIterator = entries.iterator()\n            return object : MutableIterator<V> {\n                override fun\n                hasNext(): Boolean = entryIterator.hasNext()\n                override fun next(): V = entryIterator.next().value\n                override fun remove() = entryIterator.remove()\n            }\n        }\n        override val size: Int get() = this@AbstractMutableMap.size\n        override fun checkIsMutable(): Unit = this@AbstractMutableMap.checkIsMutable()\n    }\n    }\n\n    return _values!!\n    }\n\n    actual override fun remove(key: K): V? {\n        checkIsMutable()\n        val iter = entries.iterator()\n        while (iter.hasNext()) {\n            val entry = iter.next()\n            val k = entry.key\n            if (key == k) {\n                val value = entry.value\n                iter.remove()\n                return value\n            }\n        }\n        return null\n    }\n\n    /**\n     * This method is called every time when a mutating method is called on\n     * this mutable map.\n     * Mutable maps that are built (frozen) must throw `UnsupportedOperationException`.\n     */\n    internal open fun checkIsMutable(): Unit {\n    }\n\n    * Copyright\n    2010-2020 JetBrains s.r.o. and Kotlin Programming Language contributors.\n    * Use of this source code is governed\n    by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n    */\npackage\nkotlin.collections\n\n/**\n * Provides a skeletal implementation of the [MutableSet] interface.\n * @param E the\n * type of elements contained in the set. The set is invariant in its element type.\n */\npublic actual abstract class\nAbstractMutableSet<E> protected actual constructor() : AbstractMutableCollection<E>(), MutableSet<E> {\n\n    /**\n     * Compares this set with another set instance with the unordered structural equality.\n     * @return\n     * `true`, if [other] instance is a [Set] of the same size, all elements of which are contained in this set.\n     */\n    override fun equals(other: Any?): Boolean {\n        if (other === this) return true\n        if (other !is Set<*>) return\n        false\n        return AbstractSet.setEquals(this, other)\n    }\n\n    /**\n     * Returns\n     * the hash code value for this set.\n     */\n    override fun hashCode(): Int =\n    AbstractSet.unorderedHashCode(this)\n\n    * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming\n    Language contributors.\n    * Use of this source code is governed by the Apache 2.0 license that can be found in the\n    license/LICENSE.txt file.\n    */\npackage kotlin.collections\n\n/**\n * Provides a [MutableList] implementation,

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which uses a resizable array as its backing storage.\n \* This implementation doesn't provide a way to manage capacity, as backing JS array is resizeable itself.\n \* There is no speed advantage to pre-allocating array sizes in JavaScript, so this implementation does not include any of the\n \* capacity and "growth increment" concepts.\n \*\n public actual open class ArrayList<E> internal constructor(private var array: Array<Any?>) : AbstractMutableList<E>(), MutableList<E>, RandomAccess {\n private var isReadOnly: Boolean = false\n\n /\*\*\n \* Creates an empty [ArrayList].\n\n \*\n public actual constructor() : this(emptyArray()) {\n\n /\*\*\n \* Creates an empty [ArrayList].\n\n \* @param initialCapacity initial capacity (ignored)\n \*\n public actual constructor(initialCapacity: Int) : this(emptyArray()) {\n\n /\*\*\n \* Creates an [ArrayList] filled from the [elements] collection.\n\n \*\n public actual constructor(elements: Collection<E>) : this(elements.toTypedArray<Any?>()) {\n\n @PublishedApi\n internal fun build(): List<E> {\n checkIsMutable()\n isReadOnly = true\n return this\n }\n\n /\*\*\n Does nothing in this ArrayList implementation.\n \*\n public actual fun trimToSize() {\n\n /\*\*\n Does nothing in this ArrayList implementation.\n \*\n public actual fun ensureCapacity(minCapacity: Int) {\n\n actual override val size: Int get() = array.size\n @Suppress("UNCHECKED\_CAST")\n actual override fun get(index: Int): E = array[rangeCheck(index)] as E\n\n actual override fun set(index: Int, element: E): E {\n checkIsMutable()\n rangeCheck(index)\n @Suppress("UNCHECKED\_CAST")\n return array[index].apply { array[index] = element } as E\n }\n\n actual override fun add(element: E): Boolean {\n checkIsMutable()\n array.asDynamic().push(element)\n modCount++\n return true\n }\n\n actual override fun add(index: Int, element: E): Unit {\n checkIsMutable()\n array.asDynamic().splice(insertionRangeCheck(index), 0, element)\n modCount++\n }\n\n actual override fun addAll(elements: Collection<E>): Boolean {\n checkIsMutable()\n if (elements.isEmpty()) return false\n array += elements.toTypedArray<Any?>()\n modCount++\n return true\n }\n\n actual override fun addAll(index: Int, elements: Collection<E>): Boolean {\n checkIsMutable()\n insertionRangeCheck(index)\n if (index == size) return addAll(elements)\n if (elements.isEmpty()) return false\n when (index) {\n size -> return addAll(elements)\n 0 -> array = elements.toTypedArray<Any?>() + array\n else -> array = array.copyOfRange(0, index).asDynamic().concat(elements.toTypedArray<Any?>(), array.copyOfRange(index, size))\n }\n modCount++\n return true\n }\n\n actual override fun removeAt(index: Int): E {\n checkIsMutable()\n rangeCheck(index)\n modCount++\n return if (index == lastIndex)\n array.asDynamic().pop()\n else\n array.asDynamic().splice(index, 1)[0]\n }\n\n actual override fun remove(element: E): Boolean {\n checkIsMutable()\n for (index in array.indices) {\n if (array[index] == element) {\n array.asDynamic().splice(index, 1)\n modCount++\n return true\n }\n }\n return false\n }\n\n override fun removeRange(fromIndex: Int, toIndex: Int) {\n checkIsMutable()\n modCount++\n array.asDynamic().splice(fromIndex, toIndex - fromIndex)\n }\n\n actual override fun clear() {\n checkIsMutable()\n array = emptyArray()\n modCount++\n }\n\n\n actual override fun indexOf(element: E): Int = array.indexOf(element)\n\n actual override fun lastIndexOf(element: E): Int = array.lastIndexOf(element)\n\n override fun toString() = arrayToString(array)\n\n @Suppress("UNCHECKED\_CAST")\n override fun <T> toArray(array: Array<T>): Array<T> {\n if (array.size < size) {\n return toArray() as Array<T>\n }\n (this.array as Array<T>).copyInto(array)\n if (array.size > size) {\n array[size] = null as T // null-terminate\n }\n return array\n }\n\n override fun toArray(): Array<Any?> {\n return js("[]").slice.call(array)\n }\n\n\n internal override fun checkIsMutable() {\n if (isReadOnly) throw UnsupportedOperationException()\n }\n\n private fun rangeCheck(index: Int) = index.apply {\n AbstractList.checkElementIndex(index, size)\n }\n\n private fun insertionRangeCheck(index: Int) = index.apply {\n AbstractList.checkPositionIndex(index, size)\n }\n\n }", "/\*\*\n \* Copyright 2010-2019 JetBrains s.r.o. and Kotlin Programming Language contributors.\n \* Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n \*/\n\n package

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kotlin.collections\n\ninternal fun <T> sortArrayWith(array: Array<out T>, comparison: (T, T) -> Int) {\n  if
(getStableSortingIsSupported()) {\n    array.asDynamic().sort(comparison)\n  } else {\n
mergeSort(array.unsafeCast<Array<T>>(), 0, array.lastIndex, Comparator(comparison))\n  }\n}\n\ninternal fun
<T> sortArrayWith(array: Array<out T>, comparator: Comparator<in T>) {\n  if (getStableSortingIsSupported())
{\n    val comparison = { a: T, b: T -> comparator.compare(a, b) }\n    array.asDynamic().sort(comparison)\n
} else {\n    mergeSort(array.unsafeCast<Array<T>>(), 0, array.lastIndex, comparator)\n  }\n}\n\ninternal fun
<T> sortArrayWith(array: Array<out T>, fromIndex: Int, toIndex: Int, comparator: Comparator<in T>) {\n  if
(fromIndex < toIndex - 1) {\n    mergeSort(array.unsafeCast<Array<T>>(), fromIndex, toIndex - 1, comparator)\n
  }\n}\n\ninternal fun <T : Comparable<T>> sortArray(array: Array<out T>) {\n  if
(getStableSortingIsSupported()) {\n    val comparison = { a: T, b: T -> a.compareTo(b) }\n
array.asDynamic().sort(comparison)\n  } else {\n    mergeSort(array.unsafeCast<Array<T>>(), 0,
array.lastIndex, naturalOrder())\n  }\n}\n\nprivate var _stableSortingIsSupported: Boolean? = null\nprivate fun
getStableSortingIsSupported(): Boolean {\n  _stableSortingIsSupported?.let { return it }\n
_stableSortingIsSupported = false\n\n  val array = js("{}").unsafeCast<Array<Int>>()\n  // known implementations may use stable sort for arrays of up to
512 elements\n  // so we create slightly more elements to test stability\n  for (index in 0 until 600)
array.asDynamic().push(index)\n  val comparison = { a: Int, b: Int -> (a and 3) - (b and 3) }\n
array.asDynamic().sort(comparison)\n  for (index in 1 until array.size) {\n    val a = array[index - 1]\n    val b
= array[index]\n    if ((a and 3) == (b and 3) && a >= b) return false\n  }\n  _stableSortingIsSupported = true\n
return true\n}\n\nprivate fun <T> mergeSort(array: Array<T>, start: Int, endInclusive: Int, comparator:
Comparator<in T>) {\n  val buffer = arrayOfNulls<Any?>(array.size).unsafeCast<Array<T>>()\n  val result =
mergeSort(array, buffer, start, endInclusive, comparator)\n  if (result !== array) {\n    for (i in start..endInclusive)
array[i] = result[i]\n  }\n}\n\n// Both start and end are inclusive indices.\nprivate
fun <T> mergeSort(array: Array<T>, buffer: Array<T>, start: Int, end: Int, comparator: Comparator<in T>):
Array<T> {\n  if (start == end) {\n    return array\n  }\n  val median = (start + end) / 2\n  val left =
mergeSort(array, buffer, start, median, comparator)\n  val right = mergeSort(array, buffer, median + 1, end,
comparator)\n  val target = if (left === buffer) array else buffer\n  // Merge.\n  var leftIndex = start\n  var
rightIndex = median + 1\n  for (i in start..end) {\n    when {\n      leftIndex <= median && rightIndex <= end
-> {\n        val leftValue = left[leftIndex]\n        val rightValue = right[rightIndex]\n        if
(comparator.compare(leftValue, rightValue) <= 0) {\n          target[i] = leftValue\n          leftIndex++\n
        } else {\n          target[i] = rightValue\n          rightIndex++\n        }\n      }\n    }\n  }\n  leftIndex
<= median -> {\n    target[i] = left[leftIndex]\n    leftIndex++\n  }\n  else /* rightIndex
<= end */ -> {\n    target[i] = right[rightIndex]\n    rightIndex++\n    Unit // TODO: Fix KT-
31506\n  }\n}\n}\n}\n\nreturn target\n}", /*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin
Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be
found in the license/LICENSE.txt file.\n */\npackage
kotlin.collections\n\n@OptIn(ExperimentalUnsignedTypes::class)\n@SinceKotlin("1.3")\n@kotlin.js.JsName("
contentDeepHashCodeImpl")\ninternal fun <T> Array<out T>?.contentDeepHashCodeImpl(): Int {\n  if (this ==
null) return 0\n  var result = 1\n  for (element in this) {\n    val elementHash = when {\n      element == null
-> 0\n      isArrayish(element) -> (element.unsafeCast<Array<*>>()).contentDeepHashCodeImpl()\n
      element is UByteArray -> element.contentHashCode()\n      element is UShortArray ->
element.contentHashCode()\n      element is UIntArray -> element.contentHashCode()\n      element is
ULongArray -> element.contentHashCode()\n      else -> element.hashCode()\n    }\n    result = 31 * result + elementHash\n  }\n  return result\n}", /*\n * Copyright 2010-2018 JetBrains s.r.o. and
Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that
can be found in the license/LICENSE.txt file.\n */\npackage kotlin.collections\n\ninternal interface
EqualityComparator {\n  /**\n   * Subclasses must override to return a value indicating\n   * whether or not two

```

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keys or values are equal.\n    */\n    abstract fun equals(value1: Any?, value2: Any?): Boolean\n\n    /**\n     * Subclasses must override to return the hash code of a given key.\n     */\n    abstract fun hashCode(value: Any?): Int\n\n    object HashCoder : EqualityComparator {\n        override fun equals(value1: Any?, value2: Any?): Boolean = value1 == value2\n        override fun hashCode(value: Any?): Int = value?.hashCode() ?: 0\n    }\n\n    /**\n     * Copyright 2010-2020 JetBrains s.r.o. and Kotlin Programming Language contributors.\n     * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n     */\n    /**\n     * Based on GWT AbstractHashMap\n     * Copyright 2008 Google Inc.\n     */\n    /**\n     * package kotlin.collections\n     * import kotlin.collections.MutableMap.MutableEntry\n     */\n    /**\n     * Hash table based implementation of the [MutableMap] interface.\n     * This implementation makes no guarantees regarding the order of enumeration of [keys], [values] and [entries] collections.\n     */\n    /**\n     * Classes that extend HashMap and implement `build()` (freezing) operation\n     */\n    /**\n     * have to make sure mutating methods check `checkIsMutable`.\n     */\n    public actual\n\n    open class HashMap<K, V> : AbstractMutableMap<K, V>, MutableMap<K, V> {\n        private inner class\n        EntrySet : AbstractEntrySet<MutableEntry<K, V>, K, V>() {\n            override fun add(element: MutableEntry<K, V>): Boolean = throw UnsupportedOperationException("Add is not supported on entries")\n            override fun clear() {\n                this@HashMap.clear()\n            }\n            override fun containsEntry(element: Map.Entry<K, V>): Boolean = this@HashMap.containsEntry(element)\n            override operator fun iterator(): MutableIterator<MutableEntry<K, V>> = internalMap.iterator()\n            override fun removeEntry(element: Map.Entry<K, V>): Boolean {\n                if (contains(element)) {\n                    this@HashMap.remove(element.key)\n                }\n                return true\n            }\n            override val size: Int get() = this@HashMap.size\n        }\n\n        /**\n         * Internal implementation of the map: either string-based or hashcode-based.\n         */\n        private val internalMap: InternalMap<K, V>\n        private val equality: EqualityComparator\n\n        internal constructor(internalMap: InternalMap<K, V>) : super() {\n            this.internalMap = internalMap\n            this.equality = internalMap.equality\n        }\n\n        /**\n         * Constructs an empty [HashMap] instance.\n         */\n        actual constructor(): this(InternalHashMap(EqualityComparator.HashCode))\n\n        /**\n         * Constructs an empty [HashMap] instance.\n         * @param initialCapacity the initial capacity (ignored)\n         * @param loadFactor the load factor (ignored)\n         * @throws IllegalArgumentException if the initial capacity or load factor are negative\n         */\n        actual constructor(initialCapacity: Int, loadFactor: Float) : this() {\n            // This implementation of HashMap has no need of load factors or capacities.\n            require(initialCapacity >= 0) { "Negative initial capacity: $initialCapacity" }\n            require(loadFactor >= 0) { "Non-positive load factor: $loadFactor" }\n        }\n\n        actual constructor(initialCapacity: Int) : this(initialCapacity, 0.0f)\n\n        /**\n         * Constructs an instance of [HashMap] filled with the contents of the specified [original] map.\n         */\n        actual constructor(original: Map<out K, V>) : this() {\n            this.putAll(original)\n        }\n\n        actual override fun clear() {\n            internalMap.clear()\n        }\n\n        actual override fun structureChanged(this) {\n        }\n\n        actual override fun containsKey(key: K): Boolean = internalMap.containsKey(key)\n\n        actual override fun containsValue(value: V): Boolean = internalMap.any { equality.equals(it.value, value) }\n\n        private var _entries: MutableSet<MutableMap.MutableEntry<K, V>>? = null\n        actual override val entries: MutableSet<MutableMap.MutableEntry<K, V>>\n            get() {\n                if (_entries == null) {\n                    _entries = createEntrySet()\n                }\n                return _entries!!\n            }\n\n        internal\n        open fun createEntrySet():\n        MutableSet<MutableMap.MutableEntry<K, V>> = EntrySet()\n\n        actual override operator fun get(key: K): V? = internalMap.get(key)\n\n        actual override fun put(key: K, value: V): V? = internalMap.put(key, value)\n\n        actual override fun remove(key: K): V? = internalMap.remove(key)\n\n        actual override val size: Int get() = internalMap.size\n    }\n\n    /**\n     * Constructs the specialized implementation of [HashMap] with [String] keys, which stores the keys as properties of\n     * JS object without hashing them.\n     */\n    /**\n     * public fun <V> stringMapOf(vararg pairs: Pair<String, V>): HashMap<String, V> {\n     *     return HashMap<String, V> {\n     *         return HashMap<String, V>(InternalStringMap(EqualityComparator.HashCode)).apply { putAll(pairs) }\n     *     }\n     */\n\n    /**\n     * Copyright 2010-2018

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JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the
Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\n * Based on GWT HashSet\n *
Copyright 2008 Google Inc.\n */\n\npackage
kotlin.collections\n\n/**\n * The implementation of the [MutableSet] interface, backed by a [HashMap] instance.\n
*/\n\n// Classes that extend HashSet and implement `build()` (freezing) operation\n// have to make sure mutating
methods check `checkIsMutable`.\n\npublic actual open class HashSet<E> : AbstractMutableSet<E>, MutableSet<E>
{\n\n    internal val map: HashMap<E, Any>\n\n    /**\n     * Constructs a new empty [HashSet].\n     */\n    actual
constructor()\n    {\n        map = HashMap<E, Any>()\n    }\n\n    /**\n     * Constructs a new [HashSet] filled with the
elements of the specified collection.\n     */\n    actual constructor(elements: Collection<E>)\n    {\n        map =
HashMap<E, Any>(elements.size)\n        addAll(elements)\n    }\n\n    /**\n     * Constructs a new empty
[HashSet].\n     */\n    * @param initialCapacity the initial capacity (ignored)\n     * @param loadFactor the load
factor (ignored)\n     */\n    * @throws IllegalArgumentException if the initial
capacity or load factor are negative\n     */\n    actual constructor(initialCapacity: Int, loadFactor: Float)\n    {\n
map = HashMap<E, Any>(initialCapacity, loadFactor)\n    }\n\n    actual constructor(initialCapacity: Int) :
this(initialCapacity, 0.0f)\n\n    /**\n     * Protected constructor to specify the underlying map. This is used by\n     *
LinkedHashSet.\n     */\n    * @param map underlying map to use.\n     */\n    internal constructor(map: HashMap<E,
Any>)\n    {\n        this.map = map\n    }\n\n    actual override fun add(element: E): Boolean {\n        val old =
map.put(element, this)\n        return old == null\n    }\n\n    actual override fun clear()\n    {\n        map.clear()\n    }\n\n    //
public override fun clone(): Any {\n        return HashSet<E>(this)\n    }\n\n    actual override operator fun
contains(element: E): Boolean = map.containsKey(element)\n\n    actual override fun isEmpty(): Boolean =
map.isEmpty()\n\n    actual override fun iterator(): MutableIterator<E>
= map.keys.iterator()\n\n    actual override fun remove(element: E): Boolean = map.remove(element) != null\n\n
actual override val size: Int get() = map.size\n}\n\n/**\n * Creates a new instance of the specialized
implementation of [HashSet] with the specified [String] elements,\n * which elements the keys as properties of JS
object without hashing them.\n */\n\npublic fun stringSetOf(vararg elements: String): HashSet<String> {\n    return
HashSet(stringMapOf<Any>()).apply { addAll(elements) }\n}\n\n"/\n\n * Copyright 2010-2018 JetBrains s.r.o. and
Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that
can be found in the license/LICENSE.txt file.\n */\n\n * Based on GWT InternalHashMap\n * Copyright
2008 Google Inc.\n */\n\npackage kotlin.collections\n\nimport
kotlin.collections.MutableMap.MutableEntry\nimport kotlin.collections.AbstractMutableMap.SimpleEntry\n\n/**\n
* A simple wrapper around JavaScriptObject to provide
[java.util.Map]-like semantics for any\n * key type.\n * *\n * Implementation notes:\n * *\n * A key's hashCode
is the index in backingMap which should contain that key. Since several keys may\n * have the same hash, each
value in hashCodeMap is actually an array containing all entries whose\n * keys share the same hash.\n */\n\ninternal
class InternalHashMap<K, V>(override val equality: EqualityComparator) : InternalMap<K, V> {\n\n    private var backingMap: dynamic = createJsMap()\n    override var size: Int = 0\n    private set\n\n    override fun
put(key: K, value: V): V? {\n        val hashCode = equality.getHashCode(key)\n        val chainOrEntry =
getChainOrEntryOrNull(hashCode)\n        if (chainOrEntry == null) {\n            // This is a new chain, put it to the
map.\n            backingMap[hashCode] = SimpleEntry(key, value)\n        } else {\n            if (chainOrEntry !is
Array<*>)\n                // It is an entry\n                val entry: SimpleEntry<K,
V> = chainOrEntry\n                if (equality.equals(entry.key, key)) {\n                    return entry.setValue(value)\n
                }\n            } else {\n                backingMap[hashCode] = arrayOf(entry, SimpleEntry(key, value))\n
            }\n        }\n        size++\n        return null\n    }\n\n    } else {\n        // Chain already exists, perhaps key also
exists.\n        val chain: Array<MutableEntry<K, V>> = chainOrEntry\n        val entry =
chain.findEntryInChain(key)\n        if (entry != null) {\n            return entry.setValue(value)\n        }\n        chain.asDynamic().push(SimpleEntry(key, value))\n    }\n}\n\n    size++\n\n    structureChanged(host)\n    return null\n}\n\n    override fun remove(key: K): V? {\n        val hashCode =
equality.getHashCode(key)\n        val chainOrEntry = getChainOrEntryOrNull(hashCode) ?: return null\n        if

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(chainOrEntry
!is Array<*>) {\n        val entry: MutableEntry<K, V> = chainOrEntry\n        if (equality.equals(entry.key,
key)) {\n            jsDeleteProperty(backingMap, hashCode)\n            size--\n            return entry.value\n        } else {\n            return null\n        }\n    } else {\n        val chain: Array<MutableEntry<K, V>> =
chainOrEntry\n        for (index in chain.indices) {\n            val entry = chain[index]\n            if
(equality.equals(key, entry.key)) {\n                if (chain.size == 1) {\n                    chain.asDynamic().length =
0\n                    // remove the whole array\n                    jsDeleteProperty(backingMap, hashCode)\n                } else {\n                    // splice out the entry we're removing\n                    chain.asDynamic().splice(index, 1)\n                }\n                size--\n                structureChanged(host)\n                return entry.value\n            }\n        }\n        return null\n    }\n\n    override fun clear() {\n        backingMap = createJsMap()\n        size = 0\n    }\n\n    override fun contains(key: K): Boolean = getEntry(key) !=
null\n\n    override fun get(key: K): V? = getEntry(key)?.value\n\n    private fun getEntry(key: K): MutableEntry<K,
V>? {\n        val chainOrEntry = getChainOrEntryOrNull(equality.getHashCode(key)) ?: return null\n        if
(chainOrEntry !is Array<*>) {\n            val entry: MutableEntry<K, V> = chainOrEntry\n            if
(equality.equals(entry.key, key)) {\n                return entry\n            } else {\n                return null\n            }\n        }
else {\n            val chain: Array<MutableEntry<K, V>> = chainOrEntry\n            return
chain.findEntryInChain(key)\n        }\n    }\n\n    private fun Array<MutableEntry<K, V>>.findEntryInChain(key:
K): MutableEntry<K, V>? =\n        firstOrNull { entry ->
equality.equals(entry.key, key) }\n\n    override fun iterator(): MutableIterator<MutableEntry<K, V>> {\n\n        return object : MutableIterator<MutableEntry<K, V>> {\n            var state = -1 // -1 not ready, 0 - ready, 1 -
done\n            val keys: Array<String> = js("Object").keys(backingMap)\n            var keyIndex = -1\n            var chainOrEntry: dynamic = null\n            var isChain = false\n            var itemIndex = -1\n            var lastEntry:
MutableEntry<K, V>? = null\n            private fun computeNext(): Int {\n                if (chainOrEntry != null &&
isChain) {\n                    val chainSize: Int = chainOrEntry.unsafeCast<Array<MutableEntry<K, V>>>().size\n                    if (++itemIndex < chainSize)\n                        return 0\n                }\n                if (++keyIndex < keys.size)\n                    chainOrEntry = backingMap[keys[keyIndex]]\n                    isChain = chainOrEntry is Array<*>\n\n                    itemIndex = 0\n                    return 0\n                } else {\n                    chainOrEntry = null\n                    return
1\n                }\n            }\n\n            override fun hasNext(): Boolean {\n                if (state == -1)\n                    state
= computeNext()\n                return state == 0\n            }\n\n            override fun next(): MutableEntry<K, V> {\n                if (!hasNext()) throw NoSuchElementException()\n                val lastEntry = if (isChain) {\n                    chainOrEntry.unsafeCast<Array<MutableEntry<K, V>>>()[itemIndex]\n                } else {\n                    chainOrEntry.unsafeCast<MutableEntry<K, V>>()\n                }\n                this.lastEntry = lastEntry\n                state = -1\n                return lastEntry\n            }\n\n            override fun remove() {\n                checkNotNull(lastEntry)\n                this@InternalHashMap.remove(lastEntry!!.key)\n                lastEntry = null\n                // the chain being iterated just got modified by InternalHashMap.remove\n                itemIndex--\n            }\n\n            private fun getChainOrEntryOrNull(hashCode: Int): dynamic {\n                val chainOrEntry = backingMap[hashCode]\n                return if (chainOrEntry === undefined) null else chainOrEntry\n            }\n\n            /*\n            * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n            * Use of
this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n            */\n\n            /*\n            * package kotlin.collections\n            * The common interface of [InternalStringMap] and
[InternalHashMap].\n            */\n\n            internal interface InternalMap<K, V> :
MutableIterable<MutableMap.MutableEntry<K, V>> {\n                val equality: EqualityComparator\n                val size: Int\n                operator fun contains(key: K): Boolean\n                operator fun get(key: K): V?\n                fun put(key: K, value: V): V?\n                fun
remove(key: K): V?\n\n                fun clear(): Unit\n                fun createJsMap(): dynamic {\n                    val result = js("Object.create(null)")\n                    // force to
switch object representation to dictionary mode\n                    result["foo"] = 1\n                    jsDeleteProperty(result, "foo")\n                    return result\n                }\n            }\n\n            /*\n            * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language

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contributors.\n \* Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n \*/\n \* Based on GWT InternalStringMap\n \* Copyright 2008 Google Inc.\n \*/\npackage kotlin.collections\n\nimport kotlin.collections.MutableMap.MutableEntry\n\n/\*\*\n \* A simple wrapper around JavaScript Map for key type is string.\n \* Although this map is instantiated only with K=String, the K type is not fixed to String statically,\n \* because we want to have it erased to Any? in order not to generate type-safe override bridges for\n \* [get], [contains], [remove] etc, if they ever are generated.\n \*/\ninternal class InternalStringMap<K, V>(override val equality: EqualityComparator) : InternalMap<K, V> {\n\n private var backingMap: dynamic = createJsMap()\n override var size: Int = 0\n private set\n\n /\*\*\n \* A mod count to track 'value' replacements in map to ensure that the 'value' that we have in the\n \* iterator entry is guaranteed to be still correct.\n \* This is to optimize for the common scenario where the values are not modified during\n \* iterations where the entries are never stale.\n \*/\n private var valueMod: Int = 0\n\n override operator fun contains(key: K): Boolean {\n if (key !is String) return false\n return backingMap[key] !== undefined\n }\n\n override operator fun get(key: K): V? {\n if (key !is String) return null\n val value = backingMap[key]\n return if (value !== undefined) value.unsafeCast<V>() else null\n }\n\n override fun put(key: K, value: V): V? {\n require(key is String)\n val oldValue = backingMap[key]\n backingMap[key] = value\n\n if (oldValue === undefined) {\n size++\n structureChanged(host)\n return null\n } else {\n valueMod++\n return oldValue.unsafeCast<V>()\n }\n }\n\n override fun remove(key: K): V? {\n if (key !is String) return null\n val value = backingMap[key]\n if (value !== undefined) {\n jsDeleteProperty(backingMap, key)\n size--\n structureChanged(host)\n return value.unsafeCast<V>()\n } else {\n valueMod++\n return null\n }\n }\n\n override fun clear() {\n backingMap = createJsMap()\n size = 0\n }\n\n override fun iterator(): MutableIterator<MutableEntry<K, V>> {\n return object : MutableIterator<MutableEntry<K, V>> {\n\n private val keys: Array<String>\n = js("Object").keys(backingMap)\n\n private val iterator = keys.iterator()\n private var lastKey: String? = null\n\n override fun hasNext(): Boolean = iterator.hasNext()\n override fun next(): MutableEntry<K, V> {\n val key = iterator.next()\n lastKey = key\n @Suppress("UNCHECKED\_CAST")\n return newMapEntry(key as K)\n }\n\n override fun remove() {\n @Suppress("UNCHECKED\_CAST")\n this@InternalStringMap.remove(checkNotNull(lastKey) as K)\n }\n\n private fun newMapEntry(key: K): MutableEntry<K, V> = object : MutableEntry<K, V> {\n override val key: K get() = key\n override val value: V get() = this@InternalStringMap[key].unsafeCast<V>()\n override fun setValue(newValue: V): V = this@InternalStringMap.put(key, newValue).unsafeCast<V>()\n override fun hashCode(): Int = AbstractMap.entryHashCode(this)\n override fun toString(): String = AbstractMap.entryToString(this)\n override fun equals(other: Any?): Boolean = AbstractMap.entryEquals(this, other)\n }\n }\n }\n\n /\*\*\n \* Copyright 2010-2020 JetBrains s.r.o. and Kotlin Programming Language contributors.\n \* Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n \*/\n\n /\*\*\n \* Based on GWT LinkedHashMap\n \* Copyright 2008 Google Inc.\n \*/\n\n /\*\*\n \* Hash table based implementation of the [MutableMap] interface, which additionally preserves the insertion order\n \* of entries during the iteration.\n \* The insertion order is preserved by maintaining a doubly-linked list of all of its entries.\n \*/\n\n /\*\*\n \* public actual open class\n \*/\n LinkedHashMap<K, V> : HashMap<K, V>, MutableMap<K, V> {\n\n /\*\*\n \* The entry we use includes next/prev pointers for a doubly-linked circular\n \* list with a head node. This reduces the special cases we have to deal with\n \* in the list operations.\n \* Note that we duplicate the key from the underlying hash map so we can find\n \* the eldest entry. The alternative would have been to modify HashMap so more\n \* of the code was directly usable here, but this would have added some\n \* overhead to HashMap, or to reimplement most of the HashMap code here with\n \*/\n }\n\n}

```

* small modifications. Paying a small storage cost only if you use * LinkedHashMap and minimizing code size
seemed like a better tradeoff
*/
private inner class ChainEntry<K, V>(key: K, value: V) :
AbstractMutableMap.SimpleEntry<K, V>(key, value) {
    internal var next: ChainEntry<K, V>? = null
    internal var prev: ChainEntry<K, V>? = null
    override fun setValue(newValue: V): V {
        this@LinkedHashMap.checkIsMutable()
        return super.setValue(newValue)
    }
}
private inner class EntrySet : AbstractEntrySet<MutableEntry<K, V>, K, V> {
    private inner
class EntryIterator : MutableIterator<MutableEntry<K, V>> {
        // The last entry that was returned from this
iterator.
        private var last: ChainEntry<K, V>? = null
        // The next entry to return from this
iterator.
        private var next: ChainEntry<K, V>? = null
        init {
            next = head
        }
        recordLastKnownStructure(map, this)
        override fun hasNext(): Boolean {
            return
next != null
        }
        override fun next(): MutableEntry<K, V> {
            checkStructuralChange(map, this)
            if (!hasNext()) throw NoSuchElementException()
            val
current = next!!
            last = current
            next = current.next.takeIf { it != head }
            return
current
        }
        override fun remove() {
            check(last != null)
            this@EntrySet.checkIsMutable()
            checkStructuralChange(map, this)
            last!!.remove()
            map.remove(last!!.key)
            recordLastKnownStructure(map, this)
            last = null
        }
        override fun add(element:
MutableEntry<K, V>): Boolean = throw UnsupportedOperationException("Add is not supported on entries")
        override fun clear() {
            this@LinkedHashMap.clear()
        }
        override fun containsEntry(element:
Map.Entry<K, V>): Boolean = this@LinkedHashMap.containsEntry(element)
        override operator fun
iterator(): MutableIterator<MutableEntry<K, V>> = EntryIterator()
        override fun removeEntry(element:
Map.Entry<K, V>): Boolean {
            checkIsMutable()
            if (contains(element)) {
                this@LinkedHashMap.remove(element.key)
                return true
            }
            return false
        }
        override val size: Int get() =
this@LinkedHashMap.size
        override fun checkIsMutable(): Unit =
this@LinkedHashMap.checkIsMutable()
}
/**
 * The head of the insert order chain, which is a doubly-
linked circular
 * list.
 * The most recently inserted node is at the end of the chain, ie.
 * chain.prev.
*/
private var head: ChainEntry<K, V>? = null
/**
 * Add this node to the end of the chain.
*/
private fun ChainEntry<K, V>.addToEnd() {
    // This entry is not in the list.
    check(next == null && prev
== null)
    val _head = head
    if (_head == null) {
        head = this
        next = this
        prev =
this
    } else {
        // Chain is valid.
        val _tail = checkNotNull(_head.prev)
        // Update me.
        prev = _tail
        next = _head
        // Update my new siblings: current head and old tail
        _head.prev = this
        _tail.next = this
    }
}
/**
 * Remove this node from the chain it is a part of.
*/
private fun ChainEntry<K,
V>.remove() {
    if (this.next === this) {
        // if this is single element, remove head
        head = null
    } else {
        if (head === this) {
            // if this is first element, move head to next
            head =
next
        }
        next!!.prev = prev
        prev!!.next = next
        next = null
        prev = null
    }
}
/**
 * The hashmap that keeps track of our entries and the chain. Note that we
 * duplicate the key here
to eliminate changes to HashMap and minimize the
 * code here, at the expense of additional space.
*/
private val map: HashMap<K, ChainEntry<K, V>>
private var isReadOnly: Boolean = false
/**
 * Constructs an empty [LinkedHashMap] instance.
*/
actual constructor(): super() {
    map =
HashMap<K, ChainEntry<K, V>>()
}
internal constructor(backingMap: HashMap<K, Any>): super() {
    @Suppress("UNCHECKED_CAST") // expected to work due to erasure
    map = backingMap as
HashMap<K, ChainEntry<K, V>>
}
/**
 * Constructs an empty [LinkedHashMap] instance.
 *
 * @param initialCapacity the initial capacity (ignored)
 * @param loadFactor the load factor (ignored)
 *
 * @throws IllegalArgumentException if the initial capacity or load factor are negative
*/
actual
constructor(initialCapacity: Int, loadFactor: Float): super(initialCapacity, loadFactor) {
    map = HashMap<K,
ChainEntry<K, V>>()
}
actual constructor(initialCapacity: Int): this(initialCapacity, 0.0f)
/**
 *

```

```

Constructs an instance of [LinkedHashMap] filled with the contents of the specified [original]
map.\n *^/n actual constructor(original: Map<out K, V>) {\n    map = HashMap<K, ChainEntry<K, V>>()\n    this.putAll(original)\n } \n\n @PublishedApi\n internal fun build(): Map<K, V> {\n    checkIsMutable()\n    isReadOnly = true\n    return this\n } \n\n actual override fun clear() {\n    checkIsMutable()\n    map.clear()\n    head = null\n } \n\n// override fun clone(): Any {\n//    return LinkedHashMap(this)\n// }\n\n\n actual override fun containsKey(key: K): Boolean = map.containsKey(key)\n\n\n actual override fun containsValue(value: V): Boolean {\n    var node: ChainEntry<K, V> = head ?: return false\n    do {\n        if (node.value == value) {\n            return true\n        }\n        node = node.next!!\n    } while (node != head)\n    return false\n } \n\n\n internal override fun createEntrySet():\nMutableSet<MutableMap.MutableEntry<K, V>> = EntrySet()\n\n    actual override operator fun get(key: K): V? = map.get(key)?.value\n\n    actual override fun put(key: K, value: V): V? {\n        checkIsMutable()\n        val old = map.get(key)\n        if (old == null) {\n            val newEntry = ChainEntry(key, value)\n            map.put(key, newEntry)\n            newEntry.addToEnd()\n            return null\n        } else {\n            return old.setValue(value)\n        }\n    }\n\n    actual override fun remove(key: K): V? {\n        checkIsMutable()\n        val entry = map.remove(key)\n        if (entry != null) {\n            entry.remove()\n            return entry.value\n        }\n        return null\n    }\n\n    actual override val size: Int get() = map.size\n\n\n internal override fun checkIsMutable() {\n    if (isReadOnly) throw UnsupportedOperationException()\n } \n\n}\n\n/**\n * Constructs the specialized implementation of [LinkedHashMap] with [String] keys, which stores the keys as properties of\n * JS object without hashing them.\n */\n\npublic fun <V> linkedStringMapOf(vararg pairs: Pair<String, V>): LinkedHashMap<String, V> {\n    return LinkedHashMap<String, V>(stringMapOf<Any>()).apply { putAll(pairs) }\n}\n\n"/*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\n * Based on GWT\n */\n\nLinkedHashSet\n * Copyright 2008 Google Inc.\n */\n\npackage kotlin.collections\n\n/**\n * The implementation of the [MutableSet] interface, backed by a [LinkedHashMap] instance.\n * This implementation preserves the insertion order of elements during the iteration.\n */\n\npublic actual open class LinkedHashSet<E> : HashSet<E>, MutableSet<E> {\n\n    internal constructor(map: LinkedHashMap<E, Any>) : super(map)\n\n    /**\n     * Constructs a new empty [LinkedHashSet].\n     */\n\n    actual constructor(): super(LinkedHashMap<E, Any>())\n\n    /**\n     * Constructs a new [LinkedHashSet] filled with the elements of the specified collection.\n     */\n\n    actual constructor(elements: Collection<E>): super(LinkedHashMap<E, Any>()) {\n        addAll(elements)\n    }\n\n    /**\n     * Constructs a new empty [LinkedHashSet].\n     */\n\n    * @param initialCapacity the initial capacity (ignored)\n    * @param loadFactor the load factor (ignored)\n    * @throws IllegalArgumentException if the initial capacity or load factor are negative\n     */\n\n    actual constructor(initialCapacity: Int, loadFactor: Float): super(LinkedHashMap<E, Any>(initialCapacity, loadFactor))\n\n    actual constructor(initialCapacity: Int): this(initialCapacity, 0.0f)\n\n    @PublishedApi\n    internal fun build(): Set<E> {\n        (map as LinkedHashMap<E, Any>).build()\n        return this\n    }\n\n    internal override fun checkIsMutable(): Unit = map.checkIsMutable()\n\n\n// public override fun clone(): Any {\n//    return LinkedHashSet(this)\n// }\n\n}\n\n}\n\n/**\n * Creates a new instance of the specialized implementation of [LinkedHashSet] with the specified [String] elements,\n * which elements the keys as properties of JS object without hashing them.\n */\n\npublic fun linkedStringSetOf(vararg elements: String): LinkedHashSet<String> {\n    return LinkedHashSet(linkedStringMapOf<Any>()).apply { addAll(elements) }\n}\n\n"/*\n * Copyright 2010-2020 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\npackage kotlin\n\nimport kotlin.contracts.*\n\n@DeprecatedSinceKotlin(warningSince = \"1.6\")\n@Deprecated(\"Synchronization on any object is not supported in Kotlin/JS\", ReplaceWith(\"run(block)\"))\n@kotlin.internal.InlineOnly\n@Suppress(\"UNUSED_PARAMETER\")\npublic inline fun <R> synchronized(lock: Any, block: () -> R): R {\n    contract {\n        callsInPlace(block,

```

InvocationKind.EXACTLY\_ONCE)\n

```
\n    return block()\n\n", /*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\npackage kotlin.io\n\ninternal abstract class BaseOutput {\n    open fun println()\n    print("\\n")\n}\n\nopen fun println(message: Any?) {\n    print(message)\n    println()\n}\n\nabstract fun print(message: Any?)\n\nopen fun flush() {\n}\n\n/** JsName used to make the declaration available outside of module to test it */\n@JsName("NodeJsOutput")\ninternal class NodeJsOutput(val outputStream: dynamic) : BaseOutput() {\n    override fun print(message: Any?) {\n        // TODO: Using local variable because of bug in block decomposition lowering in IR backend\n        val messageString = String(message)\n        outputStream.write(messageString)\n    }\n}\n\n/** JsName used to make the declaration available outside of module to test it */\n@JsName("OutputToConsoleLog")\ninternal class OutputToConsoleLog : BaseOutput() {\n    override fun print(message: Any?) {\n        console.log(message)\n    }\n\n    override fun println(message: Any?) {\n        console.log(message)\n    }\n\n    override fun println() {\n        console.log("")\n    }\n}\n\n/** JsName used to make the declaration available outside of module to test it and use at try.kotl.in */\n@JsName("BufferedOutput")\ninternal open class BufferedOutput : BaseOutput() {\n    var buffer = ""\n\n    override fun print(message: Any?) {\n        buffer += String(message)\n    }\n\n    override fun flush() {\n        buffer = ""\n    }\n}\n\n/** JsName used to make the declaration available outside of module to test it */\n@JsName("BufferedOutputToConsoleLog")\ninternal class BufferedOutputToConsoleLog : BufferedOutput() {\n    override fun print(message: Any?) {\n        var s = String(message)\n        val i = s.nativeLastIndexOf("\\n", 0)\n        if (i >= 0) {\n            buffer += s.substring(0, i)\n            flush()\n            s = s.substring(i + 1)\n        }\n        buffer += s\n    }\n\n    override fun flush() {\n        console.log(buffer)\n        buffer = ""\n    }\n}\n\n/** JsName used to make the declaration available outside of module to test it and use at try.kotl.in */\n@JsName("output")\ninternal var output = run {\n    val isNode: Boolean = js("typeof process !== 'undefined' && process.versions && !!process.versions.node")\n    if (isNode) NodeJsOutput(js("process.stdout"))\n    else BufferedOutputToConsoleLog()\n}\n\n@kotlin.internal.InlineOnly\nprivate inline fun String(value: Any?): String = js("String")(value)\n\n/** Prints the line separator to the standard output stream. */\npublic actual fun println() {\n    output.println()\n}\n\n/** Prints the given [message] and the line separator to the standard output stream. */\npublic actual fun println(message: Any?) {\n    output.println(message)\n}\n\n/** Prints the given [message] to the standard output stream. */\npublic actual fun print(message: Any?) {\n    output.print(message)\n}\n\n@SinceKotlin("1.6")\npublic actual fun readln(): String = throw UnsupportedOperationException("readln is not supported in Kotlin/JS")\n\n@SinceKotlin("1.6")\npublic actual fun readlnOrNull(): String? = throw UnsupportedOperationException("readlnOrNull is not supported in Kotlin/JS")\n\n", /*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\npackage kotlin.coroutines\n\nimport kotlin.coroutines.intrinsics.CoroutineSingletons\n\nimport kotlin.coroutines.intrinsics.COROUTINE_SUSPENDED\n\n@PublishedApi\n@SinceKotlin("1.3")\ninternal actual class SafeContinuation<in T>\n\ninternal actual constructor(\n    private val delegate: Continuation<T>,\n    initialResult: Any?) : Continuation<T> {\n    @PublishedApi\n    internal actual constructor(delegate: Continuation<T>) : this(delegate, UNDECIDED)\n\n    public actual override val context: CoroutineContext\n\n    get() = delegate.context\n\n    private var result: Any? = initialResult\n\n    public actual override fun resumeWith(result: Result<T>) {\n        val cur = this.result\n        when {\n            cur === UNDECIDED -> {\n                this.result = result.value\n            }\n            cur === COROUTINE_SUSPENDED -> {\n                this.result = RESUMED\n                delegate.resumeWith(result)\n            }\n            else -> throw IllegalStateException("Already resumed")\n        }\n    }\n\n    @PublishedApi\n    internal actual fun getOrThrow(): Any? {\n        if (result === UNDECIDED) {\n            result = COROUTINE_SUSPENDED\n            return COROUTINE_SUSPENDED\n        }\n        val result = this.result\n        return when {\n
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    result === RESUMED -> COROUTINE_SUSPENDED // already called continuation, indicate
COROUTINE_SUSPENDED upstream\n        result is Result.Failure -> throw result.exception\n        else ->
result // either COROUTINE_SUSPENDED or data\n        }\n        }\n}\n", /*\n * Copyright 2010-2020 JetBrains
s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0
license that can be found in the license/LICENSE.txt file.\n */\n\npackage
kotlin.coroutines.cancellation\n\n@SinceKotlin("1.4")\npublic actual open class CancellationException :
IllegalStateException {\n    actual constructor() : super()\n    actual constructor(message: String?) : super(message)\n    constructor(message: String?, cause: Throwable?) : super(message, cause)\n    constructor(cause: Throwable?) :
super(cause)\n}\n", /*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n *
Use of this source code is governed by the Apache 2.0
license that can be found in the license/LICENSE.txt file.\n */\n\npackage kotlin.coroutines.js.internal\n\nimport
kotlin.coroutines.Continuation\n\nimport
kotlin.coroutines.EmptyCoroutineContext\n\n@PublishedApi\n@SinceKotlin("1.3")\ninternal val
EmptyContinuation = Continuation<Any?>(EmptyCoroutineContext) { result ->\n    result.getOrThrow()\n}\n", /*\n *
Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code
is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\npackage
kotlin.js\n\n/**\n * Exposes the [Date API](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Date) to Kotlin.\n
*/\n\n@Suppress("NOT_DOCUMENTED")\npublic external class Date() {\n    public constructor(milliseconds:
Number)\n\n    public constructor(dateString: String)\n\n    public constructor(year: Int, month: Int)\n\n    public
constructor(year: Int, month: Int, day: Int)\n\n    public
constructor(year: Int, month: Int, day: Int, hour: Int)\n\n    public constructor(year: Int, month: Int, day: Int, hour:
Int, minute: Int)\n\n    public constructor(year: Int, month: Int, day: Int, hour: Int, minute: Int, second: Int)\n\n
public constructor(year: Int, month: Int, day: Int, hour: Int, minute: Int, second: Int, millisecond: Number)\n\n
public fun getDate(): Int\n\n    public fun getDay(): Int\n\n    public fun getFullYear(): Int\n\n    public fun
getHours(): Int\n\n    public fun getMilliseconds(): Int\n\n    public fun getMinutes(): Int\n\n    public fun
getMonth(): Int\n\n    public fun getSeconds(): Int\n\n    public fun getTime(): Double\n\n    public fun
getTimezoneOffset(): Int\n\n    public fun getUTCDate(): Int\n\n    public fun getUTCDay(): Int\n\n    public fun
getUTCFullYear(): Int\n\n    public fun getUTCHours(): Int\n\n    public fun getUTCMilliseconds(): Int\n\n    public
fun getUTCMinutes(): Int\n\n    public fun getUTCMonth(): Int\n\n    public fun
getUTCSeconds(): Int\n\n    public fun toDateString(): String\n\n    public fun toISOString(): String\n\n    public fun
toJSON(): Json\n\n    public fun toLocaleDateString(locales: Array<String> = definedExternally, options:
LocaleOptions = definedExternally): String\n\n    public fun toLocaleDateString(locales: String, options:
LocaleOptions = definedExternally): String\n\n    public fun toLocaleString(locales: Array<String> =
definedExternally, options: LocaleOptions = definedExternally): String\n\n    public fun toLocaleString(locales:
String, options: LocaleOptions = definedExternally): String\n\n    public fun toLocaleTimeString(locales:
Array<String> = definedExternally, options: LocaleOptions = definedExternally): String\n\n    public fun
toLocaleTimeString(locales: String, options: LocaleOptions = definedExternally): String\n\n    public fun
toTimeString(): String\n\n    public fun toUTCString(): String\n\n    public companion object {\n        public fun
now(): Double\n\n        public fun parse(dateString: String): Double\n\n        public fun UTC(year: Int, month: Int): Double\n\n
public fun UTC(year: Int, month: Int, day: Int): Double\n\n        public fun UTC(year: Int, month: Int, day: Int, hour:
Int): Double\n\n        public fun UTC(year: Int, month: Int, day: Int, hour: Int, minute: Int): Double\n\n        public
fun UTC(year: Int, month: Int, day: Int, hour: Int, minute: Int, second: Int): Double\n\n        public fun UTC(year:
Int, month: Int, day: Int, hour: Int, minute: Int, second: Int, millisecond: Number): Double\n    }\n\n    public
interface LocaleOptions {\n        public var localeMatcher: String?\n\n        public var timeZone: String?\n\n        public
var hour12: Boolean?\n\n        public var formatMatcher: String?\n\n        public var weekday: String?\n\n        public
var era: String?\n\n        public var year: String?\n\n        public var month: String?\n\n        public var day:

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String?
    public var hour: String?
        public var minute: String?
        public var second: String?
        public var timeZoneName: String?
    }
    public inline fun dateLocaleOptions(init: Date.LocaleOptions() -> Unit): Date.LocaleOptions {
        val result = js("new Object()").unsafeCast<Date.LocaleOptions>()
        init(result)
        return result
    }
}
/*
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 * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.
 */
package kotlin.dom
import org.w3c.dom.Document
import org.w3c.dom.Element
import kotlin.internal.LowPriorityInOverloadResolution
import kotlinx.dom.appendElement as
newAppendElement
import kotlinx.dom.createElement as newCreateElement
/**
 * Creates a new element with the specified [name].
 * The element is initialized with the specified [init] function.
 */
@LowPriorityInOverloadResolution
@Deprecated(
    message = "This API is moved to another package, use 'kotlinx.dom.createElement' instead.",
    replaceWith = ReplaceWith("this.createElement(name, init)"),
    sinceKotlin = "1.4",
    errorSince = "1.6")
public inline fun Document.createElement(name: String, noinline init: Element() -> Unit): Element =
    this.newCreateElement(name, init)
/**
 * Appends a newly created element with the specified [name] to this element.
 * The element is initialized with the specified [init] function.
 */
@LowPriorityInOverloadResolution
@Deprecated(
    message = "This API is moved to another package, use 'kotlinx.dom.appendElement' instead.",
    replaceWith = ReplaceWith("this.appendElement(name, init)"),
    sinceKotlin = "1.4",
    errorSince = "1.6")
public inline fun Element.appendElement(name: String, noinline init: Element() -> Unit): Element =
    this.newAppendElement(name, init)
/*
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 * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.
 */
package kotlin.dom
import org.w3c.dom.Element
import kotlin.internal.LowPriorityInOverloadResolution
import kotlinx.dom.addClass as newAddClass
import kotlinx.dom.hasClass as newHasClass
import kotlinx.dom.removeClass as newRemoveClass
/**
 * Returns true if the element has the given CSS class style in its 'class' attribute
 */
@LowPriorityInOverloadResolution
@Deprecated(
    message = "This API is moved to another package, use 'kotlinx.dom.hasClass' instead.",
    replaceWith = ReplaceWith("this.hasClass(cssClass)"),
    sinceKotlin = "1.4",
    errorSince = "1.6")
inline fun Element.hasClass(cssClass: String): Boolean = this.newHasClass(cssClass)
/**
 * Adds CSS class to element. Has no effect if all specified classes are already in class attribute of the element
 */
@LowPriorityInOverloadResolution
@Deprecated(
    message = "This API is moved to another package, use 'kotlinx.dom.addClass' instead.",
    replaceWith = ReplaceWith("this.addClass(cssClasses)"),
    sinceKotlin = "1.4",
    errorSince = "1.6")
inline fun Element.addClass(vararg cssClasses: String): Boolean = this.newAddClass(*cssClasses)
/**
 * Removes all [cssClasses] from element. Has no effect if all specified classes are missing in class attribute of the element
 */
@LowPriorityInOverloadResolution
@Deprecated(
    message = "This API is moved to another package, use 'kotlinx.dom.removeClass' instead.",
    replaceWith = ReplaceWith("this.removeClass(cssClasses)"),
    sinceKotlin = "1.4",
    errorSince = "1.6")
inline fun Element.removeClass(vararg cssClasses: String): Boolean =
    this.newRemoveClass(*cssClasses)
/*
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 * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.
 */
package kotlin.dom
import org.w3c.dom.Element
import org.w3c.dom.Node
import kotlin.internal.LowPriorityInOverloadResolution
import kotlinx.dom.isElement as

```



```

newIsElement\nimport kotlin.dom.isText as newIsText\n\n/**\n * Gets a value indicating whether this node is a
TEXT_NODE or a CDATA_SECTION_NODE.\n */\n@LowPriorityInOverloadResolution\n@Deprecated(\n
message = \"This API is moved to another package, use 'kotlin.dom.isText' instead.\",\n
replaceWith =
ReplaceWith(\"this.isText\", \"kotlin.dom.isText\")\n)\n@DeprecatedSinceKotlin(warningSince = \"1.4\",
errorSince = \"1.6\")\npublic val Node.isText: Boolean\n
    inline get() = this.newIsText\n\n/**\n * Gets a value indicating whether this node is an [Element].\n
*/\n@LowPriorityInOverloadResolution\n@Deprecated(\n
message = \"This API is moved to another package,
use 'kotlin.dom.isElement' instead.\",\n
replaceWith = ReplaceWith(\"this.isElement\",
\"kotlin.dom.isElement\")\n)\n@DeprecatedSinceKotlin(warningSince = \"1.4\", errorSince = \"1.6\")\npublic val
Node.isElement: Boolean\n
    inline get() = this.newIsElement\n\n\", \"/*\n * Copyright 2010-2018 JetBrains s.r.o. and
Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that
can be found in the license/LICENSE.txt file.\n */\n\npackage org.w3c.dom.events\n\npublic fun
EventListener(handler: (Event) -> Unit): EventListener = EventListenerHandler(handler)\n\nprivate class
EventListenerHandler(private val handler: (Event) -> Unit) : EventListener {\n
    public override fun
handleEvent(event: Event) {\n
        handler(event)\n
    }\n\n
    public override fun toString(): String = \"EventListenerHandler($handler)\"\n\n}\n\n\", \"/*\n * Copyright 2010-
2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the
Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\npackage org.w3c.dom\n\npublic
external interface ItemArrayLike<out T> {\n
    val length: Int\n
    fun item(index: Int): T?\n\n}\n\n/**\n * Returns the
view of this `ItemArrayLike<T>` collection as `List<T>`\n */\n@public fun <T> ItemArrayLike<T>.asList(): List<T>
= object : AbstractList<T>() {\n
    override val size: Int get() = this@asList.length\n\n
    override fun get(index: Int):
T = when (index) {\n
        in 0..lastIndex -> this@asList.item(index).unsafeCast<T>()\n
        else -> throw
IndexOutOfBoundsException(\"index $index is not in range [0..$lastIndex]\")\n
    }\n\n}\n\n\", \"/*\n * Copyright 2010-
2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source
code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\npackage
kotlin.dom\n\nimport org.w3c.dom.Element\nimport org.w3c.dom.Node\nimport
kotlin.internal.LowPriorityInOverloadResolution\nimport kotlin.dom.appendText as newAppendText\nimport
kotlin.dom.clear as newClear\n\n/**\n * Removes all the children from this node.\n
*/\n@LowPriorityInOverloadResolution\n@Deprecated(\n
message = \"This API is moved to another package,
use 'kotlin.dom.clear' instead.\",\n
replaceWith = ReplaceWith(\"this.clear()\",
\"kotlin.dom.clear\")\n)\n@DeprecatedSinceKotlin(warningSince = \"1.4\", errorSince = \"1.6\")\npublic inline fun
Node.clear() = this.newClear()\n\n/**\n * Creates text node and append it to the element.\n */\n@return this
element\n */\n@LowPriorityInOverloadResolution\n@Deprecated(\n
message = \"This API is moved to another
package, use 'kotlin.dom.appendText' instead.\",\n
replaceWith = ReplaceWith(\"this.appendText(text)\",
\"kotlin.dom.appendText\")\n)\n@DeprecatedSinceKotlin(warningSince = \"1.4\", errorSince = \"1.6\")\n\ninline fun
Element.appendText(text: String): Element = this.newAppendText(text)\n\n\", \"/*\n * Copyright 2010-2018 JetBrains
s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0
license that can be found in the license/LICENSE.txt file.\n */\n\npackage kotlin.js\n\n/**\n * Reinterprets this value
as a value of the [dynamic type](/docs/reference/dynamic-type.html).\n */\n@kotlin.internal.InlineOnly\npublic
inline fun Any?.asDynamic(): dynamic = this\n\n/**\n * Reinterprets this value as a value of the specified type [T]
without any actual type checking.\n */\n@kotlin.internal.InlineOnly\npublic inline fun <T> Any?.unsafeCast():
@kotlin.internal.NoInfer T = this.asDynamic()\n\n/**\n * Reinterprets this `dynamic` value as a value of the
specified type [T] without any actual type checking.\n
*/\n@kotlin.internal.DynamicExtension\n@JsName(\"unsafeCastDynamic\")\n@kotlin.internal.InlineOnly\npublic
inline fun <T> dynamic.unsafeCast(): @kotlin.internal.NoInfer T = this\n\n/**\n * Allows to iterate this `dynamic`
object in the following cases:\n * - when it has an `iterator` function,\n * - when it is an array\n * - when it is an
instance of [kotlin.collections.Iterable]\n */\n@kotlin.internal.DynamicExtension\npublic operator fun
dynamic.iterator(): Iterator<dynamic> {\n
    val r: Any? = this\n\n
    return when {\n
        this[\"iterator\"] != null -

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```

>\n      this["iterator"]()\n      isArrayish(r) ->\n      r.unsafeCast<Array<*>>().iterator()\n      else ->\n      (r as Iterable<*>).iterator()\n    }\n  }", "/*\n * Copyright 2010-2022 JetBrains s.r.o. and Kotlin Programming
Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n */\n\npackage kotlin.enums\n\n// Unused stub\ninternal actual class
EnumEntriesSerializationProxy<E
: Enum<E>> actual constructor(entries: Array<E>)\n", "/*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin
Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be
found in the license/LICENSE.txt file.\n */\n\n// a package is omitted to get declarations directly under the
module\n\n@JsName("throwNPE")\ninternal fun throwNPE(message: String) {\n  throw
NullPointerException(message)\n}\n\n@JsName("throwCCE")\ninternal fun throwCCE() {\n  throw
ClassCastException("Illegal cast")\n}\n\n@JsName("throwISE")\ninternal fun throwISE(message: String) {\n
throw IllegalStateException(message)\n}\n\n@JsName("throwUPAE")\ninternal fun throwUPAE(propertyName:
String) {\n  throw UninitializedPropertyAccessException("lateinit property ${propertyName} has not been
initialized")\n}\n", "/*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n
* Use of this source code is governed
by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\npackage
kotlin.collections\n\n/**\n * Groups elements from the [Grouping] source by key and counts elements in each
group.\n * @return a [Map] associating the key of each group with the count of elements in the group.\n * @sample
samples.collections.Grouping.groupingByEachCount\n */\n\n@SinceKotlin("1.1")\npublic actual fun <T,
K> Grouping<T, K>.eachCount(): Map<K, Int> =\n  fold(0) { acc, _ -> acc + 1 }\n\n/**\n * Groups elements
from the [Grouping] source by key and sums values provided by the [valueSelector] function for elements in each
group.\n * @return a [Map] associating the key of each group with the count of element in the group.\n
*/\n\n@SinceKotlin("1.1")\npublic inline fun <T, K> Grouping<T, K>.eachSumOf(valueSelector: (T) -> Int):
Map<K, Int> =\n  fold(0) { acc, e -> acc + valueSelector(e) }\n", "/*\n * Copyright 2010-2018 JetBrains s.r.o.
and Kotlin Programming
Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n
*/\n\n@file:kotlin.jvm.JvmName("GroupingKt")\n@file:kotlin.jvm.JvmMultifileClass\n\npackage
kotlin.collections\n\n/**\n * Represents a source of elements with a [keyOf] function, which can be applied to each
element to get its key.\n * A [Grouping] structure serves as an intermediate step in group-and-fold operations:\n
* they group elements by their keys and then fold each group with some aggregating operation.\n * It is created
by attaching `keySelector: (T) -> K` function to a source of elements.\n * To get an instance of [Grouping] use one
of `groupingBy` extension functions:\n * - [Iterable.groupingBy]\n * - [Sequence.groupingBy]\n * -
[Array.groupingBy]\n * - [CharSequence.groupingBy]\n * For the list of group-and-fold operations available,
see the [extension functions](#extension-functions) for `Grouping`.\n */\n\n@SinceKotlin("1.1")\npublic
interface Grouping<T, out K> {\n  /** Returns an [Iterator] over the elements of the source of this grouping. */\n
fun sourceIterator(): Iterator<T>\n  /** Extracts the key of an [element]. */\n  fun keyOf(element: T):
K}\n\n/**\n * Groups elements from the [Grouping] source by key and applies [operation] to the elements of each
group sequentially,\n * passing the previously accumulated value and the current element as arguments, and stores
the results in a new map.\n * The key for each element is provided by the [Grouping.keyOf] function.\n * @param
operation function is invoked on each element with the following parameters:\n * - `key`: the key of the
group this element belongs to;\n * - `accumulator`: the current value of the accumulator of the group, can be `null`
if it's the first `element` encountered in the group;\n * - `element`: the element from the source being aggregated;\n
* - `first`: indicates whether it's the first `element` encountered
in the group.\n * @return a [Map] associating the key of each group with the result of aggregation of the group
elements.\n * @sample samples.collections.Grouping.aggregateByRadix\n */\n\n@SinceKotlin("1.1")\npublic inline
fun <T, K, R> Grouping<T, K>.aggregate(\n  operation: (key: K, accumulator: R?, element: T, first: Boolean) ->
R\n): Map<K, R> {\n  return aggregateTo(mutableMapOf<K, R>(), operation)\n}\n\n/**\n * Groups elements

```

from the [Grouping] source by key and applies [operation] to the elements of each group sequentially, passing the previously accumulated value and the current element as arguments, and stores the results in the given [destination] map. The key for each element is provided by the [Grouping.keyOf] function. @param operation a function that is invoked on each element with the following parameters: `key`: the key of the group this element belongs to; `accumulator`: the current value of the accumulator of the group, can be `null` if it's the first `element` encountered in the group; `element`: the element from the source being aggregated; `first`: indicates whether it's the first `element` encountered in the group. If the [destination] map already has a value corresponding to some key, then the elements being aggregated for that key are never considered as `first`. @return the [destination] map associating the key of each group with the result of aggregation of the group elements. @sample samples.collections.Grouping.aggregateByRadixTo

```

*\n@SinceKotlin("1.1")\npublic inline fun <T, K, R, M : MutableMap<in K, R>> Grouping<T, K>.aggregateTo(\n destination: M,\n operation: (key: K, accumulator: R?, element: T, first: Boolean) -> R)\n): M {\n for (e in this.sourceIterator()) {\n val key = keyOf(e)\n val accumulator = destination[key]\n destination[key] = operation(key, accumulator, e, accumulator == null && !destination.containsKey(key))\n }\n return destination\n}\n
```

\* Groups elements from the [Grouping] source by key and applies [operation] to the elements of each group sequentially, passing the previously accumulated value and the current element as arguments, and stores the results in a new map. An initial value of accumulator is provided by [initialValueSelector] function. @param initialValueSelector a function that provides an initial value of accumulator for each group. It's invoked with parameters: `key`: the key of the group; `element`: the first element being encountered in that group. @param operation a function that is invoked on each element with the following parameters: `key`: the key of the group this element belongs to; `accumulator`: the current value of the accumulator of the group; `element`: the element from the source being accumulated. @return a [Map] associating the key of each group with the result of accumulating the group elements. @sample

```

samples.collections.Grouping.foldByEvenLengthWithComputedInitialValue\n *\n@SinceKotlin("1.1")\npublic inline fun <T, K, R> Grouping<T, K>.fold(\n initialValueSelector: (key: K, element: T) -> R,\n operation: (key: K, accumulator: R, element: T) -> R)\n): Map<K, R> =\n @Suppress("UNCHECKED_CAST")\n aggregate {\n key, acc, e, first -> operation(key, if (first) initialValueSelector(key, e) else acc as R, e) }\n
```

\* Groups elements from the [Grouping] source by key and applies [operation] to the elements of each group sequentially, passing the previously accumulated value and the current element as arguments, and stores the results in the given [destination] map. An initial value of accumulator is provided by [initialValueSelector] function. @param initialValueSelector a function that provides an initial value of accumulator for each group. It's invoked with parameters: `key`: the key of the group; `element`: the first element being encountered in that group. If the [destination] map already has a value corresponding to some key, that value is used as an initial value of the accumulator for that group and the [initialValueSelector] function is not called for that group. @param operation a function that is invoked on each element with the following parameters: `key`: the key of the group this element belongs to; `accumulator`: the current value of the accumulator of the group; `element`: the element from the source being accumulated. @return the [destination] map associating the key of each group with the result of accumulating the group elements. @sample

```

samples.collections.Grouping.foldByEvenLengthWithComputedInitialValueTo\n *\n@SinceKotlin("1.1")\npublic inline fun <T, K, R, M : MutableMap<in K, R>> Grouping<T, K>.foldTo(\n destination: M,\n initialValueSelector: (key: K, element: T) -> R,\n operation: (key: K, accumulator: R, element: T) -> R)\n): M =\n @Suppress("UNCHECKED_CAST")\n aggregateTo(destination) {\n key, acc, e, first -> operation(key, if (first) initialValueSelector(key, e) else acc as R, e) }\n
```

\* Groups elements from the [Grouping] source by key and applies [operation] to the elements of each group sequentially, passing the previously accumulated value and the current element as arguments, and stores the results in a new map. An initial value of accumulator is the same [initialValue] for each group.

@param operation a function that is invoked on each element with the following parameters:  
`accumulator`: the current value of the accumulator of the group;  
`element`: the element from the source being accumulated.  
@return a [Map] associating the key of each group with the result of accumulating the group elements.  
@sample samples.collections.Grouping.foldByEvenLengthWithConstantInitialValue

```

*\n@SinceKotlin("1.1")\npublic
inline fun <T, K, R> Grouping<T, K>.fold(\n    initialValue: R,\n    operation: (accumulator: R, element: T) ->
R\n): Map<K, R> =\n    @Suppress("UNCHECKED_CAST")\n    aggregate { _, acc, e, first -> operation(if (first)
initialValue else acc as R, e) }\n\n/**\n * Groups elements from the [Grouping] source by key and applies
[operation] to the elements of each group sequentially,\n * passing the previously accumulated value and the current
element as arguments,\n * and stores the results in the given [destination] map.\n * An initial value of accumulator is
the same [initialValue] for each group.\n *\n * If the [destination] map already has a value corresponding to the key
of some group,\n * that value is used as an initial value of the accumulator for that group.\n *\n * @param operation
a function that is invoked on each element with the following parameters:  

`accumulator`: the current value of the accumulator of the group;  

`element`: the element from the source being accumulated.  

@return the [destination] map associating the key of each group with the result of accumulating the group elements.  

@sample
samples.collections.Grouping.foldByEvenLengthWithConstantInitialValueTo
*\n@SinceKotlin("1.1")\npublic
inline fun <T, K, R, M : MutableMap<in K, R>> Grouping<T, K>.foldTo(\n    destination: M,\n    initialValue: R,\n    operation: (accumulator: R, element: T) -> R\n): M =\n    @Suppress("UNCHECKED_CAST")\n    aggregateTo(destination) { _, acc, e, first -> operation(if (first) initialValue else acc as R, e) }\n\n\n/**\n * Groups
elements from the [Grouping] source by key and applies the reducing [operation] to the elements of each group\n *
sequentially starting from the second element of the group,\n * passing the previously accumulated value and the
current element as arguments,\n * and stores the results in a new map.\n * An initial value of accumulator is the first
element of the group.\n *\n * @param operation a
function that is invoked on each subsequent element of the group with the following parameters:  

`key`: the key of the group this element belongs to;  

`accumulator`: the current value of the accumulator of the group;  

`element`: the element from the source being accumulated.  

@return a [Map] associating the key of each group with the result of accumulating the group elements.  

@sample
samples.collections.Grouping.reduceByMaxVowels
*\n@SinceKotlin("1.1")\npublic inline fun <S, T : S, K>
Grouping<T, K>.reduce(\n    operation: (key: K, accumulator: S, element: T) -> S\n): Map<K, S> =\n    aggregate {
key, acc, e, first ->\n        @Suppress("UNCHECKED_CAST")\n        if (first) e else operation(key, acc as S, e)\n    }\n\n\n/**\n * Groups elements from the [Grouping] source by key and applies the reducing [operation] to the
elements of each group\n * sequentially starting from the second element of the group,\n * passing the previously
accumulated value and the current element as arguments,\n * and stores the results in the given [destination] map.\n * An initial value of accumulator is the first element of the group.\n *\n * If the [destination] map already has a value corresponding to the key of some group,\n * that value is used as an initial value of the accumulator for that group and the first
element of that group is also\n * subjected to the [operation].\n *\n * @param operation a function that is invoked on
each subsequent element of the group with the following parameters:  

`accumulator`: the current value of the accumulator of the group;  

`element`: the element from the source being folded;  

@return the [destination] map associating the key of each group with the result of accumulating the group elements.  

@sample
samples.collections.Grouping.reduceByMaxVowelsTo
*\n@SinceKotlin("1.1")\npublic inline fun <S,
T : S, K, M : MutableMap<in K, S>> Grouping<T, K>.reduceTo(\n    destination: M,\n    operation:
(key: K, accumulator: S, element: T) -> S\n): M =\n    aggregateTo(destination) { key, acc, e, first ->\n        @Suppress("UNCHECKED_CAST")\n        if (first) e else operation(key, acc as S, e)\n    }\n\n\n/**\n * Groups
elements from the [Grouping] source by key and counts elements in each group to the given [destination] map.\n *\n * If the [destination] map already has a value corresponding to the key of some group,\n * that value is used as an
initial value of the counter for that group.\n *\n * @return the [destination] map associating the key of each group

```

```

with the count of elements in the group.\n *\n * @sample samples.collections.Grouping.groupingByEachCount\n
*\n@SinceKotlin("1.1")\npublic fun <T, K, M : MutableMap<in K, Int>> Grouping<T,
K>.eachCountTo(destination: M): M =\n    foldTo(destination, 0) { acc, _ -> acc + 1 }\n\n/*\n * Groups
elements from the [Grouping] source by key and sums values provided by the [valueSelector] function for elements
in each group\n
 * to the given [destination] map.\n *\n *\n * If the [destination] map already has a value corresponding to the key of
some group,\n *\n * that value is used as an initial value of the sum for that group.\n *\n * @return the [destination] map
associating the key of each group with the sum of elements in the group.\n *\n@SinceKotlin("1.1")\npublic inline
fun <T, K, M : MutableMap<in K, Int>> Grouping<T, K>.eachSumOfTo(destination: M, valueSelector: (T) -> Int):
M =\n    foldTo(destination, 0) { acc, e -> acc + valueSelector(e)}\n\n/*\n\n/*\n// TODO: sum by long and by
double overloads\n\npublic inline fun <T, K, M : MutableMap<in K, Long>> Grouping<T,
K>.sumEachByLongTo(destination: M, valueSelector: (T) -> Long): M =\n    foldTo(destination, 0L) { acc, e ->
acc + valueSelector(e)}\n\npublic inline fun <T, K> Grouping<T, K>.sumEachByLong(valueSelector: (T) -> Long):
Map<K, Long> =\n    fold(0L) { acc, e -> acc + valueSelector(e)}\n\npublic inline fun <T, K, M :
MutableMap<in
K, Double>> Grouping<T, K>.sumEachByDoubleTo(destination: M, valueSelector: (T) -> Double): M =\n
foldTo(destination, 0.0) { acc, e -> acc + valueSelector(e)}\n\npublic inline fun <T, K> Grouping<T,
K>.sumEachByDouble(valueSelector: (T) -> Double): Map<K, Double> =\n    fold(0.0) { acc, e -> acc +
valueSelector(e)}\n\n/*\n\n/*\n * Copyright 2010-2021 JetBrains s.r.o. and Kotlin Programming Language
contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n *\n\npackage
kotlin.js\n\n@Retention(AnnotationRetention.BINARY)\n@Target(AnnotationTarget.FUNCTION,
AnnotationTarget.PROPERTY)\ninternal annotation class JsPolyfill(val implementation: String)\n\n/*\n\n/*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is
governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n *\n\npackage
kotlin.js\n\n/*\n\n/*\n * An interface
for indexing access to a collection of key-value pairs, where type of key is [String] and type of value is
[Any?][Any].\n *\n\npublic external interface Json {\n    /**\n     * Calls to the function will be translated to indexing
operation (square brackets) on the receiver with [propertyName] as the argument.\n     *\n     * E.g. for next code:\n
     * ```kotlin\n     * fun test(j: Json, p: String) = j["prop"] + j.get(p)\n     * ```\n     *\n     * will be generated:\n
     * ```js\n     * function test(j, p) {\n     *     return j["prop"] + j[p];\n     * }\n     * ```\n     *\n     *\n     * operator fun
get(propertyName: String): Any?\n     *\n     *\n     * Calls of the function will be translated to an assignment of [value]
to the receiver indexed (with square brackets/index operation) with [propertyName].\n     *\n     * E.g. for the
following code:\n     * ```kotlin\n     * fun test(j: Json, p: String, newValue: Any) {\n     *     j["prop"] = 1\n     *
j.set(p, newValue)\n     * }\n     * ```\n     *\n     * will be generated:\n     * ```js\n     * function test(j, p, newValue) {\n     *     j["prop"] = 1;\n
     *     j[p] = newValue;\n     * }\n     * }\n     * ```\n     *\n     *\n     * operator fun set(propertyName: String, value: Any?):
Unit\n     *\n     *\n     * Returns a simple JavaScript object (as [Json]) using provided key-value pairs as names and
values of its properties.\n     *\n     *\n     * public fun json(vararg pairs: Pair<String, Any?>): Json {\n     *     val res: dynamic =
js("{}")\n     *     for ((name, value) in pairs) {\n     *         res[name] = value\n     *     }\n     *     return res\n     * }\n     *\n     *\n     * Adds key-
value pairs from [other] to [this].\n     *\n     * Returns the original receiver.\n     *\n     *\n     * public fun Json.add(other: Json): Json {\n
     *     val keys: Array<String> = js("Object").keys(other)\n     *     for (key in keys) {\n     *         if
(other.asDynamic().hasOwnProperty(key)) {\n     *             this[key] = other[key];\n     *         }\n     *     }\n     *     return
this\n     * }\n     *\n     *\n     * Exposes the JavaScript [JSON object](https://developer.mozilla.org/en-
US/docs/Web/JavaScript/Reference/Global_Objects/JSON)
to Kotlin.\n     *\n     *\n     * @Suppress("NOT_DOCUMENTED")\n     * public external object JSON {\n     *     public fun stringify(o:
Any?): String\n     *     public fun stringify(o: Any?, replacer: ((key: String, value: Any?) -> Any?): String)\n     *     public fun
stringify(o: Any?, replacer: ((key: String, value: Any?) -> Any?)? = definedExternally, space: Int): String\n     *     public

```

```

fun stringify(o: Any?, replacer: ((key: String, value: Any?) -> Any?)? = definedExternally, space: String): String\n
public fun stringify(o: Any?, replacer: Array<String>): String\n public fun stringify(o: Any?, replacer:
Array<String>, space: Int): String\n public fun stringify(o: Any?, replacer: Array<String>, space: String):
String\n\n public fun <T> parse(text: String): T\n public fun <T> parse(text: String, reviver: ((key: String, value:
Any?) -> Any?)): T\n}\n"/\n * Copyright 2010-2022 JetBrains s.r.o. and Kotlin Programming Language
contributors.\n * Use

```

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```

*\npackage kotlin.math\n\nimport kotlin.internal.InlineOnly\nimport kotlin.js.JsMath as nativeMath\n\n//
region ===== Double Math =====\n\n**

```

Computes the sine of the angle [x] given in radians.\n \* Special cases:\n \* - `sin(NaN|+Inf|-Inf)` is `NaN`\n

```

*\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun sin(x: Double): Double =

```

nativeMath.sin(x)\n\n\*\* Computes the cosine of the angle [x] given in radians.\n \* Special cases:\n \* -

```

`cos(NaN|+Inf|-Inf)` is `NaN`\n *\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun cos(x: Double):

```

Double = nativeMath.cos(x)\n\n\*\* Computes the tangent of the angle [x] given in radians.\n \* Special cases:\n

```

* - `tan(NaN|+Inf|-Inf)` is `NaN`\n *\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun tan(x:

```

```

Double): Double = nativeMath.tan(x)\n\n**\n

```

\* Computes the arc sine of the value [x];\n \* the returned value is an angle in the range from  $-\pi/2$  to  $\pi/2$

```

radians.\n *\n * Special cases:\n * - `asin(x)` is `NaN`, when `abs(x) > 1` or x is `NaN`\n

```

```

*\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun asin(x: Double): Double =

```

nativeMath.asin(x)\n\n\*\*\n \* Computes the arc cosine of the value [x];\n \* the returned value is an angle in the

```

range from `0.0` to `PI` radians.\n *\n * Special cases:\n * - `acos(x)` is `NaN`, when `abs(x) > 1` or x is `NaN`\n

```

```

*\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun acos(x: Double): Double =

```

nativeMath.acos(x)\n\n\*\*\n \* Computes the arc tangent of the value [x];\n \* the returned value is an angle in the

```

range from  $-\pi/2$  to  $\pi/2$  radians.\n *\n * Special cases:\n * - `atan(NaN)` is `NaN`\n

```

```

*\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun atan(x: Double): Double =

```

nativeMath.atan(x)\n\n\*\*\n \* Returns the angle  $\theta$  of the polar

```

coordinates `(r, theta)` that correspond\n * to the rectangular coordinates `(x, y)` by computing the arc tangent of

```

```

the value [y] / [x];\n * the returned value is an angle in the range from  $-\pi$  to  $\pi$  radians.\n *\n * Special cases:\n *

```

```

- `atan2(0.0, 0.0)` is `0.0`\n * - `atan2(0.0, x)` is `0.0` for `x > 0` and  $\pi$  for `x < 0`\n * - `atan2(-0.0, x)` is

```

```

`-0.0` for `x > 0` and  $-\pi$  for `x < 0`\n * - `atan2(y, +Inf)` is `0.0` for  $0 < y < +\infty$  and  $-0.0$  for  $-\infty < y < 0$ \n *

```

```

- `atan2(y, -Inf)` is  $\pi$  for  $0 < y < +\infty$  and  $-\pi$  for  $-\infty < y < 0$ \n * - `atan2(y, 0.0)` is  $\pi/2$  for `y > 0` and

```

```

 $-\pi/2$  for `y < 0`\n * - `atan2(+Inf, x)` is  $\pi/2$  for finite `x`\n * - `atan2(-Inf, x)` is  $-\pi/2$  for finite `x`\n * -

```

```

`atan2(NaN, x)` and `atan2(y, NaN)` is `NaN`\n *\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun

```

```

atan2(y: Double, x: Double): Double = nativeMath.atan2(y, x)\n\n**\n * Computes the hyperbolic sine of the value

```

```

[x].\n *\n * Special

```

```

cases:\n * - `sinh(NaN)` is `NaN`\n * - `sinh(+Inf)` is  $+\infty$ \n * - `sinh(-Inf)` is  $-\infty$ \n

```

```

*\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun sinh(x: Double): Double = nativeSinh(x)\n\n**\n

```

\* Computes the hyperbolic cosine of the value [x].\n \* Special cases:\n \* - `cosh(NaN)` is `NaN`\n \* -

```

`cosh(+Inf|-Inf)` is  $+\infty$ \n *\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun cosh(x: Double):

```

```

Double = nativeCosh(x)\n\n**\n * Computes the hyperbolic tangent of the value [x].\n *\n * Special cases:\n * -

```

```

`tanh(NaN)` is `NaN`\n * - `tanh(+Inf)` is  $1.0$ \n * - `tanh(-Inf)` is  $-1.0$ \n

```

```

*\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun tanh(x: Double): Double =

```

nativeTanh(x)\n\n\*\*\n \* Computes the inverse hyperbolic sine of the value [x].\n \* The returned value is  $y$

```

such that `sinh(y) == x`.\n *\n * Special cases:\n * - `asinh(NaN)` is `NaN`\n * - `asinh(+Inf)` is  $+\infty$ \n * -

```

```

`asinh(-Inf)` is  $-\infty$ \n *\n@SinceKotlin("1.2")\n@InlineOnly\npublic

```

```

actual inline fun asinh(x: Double): Double = nativeAsinh(x)\n\n**\n * Computes the inverse hyperbolic cosine of

```

```

the value [x].\n *\n * The returned value is positive `y` such that `cosh(y) == x`.\n *\n * Special cases:\n * -

```

```

`acosh(NaN)` is `NaN`\n * - `acosh(x)` is `NaN` when `x < 1`\n * - `acosh(+Inf)` is  $+\infty$ \n

```

```

`acosh(-Inf)` is  $+\infty$ \n

```

```

*\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun acosh(x: Double): Double =
nativeAcosh(x)\n\n/**\n * Computes the inverse hyperbolic tangent of the value [x].\n * The returned value is
`y` such that `tanh(y) == x`.\n * Special cases:\n * - `tanh(NaN)` is `NaN`\n * - `tanh(x)` is `NaN` when `x >
1` or `x < -1`\n * - `tanh(1.0)` is `+Inf`\n * - `tanh(-1.0)` is `-Inf`\n
*\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun atanh(x: Double): Double =
nativeAtanh(x)\n\n/**\n * Computes `sqrt(x^2 + y^2)` without intermediate overflow or underflow.\n * Special
cases:\n * - returns `+Inf` if
any of arguments is infinite\n * - returns `NaN` if any of arguments is `NaN` and the other is not infinite\n
*\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun hypot(x: Double, y: Double): Double =
nativeHypot(x, y)\n\n/**\n * Computes the positive square root of the value [x].\n * Special cases:\n * -
`sqrt(x)` is `NaN` when `x < 0` or `x` is `NaN`\n *\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun
sqrt(x: Double): Double = nativeMath.sqrt(x)\n\n/**\n * Computes Euler's number `e` raised to the power of the
value [x].\n * Special cases:\n * - `exp(NaN)` is `NaN`\n * - `exp(+Inf)` is `+Inf`\n * - `exp(-Inf)` is `0.0`\n
*\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun exp(x: Double): Double =
nativeMath.exp(x)\n\n/**\n * Computes `exp(x) - 1`.\n * This function can be implemented to produce more
precise result for [x] near zero.\n * Special cases:\n * - `expm1(NaN)` is `NaN`\n * - `expm1(+Inf)` is `+Inf`\n
*\n *
- `expm1(-Inf)` is `-1.0`\n *\n * @see [exp] function.\n *\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual
inline fun expm1(x: Double): Double = nativeExp1(x)\n\n/**\n * Computes the logarithm of the value [x] to the
given [base].\n * Special cases:\n * - `log(x, b)` is `NaN` if either `x` or `b` are `NaN`\n * - `log(x, b)` is
`NaN` when `x < 0` or `b <= 0` or `b == 1.0`\n * - `log(+Inf, +Inf)` is `NaN`\n * - `log(+Inf, b)` is `+Inf` for `b >
1` and `-Inf` for `b < 1`\n * - `log(0.0, b)` is `-Inf` for `b > 1` and `+Inf` for `b > 1`\n *\n * See also logarithm
functions for common fixed bases: [ln], [log10] and [log2].\n *\n@SinceKotlin("1.2")\npublic actual fun log(x:
Double, base: Double): Double {\n if (base <= 0.0 || base == 1.0) return Double.NaN\n return nativeMath.log(x)
/ nativeMath.log(base)\n}\n\n/**\n * Computes the natural logarithm (base `E`) of the value [x].\n * Special
cases:\n * - `ln(NaN)` is `NaN`\n * - `ln(x)` is `NaN` when `x < 0.0`\n
*\n * - `ln(+Inf)` is `+Inf`\n * - `ln(0.0)` is `-Inf`\n *\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun
ln(x: Double): Double = nativeMath.log(x)\n\n/**\n * Computes the common logarithm (base 10) of the value [x].\n
*\n * @see [ln] function for special cases.\n *\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun
log10(x: Double): Double = nativeLog10(x)\n\n/**\n * Computes the binary logarithm (base 2) of the value [x].\n
*\n * @see [ln] function for special cases.\n *\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun
log2(x: Double): Double = nativeLog2(x)\n\n/**\n * Computes `ln(x + 1)`.\n * This function can be
implemented to produce more precise result for [x] near zero.\n * Special cases:\n * - `ln1p(NaN)` is `NaN`\n *
- `ln1p(x)` is `NaN` where `x < -1.0`\n * - `ln1p(-1.0)` is `-Inf`\n * - `ln1p(+Inf)` is `+Inf`\n *\n * @see [ln]
function\n * @see [expm1] function\n *\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual
inline fun ln1p(x: Double): Double = nativeLog1p(x)\n\n/**\n * Rounds the given value [x] to an integer towards
positive infinity.\n * @return the smallest double value that is greater than or equal to the given value [x] and is a
mathematical integer.\n * Special cases:\n * - `ceil(x)` is `x` where `x` is `NaN` or `+Inf` or `-Inf` or already a
mathematical integer.\n *\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun ceil(x: Double): Double =
nativeMath.ceil(x)\n\n/**\n * Rounds the given value [x] to an integer towards negative infinity.\n * @return the
largest double value that is smaller than or equal to the given value [x] and is a mathematical integer.\n * Special
cases:\n * - `floor(x)` is `x` where `x` is `NaN` or `+Inf` or `-Inf` or already a mathematical integer.\n
*\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun floor(x: Double): Double =
nativeMath.floor(x)\n\n/**\n * Rounds the given value [x] to an integer towards zero.\n
*\n * @return the value [x] having its fractional part truncated.\n * Special cases:\n * - `truncate(x)` is `x`
where `x` is `NaN` or `+Inf` or `-Inf` or already a mathematical integer.\n
*\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun truncate(x: Double): Double =
nativeTrunc(x)\n\n/**\n * Rounds the given value [x] towards the closest integer with ties rounded towards even

```

integer.  
 \* Special cases: `round(x)` is `x` where `x` is `NaN` or `+Inf` or `-Inf` or already a mathematical integer.  
`@SinceKotlin("1.2")`  
`public actual fun round(x: Double): Double {`  
 `if (x % 0.5 != 0.0) {`  
 `return nativeMath.round(x)`  
 `}`  
 `val floor = floor(x)`  
 `return if (floor % 2 == 0.0) floor else`  
 `ceil(x)`  
`}`  
 \* Returns the absolute value of the given value `[x]`.  
 \* Special cases: `abs(NaN)` is `NaN`.  
 \* @see `absoluteValue` extension property for `[Double]`  
`@SinceKotlin("1.2")`  
`@InlineOnly`  
`public actual inline fun abs(x:`  
 `Double): Double = nativeMath.abs(x)`  
 \* Returns the sign of the given value `[x]`:  
 \* `-1.0` if the value is negative,  
 \* `0` if the value is zero,  
 \* `1.0` if the value is positive  
 \* Special case: `sign(NaN)` is `NaN`.  
`@SinceKotlin("1.2")`  
`@InlineOnly`  
`public actual inline fun sign(x: Double): Double =`  
 `nativeSign(x)`  
 \* Returns the smaller of two values.  
 \* If either value is `NaN`, then the result is `NaN`.  
`@SinceKotlin("1.2")`  
`@InlineOnly`  
`public actual inline fun min(a: Double, b: Double): Double =`  
 `nativeMath.min(a, b)`  
 \* Returns the greater of two values.  
 \* If either value is `NaN`, then the result is `NaN`.  
`@SinceKotlin("1.2")`  
`@InlineOnly`  
`public actual inline fun max(a: Double, b: Double): Double =`  
 `nativeMath.max(a, b)`  
 \* Returns the cube root of `[x]`. For any `x`, `cbqrt(-x) == -cbqrt(x)`; that is, the cube root of a negative value is the negative of the cube root of that value's magnitude. Special cases:  
 \* Special cases:  
 \* If the argument is `NaN`, then the result is `NaN`.  
 \* If the argument is infinite, then the result is an infinity with the same sign as the argument.  
 \* If the argument is zero, then the result is a zero with the same sign as the argument.  
`@SinceKotlin("1.8")`  
`@WasExperimental(ExperimentalStdlibApi::class)`  
`@InlineOnly`  
`public actual inline fun cbqrt(x: Double): Double = nativeMath.cbqrt(x)`  
 \* Raises this value to the power `[x]`.  
 \* Special cases:  
 \* `b.pow(0.0)` is `1.0`  
 \* `b.pow(1.0) == b`  
 \* `b.pow(NaN)` is `NaN`  
 \* `NaN.pow(x)` is `NaN` for `x != 0.0`  
 \* `b.pow(Inf)` is `NaN` for `abs(b) == 1.0`  
 \* `b.pow(x)` is `NaN` for `b < 0` and `x` is finite and not an integer  
`@SinceKotlin("1.2")`  
`@InlineOnly`  
`public actual inline fun Double.pow(x: Double): Double = nativeMath.pow(this, x)`  
 \* Raises this value to the integer power `[n]`.  
 \* See the other overload of `[pow]` for details.  
`@SinceKotlin("1.2")`  
`@InlineOnly`  
`public actual inline fun Double.pow(n: Int): Double = nativeMath.pow(this, n.toDouble())`  
 \* Returns the absolute value of this value.  
 \* Special cases: `NaN.absoluteValue` is `NaN`.  
 \* @see `abs` function  
`@SinceKotlin("1.2")`  
`@InlineOnly`  
`public actual inline val Double.absoluteValue: Double get() =`  
 `nativeMath.abs(this)`  
 \* Returns the sign of this value:  
 \* `-1.0` if the value is negative,  
 \* `0` if the value is zero,  
 \* `1.0` if the value is positive  
 \* Special case: `NaN.sign` is `NaN`  
`@SinceKotlin("1.2")`  
`@InlineOnly`  
`public actual inline val Double.sign: Double get() =`  
 `nativeSign(this)`  
 \* Returns this value with the sign bit same as of the `[sign]` value.  
`@SinceKotlin("1.2")`  
`@InlineOnly`  
`public actual inline fun Double.withSign(sign: Int): Double =`  
 `this.withSign(sign.toDouble())`  
 \* Returns the ulp (unit in the last place) of this value.  
 \* An ulp is a positive distance between this value and the next nearest `[Double]` value larger in magnitude.  
 \* Special Cases:  
 \* `NaN.ulp` is `NaN`  
 \* `x.ulp` is `+Inf` when `x` is `+Inf` or `-Inf`  
 \* `0.0.ulp` is `Double.MIN_VALUE`  
`@SinceKotlin("1.2")`  
`public actual val Double.ulp: Double get() =`  
 `when {`  
 `this < 0 -> (-this).ulp`  
 `this.isNaN() || this == Double.POSITIVE_INFINITY -> this`  
 `this == Double.MAX_VALUE -> this - this.nextDown()`  
 `else -> this.nextUp() - this`  
 `}`  
 \* Returns the `[Double]` value nearest to this value in direction of positive infinity.  
`@SinceKotlin("1.2")`  
`public actual fun Double.nextUp(): Double =`  
 `when {`  
 `this.isNaN() || this == Double.POSITIVE_INFINITY -> this`  
 `this == 0.0 -> Double.MIN_VALUE`  
 `else -> Double.fromBits(this.toRawBits() + if (this > 0) 1 else -1)`  
`}`  
 \* Returns the `[Double]` value nearest to this value in direction of negative infinity.  
`@SinceKotlin("1.2")`  
`public actual fun Double.nextDown(): Double =`  
 `when {`  
 `this.isNaN() || this == Double.NEGATIVE_INFINITY -> this`  
 `this == 0.0 -> -Double.MIN_VALUE`  
 `else -> Double.fromBits(this.toRawBits() + if (this > 0) -1 else 1)`  
`}`  
 \* Returns the `[Double]` value nearest to this value in direction from this value towards the value `[to]`.  
 \* Special cases:  
 \* `x.nextTowards(y)` is `NaN` if



either `x` or `y` are `NaN`  
`x.nextTowards(x) == x`  
`Double.nextTowards(to: Double): Double = when { this.isNaN() || to.isNaN() -> Double.NaN to == this -> to to > this -> this.nextUp() else /* to < this */ -> this.nextDown() }`  
Rounds this [Double] value to the nearest integer and converts the result to [Int].  
Ties are rounded towards positive infinity.  
Special cases:  
`x.roundToInt() == Int.MAX_VALUE` when `x > Int.MAX_VALUE`  
`x.roundToInt() == Int.MIN_VALUE` when `x < Int.MIN_VALUE`  
@throws `IllegalArgumentException` when this value is `NaN`  
`Double.roundToInt(): Int = when { this.isNaN() -> throw IllegalArgumentException("Cannot round NaN value.") this > Int.MAX_VALUE -> Int.MAX_VALUE this < Int.MIN_VALUE -> Int.MIN_VALUE else -> nativeMath.round(this).toInt() }`  
Rounds this [Double] value to the nearest integer and converts the result to [Long].  
Ties are rounded towards positive infinity.  
Special cases:  
`x.roundToLong() == Long.MAX_VALUE` when `x > Long.MAX_VALUE`  
`x.roundToLong() == Long.MIN_VALUE` when `x < Long.MIN_VALUE`  
@throws `IllegalArgumentException` when this value is `NaN`  
`Double.roundToLong(): Long = when { this.isNaN() -> throw IllegalArgumentException("Cannot round NaN value.") this > Long.MAX_VALUE -> Long.MAX_VALUE this < Long.MIN_VALUE -> Long.MIN_VALUE else -> nativeMath.round(this).toLong() }`  
endregion  
region ===== Float Math  
===== Computes the sine of the angle [x] given in radians.  
Special cases:  
`sin(NaN|+Inf|-Inf)` is `NaN`  
`sin(x: Float): Float = nativeMath.sin(x.toDouble()).toFloat()`  
Computes the cosine of the angle [x] given in radians.  
Special cases:  
`cos(NaN|+Inf|-Inf)` is `NaN`  
`cos(x: Float): Float = nativeMath.cos(x.toDouble()).toFloat()`  
Computes the tangent of the angle [x] given in radians.  
Special cases:  
`tan(NaN|+Inf|-Inf)` is `NaN`  
`tan(x: Float): Float = nativeMath.tan(x.toDouble()).toFloat()`  
Computes the arc sine of the value [x];  
\* the returned value is an angle in the range from `-PI/2` to `PI/2` radians.  
Special cases:  
`asin(x)` is `NaN`, when `abs(x) > 1` or `x` is `NaN`  
`asin(x: Float): Float = nativeMath.asin(x.toDouble()).toFloat()`  
Computes the arc cosine of the value [x];  
\* the returned value is an angle in the range from `0.0` to `PI` radians.  
Special cases:  
`acos(x)` is `NaN`, when `abs(x) > 1` or `x` is `NaN`  
`acos(x: Float): Float = nativeMath.acos(x.toDouble()).toFloat()`  
Computes the arc tangent of the value [x];  
\* the returned value is an angle in the range from `-PI/2` to `PI/2` radians.  
Special cases:  
`atan(NaN)` is `NaN`  
`atan(x: Float): Float = nativeMath.atan(x.toDouble()).toFloat()`  
Returns the angle `theta` of the polar coordinates `(r, theta)` that correspond to the rectangular coordinates `(x, y)` by computing the arc tangent of the value `y / x`;  
\* the returned value is an angle in the range from `-PI` to `PI` radians.  
Special cases:  
`atan2(0.0, 0.0)` is `0.0`  
`atan2(0.0, x)` is `0.0` for `x > 0` and `PI` for `x < 0`  
`atan2(-0.0, x)` is `-0.0` for `x > 0` and `-PI` for `x < 0`  
`atan2(y, +Inf)` is `0.0` for `0 < y < +Inf` and `-0.0` for `-Inf < y < 0`  
`atan2(y, -Inf)` is `PI` for `0 < y < +Inf` and `-PI` for `-Inf < y < 0`  
`atan2(y, 0.0)` is `PI/2` for `y > 0` and `-PI/2` for `y < 0`  
`atan2(+Inf, x)` is `PI/2` for finite `x`  
`atan2(-Inf, x)` is `-PI/2` for finite `x`  
`atan2(NaN, x)` and `atan2(y, NaN)` is `NaN`  
`atan2(y: Float, x: Float): Float = nativeMath.atan2(y.toDouble(), x.toDouble()).toFloat()`  
Computes the hyperbolic sine of the value [x].  
Special cases:  
`sinh(NaN)` is `NaN`  
`sinh(+Inf)` is `+Inf`  
`sinh(-Inf)` is `-Inf`  
`sinh(x: Float): Float = nativeSinh(x.toDouble()).toFloat()`  
Computes the hyperbolic cosine of the value [x].  
Special

cases:  $\cosh(\text{NaN})$  is  $\text{NaN}$   $\cosh(+\text{Inf}|- \text{Inf})$  is  $+\text{Inf}$

```
*\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun cosh(x: Float): Float =
nativeCosh(x.toDouble()).toFloat()\n\n**\n * Computes the hyperbolic tangent of the value [x].\n * Special
cases:\n * - \tanh(\text{NaN}) is \text{NaN}\n * - \tanh(+\text{Inf}) is 1.0\n * - \tanh(-\text{Inf}) is -1.0\n
*\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun tanh(x: Float): Float =
nativeTanh(x.toDouble()).toFloat()\n\n**\n * Computes the inverse hyperbolic sine of the value [x].\n * The
returned value is `y` such that \sinh(y) == x.\n * Special cases:\n * - \asinh(\text{NaN})
is \text{NaN}\n * - \asinh(+\text{Inf}) is +\text{Inf}\n * - \asinh(-\text{Inf}) is -\text{Inf}\n
*\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun asinh(x: Float): Float =
nativeAsinh(x.toDouble()).toFloat()\n\n**\n * Computes the inverse hyperbolic cosine of the value [x].\n * The
returned value is positive `y` such that \cosh(y) == x.\n * Special cases:\n * - \acosh(\text{NaN}) is \text{NaN}\n * -
\acosh(x) is \text{NaN} when `x < 1`\n * - \acosh(+\text{Inf}) is +\text{Inf}\n *\n@SinceKotlin("1.2")\n@InlineOnly\npublic
actual inline fun acosh(x: Float): Float = nativeAcosh(x.toDouble()).toFloat()\n\n**\n * Computes the inverse
hyperbolic tangent of the value [x].\n * The returned value is `y` such that \tanh(y) == x.\n * Special
cases:\n * - \tanh(\text{NaN}) is \text{NaN}\n * - \tanh(x) is \text{NaN} when `x > 1` or `x < -1`\n * - \tanh(1.0) is +\text{Inf}\n *
- \tanh(-1.0) is -\text{Inf}\n *\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun atanh(x: Float): Float =
nativeAtanh(x.toDouble()).toFloat()\n\n**\n
* Computes \sqrt(x^2 + y^2) without intermediate overflow or underflow.\n * Special cases:\n * - returns
+\text{Inf} if any of arguments is infinite\n * - returns \text{NaN} if any of arguments is \text{NaN} and the other is not infinite\n
*\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun hypot(x: Float, y: Float): Float =
nativeHypot(x.toDouble(), y.toDouble()).toFloat()\n\n**\n * Computes the positive square root of the value [x].\n
*\n * Special cases:\n * - \sqrt(x) is \text{NaN} when `x < 0` or `x` is \text{NaN}\n
*\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun sqrt(x: Float): Float =
nativeMath.sqrt(x.toDouble()).toFloat()\n\n**\n * Computes Euler's number `e` raised to the power of the value
[x].\n * Special cases:\n * - \exp(\text{NaN}) is \text{NaN}\n * - \exp(+\text{Inf}) is +\text{Inf}\n * - \exp(-\text{Inf}) is 0.0\n
*\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun exp(x: Float): Float =
nativeMath.exp(x.toDouble()).toFloat()\n\n**\n
* Computes \exp(x) - 1.\n * This function can be implemented to produce more precise result for [x] near
zero.\n * Special cases:\n * - \expm1(\text{NaN}) is \text{NaN}\n * - \expm1(+\text{Inf}) is +\text{Inf}\n * - \expm1(-\text{Inf}) is -
1.0\n * * @see [exp] function.\n *\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun expm1(x:
Float): Float = nativeExp1(x.toDouble()).toFloat()\n\n**\n * Computes the logarithm of the value [x] to the given
[base].\n * Special cases:\n * - \log(x, b) is \text{NaN} if either `x` or `b` are \text{NaN}\n * - \log(x, b) is \text{NaN}
when `x < 0` or `b <= 0` or `b == 1.0`\n * - \log(+\text{Inf}, +\text{Inf}) is \text{NaN}\n * - \log(+\text{Inf}, b) is +\text{Inf} for `b > 1` and
-\text{Inf} for `b < 1`\n * - \log(0.0, b) is -\text{Inf} for `b > 1` and +\text{Inf} for `b > 1`\n * * See also logarithm functions
for common fixed bases: [ln], [log10] and [log2].\n *\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline
fun log(x: Float, base: Float): Float = log(x.toDouble(), base.toDouble()).toFloat()\n\n**\n
* Computes the natural logarithm (base `E`) of the value [x].\n * Special cases:\n * - \ln(\text{NaN}) is \text{NaN}\n * -
\ln(x) is \text{NaN} when `x < 0.0`\n * - \ln(+\text{Inf}) is +\text{Inf}\n * - \ln(0.0) is -\text{Inf}\n
*\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun ln(x: Float): Float =
nativeMath.log(x.toDouble()).toFloat()\n\n**\n * Computes the common logarithm (base 10) of the value [x].\n *
*\n * @see [ln] function for special cases.\n *\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun log10(x:
Float): Float = nativeLog10(x.toDouble()).toFloat()\n\n**\n * Computes the binary logarithm (base 2) of the value
[x].\n * * @see [ln] function for special cases.\n *\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline
fun log2(x: Float): Float = nativeLog2(x.toDouble()).toFloat()\n\n**\n * Computes \ln(x + 1).\n * This
function can be implemented to produce more precise result for [x] near zero.\n * Special cases:\n
* - \ln1p(\text{NaN}) is \text{NaN}\n * - \ln1p(x) is \text{NaN} where `x < -1.0`\n * - \ln1p(-1.0) is -\text{Inf}\n * - \ln1p(+\text{Inf})
is +\text{Inf}\n * * @see [ln] function\n * * @see [expm1] function\n *\n@SinceKotlin("1.2")\n@InlineOnly\npublic
actual inline fun ln1p(x: Float): Float = nativeLog1p(x.toDouble()).toFloat()\n\n**\n * Rounds the given value [x]
```

to an integer towards positive infinity.

`@return` the smallest `Float` value that is greater than or equal to the given value `[x]` and is a mathematical integer.

`Special cases:`

- `ceil(x)` is `x` where `x` is `NaN` or `+Inf` or `-Inf` or already a mathematical integer.

```
@SinceKotlin("1.2")
@InlineOnly
public actual inline fun ceil(x: Float): Float = nativeMath.ceil(x.toDouble()).toFloat()
```

`Rounds the given value [x] to an integer towards negative infinity.`

`@return` the largest `Float` value that is smaller than or equal to the given value `[x]` and is a mathematical integer.

`Special cases:`

- `floor(x)` is `x` where `x` is `NaN` or `+Inf` or `-Inf` or already a mathematical integer.

```
@SinceKotlin("1.2")
@InlineOnly
public actual inline fun floor(x: Float): Float = nativeMath.floor(x.toDouble()).toFloat()
```

`Rounds the given value [x] to an integer towards zero.`

`@return` the value `[x]` having its fractional part truncated.

`Special cases:`

- `truncate(x)` is `x` where `x` is `NaN` or `+Inf` or `-Inf` or already a mathematical integer.

```
@SinceKotlin("1.2")
@InlineOnly
public actual inline fun truncate(x: Float): Float = truncate(x.toDouble()).toFloat()
```

`Rounds the given value [x] towards the closest integer with ties rounded towards even integer.`

`Special cases:`

- `round(x)` is `x` where `x` is `NaN` or `+Inf` or `-Inf` or already a mathematical integer.

```
@SinceKotlin("1.2")
@InlineOnly
public actual inline fun round(x: Float): Float = round(x.toDouble()).toFloat()
```

`Returns the absolute value of the given value [x].`

`Special cases:`

- `abs(NaN)` is `NaN`

`@see` `absoluteValue` extension property for `[Float]`

```
@SinceKotlin("1.2")
@InlineOnly
public actual inline fun abs(x: Float): Float = nativeMath.abs(x.toDouble()).toFloat()
```

`Returns the sign of the given value [x]:`

- `-1.0` if the value is negative,
- `0` if the value is zero,
- `1.0` if the value is positive

`Special case:`

- `sign(NaN)` is `NaN`

```
@SinceKotlin("1.2")
@InlineOnly
public actual inline fun sign(x: Float): Float = nativeSign(x.toDouble()).toFloat()
```

`Returns the smaller of two values.`

`If either value is NaN, then the result is NaN.`

```
@SinceKotlin("1.2")
@InlineOnly
public actual inline fun min(a: Float, b: Float): Float = nativeMath.min(a, b)
```

`Returns the greater of two values.`

`If either value is NaN, then the result is NaN.`

```
@SinceKotlin("1.2")
@InlineOnly
public actual inline fun max(a: Float, b: Float): Float = nativeMath.max(a, b)
```

`Returns the cube root of [x]. For any x, cbrt(-x) == -cbrt(x); that is, the cube root of a negative value is the negative of the cube root of that value's magnitude.`

`Special cases:`

- `Special cases:`
- If the argument is `NaN`, then the result is `NaN`.
- If the argument is infinite, then the result is an infinity with the same sign as the argument.
- If the argument is zero, then the result is a zero with the same sign as the argument.

```
@SinceKotlin("1.8")
@WasExperimental(ExperimentalStdlibApi::class)
@InlineOnly
public actual inline fun cbrt(x: Float): Float = nativeMath.cbrt(x.toDouble()).toFloat()
```

`Raises this value to the power [x].`

`Special cases:`

- `b.pow(0.0)` is `1.0`
- `b.pow(1.0) == b`
- `b.pow(NaN)` is `NaN`
- `NaN.pow(x)` is `NaN` for `x != 0.0`
- `b.pow(Inf)` is `NaN` for `abs(b) == 1.0`
- `b.pow(x)` is `NaN` for `b < 0` and `x` is finite and not an integer

```
@SinceKotlin("1.2")
@InlineOnly
public actual inline fun Float.pow(x: Float): Float = nativeMath.pow(this.toDouble(), x.toDouble()).toFloat()
```

`Raises this value to the integer power [n].`

`See the other overload of [pow] for details.`

```
@SinceKotlin("1.2")
@InlineOnly
public actual inline fun Float.pow(n: Int): Float = nativeMath.pow(this.toDouble(), n.toDouble()).toFloat()
```

`Returns the absolute value of this value.`

`Special cases:`

- `NaN.absoluteValue` is `NaN`

`@see` `abs` function

```
@SinceKotlin("1.2")
@InlineOnly
public actual inline val Float.absoluteValue: Float get() = nativeMath.abs(this.toDouble()).toFloat()
```

`Returns the sign of this value:`

- `-1.0` if the value is negative,
- `0` if the value is zero,
- `1.0` if the value is positive

`Special case:`

- `NaN.sign` is `NaN`

```
@SinceKotlin("1.2")
@InlineOnly
public actual inline val Float.sign: Float get() = nativeSign(this.toDouble()).toFloat()
```

`Returns this value with the sign bit same as of the [sign] value.`

`If [sign] is NaN the sign of the result is undefined.`

```
@SinceKotlin("1.2")
@InlineOnly
public actual inline fun Float.withSign(sign: Float): Float = this.toDouble().withSign(sign.toDouble()).toFloat()
```

`Returns this value with the sign bit same as of the`

```

[sign] value.\n *^@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun Float.withSign(sign: Int): Float =
this.toDouble().withSign(sign.toDouble()).toFloat()\n\n/**\n * Rounds this [Float] value to the nearest integer and
converts the result to [Int].\n * Ties are rounded towards positive infinity.\n * Special cases:\n * -
`x.roundToInt() == Int.MAX_VALUE` when `x > Int.MAX_VALUE`\n * - `x.roundToInt() == Int.MIN_VALUE`
when `x < Int.MIN_VALUE`\n * * @throws IllegalArgumentException when this value
is `NaN`\n *^@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun Float.roundToInt(): Int =
toDouble().roundToInt()\n\n/**\n * Rounds this [Float] value to the nearest integer and converts the result to
[Long].\n * Ties are rounded towards positive infinity.\n * Special cases:\n * - `x.roundToLong() ==
Long.MAX_VALUE` when `x > Long.MAX_VALUE`\n * - `x.roundToLong() == Long.MIN_VALUE` when `x
< Long.MIN_VALUE`\n * * @throws IllegalArgumentException when this value is `NaN`\n
*^@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun Float.roundToLong(): Long =
toDouble().roundToLong()\n\n// endregion\n\n// region ===== Integer Math
=====
\n\n/**\n * Returns the absolute value of the given value
[n].\n * Special cases:\n * - `abs(Int.MIN_VALUE)` is `Int.MIN_VALUE` due to an overflow\n * * @see
absoluteValue extension property for [Int]\n *^@n// TODO: remove manual 'or' when KT-19290 is
fixed\n@SinceKotlin("1.2")\npublic
actual fun abs(n: Int): Int = if (n < 0) (-n or 0) else n\n\n/**\n * Returns the smaller of two values.\n
*^@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun min(a: Int, b: Int): Int = nativeMath.min(a,
b)\n\n/**\n * Returns the greater of two values.\n *^@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun
max(a: Int, b: Int): Int = nativeMath.max(a, b)\n\n/**\n * Returns the absolute value of this value.\n * Special
cases:\n * - `Int.MIN_VALUE.absoluteValue` is `Int.MIN_VALUE` due to an overflow\n * * @see abs
function\n *^@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline val Int.absoluteValue: Int get() =
abs(this)\n\n/**\n * Returns the sign of this value:\n * - `-1` if the value is negative,\n * - `0` if the value is zero,\n
* - `1` if the value is positive\n *^@SinceKotlin("1.2")\npublic actual val Int.sign: Int get() = when {\n this <
0 -> -1\n this > 0 -> 1\n else -> 0}\n\n/**\n * Returns the
absolute value of the given value [n].\n * Special cases:\n * - `abs(Long.MIN_VALUE)` is
`Long.MIN_VALUE` due to an overflow\n * * @see absoluteValue extension property for [Long]\n
*^@SinceKotlin("1.2")\npublic actual fun abs(n: Long): Long = if (n < 0) -n else n\n\n/**\n * Returns the smaller
of two values.\n *^@SinceKotlin("1.2")\n@Suppress("NOTHING_TO_INLINE")\npublic actual inline fun
min(a: Long, b: Long): Long = if (a <= b) a else b\n\n/**\n * Returns the greater of two values.\n
*^@SinceKotlin("1.2")\n@Suppress("NOTHING_TO_INLINE")\npublic actual inline fun max(a: Long, b:
Long): Long = if (a >= b) a else b\n\n/**\n * Returns the absolute value of this value.\n * Special cases:\n * -
`Long.MIN_VALUE.absoluteValue` is `Long.MIN_VALUE` due to an overflow\n * * @see abs function\n
*^@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline val Long.absoluteValue: Long get() =
abs(this)\n\n/**\n * Returns the sign of this value:\n * - `-1` if the
value is negative,\n * - `0` if the value is zero,\n * - `1` if the value is positive\n
*^@SinceKotlin("1.2")\npublic actual val Long.sign: Int get() = when {\n this < 0 -> -1\n this > 0 -> 1\n
else -> 0}\n\n// endregion\n", /*\n * Copyright 2010-2021 JetBrains s.r.o. and Kotlin Programming Language
contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n *^@n\npackage kotlin\n\n/**\n * Returns `true` if the specified number is a\n * Not-a-
Number (NaN) value, `false` otherwise.\n *^@npublic actual fun Double.isNaN(): Boolean = this != this\n\n/**\n *
Returns `true` if the specified number is a\n * Not-a-Number (NaN) value, `false` otherwise.\n *^@npublic actual fun
Float.isNaN(): Boolean = this != this\n\n/**\n * Returns `true` if this value is infinitely large in magnitude.\n
*^@npublic actual fun Double.isInfinite(): Boolean = this == Double.POSITIVE_INFINITY || this ==
Double.NEGATIVE_INFINITY\n\n/**\n * Returns `true` if this value is infinitely large in magnitude.\n *^@npublic actual fun Float.isInfinite(): Boolean =
this == Float.POSITIVE_INFINITY || this == Float.NEGATIVE_INFINITY\n\n/**\n * Returns `true` if the
argument is a finite floating-point value; returns `false` otherwise (for `NaN` and infinity arguments).\n *^@npublic

```

```

actual fun Double.isFinite(): Boolean = !isInfinite() && !isNaN()\n\n/**\n * Returns `true` if the argument is a finite
floating-point value; returns `false` otherwise (for `NaN` and infinity arguments).\n */\npublic actual fun
Float.isFinite(): Boolean = !isInfinite() && !isNaN()\n\n/**\n * Counts the number of set bits in the binary
representation of this [Int] number.\n */\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic actual fun
Int.countOneBits(): Int {\n // Hacker's Delight 5-1 algorithm\n var v = this\n v = (v and 0x55555555) +
(v.ushr(1) and 0x55555555)\n v = (v and 0x33333333) + (v.ushr(2)
and 0x33333333)\n v = (v and 0x0F0F0F0F) + (v.ushr(4) and 0x0F0F0F0F)\n v = (v and 0x00FF00FF) +
(v.ushr(8) and 0x00FF00FF)\n v = (v and 0x0000FFFF) + (v.ushr(16))\n return v}\n\n/**\n * Counts the
number of consecutive most significant bits that are zero in the binary representation of this [Int] number.\n */\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic
actual inline fun Int.countLeadingZeroBits(): Int = nativeClz32(this)\n\n/**\n * Counts the number of consecutive
least significant bits that are zero in the binary representation of this [Int] number.\n */\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic actual fun
Int.countTrailingZeroBits(): Int =\n // Hacker's Delight 5-4 algorithm for expressing countTrailingZeroBits with
countLeadingZeroBits\n Int.SIZE_BITS - (this or -this).inv().countLeadingZeroBits()\n\n/**\n * Returns a
number having a single bit set in the position
of the most significant set bit of this [Int] number,\n * or zero, if this number is zero.\n */\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic actual fun
Int.takeHighestOneBit(): Int =\n if (this == 0) 0 else 1.shl(Int.SIZE_BITS - 1 - countLeadingZeroBits())\n\n/**\n * Returns a number having a single bit set in the position of the least significant set bit of this [Int] number,\n * or
zero, if this number is zero.\n */\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic actual fun
Int.takeLowestOneBit(): Int =\n // Hacker's Delight 2-1 algorithm for isolating rightmost 1-bit\n this and -
this\n\n/**\n * Rotates the binary representation of this [Int] number left by the specified [bitCount] number of
bits.\n * The most significant bits pushed out from the left side reenter the number as the least significant bits on the
right side.\n * Rotating the number left by a negative bit count is the same as rotating it
right by the negated bit count:\n * `number.rotateLeft(-n) == number.rotateRight(n)`\n * Rotating by a multiple
of [Int.SIZE_BITS] (32) returns the same number, or more generally\n * `number.rotateLeft(n) ==
number.rotateLeft(n % 32)`\n */\n@SinceKotlin("1.6")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic actual fun
Int.rotateLeft(bitCount: Int): Int =\n shl(bitCount) or ushr(Int.SIZE_BITS - bitCount)\n\n/**\n * Rotates the
binary representation of this [Int] number right by the specified [bitCount] number of bits.\n * The least significant
bits pushed out from the right side reenter the number as the most significant bits on the left side.\n * Rotating
the number right by a negative bit count is the same as rotating it left by the negated bit count:\n *
`number.rotateRight(-n) == number.rotateLeft(n)`\n * Rotating by a multiple of [Int.SIZE_BITS] (32) returns
the same number, or more generally\n * `number.rotateRight(n) == number.rotateRight(n % 32)`\n */\n@SinceKotlin("1.6")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic
actual fun Int.rotateRight(bitCount: Int): Int =\n shl(Int.SIZE_BITS - bitCount) or ushr(bitCount)\n\n/**\n * Counts the number of set bits in the binary representation of this [Long] number.\n */\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic actual fun
Long.countOneBits(): Int =\n high.countOneBits() + low.countOneBits()\n\n/**\n * Counts the number of
consecutive most significant bits that are zero in the binary representation of this [Long] number.\n */\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic actual fun
Long.countLeadingZeroBits(): Int =\n when (val high = this.high) {\n 0 -> Int.SIZE_BITS +
low.countLeadingZeroBits()\n else -> high.countLeadingZeroBits()\n }\n\n/**\n * Counts the number of
consecutive least significant bits that are zero in the binary representation of this [Long] number.\n */\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic

```

```

actual fun Long.countTrailingZeroBits(): Int = when (val low = this.low) { \n    0 -> Int.SIZE_BITS +
high.countTrailingZeroBits()\n    else -> low.countTrailingZeroBits()\n } \n \n /** \n * Returns a number having a
single bit set in the position of the most significant set bit of this [Long] number, \n * or zero, if this number is
zero. \n */ \n @SinceKotlin("1.4") \n @WasExperimental(ExperimentalStdlibApi::class) \n public actual fun
Long.takeHighestOneBit(): Long = when (val high = this.high) { \n    0 -> Long(low.takeHighestOneBit(),
0)\n    else -> Long(0, high.takeHighestOneBit())\n } \n \n /** \n * Returns a number having a single bit set in the
position of the least significant set bit of this [Long] number, \n * or zero, if this number is zero. \n */ \n
@SinceKotlin("1.4") \n @WasExperimental(ExperimentalStdlibApi::class) \n public actual fun
Long.takeLowestOneBit(): Long = when (val low = this.low)
{ \n    0 -> Long(0, high.takeLowestOneBit())\n    else -> Long(low.takeLowestOneBit(), 0)\n } \n \n /** \n *
Rotates the binary representation of this [Long] number left by the specified [bitCount] number of bits. \n * The most
significant bits pushed out from the left side reenter the number as the least significant bits on the right side. \n *
Rotating the number left by a negative bit count is the same as rotating it right by the negated bit count: \n *
`number.rotateLeft(-n) == number.rotateRight(n)` \n * Rotating by a multiple of [Long.SIZE_BITS] (64) returns
the same number, or more generally \n * `number.rotateLeft(n) == number.rotateLeft(n % 64)` \n */ \n
@SinceKotlin("1.6") \n @WasExperimental(ExperimentalStdlibApi::class) \n public actual fun
Long.rotateLeft(bitCount: Int): Long { \n    if ((bitCount and 31) != 0) { \n        val low = this.low \n        val high =
this.high \n        val newLow = low.shl(bitCount) or high.ushr(-bitCount)\n        val newHigh = high.shl(bitCount)
or low.ushr(-bitCount)\n        return if ((bitCount and 32) == 0) Long(newLow, newHigh) else Long(newHigh,
newLow)\n    } else { \n        return if ((bitCount and 32) == 0) this else Long(high, low)\n    } \n } \n \n \n /** \n *
Rotates the binary representation of this [Long] number right by the specified [bitCount] number of bits. \n * The
least significant bits pushed out from the right side reenter the number as the most significant bits on the left side. \n
* Rotating the number right by a negative bit count is the same as rotating it left by the negated bit count: \n *
`number.rotateRight(-n) == number.rotateLeft(n)` \n * Rotating by a multiple of [Long.SIZE_BITS] (64) returns
the same number, or more generally \n * `number.rotateRight(n) == number.rotateRight(n % 64)` \n */ \n
@SinceKotlin("1.6") \n @WasExperimental(ExperimentalStdlibApi::class) \n @kotlin.internal.InlineOnly \n publi
c actual inline fun Long.rotateRight(bitCount: Int): Long = rotateLeft(-bitCount)\n", /* \n *
Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors. \n * Use of this source code
is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file. \n */ \n \n package
kotlin.js \n \n import kotlin.internal.LowPriorityInOverloadResolution \n \n /** \n * Exposes the JavaScript [Promise
object] (https://developer.mozilla.org/en/docs/Web/JavaScript/Reference/Global\_Objects/Promise) to Kotlin. \n
*/ \n @Suppress("NOT_DOCUMENTED") \n public open external class Promise<out T>(executor: (resolve: (T) ->
Unit, reject: (Throwable) -> Unit) -> Unit) { \n    @LowPriorityInOverloadResolution \n    public open fun <S>
then(onFulfilled: ((T) -> S)?): Promise<S> \n \n    @LowPriorityInOverloadResolution \n    public open fun <S>
then(onFulfilled: ((T) -> S)?, onRejected: ((Throwable) -> S)?): Promise<S> \n \n    public open fun <S>
catch(onRejected: (Throwable) -> S): Promise<S> \n \n    public open fun finally(onFinally: () -> Unit):
Promise<T> \n \n    companion object { \n        public fun <S> all(promise: Array<out Promise<S>>): Promise<Array<out S>> \n \n        public fun <S>
race(promise: Array<out Promise<S>>): Promise<S> \n \n        public fun reject(e: Throwable):
Promise<Nothing> \n \n        public fun <S> resolve(e: S): Promise<S> \n \n        public fun <S> resolve(e:
Promise<S>): Promise<S> \n    } \n } \n \n // It's workaround for KT-19672 since we can fix it properly until KT-11265
isn't fixed. \n inline fun <T, S> Promise<Promise<T>>.then(\n    noinline onFulfilled: ((T) -> S)?\n): Promise<S> { \n
return this.unsafeCast<Promise<T>>().then(onFulfilled)\n } \n \n inline fun <T, S> Promise<Promise<T>>.then(\n
noinline onFulfilled: ((T) -> S)?, \n    noinline onRejected: ((Throwable) -> S)?\n): Promise<S> { \n return
this.unsafeCast<Promise<T>>().then(onFulfilled, onRejected)\n } \n \n", /* \n * Copyright 2010-2018 JetBrains s.r.o.
and Kotlin Programming Language contributors. \n * Use of this source code is governed by the Apache 2.0 license
that can be found in

```

```

the license/LICENSE.txt file.\n */\n\npackage kotlin.random\n\nimport kotlin.math.pow\n\ninternal actual fun
defaultPlatformRandom(): Random =\n    Random(js(\n        (Math.random() * Math.pow(2, 32)) |
0\").unsafeCast<Int>())\n\nprivate val INV_2_26: Double = 2.0.pow(-26)\nprivate val INV_2_53: Double =
2.0.pow(-53)\n\ninternal actual fun doubleFromParts(hi26: Int, low27: Int): Double =\n    hi26 * INV_2_26 + low27 *
INV_2_53\n\n/*\n * Copyright 2010-2020 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use
of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*/\n\npackage kotlin.reflect\n\nimport findAssociatedObject\n\n/**\n * The experimental marker for associated
objects API.\n * Any usage of a declaration annotated with `@ExperimentalAssociatedObjects` must be
accepted either by\n * annotating that usage with the [OptIn] annotation, e.g.
`@OptIn(ExperimentalAssociatedObjects::class)`,\n * or by using the compiler
argument `-opt-in=kotlin.reflect.ExperimentalAssociatedObjects`.\n */\n\n@RequiresOptIn(level =
RequiresOptIn.Level.ERROR)\n@Retention(value = AnnotationRetention.BINARY)\n\npublic annotation class
ExperimentalAssociatedObjects\n\n/**\n * Makes the annotated annotation class an associated object key.\n */\n
An associated object key annotation should have single [KClass] parameter.\n * When applied to a class with
reference to an object declaration as an argument, it binds\n * the object to the class, making this binding
discoverable at runtime using [findAssociatedObject].\n
*/\n\n@ExperimentalAssociatedObjects\n@Retention(AnnotationRetention.BINARY)\n@Target(AnnotationTarget.A
NNOTATION_CLASS)\n\npublic annotation class AssociatedObjectKey\n\n/**\n * If [T] is an
@[AssociatedObjectKey]-annotated annotation class and [this] class is annotated with @[T] (`S::class`),\n * returns
object `S`.\n * Otherwise returns `null`.\n */\n\n@ExperimentalAssociatedObjects\n\npublic inline fun <reified
T : Annotation> KClass<*>.findAssociatedObject(): Any? =\n    this.findAssociatedObject(T::class)\n\n/*\n * Copyright
2010-2020 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is
governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\npackage
kotlin.js\n\nimport getKClass\n\nimport kotlin.reflect.KClass\n\nimport kotlin.reflect.js.internal.KClassImpl\n\n/**\n
 * Represents the constructor of a class. Instances of `JsClass` can be passed to JavaScript APIs that expect a
constructor reference.\n */\n\nexternal interface JsClass<T : Any> {\n    /**\n     * Returns the unqualified name of the
class represented by this instance.\n     */\n    val name: String\n}\n\n/**\n * Obtains a constructor reference for the
given `KClass`.\n */\n\nval <T : Any> KClass<T>.js: JsClass<T>\n    get() = (this as KClassImpl<T>).jClass\n\n/**\n
 * Obtains a `KClass` instance for the given constructor reference.\n */\n\nval <T : Any> JsClass<T>.kotlin:
KClass<T>\n    get() = getKClass(this)\n\n/*\n * Copyright 2010-2020 JetBrains s.r.o. and Kotlin Programming
Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n */\n\npackage kotlin.reflect.js.internal\n\nimport kotlin.reflect.*\n\ninternal abstract
class KClassImpl<T : Any>(\n    internal open val jClass: JsClass<T>)\n    : KClass<T> {\n\n    override val
qualifiedName: String?\n    get() = TODO()\n\n    override fun equals(other: Any?): Boolean {\n        return other
is KClassImpl<*> && jClass == other.jClass\n    }\n\n    // TODO: use FQN\n    override fun hashCode(): Int =
simpleName?.hashCode() ?: 0\n\n    override fun toString(): String {\n        // TODO: use FQN\n        return
"class $simpleName"\n    }\n}\n\ninternal class SimpleKClassImpl<T : Any>(jClass: JsClass<T>) :
KClassImpl<T>(jClass) {\n    override val simpleName: String? =
jClass.asDynamic().`$metadata$`.simpleName.unsafeCast<String?>()\n\n    override fun isInstance(value: Any?): Boolean {\n
        return jsIsType(value, jClass)\n    }\n}\n\ninternal class
PrimitiveKClassImpl<T : Any>(\n    jClass: JsClass<T>,\n    private val givenSimpleName: String,\n    private val
isInstanceFunction: (Any?) -> Boolean)\n    : KClassImpl<T>(jClass) {\n    override fun equals(other: Any?): Boolean
{\n        if (other !is PrimitiveKClassImpl<*>) return false\n        return super.equals(other) && givenSimpleName
== other.givenSimpleName\n    }\n\n    override val simpleName: String? get() = givenSimpleName\n\n    override
fun isInstance(value: Any?): Boolean {\n        return isInstanceFunction(value)\n    }\n}\n\ninternal object
NothingKClassImpl : KClassImpl<Nothing>(js("Object")) {\n    override val simpleName: String =
"Nothing"\n\n    override fun isInstance(value: Any?): Boolean = false\n\n    override val jClass:
JsClass<Nothing>\n    get() = throw UnsupportedOperationException("There's no native

```

```

JS class for Nothing type`)
override fun equals(other: Any?): Boolean = other === this
override fun hashCode(): Int = 0
internal class ErrorKClass : KClass<Nothing> {
    override val simpleName: String? get() = error("Unknown simpleName for ErrorKClass")
    override val qualifiedName: String? get() = error("Unknown qualifiedName for ErrorKClass")
    override fun isInstance(value: Any?): Boolean = error("Can's check isInstance on ErrorKClass")
    override fun equals(other: Any?): Boolean = other === this
    override fun hashCode(): Int = 0
}
/* Copyright 2010-2019 JetBrains s.r.o. and Kotlin Programming Language contributors.
 * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.
 */
package kotlin.reflect
internal actual inline val KClass<*>.qualifiedOrSimpleName: String? get() = simpleName
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 * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.
 */
// a package is omitted to get declarations directly under the module
// TODO: Remove once JsReflectionAPICallChecker supports more reflection
types
@file:Suppress("Unsupported")
import kotlin.reflect.*
import kotlin.reflect.js.internal.*
@JsName("createKType")
internal fun createKType(
    classifier: KClassifier,
    arguments: Array<KTypeProjection>,
    isMarkedNullable: Boolean
) = KTypeImpl(
    classifier,
    arguments.asList(),
    isMarkedNullable
)
@JsName("createDynamicKType")
internal fun createDynamicKType(): KType = DynamicKType
@JsName("markKTypeNullable")
internal fun markKTypeNullable(
    kType: KType
) = KTypeImpl(
    kType.classifier!!,
    kType.arguments,
    true
)
@JsName("createKTypeParameter")
internal fun createKTypeParameter(
    name: String,
    upperBounds: Array<KType>,
    variance: String
): KTypeParameter {
    val kVariance = when (variance) {
        "in" -> KVariance.IN
        "out" -> KVariance.OUT
        else -> KVariance.INVARIANT
    }
    return KTypeParameterImpl(
        name,
        upperBounds.asList(),
        kVariance,
        false
    )
}
@JsName("getStarKTypeProjection")
internal fun getStarKTypeProjection(): KTypeProjection = KTypeProjection.STAR
@JsName("createCovariantKTypeProjection")
internal fun createCovariantKTypeProjection(
    type: KType
): KTypeProjection = KTypeProjection.covariant(
    type
)
@JsName("createInvariantKTypeProjection")
internal fun createInvariantKTypeProjection(
    type: KType
): KTypeProjection = KTypeProjection.invariant(
    type
)
@JsName("createContravariantKTypeProjection")
internal fun createContravariantKTypeProjection(
    type: KType
): KTypeProjection = KTypeProjection.contravariant(
    type
)
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 */
package kotlin.reflect.js.internal
import kotlin.reflect.*
internal class KTypeImpl(
    override val classifier: KClassifier,
    override val arguments: List<KTypeProjection>,
    override val isMarkedNullable: Boolean
): KType {
    override fun equals(
        other: Any?
    ): Boolean = other is KTypeImpl && classifier == other.classifier && arguments == other.arguments && isMarkedNullable == other.isMarkedNullable
    override fun hashCode(): Int = (classifier.hashCode() * 31 + arguments.hashCode()) * 31 + isMarkedNullable.hashCode()
    override fun toString(): String {
        val kClass = (classifier as? KClass<*>)
        val classifierName = when {
            kClass == null -> classifier.toString()
            kClass.simpleName != null -> kClass.simpleName
            else -> "(non-denotable type)"
        }
        val args = if (arguments.isEmpty()) "" else arguments.joinToString(", ", "<", ">")
        val nullable = if (isMarkedNullable) "?" else ""
        return classifierName + args + nullable
    }
}
internal object DynamicKType : KType {
    override val classifier: KClassifier? = null
    override val arguments: List<KTypeProjection> = emptyList()
    override val isMarkedNullable: Boolean = false
    override fun toString(): String = "dynamic"
}
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 * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.
 */
package kotlin.reflect.js.internal
import kotlin.reflect.*
internal data class

```



```

KTypeParameterImpl(\n  override val name: String,\n  override val upperBounds: List<KType>,\n  override val variance: KVariance,\n  override val isReified: Boolean)\n) : KTypeParameter {\n  override fun toString(): String = name\n}, "/*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\npackage kotlin.reflect.js.internal\n\nimport kotlin.js.JsClass\n\n@JsName("PrimitiveClasses")\n\ninternal object PrimitiveClasses {\n  @JsName("anyClass")\n  val anyClass = PrimitiveKClassImpl(js("Object").unsafeCast<JsClass<Any>>(), "Any", { it is Any })\n\n  @JsName("numberClass")\n  val numberClass = PrimitiveKClassImpl(js("Number").unsafeCast<JsClass<Number>>(), "Number", { it is Number })\n\n  @JsName("nothingClass")\n  val nothingClass = NothingKClassImpl\n\n  @JsName("booleanClass")\n  val booleanClass = PrimitiveKClassImpl(js("Boolean").unsafeCast<JsClass<Boolean>>(), "Boolean", { it is Boolean })\n\n  @JsName("byteClass")\n  val byteClass = PrimitiveKClassImpl(js("Number").unsafeCast<JsClass<Byte>>(), "Byte", { it is Byte })\n\n  @JsName("shortClass")\n  val shortClass = PrimitiveKClassImpl(js("Number").unsafeCast<JsClass<Short>>(), "Short", { it is Short })\n\n  @JsName("intClass")\n  val intClass = PrimitiveKClassImpl(js("Number").unsafeCast<JsClass<Int>>(), "Int", { it is Int })\n\n  @JsName("floatClass")\n  val floatClass = PrimitiveKClassImpl(js("Number").unsafeCast<JsClass<Float>>(), "Float", { it is Float })\n\n  @JsName("doubleClass")\n  val doubleClass = PrimitiveKClassImpl(js("Number").unsafeCast<JsClass<Double>>(), "Double", { it is Double })\n\n  @JsName("arrayClass")\n  val arrayClass = PrimitiveKClassImpl(js("Array").unsafeCast<JsClass<Array<*>>(), "Array", { it is Array<*> })\n\n  @JsName("stringClass")\n  val stringClass = PrimitiveKClassImpl(js("String").unsafeCast<JsClass<String>>(), "String", { it is String })\n\n  @JsName("throwableClass")\n  val throwableClass = PrimitiveKClassImpl(js("Error").unsafeCast<JsClass<Throwable>>(), "Throwable", { it is Throwable })\n\n  @JsName("booleanArrayClass")\n  val booleanArrayClass = PrimitiveKClassImpl(js("Array").unsafeCast<JsClass<BooleanArray>>(), "BooleanArray", { it is BooleanArray })\n\n  @JsName("charArrayClass")\n  val charArrayClass = PrimitiveKClassImpl(js("Uint16Array").unsafeCast<JsClass<CharArray>>(), "CharArray", { it is CharArray })\n\n  @JsName("byteArrayClass")\n  val byteArrayClass = PrimitiveKClassImpl(js("Int8Array").unsafeCast<JsClass<ByteArray>>(), "ByteArray", { it is ByteArray })\n\n  @JsName("shortArrayClass")\n  val shortArrayClass = PrimitiveKClassImpl(js("Int16Array").unsafeCast<JsClass<ShortArray>>(), "ShortArray", { it is ShortArray })\n\n  @JsName("intArrayClass")\n  val intArrayClass = PrimitiveKClassImpl(js("Int32Array").unsafeCast<JsClass<IntArray>>(), "IntArray", { it is IntArray })\n\n  @JsName("longArrayClass")\n  val longArrayClass = PrimitiveKClassImpl(js("Array").unsafeCast<JsClass<LongArray>>(), "LongArray", { it is LongArray })\n\n  @JsName("floatArrayClass")\n  val floatArrayClass = PrimitiveKClassImpl(js("Float32Array").unsafeCast<JsClass<FloatArray>>(), "FloatArray", { it is FloatArray })\n\n  @JsName("doubleArrayClass")\n  val doubleArrayClass = PrimitiveKClassImpl(js("Float64Array").unsafeCast<JsClass<DoubleArray>>(), "DoubleArray", { it is DoubleArray })\n\n  @JsName("functionClass")\n  fun functionClass(arity: Int): KClassImpl<Any> {\n    return functionClasses.get(arity) ?: run {\n      val result = PrimitiveKClassImpl(js("Function").unsafeCast<JsClass<Any>>(), "Function$arity", {\n        { jsTypeOf(it) === "function" && it.asDynamic().length === arity })\n      }\n      functionClasses.asDynamic()[arity] = result\n      result\n    }\n  }\n\n  private val functionClasses = arrayOfNulls<KClassImpl<Any>>(0), "/*\n *

```

```

Copyright 2010-2020 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code
is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\n// a package is
omitted to get declarations directly under the module\n\nimport kotlin.reflect.*\nimport
kotlin.reflect.js.internal.*\n\n@JsName("\ngetKClass")\ninternal fun <T : Any> getKClass(jClass: Any /*
JsClass<T> | Array<JsClass<T>> */): KClass<T> {\n    return if (js("\nArray").isArray(jClass)) {\n
getKClassM(jClass.unsafeCast<Array<JsClass<T>>())\n    } else {\n
getKClass1(jClass.unsafeCast<JsClass<T>>())\n    }\n}\n\n@JsName("\ngetKClassM")\ninternal fun <T : Any>
getKClassM(jClasses: Array<JsClass<T>>): KClass<T> = when (jClasses.size) {\n    1 ->
getKClass1(jClasses[0])\n    0 -> Nothing\n    KClassImpl.unsafeCast<KClass<T>>()\n    else ->
ErrorKClass().unsafeCast<KClass<T>>()\n}\n\n@JsName("\ngetKClassFromExpression")\ninternal fun <T : Any>
getKClassFromExpression(e:
T): KClass<T> =\n    when (jsTypeOf(e)) {\n        "string" -> PrimitiveClasses.stringClass\n        "number" -> if
(jsBitwiseOr(e, 0).asDynamic() === e) PrimitiveClasses.intClass else PrimitiveClasses.doubleClass\n
"boolean" -> PrimitiveClasses.booleanClass\n        "function" ->
PrimitiveClasses.functionClass(e.asDynamic().length)\n        else -> {\n            when {\n                e is BooleanArray
-> PrimitiveClasses.booleanArrayClass\n                e is CharArray -> PrimitiveClasses.charArrayClass\n
                e is ByteArray -> PrimitiveClasses.byteArrayClass\n                e is ShortArray -> PrimitiveClasses.shortArrayClass\n
                e is IntArray -> PrimitiveClasses.intArrayClass\n                e is LongArray ->
PrimitiveClasses.longArrayClass\n                e is FloatArray -> PrimitiveClasses.floatArrayClass\n                e is
DoubleArray -> PrimitiveClasses.doubleArrayClass\n                e is KClass<*> -> KClass::class\n
                e is Array<*> -> PrimitiveClasses.arrayClass\n                else -> {\n                    val constructor =
js("\nObject").getPrototypeOf(e).constructor\n                    when {\n                        constructor === js("\nObject") ->
PrimitiveClasses.anyClass\n                        constructor === js("\nError") -> PrimitiveClasses.throwableClass\n
                        else -> {\n                            val jsClass: JsClass<T> = constructor\n                            getKClass1(jsClass)\n
                        }\n                    }\n                }\n            }\n        }\n    }\n}\n\nunsafeCast<KClass<T>>()\n\n@JsName("\ngetKClass1")\ninternal fun <T : Any> getKClass1(jClass:
JsClass<T>): KClass<T> {\n    if (jClass === js("\nString")) return
PrimitiveClasses.stringClass.unsafeCast<KClass<T>>()\n    val metadata = jClass.asDynamic().`$metadata$\n\n
return if (metadata != null) {\n        if (metadata.`$kClass$` == null) {\n            val kClass =
SimpleKClassImpl(jClass)\n            metadata.`$kClass$` = kClass\n            kClass\n        } else {\n
metadata.`$kClass$`\n        }\n    } else {\n        SimpleKClassImpl(jClass)\n    }\n}\n\n/*\n * Copyright 2010-2018
JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the
Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\npackage kotlin.js\n\n/**\n * Exposes
the JavaScript [RegExp
object](https://developer.mozilla.org/en/docs/Web/JavaScript/Reference/Global_Objects/RegExp) to Kotlin.\n
*\n */\n\n@Suppress("\nNOT_DOCUMENTED")\npublic external class RegExp(pattern: String, flags: String? =
definedExternally) {\n    public fun test(str: String): Boolean\n    public fun exec(str: String): RegExpMatch?\n\n
public override fun toString(): String\n\n    /**\n     * The lastIndex is a read/write integer property of regular
expressions that specifies the index at which to start the next match.\n
*\n     */\n    public var lastIndex: Int\n\n    public val global: Boolean\n    public val ignoreCase: Boolean\n    public val
multiline: Boolean\n}\n\n/**\n * Resets the regular expression so that subsequent [RegExp.test] and [RegExp.exec]
calls will match starting with the beginning of the input string.\n
*\n */\n\npublic fun RegExp.reset() {\n    lastIndex =
0\n}\n\n// TODO: Inherit from array or introduce asArray() extension\n\n/**\n * Represents the return value of
[RegExp.exec].\n
*\n */\n\n@Suppress("\nNOT_DOCUMENTED")\npublic external interface RegExpMatch {\n    public
val index: Int\n    public val input: String\n    public val length: Int\n}\n\n/**\n * Returns the entire text matched by
[RegExp.exec] if the [index] parameter is 0, or the text matched by the capturing parenthesis\n
* at the given index.\n
*\n */\n\npublic inline operator fun RegExpMatch.get(index: Int): String? = asDynamic()[index]\n\n/**\n *
Converts the result of [RegExp.exec] to an array where the first element contains the entire

```

```

matched text and each subsequent\n * element is the text matched by each capturing parenthesis.\n *\npublic inline
fun RegExpMatch.asArray(): Array<out String?> = unsafeCast<Array<out String?>>()\n", /*\n * Copyright 2010-
2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the
Apache 2.0 license that can be found in the license/LICENSE.txt file.\n *\n\npackage kotlin.sequences\n\ninternal
actual class ConstrainedOnceSequence<T> actual constructor(sequence: Sequence<T>) : Sequence<T> {\n private
var sequenceRef: Sequence<T>? = sequence\n\n actual override fun iterator(): Iterator<T> {\n val sequence =
sequenceRef ?: throw IllegalStateException("This sequence can be consumed only once.")\n sequenceRef =
null\n return sequence.iterator()\n }\n}\n", /*\n * Copyright 2010-2020 JetBrains s.r.o. and Kotlin
Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0
license that can be found in the license/LICENSE.txt file.\n *\n\npackage
kotlin.text\n\n@SinceKotlin("1.5")\npublic actual enum class CharCategory(internal val value: Int, public actual
val code: String) {\n /**\n * General category \"Cn\" in the Unicode specification.\n * UNASSIGNED(0,
\"Cn\"),\n\n /**\n * General category \"Lu\" in the Unicode specification.\n * UPPERCASE_LETTER(1,
\"Lu\"),\n\n /**\n * General category \"Ll\" in the Unicode specification.\n * LOWERCASE_LETTER(2,
\"Ll\"),\n\n /**\n * General category \"Ll\" in the Unicode specification.\n * TITLECASE_LETTER(3,
\"Ll\"),\n\n /**\n * General category \"Lm\" in the Unicode specification.\n * MODIFIER_LETTER(4,
\"Lm\"),\n\n /**\n * General category \"Lo\" in the Unicode specification.\n * OTHER_LETTER(5,
\"Lo\"),\n\n /**\n * General category \"Mn\" in the Unicode specification.\n * NON_SPACING_MARK(6,
\"Mn\"),\n\n /**\n * General category \"Me\" in the Unicode specification.\n * ENCLOSING_MARK(7,
\"Me\"),\n\n /**\n * General category \"Mc\" in the Unicode specification.\n * COMBINING_SPACING_MARK(8,
\"Mc\"),\n\n /**\n * General category \"Nd\" in the Unicode
specification.\n * DECIMAL_DIGIT_NUMBER(9, \"Nd\"),\n\n /**\n * General category \"Nl\" in the
Unicode specification.\n * LETTER_NUMBER(10, \"Nl\"),\n\n /**\n * General category \"No\" in the
Unicode specification.\n * OTHER_NUMBER(11, \"No\"),\n\n /**\n * General category \"Zs\" in the
Unicode specification.\n * SPACE_SEPARATOR(12, \"Zs\"),\n\n /**\n * General category \"Zl\" in the
Unicode specification.\n * LINE_SEPARATOR(13, \"Zl\"),\n\n /**\n * General category \"Zp\" in the
Unicode specification.\n * PARAGRAPH_SEPARATOR(14, \"Zp\"),\n\n /**\n * General category
\"Cc\" in the Unicode
specification.\n * CONTROL(15, \"Cc\"),\n\n /**\n * General category \"Cf\" in the Unicode
specification.\n * FORMAT(16, \"Cf\"),\n\n /**\n * General category \"Co\" in the Unicode
specification.\n * PRIVATE_USE(18, \"Co\"),\n\n /**\n * General category \"Cs\" in the Unicode
specification.\n * SURROGATE(19, \"Cs\"),\n\n /**\n * General category \"Pd\" in the Unicode
specification.\n * DASH_PUNCTUATION(20, \"Pd\"),\n\n /**\n * General category \"Ps\" in the
Unicode specification.\n * START_PUNCTUATION(21, \"Ps\"),\n\n /**\n * General category \"Pe\" in
the Unicode specification.\n * END_PUNCTUATION(22, \"Pe\"),\n\n /**\n * General category \"Pc\" in
the Unicode specification.\n * CONNECTOR_PUNCTUATION(23, \"Pc\"),\n\n /**\n * General
category \"Po\" in the Unicode specification.\n * OTHER_PUNCTUATION(24, \"Po\"),\n\n /**\n *
General
category \"Sm\" in the Unicode specification.\n * MATH_SYMBOL(25, \"Sm\"),\n\n /**\n * General
category \"Sc\" in the Unicode specification.\n * CURRENCY_SYMBOL(26, \"Sc\"),\n\n /**\n *
General category \"Sk\" in the Unicode specification.\n * MODIFIER_SYMBOL(27, \"Sk\"),\n\n /**\n *
General category \"So\" in the Unicode specification.\n * OTHER_SYMBOL(28, \"So\"),\n\n /**\n *
General category \"Pi\" in the Unicode specification.\n * INITIAL_QUOTE_PUNCTUATION(29,
\"Pi\"),\n\n /**\n * General category \"Pf\" in the Unicode specification.\n * FINAL_QUOTE_PUNCTUATION(30,
\"Pf\");\n\n /**\n * Returns `true` if [char] character belongs to this
category.\n * public actual operator fun contains(char: Char): Boolean = char.getCategoryValue() ==
this.value\n\n companion object {\n internal fun valueOf(category: Int): CharCategory =\n when

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(category) {\n
    in 0..16 -> values()[category]\n          in 18..30 -> values()[category - 1]\n          else -> throw
IllegalArgumentException("Category #${category} is not defined.")\n          }\n }\n\n"/*\n * Copyright 2010-
2019 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the
Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\npackage kotlin.text\n\n/**\n * The
exception thrown when a character encoding or decoding error occurs.\n
*/\n\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic actual open class
CharacterCodingException(message: String?) : Exception(message) {\n    actual constructor() : this(null)\n}\n\n"/*\n
* Copyright 2010-2020 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code
is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\npackage
kotlin.text\n\n/**\n * A mutable
sequence of characters.\n * String builder can be used to efficiently perform multiple string manipulation
operations.\n */\n\npublic actual class StringBuilder actual constructor(content: String) : Appendable, CharSequence
{\n    /**\n     * Constructs an empty string builder with the specified initial [capacity].\n     * In Kotlin/JS
implementation of StringBuilder the initial capacity has no effect on the further performance of operations.\n     */\n
    actual constructor(capacity: Int) : this() {\n    }\n\n    /** Constructs a string builder that contains the same
characters as the specified [content] char sequence. */\n    actual constructor(content: CharSequence) :
this(content.toString()) {\n    }\n\n    /** Constructs an empty string builder. */\n    actual constructor() : this("")\n\n
private var string: String = if (content != undefined) content else ""\n\n    actual override val length: Int\n
get() = string.asDynamic().length\n\n    actual override fun
get(index: Int): Char =\n        string.getOrElse(index) { throw IndexOutOfBoundsException("index: $index, length:
$length") }\n\n    actual override fun subSequence(startIndex: Int, endIndex: Int): CharSequence =
string.substring(startIndex, endIndex)\n\n    actual override fun append(value: Char): StringBuilder {\n        string +=
value\n        return this\n    }\n\n    actual override fun append(value: CharSequence?): StringBuilder {\n        string
+= value.toString()\n        return this\n    }\n\n    actual override fun append(value: CharSequence?, startIndex: Int,
endIndex: Int): StringBuilder =\n        this.appendRange(value ?: "null", startIndex, endIndex)\n\n    /**\n     *
Reverses the contents of this string builder and returns this instance.\n     * Surrogate pairs included in this
string builder are treated as single characters.\n     * Therefore, the order of the high-low surrogates is never
reversed.\n     * Note that the reverse operation may
produce new surrogate pairs that were unpaired low-surrogates and high-surrogates before the operation.\n     * For
example, reversing "\uDC00\uD800" produces "\uD800\uDC00" which is a valid surrogate pair.\n     */\n\n    actual fun reverse(): StringBuilder {\n        var reversed = ""\n        var index = string.length - 1\n        while (index
>= 0) {\n            val low = string[index--]\n            if (low.isLowSurrogate() && index >= 0) {\n                val high =
string[index--]\n                if (high.isHighSurrogate()) {\n                    reversed = reversed + high + low\n                }
else {\n                    reversed = reversed + low + high\n                }\n            } else {\n                reversed += low\n            }\n        }\n        string = reversed\n        return this\n    }\n\n    /**\n     * Appends the string representation of the
specified object [value] to this string builder and returns this instance.\n     * The overall
effect is exactly as if the [value] were converted to a string by the `value.toString()` method,\n     * and then that
string was appended to this string builder.\n     */\n\n    actual fun append(value: Any?): StringBuilder {\n        string
+= value.toString()\n        return this\n    }\n\n    /**\n     * Appends the string representation of the specified boolean
[value] to this string builder and returns this instance.\n     * The overall effect is exactly as if the [value] were
converted to a string by the `value.toString()` method,\n     * and then that string was appended to this string
builder.\n     */\n\n    @SinceKotlin("1.3")\n    actual fun append(value: Boolean): StringBuilder {\n        string +=
value\n        return this\n    }\n\n    /**\n     * Appends characters in the specified character array [value] to this string
builder and returns this instance.\n     * Characters are appended in order, starting at the index 0.\n     */\n\n    @SinceKotlin("1.4")\n\n    @WasExperimental(ExperimentalStdlibApi::class)\n    actual fun append(value: CharArray): StringBuilder {\n        string += value.concatToString()\n        return this\n    }\n\n    /**\n     * Appends the specified string [value] to this

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string builder and returns this instance.\n * \n * If [value] is `null`, then the four characters `"\null"` are
appended.\n * \n @SinceKotlin("1.3")\n actual fun append(value: String?): StringBuilder {\n this.string
+= value ?: "\null"\n return this\n }\n\n /** \n * Returns the current capacity of this string builder.\n * \n * The capacity is the maximum length this string builder can have before an allocation occurs.\n * \n * In
Kotlin/JS implementation of StringBuilder the value returned from this method may not indicate the actual size of
the backing storage.\n * \n @SinceKotlin("1.3")\n// @ExperimentalStdlibApi\n @Deprecated("Obtaining
StringBuilder capacity is
not supported in JS and common code.", level = DeprecationLevel.ERROR)\n actual fun capacity(): Int =
length\n\n /** \n * Ensures that the capacity of this string builder is at least equal to the specified
[minimumCapacity].\n * \n * If the current capacity is less than the [minimumCapacity], a new backing storage
is allocated with greater capacity.\n * Otherwise, this method takes no action and simply returns.\n * \n * In
Kotlin/JS implementation of StringBuilder the size of the backing storage is not extended to comply the given
[minimumCapacity],\n * thus calling this method has no effect on the further performance of operations.\n * \n
@SinceKotlin("1.4")\n @WasExperimental(ExperimentalStdlibApi::class)\n actual fun
ensureCapacity(minimumCapacity: Int) {\n }\n\n /** \n * Returns the index within this string builder of the
first occurrence of the specified [string].\n * \n * Returns -1 if the specified [string] does not
occur in this string builder.\n * \n @SinceKotlin("1.4")\n
@WasExperimental(ExperimentalStdlibApi::class)\n actual fun indexOf(string: String): Int =
this.string.asDynamic().indexOf(string)\n\n /** \n * Returns the index within this string builder of the first
occurrence of the specified [string],\n * starting at the specified [startIndex].\n * \n * Returns -1 if the
specified [string] does not occur in this string builder starting at the specified [startIndex].\n * \n
@SinceKotlin("1.4")\n @WasExperimental(ExperimentalStdlibApi::class)\n actual fun indexOf(string: String,
startIndex: Int): Int = this.string.asDynamic().indexOf(string, startIndex)\n\n /** \n * Returns the index within
this string builder of the last occurrence of the specified [string].\n * The last occurrence of empty string `""` is
considered to be at the index equal to `this.length`.\n * \n * Returns -1 if the specified [string] does not occur
in
this string builder.\n * \n @SinceKotlin("1.4")\n @WasExperimental(ExperimentalStdlibApi::class)\n
actual fun lastIndexOf(string: String): Int = this.string.asDynamic().lastIndexOf(string)\n\n /** \n * Returns the
index within this string builder of the last occurrence of the specified [string],\n * starting from the specified
[startIndex] toward the beginning.\n * \n * Returns -1 if the specified [string] does not occur in this string
builder starting at the specified [startIndex].\n * \n @SinceKotlin("1.4")\n
@WasExperimental(ExperimentalStdlibApi::class)\n actual fun lastIndexOf(string: String, startIndex: Int): Int {\n
if (string.isEmpty() && startIndex < 0) return -1\n return this.string.asDynamic().lastIndexOf(string,
startIndex)\n }\n\n /** \n * Inserts the string representation of the specified boolean [value] into this string
builder at the specified [index] and returns this instance.\n * \n * The
overall effect is exactly as if the [value] were converted to a string by the `value.toString()` method,\n * and then
that string was inserted into this string builder at the specified [index].\n * \n * @throws
IndexOutOfBoundsException if [index] is less than zero or greater than the length of this string builder.\n * \n
@SinceKotlin("1.4")\n @WasExperimental(ExperimentalStdlibApi::class)\n actual fun insert(index: Int, value:
Boolean): StringBuilder {\n AbstractList.checkPositionIndex(index, length)\n string = string.substring(0,
index) + value + string.substring(index)\n return this\n }\n\n /** \n * Inserts the specified character [value]
into this string builder at the specified [index] and returns this instance.\n * \n * @throws
IndexOutOfBoundsException if [index] is less than zero or greater than the length of this string builder.\n * \n
@SinceKotlin("1.4")\n @WasExperimental(ExperimentalStdlibApi::class)\n
actual fun insert(index: Int, value: Char): StringBuilder {\n AbstractList.checkPositionIndex(index,
length)\n string = string.substring(0, index) + value + string.substring(index)\n return this\n }\n\n /** \n * Inserts characters in the specified character array [value] into this string builder at the specified [index]
and returns this instance.\n * \n * The inserted characters go in same order as in the [value] character array,

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```

starting at [index].\n * \n * @throws IndexOutOfBoundsException if [index] is less than zero or greater than the
length of this string builder.\n * \n @SinceKotlin("1.4")\n
@WasExperimental(ExperimentalStdlibApi::class)\n actual fun insert(index: Int, value: CharArray): String Builder
{\n    AbstractList.checkPositionIndex(index, length)\n\n    string = string.substring(0, index) +
value.concatToString() + string.substring(index)\n    return this\n }\n\n /** \n * Inserts
characters in the specified character sequence [value] into this string builder at the specified [index] and returns this
instance.\n * \n * The inserted characters go in the same order as in the [value] character sequence, starting at
[index].\n * \n * @param index the position in this string builder to insert at.\n * @param value the character
sequence from which characters are inserted. If [value] is `null`, then the four characters `"\u0000\u0000\u0000\u0000"` are inserted.\n
* \n * @throws IndexOutOfBoundsException if [index] is less than zero or greater than the length of this string
builder.\n * \n @SinceKotlin("1.4")\n @WasExperimental(ExperimentalStdlibApi::class)\n actual fun
insert(index: Int, value: CharSequence?): String Builder {\n    AbstractList.checkPositionIndex(index, length)\n\n
    string = string.substring(0, index) + value.toString() + string.substring(index)\n    return this\n }\n\n /** \n
* Inserts the string representation
of the specified object [value] into this string builder at the specified [index] and returns this instance.\n * \n *
The overall effect is exactly as if the [value] were converted to a string by the `value.toString()` method,\n * and
then that string was inserted into this string builder at the specified [index].\n * \n * @throws
IndexOutOfBoundsException if [index] is less than zero or greater than the length of this string builder.\n * \n
@SinceKotlin("1.4")\n @WasExperimental(ExperimentalStdlibApi::class)\n actual fun insert(index: Int, value:
Any?): String Builder {\n    AbstractList.checkPositionIndex(index, length)\n\n    string = string.substring(0,
index) + value.toString() + string.substring(index)\n    return this\n }\n\n /** \n * Inserts the string [value]
into this string builder at the specified [index] and returns this instance.\n * \n * If [value] is `null`, then the four
characters `"\u0000\u0000\u0000\u0000"` are inserted.\n
* \n * @throws IndexOutOfBoundsException if [index] is less than zero or greater than the length of this string
builder.\n * \n @SinceKotlin("1.4")\n @WasExperimental(ExperimentalStdlibApi::class)\n actual fun
insert(index: Int, value: String?): String Builder {\n    AbstractList.checkPositionIndex(index, length)\n\n    val
toInsert = value ?: "\u0000\u0000\u0000\u0000"\n    this.string = this.string.substring(0, index) + toInsert + this.string.substring(index)\n
return this\n }\n\n /** \n * Sets the length of this string builder to the specified [newLength].\n * \n *
If the [newLength] is less than the current length, it is changed to the specified [newLength].\n * Otherwise, null
characters `"\u0000\u0000\u0000\u0000"` are appended to this string builder until its length is less than the [newLength].\n
* \n * Note that in Kotlin/JS [set] operator function has non-constant execution time complexity.\n * Therefore,
increasing length of this string
builder and then updating each character by index may slow down your program.\n * \n * @throws
IndexOutOfBoundsException or [IllegalArgumentException] if [newLength] is less than zero.\n * \n
@SinceKotlin("1.4")\n @WasExperimental(ExperimentalStdlibApi::class)\n actual fun setLength(newLength:
Int) {\n    if (newLength < 0) {\n        throw IllegalArgumentException("Negative new length:
$newLength.")\n    }\n\n    if (newLength <= length) {\n        string = string.substring(0, newLength)\n    }
else {\n        for (i in length until newLength) {\n            string += "\u0000\u0000\u0000\u0000"\n        }\n    }\n\n /** \n
* Returns a new [String] that contains characters in this string builder at [startIndex] (inclusive) and up to the
[length] (exclusive).\n * \n * @throws IndexOutOfBoundsException if [startIndex] is less than zero or greater
than the length of this string builder.\n * \n @SinceKotlin("1.4")\n
@WasExperimental(ExperimentalStdlibApi::class)\n actual fun substring(startIndex: Int): String {\n
AbstractList.checkPositionIndex(startIndex, length)\n\n    return string.substring(startIndex)\n }\n\n /** \n
* Returns a new [String] that contains characters in this string builder at [startIndex] (inclusive) and up to the
[endIndex] (exclusive).\n * \n * @throws IndexOutOfBoundsException or [IllegalArgumentException] when
[startIndex] or [endIndex] is out of range of this string builder indices or when `startIndex > endIndex`.\n * \n
@SinceKotlin("1.4")\n @WasExperimental(ExperimentalStdlibApi::class)\n actual fun substring(startIndex:
Int, endIndex: Int): String {\n    AbstractList.checkBoundsIndexes(startIndex, endIndex, length)\n\n    return

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string.substring(startIndex, endIndex)\n } \n\n /**\n * Attempts to reduce storage used for this string builder.\n *\n * If the backing storage of this string builder\n is larger than necessary to hold its current contents,\n * then it may be resized to become more space efficient.\n * Calling this method may, but is not required to, affect the value of the [capacity] property.\n *\n * In\n Kotlin/JS implementation of StringBuilder the size of the backing storage is always equal to the length of the string\n builder.\n *\n @SinceKotlin("1.4")\n @WasExperimental(ExperimentalStdlibApi::class)\n actual fun\n trimToSize() {\n }\n\n override fun toString(): String = string\n\n /**\n * Clears the content of this string\n builder making it empty and returns this instance.\n *\n * @sample samples.text.Strings.clearStringBuilder\n *\n @SinceKotlin("1.3")\n public fun clear(): StringBuilder {\n string = ""\n return this\n }\n\n /**\n * Sets the character at the specified [index] to the specified [value].\n *\n * @throws\n IndexOutOfBoundsException if [index] is out of bounds\n of this string builder.\n *\n @SinceKotlin("1.4")\n @WasExperimental(ExperimentalStdlibApi::class)\n public operator fun set(index: Int, value: Char) {\n AbstractList.checkElementIndex(index, length)\n\n string = string.substring(0, index) + value + string.substring(index + 1)\n }\n\n /**\n * Replaces characters in\n the specified range of this string builder with characters in the specified string [value] and returns this instance.\n *\n * @param startIndex the beginning (inclusive) of the range to replace.\n * @param endIndex the end\n (exclusive) of the range to replace.\n * @param value the string to replace with.\n *\n * @throws\n IndexOutOfBoundsException or [IllegalArgumentException] if [startIndex] is less than zero, greater than the length\n of this string builder, or `startIndex > endIndex`.\n *\n @SinceKotlin("1.4")\n @WasExperimental(ExperimentalStdlibApi::class)\n public fun setRange(startIndex: Int,\n endIndex: Int, value: String): StringBuilder {\n checkReplaceRange(startIndex, endIndex, length)\n\n this.string = this.string.substring(0, startIndex) + value + this.string.substring(endIndex)\n return this\n }\n\n private fun checkReplaceRange(startIndex: Int, endIndex: Int, length: Int) {\n if (startIndex < 0 || startIndex >\n length) {\n throw IndexOutOfBoundsException("startIndex: $startIndex, length: $length")\n }\n if\n (startIndex > endIndex) {\n throw IllegalArgumentException("startIndex($startIndex) >\n endIndex($endIndex)")\n }\n }\n\n /**\n * Removes the character at the specified [index] from this string\n builder and returns this instance.\n *\n * If the `Char` at the specified [index] is part of a supplementary code\n point, this method does not remove the entire supplementary character.\n *\n * @param index the index of\n `Char` to remove.\n *\n * @throws IndexOutOfBoundsException\n if [index] is out of bounds of this string builder.\n *\n @SinceKotlin("1.4")\n @WasExperimental(ExperimentalStdlibApi::class)\n public fun deleteAt(index: Int): StringBuilder {\n AbstractList.checkElementIndex(index, length)\n\n string = string.substring(0, index) + string.substring(index +\n 1)\n return this\n }\n\n /**\n * Removes characters in the specified range from this string builder and\n returns this instance.\n *\n * @param startIndex the beginning (inclusive) of the range to remove.\n * @param endIndex the end (exclusive) of the range to remove.\n *\n * @throws IndexOutOfBoundsException\n or [IllegalArgumentException] when [startIndex] is out of range of this string builder indices or when `startIndex >\n endIndex`.\n *\n @SinceKotlin("1.4")\n @WasExperimental(ExperimentalStdlibApi::class)\n public fun\n deleteRange(startIndex: Int, endIndex: Int): StringBuilder {\n checkReplaceRange(startIndex,\n endIndex, length)\n\n string = string.substring(0, startIndex) + string.substring(endIndex)\n return this\n }\n\n /**\n * Copies characters from this string builder into the [destination] character array.\n *\n * @param destination the array to copy to.\n * @param destinationOffset the position in the array to copy to, 0 by\n default.\n * @param startIndex the beginning (inclusive) of the range to copy, 0 by default.\n * @param\n endIndex the end (exclusive) of the range to copy, length of this string builder by default.\n *\n * @throws\n IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of range of this\n string builder indices or when `startIndex > endIndex`.\n * @throws IndexOutOfBoundsException when the\n subrange doesn't fit into the [destination] array starting at the specified [destinationOffset],\n * or when that index\n is out of the [destination] array indices range.\n
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    */\n @SinceKotlin("1.4")\n @WasExperimental(ExperimentalStdlibApi::class)\n public fun
toCharArray(destination: CharArray, destinationOffset: Int = 0, startIndex: Int = 0, endIndex: Int = this.length) {\n
    AbstractList.checkBoundsIndexes(startIndex, endIndex, length)\n
AbstractList.checkBoundsIndexes(destinationOffset, destinationOffset + endIndex - startIndex, destination.size)\n\n
    var dstIndex = destinationOffset\n    for (index in startIndex until endIndex) {\n        destination[dstIndex++]
= string[index]\n    }\n }\n\n /**\n * Appends characters in a subarray of the specified character array
[value] to this string builder and returns this instance.\n * Characters are appended in order, starting at
specified [startIndex].\n * @param value the array from which characters are appended.\n * @param
startIndex the beginning (inclusive) of the subarray to append.\n * @param endIndex the end (exclusive)
of the subarray to append.\n * @throws IndexOutOfBoundsException or [IllegalArgumentException]
when [startIndex] or [endIndex] is out of range of the [value] array indices or when `startIndex > endIndex`.\n
*/\n @SinceKotlin("1.4")\n @WasExperimental(ExperimentalStdlibApi::class)\n public fun
appendRange(value: CharArray, startIndex: Int, endIndex: Int): StringBuilder {\n    string +=
value.concatToString(startIndex, endIndex)\n    return this\n }\n\n /**\n * Appends a subsequence of the
specified character sequence [value] to this string builder and returns this instance.\n * @param value the
character sequence from which a subsequence is appended.\n * @param startIndex the beginning (inclusive) of
the subsequence to append.\n * @param endIndex the end (exclusive) of the subsequence to append.\n *
@throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of
range of the [value] character sequence indices or when `startIndex > endIndex`.\n */\n
@SinceKotlin("1.4")\n @WasExperimental(ExperimentalStdlibApi::class)\n public fun appendRange(value:
CharSequence, startIndex: Int, endIndex: Int): StringBuilder {\n    val stringCsq = value.toString()\n
AbstractList.checkBoundsIndexes(startIndex, endIndex, stringCsq.length)\n\n    string +=
stringCsq.substring(startIndex, endIndex)\n    return this\n }\n\n /**\n * Inserts characters in a subarray of
the specified character array [value] into this string builder at the specified [index] and returns this instance.\n
* The inserted characters go in same order as in the [value] array, starting at [index].\n * @param index
the position in this string builder to insert at.\n * @param value the array from which characters are inserted.\n
* @param startIndex the beginning (inclusive) of the subarray to insert.\n * @param endIndex
the end (exclusive) of the subarray to insert.\n * @throws IndexOutOfBoundsException or
[IllegalArgumentException] when [startIndex] or [endIndex] is out of range of the [value] array indices or when
`startIndex > endIndex`.\n * @throws IndexOutOfBoundsException if [index] is less than zero or greater than the
length of this string builder.\n */\n @SinceKotlin("1.4")\n @WasExperimental(ExperimentalStdlibApi::class)\n public fun insertRange(index: Int, value: CharArray,
startIndex: Int, endIndex: Int): StringBuilder {\n    AbstractList.checkPositionIndex(index, this.length)\n\n
string = string.substring(0, index) + value.concatToString(startIndex, endIndex) + string.substring(index)\n
return this\n }\n\n /**\n * Inserts characters in a subsequence of the specified character sequence [value] into
this string builder at the specified [index] and returns this instance.\n * The inserted characters go in the
same order
as in the [value] character sequence, starting at [index].\n * @param index the position in this string
builder to insert at.\n * @param value the character sequence from which a subsequence is inserted.\n *
@param startIndex the beginning (inclusive) of the subsequence to insert.\n * @param endIndex the end
(exclusive) of the subsequence to insert.\n * @throws IndexOutOfBoundsException or
[IllegalArgumentException] when [startIndex] or [endIndex] is out of range of the [value] character sequence
indices or when `startIndex > endIndex`.\n * @throws IndexOutOfBoundsException if [index] is less than zero or
greater than the length of this string builder.\n */\n @SinceKotlin("1.4")\n @WasExperimental(ExperimentalStdlibApi::class)\n public fun insertRange(index: Int, value: CharSequence,
startIndex: Int, endIndex: Int): StringBuilder {\n    AbstractList.checkPositionIndex(index, length)\n\n    val
stringCsq = value.toString()\n

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AbstractList.checkBoundsIndexes(startIndex, endIndex, stringCsq.length)\n\n    string = string.substring(0,
index) + stringCsq.substring(startIndex, endIndex) + string.substring(index)\n    return this\n } \n}\n\n/**\n *
Clears the content of this string builder making it empty and returns this instance.\n *\n * @sample
samples.text.Strings.clearStringBuilder\n
*\n@SinceKotlin("1.3")\n@Suppress("EXTENSION_SHADOWED_BY_MEMBER",
"NOTHING_TO_INLINE")\npublic actual inline fun StringBuilder.clear(): StringBuilder = this.clear()\n\n/**\n *
Sets the character at the specified [index] to the specified [value].\n *\n * @throws IndexOutOfBoundsException if
[index] is out of bounds of this string builder.\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@Suppress("EXTENSION_SHA
DOWED_BY_MEMBER", "NOTHING_TO_INLINE")\npublic actual inline operator fun
StringBuilder.set(index: Int, value: Char) = this.set(index, value)\n\n/**\n * Replaces
characters in the specified range of this string builder with characters in the specified string [value] and returns this
instance.\n *\n * @param startIndex the beginning (inclusive) of the range to replace.\n * @param endIndex the end
(exclusive) of the range to replace.\n * @param value the string to replace with.\n *\n * @throws
IndexOutOfBoundsException or [IllegalArgumentException] if [startIndex] is less than zero, greater than the length
of this string builder, or `startIndex > endIndex`.\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@Suppress("EXTENSION_SHA
DOWED_BY_MEMBER", "NOTHING_TO_INLINE")\npublic actual inline fun
StringBuilder.setRange(startIndex: Int, endIndex: Int, value: String): StringBuilder =\n    this.setRange(startIndex,
endIndex, value)\n\n/**\n * Removes the character at the specified [index] from this string builder and returns this
instance.\n *\n * If the `Char` at the specified [index] is part of a supplementary code point,
this method does not remove the entire supplementary character.\n *\n * @param index the index of `Char` to
remove.\n *\n * @throws IndexOutOfBoundsException if [index] is out of bounds of this string builder.\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@Suppress("EXTENSION_SHA
DOWED_BY_MEMBER", "NOTHING_TO_INLINE")\npublic actual inline fun StringBuilder.deleteAt(index:
Int): StringBuilder = this.deleteAt(index)\n\n/**\n * Removes characters in the specified range from this string
builder and returns this instance.\n *\n * @param startIndex the beginning (inclusive) of the range to remove.\n *
@param endIndex the end (exclusive) of the range to remove.\n *\n * @throws IndexOutOfBoundsException or
[IllegalArgumentException] when [startIndex] is out of range of this string builder indices or when `startIndex >
endIndex`.\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@Suppress("EXTENSION_SHA
DOWED_BY_MEMBER", "NOTHING_TO_INLINE")\npublic
actual inline fun StringBuilder.deleteRange(startIndex: Int, endIndex: Int): StringBuilder =
this.deleteRange(startIndex, endIndex)\n\n/**\n * Copies characters from this string builder into the [destination]
character array.\n *\n * @param destination the array to copy to.\n * @param destinationOffset the position in the
array to copy to, 0 by default.\n * @param startIndex the beginning (inclusive) of the range to copy, 0 by default.\n
* @param endIndex the end (exclusive) of the range to copy, length of this string builder by default.\n *\n *
@throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of
range of this string builder indices or when `startIndex > endIndex`.\n * @throws IndexOutOfBoundsException
when the subrange doesn't fit into the [destination] array starting at the specified [destinationOffset],\n * or when
that index is out of the [destination] array indices range.\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@Suppress("EXTENSION_SHA
DOWED_BY_MEMBER",
"NOTHING_TO_INLINE", "ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\npublic actual
inline fun StringBuilder.toCharArray(destination: CharArray, destinationOffset: Int = 0, startIndex: Int = 0,
endIndex: Int = this.length) =\n    this.toCharArray(destination, destinationOffset, startIndex, endIndex)\n\n/**\n *
Appends characters in a subarray of the specified character array [value] to this string builder and returns this
instance.\n *\n * Characters are appended in order, starting at specified [startIndex].\n *\n * @param value the array

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from which characters are appended.\n * @param startIndex the beginning (inclusive) of the subarray to append.\n *
@param endIndex the end (exclusive) of the subarray to append.\n *\n * @throws IndexOutOfBoundsException or
[IllegalArgumentException] when [startIndex] or [endIndex] is out of range of the [value] array indices or when
`startIndex > endIndex`.\n
*\n @SinceKotlin("1.4")\n @WasExperimental(ExperimentalStdlibApi::class)\n @Suppress("EXTENSION_SHA
DOWED_BY_MEMBER",
"NOTHING_TO_INLINE")\n public actual inline fun StringBuilder.appendRange(value: CharArray, startIndex:
Int, endIndex: Int): StringBuilder =\n     this.appendRange(value, startIndex, endIndex)\n\n /**\n * Appends a
subsequence of the specified character sequence [value] to this string builder and returns this instance.\n *\n *
@param value the character sequence from which a subsequence is appended.\n * @param startIndex the beginning
(inclusive) of the subsequence to append.\n * @param endIndex the end (exclusive) of the subsequence to append.\n
*\n * @throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out
of range of the [value] character sequence indices or when `startIndex > endIndex`.\n
*\n @SinceKotlin("1.4")\n @WasExperimental(ExperimentalStdlibApi::class)\n @Suppress("EXTENSION_SHA
DOWED_BY_MEMBER", "NOTHING_TO_INLINE")\n public
actual inline fun StringBuilder.appendRange(value: CharSequence, startIndex: Int, endIndex: Int): StringBuilder
=\n     this.appendRange(value, startIndex, endIndex)\n\n /**\n * Inserts characters in a subarray of the specified
character array [value] into this string builder at the specified [index] and returns this instance.\n *\n * The
inserted characters go in same order as in the [value] array, starting at [index].\n *\n * @param index the position
in this string builder to insert at.\n * @param value the array from which characters are inserted.\n * @param
startIndex the beginning (inclusive) of the subarray to insert.\n * @param endIndex the end (exclusive) of the
subarray to insert.\n *\n * @throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex]
or [endIndex] is out of range of the [value] array indices or when `startIndex > endIndex`.\n * @throws
IndexOutOfBoundsException if [index] is less than zero or greater than the length of this string builder.\n
*\n @SinceKotlin("1.4")\n @WasExperimental(ExperimentalStdlibApi::class)\n @Suppress("EXTENSION_SHA
DOWED_BY_MEMBER", "NOTHING_TO_INLINE")\n public actual inline fun
StringBuilder.insertRange(index: Int, value: CharArray, startIndex: Int, endIndex: Int): StringBuilder =\n
this.insertRange(index, value, startIndex, endIndex)\n\n /**\n * Inserts characters in a subsequence of the
specified character sequence [value] into this string builder at the specified [index] and returns this instance.\n
*\n * The inserted characters go in the same order as in the [value] character sequence, starting at [index].\n
*\n * @param index the position in this string builder to insert at.\n * @param value the character sequence
from which a subsequence is inserted.\n * @param startIndex the beginning (inclusive) of the subsequence to
insert.\n * @param endIndex the end (exclusive) of the subsequence to insert.\n *\n * @throws IndexOutOfBoundsException
or [IllegalArgumentException] when [startIndex] or [endIndex] is out of range of the [value] character sequence
indices or when `startIndex > endIndex`.\n *\n * @throws IndexOutOfBoundsException if [index] is less than
zero or greater than the length of this string builder.\n
*\n @SinceKotlin("1.4")\n @WasExperimental(ExperimentalStdlibApi::class)\n @Suppress("EXTENSION_SHA
DOWED_BY_MEMBER", "NOTHING_TO_INLINE")\n public actual inline fun
StringBuilder.insertRange(index: Int, value: CharSequence, startIndex: Int, endIndex: Int): StringBuilder =\n
this.insertRange(index, value, startIndex, endIndex)\n\n /**\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin
Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be
found in the license/LICENSE.txt file.\n *\n @package kotlin.text\n\n /**\n * Returns `true` if the content of
this string is equal to the word `true`, ignoring case, and `false` otherwise.\n *\n @Deprecated("Use Kotlin
compiler 1.4 to avoid deprecation warning.")\n @DeprecatedSinceKotlin(hiddenSince
= "1.4")\n @kotlin.internal.InlineOnly\n public actual inline fun String.toBoolean(): Boolean =
this.toBoolean()\n\n /**\n * Returns `true` if this string is not `null` and its content is equal to the word
`true`, ignoring case, and `false` otherwise.\n *\n * There are also strict versions of the function available
on non-nullable String, [toBooleanStrict] and [toBooleanStrictOrNull].\n *\n @SinceKotlin("1.4")\n public
actual fun

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String?.toBoolean(): Boolean = this != null && this.lowercase() == "true"\n\n/\*\*\n \* Parses the string as a signed [Byte] number and returns the result.\n \* @throws NumberFormatException if the string is not a valid representation of a number.\n \*/\npublic actual fun String.toByte(): Byte = toByteOrNull() ?: numberFormatError(this)\n\n/\*\*\n \* Parses the string as a signed [Byte] number and returns the result.\n \* @throws NumberFormatException if the string is not a valid representation of a number.\n \* @throws IllegalArgumentException when [radix] is not a valid radix for string to number conversion.\n \*/\npublic actual fun String.toByte(radix: Int): Byte = toByteOrNull(radix) ?: numberFormatError(this)\n\n/\*\*\n \* Parses the string as a [Short] number and returns the result.\n \* @throws NumberFormatException if the string is not a valid representation of a number.\n \* @throws IllegalArgumentException when [radix] is not a valid radix for string to number conversion.\n \*/\npublic actual fun String.toShort(): Short = toShortOrNull() ?: numberFormatError(this)\n\n/\*\*\n \* Parses the string as a [Short] number and returns the result.\n \* @throws NumberFormatException if the string is not a valid representation of a number.\n \* @throws IllegalArgumentException when [radix] is not a valid radix for string to number conversion.\n \*/\npublic actual fun String.toShort(radix: Int): Short = toShortOrNull(radix) ?: numberFormatError(this)\n\n/\*\*\n \* Parses the string as an [Int] number and returns the result.\n \* @throws NumberFormatException if the string is not a valid representation of a number.\n \* @throws IllegalArgumentException when [radix] is not a valid radix for string to number conversion.\n \*/\npublic actual fun String.toInt(): Int = toIntOrNull() ?: numberFormatError(this)\n\n/\*\*\n \* Parses the string as a [Long] number and returns the result.\n \* @throws NumberFormatException if the string is not a valid representation of a number.\n \* @throws IllegalArgumentException when [radix] is not a valid radix for string to number conversion.\n \*/\npublic actual fun String.toInt(radix: Int): Int = toIntOrNull(radix) ?: numberFormatError(this)\n\n/\*\*\n \* Parses the string as a [Long] number and returns the result.\n \* @throws NumberFormatException if the string is not a valid representation of a number.\n \* @throws IllegalArgumentException when [radix] is not a valid radix for string to number conversion.\n \*/\npublic actual fun String.toLong(): Long = toLongOrNull() ?: numberFormatError(this)\n\n/\*\*\n \* Parses the string as a [Long] number and returns the result.\n \* @throws NumberFormatException if the string is not a valid representation of a number.\n \* @throws IllegalArgumentException when [radix] is not a valid radix for string to number conversion.\n \*/\npublic actual fun String.toLong(radix: Int): Long = toLongOrNull(radix) ?: numberFormatError(this)\n\n/\*\*\n \* Parses the string as a [Double] number and returns the result.\n \* @throws NumberFormatException if the string is not a valid representation of a number.\n \* @throws IllegalArgumentException when [radix] is not a valid radix for string to number conversion.\n \*/\npublic actual fun String.toDouble(): Double = (+this.asDynamic()).unsafeCast<Double>().also { \n if (it.isNaN() && !this.isNaN() || it == 0.0 && this.isBlank())\n numberFormatError(this)\n}\n\n/\*\*\n \* Parses the string as a [Float] number and returns the result.\n \* @throws NumberFormatException if the string is not a valid representation of a number.\n \* @kotlin.internal.InlineOnly\n \*/\npublic actual inline fun String.toFloat(): Float = toDouble().unsafeCast<Float>()\n\n/\*\*\n \* Parses the string as a [Double] number and returns the result\n \* or `null` if the string is not a valid representation of a number.\n \* @kotlin.internal.InlineOnly\n \*/\npublic actual inline fun String.toDoubleOrNull(): Double? = (+this.asDynamic()).unsafeCast<Double>().takeIf { \n !(it.isNaN() && !this.isNaN() || it == 0.0 && this.isBlank())\n}\n\n/\*\*\n \* Parses the string as a [Float] number and returns the result\n \* or `null` if the string is not a valid representation of a number.\n \* @kotlin.internal.InlineOnly\n \*/\npublic actual inline fun String.toFloatOrNull(): Float? = toDoubleOrNull().unsafeCast<Float?>()\n\n/\*\*\n \* Returns a string representation of this [Byte] value in the specified [radix].\n \* @throws IllegalArgumentException when [radix] is not a valid radix for number to string conversion.\n \*/\n@SinceKotlin("1.2")\n@kotlin.internal.InlineOnly\npublic actual inline fun Byte.toString(radix: Int): String = this.toInt().toString(radix)\n\n/\*\*\n \* Returns a string representation of this [Short] value in the specified [radix].\n \* @throws IllegalArgumentException when [radix] is not a valid radix for number to string conversion.\n \*/\n@SinceKotlin("1.2")\n@kotlin.internal.InlineOnly\npublic actual inline fun Short.toString(radix: Int): String = this.toInt().toString(radix)\n\n/\*\*\n \* Returns a string representation of this [Int] value in the specified [radix].\n \* @throws IllegalArgumentException when [radix] is not a valid radix for number to string conversion.\n \*/\n@SinceKotlin("1.2")\npublic actual fun Int.toString(radix: Int): String = asDynamic().toString(checkRadix(radix))\n\nprivate fun String.isNaN(): Boolean = when (this.lowercase()) {\n

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"nan", "+nan", "-nan" -> true\n else -> false\n}\n\n/**\n * Checks whether the given [radix] is valid radix for
string to number and number to string conversion.\n */\n@PublishedApi\ninternal actual fun checkRadix(radix: Int):
Int {\n if (radix !in 2..36) {\n throw IllegalArgumentException("\radix $radix was not in valid range 2..36")\n
}\n return radix\n}\n\ninternal actual fun digitOf(char: Char, radix: Int): Int = when {\n char >= '0' && char <=
'9' -> char - '0'\n char >= 'A' && char <= 'Z' -> char - 'A' + 10\n char >= 'a' && char <= 'z' -> char
- 'a' + 10\n char < "\u0080" -> -1\n char >= "\uFF21" && char <= "\uFF3A" -> char - "\uFF21" + 10 // full-width
latin capital letter\n char >= "\uFF41" && char <= "\uFF5A" -> char - "\uFF41" + 10 // full-width latin small
letter\n else -> char.digitToIntImpl()\n}.let { if (it >= radix) -1 else it }\n","/*\n * Copyright 2010-2021 JetBrains
s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0
license that can be found in the license/LICENSE.txt file.\n */\n\npackage kotlin.text\n\nimport
kotlin.js.RegExp\n\n/**\n * Provides enumeration values to use to set regular expression options.\n */\n\npublic actual
enum class RegexOptions(val value: String) {\n /** Enables case-insensitive matching. */\n
IGNORE_CASE("\i"),\n /** Enables multiline mode.\n * In multiline mode the expressions `^` and `$`
match just after or just before,\n * respectively, a line terminator or the end of the input sequence.\n
*/\n MULTILINE("\m")\n}\n\nprivate fun Iterable<RegexOption>.toFlags(prepend: String): String =
joinToString("\",", prefix = prepend) { it.value }\n\n/**\n * Represents the results from a single capturing group
within a [MatchResult] of [Regex].\n */\n * @param value The value of captured group.\n */\n\npublic actual data
class MatchGroup(actual val value: String)\n\n/**\n * Returns a named group with the specified [name].\n */\n *
@return An instance of [MatchGroup] if the group with the specified [name] was matched or `null` otherwise.\n *
@throws IllegalArgumentException if there is no group with the specified [name] defined in the regex pattern.\n *
@throws UnsupportedOperationException if this match group collection doesn't support getting match groups by
name,\n * for example, when it's not supported by the current platform.\n */\n\n@SinceKotlin("1.7")\n\npublic
operator fun MatchGroupCollection.get(name: String): MatchGroup? {\n val namedGroups = this as?
MatchNamedGroupCollection\n
?: throw UnsupportedOperationException("\Retrieving groups by name is not supported on this platform.")\n\n
return namedGroups[name]\n}\n\n/**\n * Represents a compiled regular expression.\n * Provides functions to
match strings in text with a pattern, replace the found occurrences and split text around matches.\n */\n * For pattern
syntax reference see [MDN RegExp](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/RegExp#Special_characters_meaning_in_regular_expressions)\n
*/\n * and
[http://www.w3schools.com/jsref/jsref_obj_regexp.asp](https://www.w3schools.com/jsref/jsref_obj_regexp.asp).\n
*/\n * Note that `RegExp` objects under the hood are constructed with [the `u`
flag](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/RegExp/unicode)\n * that
enables Unicode-related features in regular expressions. This also makes the pattern syntax more strict,\n * for
example, prohibiting unnecessary escape
sequences.\n */\n * @constructor Creates a regular expression from the specified [pattern] string and the specified
set of [options].\n */\n\npublic actual class Regex actual constructor(pattern: String, options: Set<RegexOption>)\n
{\n\n /** Creates a regular expression from the specified [pattern] string and the specified single [option]. */\n
\n public actual constructor(pattern: String, option: RegexOption) : this(pattern, setOf(option))\n\n /** Creates a
regular expression from the specified [pattern] string and the default options. */\n\n public actual
constructor(pattern: String) : this(pattern, emptySet())\n\n /** The pattern string of this regular expression. */\n
\n public actual val pattern: String = pattern\n /** The set of options that were used to create this regular expression.
*/\n\n public actual val options: Set<RegexOption> = options.toSet()\n\n private val nativePattern: RegExp =
RegExp(pattern, options.toFlags("\gu"))\n\n private var nativeStickyPattern:
RegExp? = null\n\n private fun initStickyPattern(): RegExp =\n\n nativeStickyPattern ?: RegExp(pattern,
options.toFlags("\yu")).also { nativeStickyPattern = it }\n\n private var nativeMatchesEntirePattern: RegExp? =
null\n\n private fun initMatchesEntirePattern(): RegExp =\n\n nativeMatchesEntirePattern ?: run {\n\n if
(pattern.startsWith('^') && pattern.endsWith('$'))\n\n nativePattern\n\n else\n\n return

```

```

RegExp("\\^${pattern.trimStart('^').trimEnd('$')}\\$", options.toFlags("\\gu"))\n    }.also {
nativeMatchesEntirePattern = it }\n\n\n /** Indicates whether the regular expression matches the entire [input].
*\n public actual infix fun matches(input: CharSequence): Boolean {\n    nativePattern.reset()\n    val match
= nativePattern.exec(input.toString())\n    return match != null && match.index == 0 && nativePattern.lastIndex
== input.length\n }\n\n /** Indicates whether the regular expression
can find at least one match in the specified [input]. *\n public actual fun containsMatchIn(input: CharSequence):
Boolean {\n    nativePattern.reset()\n    return nativePattern.test(input.toString())\n }\n\n
@SinceKotlin("1.7")\n @WasExperimental(ExperimentalStdlibApi::class)\n public actual fun
matchesAt(input: CharSequence, index: Int): Boolean {\n    if (index < 0 || index > input.length) {\n        throw
IndexOutOfBoundsException("index out of bounds: $index, input length: ${input.length}")\n    }\n    val
pattern = initStickyPattern()\n    pattern.lastIndex = index\n    return pattern.test(input.toString())\n }\n\n
/**\n * Returns the first match of a regular expression in the [input], beginning at the specified [startIndex].\n
*\n * @param startIndex An index to start search with, by default 0. Must be not less than zero and not greater
than `input.length`\n * @return An instance of [MatchResult] if match
was found or `null` otherwise.\n * @throws IndexOutOfBoundsException if [startIndex] is less than zero or
greater than the length of the [input] char sequence.\n * @sample samples.text.Regexps.find\n */\n
@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\n public actual fun find(input:
CharSequence, startIndex: Int = 0): MatchResult? {\n    if (startIndex < 0 || startIndex > input.length) {\n
throw IndexOutOfBoundsException("Start index out of bounds: $startIndex, input length: ${input.length}")\n
}\n    return nativePattern.findNext(input.toString(), startIndex, nativePattern)\n }\n\n /**\n * Returns a
sequence of all occurrences of a regular expression within the [input] string, beginning at the specified
[startIndex].\n *\n * @throws IndexOutOfBoundsException if [startIndex] is less than zero or greater than the
length of the [input] char sequence.\n *\n * @sample samples.text.Regexps.findAll\n */\n
@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\n public actual fun findAll(input:
CharSequence, startIndex: Int = 0): Sequence<MatchResult> {\n    if (startIndex < 0 || startIndex > input.length)
{\n        throw IndexOutOfBoundsException("Start index out of bounds: $startIndex, input length:
${input.length}")\n    }\n    return generateSequence({ find(input, startIndex) }, { match -> match.next() })\n
}\n\n /**\n * Attempts to match the entire [input] CharSequence against the pattern.\n *\n * @return An
instance of [MatchResult] if the entire input matches or `null` otherwise.\n */\n public actual fun
matchEntire(input: CharSequence): MatchResult? =\n    initMatchesEntirePattern().findNext(input.toString(), 0,
nativePattern)\n\n @SinceKotlin("1.7")\n @WasExperimental(ExperimentalStdlibApi::class)\n public actual
fun matchAt(input: CharSequence, index: Int): MatchResult? {\n    if (index < 0 || index > input.length)
{\n        throw IndexOutOfBoundsException("index out of bounds: $index, input length: ${input.length}")\n
}\n    return initStickyPattern().findNext(input.toString(), index, nativePattern)\n }\n\n\n /**\n * Replaces
all occurrences of this regular expression in the specified [input] string with specified [replacement] expression.\n
*\n * The replacement string may contain references to the captured groups during a match. Occurrences of
`${name}` or `${index}`\n * in the replacement string will be substituted with the subsequences corresponding to
the captured groups with the specified name or index.\n * In case of `${index}`, the first digit after '$' is always
treated as a part of group reference. Subsequent digits are incorporated\n * into `index` only if they would form a
valid group reference. Only the digits '0'..'9' are considered as potential components\n * of the group reference.
Note that indexes of captured groups start from
1, and the group with index 0 is the whole match.\n * In case of `${name}`, the `name` can consist of latin letters
'a'..'z' and 'A'..'Z', or digits '0'..'9'. The first character must be\n * a letter.\n *\n * Backslash character '\\' can
be used to include the succeeding character as a literal in the replacement string, e.g. '\\$' or '\\\\\\'.\n *
[Regex.escapeReplacement] can be used if [replacement] have to be treated as a literal string.\n *\n * @param
input the char sequence to find matches of this regular expression in\n * @param replacement the expression to
replace found matches with\n * @return the result of replacing each occurrence of this regular expression in
[input] with the result of evaluating the [replacement] expression\n * @throws RuntimeException if

```

[replacement] expression is malformed, or capturing group with specified `name` or `index` does not exist

```

public actual fun replace(input: CharSequence, replacement: String):
String {
    if (!replacement.contains("\\\\") && !replacement.contains('$')) {
        return
input.toString().nativeReplace(nativePattern, replacement)
    }
    return replace(input) {
substituteGroupRefs(it, replacement)
}
}
/**
 * Replaces all occurrences of this regular expression in
the specified [input] string with the result of
 * the given function [transform] that takes [MatchResult] and
returns a string to be used as a
 * replacement for that match.
 */
public actual fun replace(input:
CharSequence, transform: (MatchResult) -> CharSequence): String {
    var match = find(input)
    if (match
== null) return input.toString()
    var lastStart = 0
    val length = input.length
    val sb =
StringBuilder(length)
    do {
        val foundMatch = match!!
        sb.append(input, lastStart,
foundMatch.range.start)
        sb.append(transform(foundMatch))
        lastStart
= foundMatch.range.endInclusive + 1
        match = foundMatch.next()
    } while (lastStart < length &&
match != null)
    if (lastStart < length) {
        sb.append(input, lastStart, length)
    }
    return
sb.toString()
}
/**
 * Replaces the first occurrence of this regular expression in the specified [input]
string with specified [replacement] expression.
 * The replacement string may contain references to the
captured groups during a match. Occurrences of `${name}` or `${index}`
 * in the replacement string will be
substituted with the subsequences corresponding to the captured groups with the specified name or index.
 * In
case of `${index}`, the first digit after '$' is always treated as a part of group reference. Subsequent digits are
incorporated
 * into `index` only if they would form a valid group reference. Only the digits '0'..'9' are considered
as potential components
 * of the group
reference. Note that indexes of captured groups start from 1, and the group with index 0 is the whole match.
 * In
case of `${name}`, the `name` can consist of latin letters 'a'..'z' and 'A'..'Z', or digits '0'..'9'. The first character
must be
 * a letter.
 * Backslash character '\\' can be used to include the succeeding character as a
literal in the replacement string, e.g. '\\$` or '\\\\`.
 * [Regex.escapeReplacement] can be used if [replacement]
have to be treated as a literal string.
 * @param input the char sequence to find a match of this regular
expression in
 * @param replacement the expression to replace the found match with
 * @return the result of
replacing the first occurrence of this regular expression in [input] with the result of evaluating the [replacement]
expression
 * @throws RuntimeException if [replacement] expression is malformed, or capturing group with
specified `name` or `index` does not exist
 */
public actual fun replaceFirst(input: CharSequence, replacement: String): String {
    if
(!replacement.contains("\\\\") && !replacement.contains('$')) {
        val nonGlobalOptions =
options.toFlags("\\u")
        return input.toString().nativeReplace(RegExp(pattern, nonGlobalOptions),
replacement)
    }
    val match = find(input) ?: return input.toString()
    return buildString {
append(input.substring(0, match.range.first))
        append(substituteGroupRefs(match, replacement))
append(input.substring(match.range.last + 1, input.length))
    }
}
/**
 * Splits the [input]
CharSequence to a list of strings around matches of this regular expression.
 * @param limit Non-negative
value specifying the maximum number of substrings the string can be split to.
 * Zero by default means no limit
is set.
 */
@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")
public actual
fun split(input: CharSequence, limit: Int = 0): List<String> {
    requireNonNegativeLimit(limit)
    val
matches = findAll(input).let { if (limit == 0) it else it.take(limit - 1) }
    val result = mutableListOf<String>()
    var lastStart = 0
    for (match in matches) {
        result.add(input.subSequence(lastStart,
match.range.start).toString())
        lastStart = match.range.endInclusive + 1
    }
    result.add(input.subSequence(lastStart, input.length).toString())
    return result
}
/**
 * Splits the
[input] CharSequence to a sequence of strings around matches of this regular expression.
 * @param limit
Non-negative value specifying the maximum number of substrings the string can be split to.
 * Zero by default
means no limit is set.
 * @sample samples.text.Regexps.splitToSequence
 */
@SinceKotlin("1.6")
@WasExperimental(ExperimentalStdlibApi::class)
@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")

```

```

public actual fun splitToSequence(input: CharSequence, limit: Int = 0): Sequence<String> {
    requireNonNegativeLimit(limit)
    return sequence {
        var match = find(input)
        if (match == null || limit == 1) {
            yield(input.toString())
            return@sequence
        }
        var nextStart = 0
        var splitCount = 0
        do {
            val foundMatch = match!!
            yield(input.substring(nextStart, foundMatch.range.first))
            nextStart = foundMatch.range.endInclusive + 1
            match = foundMatch.next()
        } while (++splitCount != limit - 1 && match != null)
        yield(input.substring(nextStart, input.length))
    }
}

/**
 * Returns the string representation of this regular expression, namely the [pattern] of this regular expression.
 * Note that another regular expression constructed from the same pattern string may have different [options] and may match strings differently.
 */
public override fun toString(): String = nativePattern.toString()

actual companion object {
    /**
     * Returns a regular expression that matches the specified [literal] string literally.
     * No characters of that string will have special meaning when searching for an occurrence of the regular expression.
     */
    public actual fun fromLiteral(literal: String): Regex = Regex(escape(literal))

    /**
     * Returns a regular expression pattern string that matches the specified [literal] string literally.
     * No characters of that string will have special meaning when searching for an occurrence of the regular expression.
     */
    public actual fun escape(literal: String): String = literal.nativeReplace(patternEscape, "\\|\\$&\\|")

    /**
     * Returns a literal replacement expression for the specified [literal] string.
     * No characters of that string will have special meaning when it is used as a replacement string in [Regex.replace] function.
     */
    public actual fun escapeReplacement(literal: String): String = literal.nativeReplace(replacementEscape, "\\|\\$&\\|")

    private val patternEscape = Regex("\\|\\$*+?.()|\\[\\]|\\]|\\|", "g")
    private val replacementEscape = Regex("\\|\\$\\|\\|", "g")
    internal fun nativeEscapeReplacement(literal: String): String = literal.nativeReplace(nativeReplacementEscape, "\\$\\$\\$")
    private val nativeReplacementEscape = Regex("\\|\\$\\|\\|", "g")
}

private fun Regex.findNext(input: String, from: Int, nextPattern: Regex): MatchResult? {
    this.lastIndex = from
    val match = exec(input)
    if (match == null) return null
    val range = match.index..lastIndex - 1
    return object : MatchResult {
        override val range: IntRange = range
        override val value: String = match[0]!!
        override val groups: MatchGroupCollection = object : MatchNamedGroupCollection, AbstractCollection<MatchGroup?>() {
            override val size: Int get() = match.length
            override fun iterator(): Iterator<MatchGroup?> = indices.asSequence().map { this[it] }.iterator()
            override fun get(index: Int): MatchGroup? = match[index]
            override fun get(name: String): MatchGroup? {
                // An object of named capturing groups whose keys are the names and values are the capturing groups
                // or undefined if no named capturing groups were defined.
                val groups = match.asDynamic().groups
                ?: throw IllegalArgumentException("Capturing group with name {$name} does not exist. No named capturing group was defined in Regex")
                // If the match was successful but the group specified failed to match any part of the input sequence, the associated value is 'undefined'. Value for a non-existent key is also 'undefined'. Thus, explicitly check if the key exists.
                if (!hasOwnProperty(groups, name)) throw IllegalArgumentException("Capturing group with name {$name} does not exist")
                val value = groups[name]
                return if (value == undefined) null else MatchGroup(value as String)
            }
        }
        private fun hasOwnProperty(o: Any?, name: String): Boolean {
            return js("Object").prototype.hasOwnProperty.call(o, name).unsafeCast<Boolean>()
        }
        private var groupValues_: List<String>? = null
        override val groupValues: List<String> get() {
            if (groupValues_ == null) {
                groupValues_ = object : AbstractList<String>() {
                    override val size: Int get() = match.length
                    override fun get(index: Int): String = match[index]
                }
            }
            return groupValues_!!
        }
        override fun next(): MatchResult? = nextPattern.findNext(input, if (range.isEmpty()) advanceToNextCharacter(range.start) else range.endInclusive + 1, nextPattern)
    }
}

```

```

advanceToNextCharacter(index: Int): Int {
    if (index < input.lastIndex) {
        val code1 =
input.asDynamic().charCodeAt(index).unsafeCast<Int>()
        if (code1 in 0xD800..0xDBFF) {
            val code2 = input.asDynamic().charCodeAt(index + 1).unsafeCast<Int>()
            if (code2 in
0xDC00..0xDFFF) {
                return index + 2
            }
        }
        return index + 1
    }
}

// The same code from K/N Regex.kt
private
fun substituteGroupRefs(match: MatchResult, replacement: String): String {
    var index = 0
    val result =
StringBuilder()
    while (index < replacement.length) {
        val char = replacement[index++]
        if (char ==
'\\') {
            if (index == replacement.length)
                throw IllegalArgumentException("The Char to be
escaped is missing")
            result.append(replacement[index++])
        } else if (char == '$') {
            if
(index == replacement.length)
                throw IllegalArgumentException("Capturing group index is
missing")
            if (replacement[index] == '{') {
                val endIndex =
replacement.readGroupName(++index)
                if (index == endIndex)
                    throw
IllegalArgumentException("Named capturing group reference should have a non-empty name")
                if
(endIndex == replacement.length || replacement[endIndex] != '}')
                    throw
IllegalArgumentException("Named
capturing group reference is missing trailing '}")
                val groupName = replacement.substring(index,
endIndex)
                result.append(match.groups[groupName]?.value ?: "\\")
                index = endIndex + 1 //
skip past '}'
            } else {
                if (replacement[index] !in '0'..'9')
                    throw
IllegalArgumentException("Invalid capturing group reference")
                val groups = match.groups
                val endIndex = replacement.readGroupIndex(index, groups.size)
                val groupIndex =
replacement.substring(index, endIndex).toInt()
                if (groupIndex >= groups.size)
                    throw
IndexOutOfBoundsException("Group with index $groupIndex does not exist")
                result.append(groups[groupIndex]?.value ?: "\\")
                index = endIndex
            }
        } else {
            result.append(char)
        }
    }
    return
result.toString()
}

// The name must be a legal JavaScript identifier. See https://262.ecma-
international.org/5.1/#sec-7.6
// Don't try to validate the referenced group name as it may be time-consuming.
// If
the name is invalid, it won't be found in `match.groups` anyway and will throw.
// Group names in the target Regex
are validated at creation time.
private fun String.readGroupName(startIndex: Int): Int {
    var index = startIndex
    while (index < length) {
        if (this[index] == '}')
            break
        index++
    }
    return index
}

private fun String.readGroupIndex(startIndex: Int, groupCount: Int): Int {
    // at least one
digit after '$' is always captured
    var index = startIndex + 1
    var groupIndex = this[startIndex] - '0'
    //
capture the largest valid group index
    while (index < length && this[index] in '0'..'9') {
        val newGroupIndex
= (groupIndex * 10) + (this[index] - '0')
        if (newGroupIndex in 0 until groupCount) {
            groupIndex = newGroupIndex
            index++
        }
        else {
            break
        }
    }
    return index
}

/**
 * Copyright 2010-2020 JetBrains s.r.o. and Kotlin
Programming Language contributors.
 * Use of this source code is governed by the Apache 2.0 license that can be
found in the license/LICENSE.txt file.
 */
@file:kotlin.jvm.JvmMultifileClass
@file:kotlin.jvm.JvmName("StringsKt")
@file:Suppress("EXTENSI
ON_SHADOWED_BY_MEMBER")
package kotlin.text
import kotlin.contracts.*

/**
 * A mutable
sequence of characters.
 * String builder can be used to efficiently perform multiple string manipulation
operations.
 */
expect class StringBuilder : Appendable, CharSequence {
    /** Constructs an empty string
builder.
 */
    constructor()
    /** Constructs an empty string builder with the specified initial [capacity].
 */
    constructor(capacity: Int)
    /** Constructs
a string builder that contains the same characters as the specified [content] char sequence.
 */
    constructor(content: CharSequence)
    /** Constructs a string builder that contains the same characters as the
specified [content] string.
 */
    @SinceKotlin("1.3")
    @ExperimentalStdlibApi
    constructor(content:
String)
    override val length: Int
    override operator fun get(index: Int): Char
    override fun
subSequence(startIndex: Int, endIndex: Int): CharSequence
    override fun append(value: Char): StringBuilder
}

```



```

override fun append(value: CharSequence?): StringBuilder\n    override fun append(value: CharSequence?,
startIndex: Int, endIndex: Int): StringBuilder\n\n    /**\n     * Reverses the contents of this string builder and returns
this instance.\n     *\n     * Surrogate pairs included in this string builder are treated as single characters.\n     *\n     * Therefore, the order of the high-low surrogates is never reversed.\n     *\n     * Note that
the reverse operation may produce new surrogate pairs that were unpaired low-surrogates and high-surrogates
before the operation.\n     * For example, reversing `"\uDC00\uD800"` produces `"\uD800\uDC00"` which is a
valid surrogate pair.\n     */\n    fun reverse(): StringBuilder\n\n    /**\n     * Appends the string representation of the
specified object [value] to this string builder and returns this instance.\n     *\n     * The overall effect is exactly as if
the [value] were converted to a string by the `value.toString()` method,\n     * and then that string was appended to
this string builder.\n     */\n    fun append(value: Any?): StringBuilder\n\n    /**\n     * Appends the string
representation of the specified boolean [value] to this string builder and returns this instance.\n     *\n     * The
overall effect is exactly as if the [value] were converted to a string by the `value.toString()` method,\n     * and then
that string was appended to this string builder.\n     */\n    @SinceKotlin("1.3")\n    fun append(value: Boolean): StringBuilder\n\n    /**\n     * Appends characters in
the specified character array [value] to this string builder and returns this instance.\n     *\n     * Characters are
appended in order, starting at the index 0.\n     */\n    @SinceKotlin("1.4")\n    @WasExperimental(ExperimentalStdlibApi::class)\n    fun append(value: CharArray): StringBuilder\n\n    /**\n     *
Appends the specified string [value] to this string builder and returns this instance.\n     *\n     * If [value] is `null`,
then the four characters `"\u0000\u0000\u0000\u0000"` are appended.\n     */\n    @SinceKotlin("1.3")\n    fun append(value: String?):
StringBuilder\n\n    /**\n     * Returns the current capacity of this string builder.\n     *\n     * The capacity is the
maximum length this string builder can have before an allocation occurs.\n     */\n    @SinceKotlin("1.3")\n    @ExperimentalStdlibApi\n    @Deprecated("Obtaining StringBuilder capacity is not
supported in JS and common code.", level = DeprecationLevel.ERROR)\n    fun capacity(): Int\n\n    /**\n     *
Ensures that the capacity of this string builder is at least equal to the specified [minimumCapacity].\n     *\n     * If
the current capacity is less than the [minimumCapacity], a new backing storage is allocated with greater capacity.\n     *\n     * Otherwise, this method takes no action and simply returns.\n     */\n    @SinceKotlin("1.4")\n    @WasExperimental(ExperimentalStdlibApi::class)\n    fun ensureCapacity(minimumCapacity: Int)\n\n    /**\n     *
Returns the index within this string builder of the first occurrence of the specified [string].\n     *\n     * Returns `-1`
if the specified [string] does not occur in this string builder.\n     */\n    @SinceKotlin("1.4")\n    @WasExperimental(ExperimentalStdlibApi::class)\n    fun indexOf(string: String): Int\n\n    /**\n     * Returns the
index within this string builder of the first occurrence of the specified [string],\n     *\n     * starting at the specified [startIndex].\n     *\n     * Returns `-1` if the specified [string] does not occur in this
string builder starting at the specified [startIndex].\n     */\n    @SinceKotlin("1.4")\n    @WasExperimental(ExperimentalStdlibApi::class)\n    fun indexOf(string: String, startIndex: Int): Int\n\n    /**\n     *
Returns the index within this string builder of the last occurrence of the specified [string].\n     *\n     * The last
occurrence of empty string `""` is considered to be at the index equal to `this.length`.\n     *\n     * Returns `-1` if
the specified [string] does not occur in this string builder.\n     */\n    @SinceKotlin("1.4")\n    @WasExperimental(ExperimentalStdlibApi::class)\n    fun lastIndexOf(string: String): Int\n\n    /**\n     * Returns
the index within this string builder of the last occurrence of the specified [string],\n     *\n     * starting from the specified
[startIndex] toward the beginning.\n     *\n     * Returns `-1` if the specified
[string] does not occur in this string builder starting at the specified [startIndex].\n     */\n    @SinceKotlin("1.4")\n    @WasExperimental(ExperimentalStdlibApi::class)\n    fun lastIndexOf(string: String, startIndex: Int): Int\n\n    /**\n     *
Inserts the string representation of the specified boolean [value] into this string builder at the specified
[index] and returns this instance.\n     *\n     * The overall effect is exactly as if the [value] were converted to a string
by the `value.toString()` method,\n     * and then that string was inserted into this string builder at the specified
[index].\n     *\n     * @throws IndexOutOfBoundsException if [index] is less than zero or greater than the length of
this string builder.\n     */\n    @SinceKotlin("1.4")\n    @WasExperimental(ExperimentalStdlibApi::class)\n    fun
insert(index: Int, value: Boolean): StringBuilder\n\n    /**\n     * Inserts the specified character [value] into this

```

```

string builder at the specified [index]
and returns this instance.\n *\n * @throws IndexOutOfBoundsException if [index] is less than zero or greater
than the length of this string builder.\n *\n @SinceKotlin("1.4")\n
@WasExperimental(ExperimentalStdlibApi::class)\n fun insert(index: Int, value: Char): StringBuilder\n\n /**\n * Inserts characters in the specified character array [value] into this string builder at the specified [index] and
returns this instance.\n *\n * The inserted characters go in same order as in the [value] character array, starting
at [index].\n *\n * @throws IndexOutOfBoundsException if [index] is less than zero or greater than the length
of this string builder.\n *\n @SinceKotlin("1.4")\n @WasExperimental(ExperimentalStdlibApi::class)\n
fun insert(index: Int, value: CharArray): StringBuilder\n\n /**\n * Inserts characters in the specified character
sequence [value] into this string builder at the specified [index] and returns this
instance.\n *\n * The inserted characters go in the same order as in the [value] character sequence, starting at
[index].\n *\n * @param index the position in this string builder to insert at.\n * @param value the character
sequence from which characters are inserted. If [value] is `null`, then the four characters `"\u0000\u0000\u0000\u0000"` are inserted.\n
*\n * @throws IndexOutOfBoundsException if [index] is less than zero or greater than the length of this string
builder.\n *\n @SinceKotlin("1.4")\n @WasExperimental(ExperimentalStdlibApi::class)\n fun
insert(index: Int, value: CharSequence?): StringBuilder\n\n /**\n * Inserts the string representation of the
specified object [value] into this string builder at the specified [index] and returns this instance.\n *\n * The
overall effect is exactly as if the [value] were converted to a string by the `value.toString()` method,\n * and then
that string was inserted into this string builder
at the specified [index].\n *\n * @throws IndexOutOfBoundsException if [index] is less than zero or greater
than the length of this string builder.\n *\n @SinceKotlin("1.4")\n
@WasExperimental(ExperimentalStdlibApi::class)\n fun insert(index: Int, value: Any?): StringBuilder\n\n /**\n *
Inserts the string [value] into this string builder at the specified [index] and returns this instance.\n *\n * If
[value] is `null`, then the four characters `"\u0000\u0000\u0000\u0000"` are inserted.\n *\n * @throws IndexOutOfBoundsException
if [index] is less than zero or greater than the length of this string builder.\n *\n @SinceKotlin("1.4")\n
@WasExperimental(ExperimentalStdlibApi::class)\n fun insert(index: Int, value: String?): StringBuilder\n\n
/**\n * Sets the length of this string builder to the specified [newLength].\n *\n * If the [newLength] is less
than the current length, it is changed to the specified [newLength].\n * Otherwise,
null characters '\u0000' are appended to this string builder until its length is less than the [newLength].\n *\n *
Note that in Kotlin/JS [set] operator function has non-constant execution time complexity.\n * Therefore,
increasing length of this string builder and then updating each character by index may slow down your program.\n
*\n * @throws IndexOutOfBoundsException or [IllegalArgumentException] if [newLength] is less than zero.\n
*\n @SinceKotlin("1.4")\n @WasExperimental(ExperimentalStdlibApi::class)\n fun setLength(newLength:
Int)\n\n /**\n * Returns a new [String] that contains characters in this string builder at [startIndex] (inclusive)
and up to the [length] (exclusive).\n *\n * @throws IndexOutOfBoundsException if [startIndex] is less than
zero or greater than the length of this string builder.\n *\n @SinceKotlin("1.4")\n
@WasExperimental(ExperimentalStdlibApi::class)\n fun substring(startIndex:
Int): String\n\n /**\n * Returns a new [String] that contains characters in this string builder at [startIndex]
(inclusive) and up to the [endIndex] (exclusive).\n *\n * @throws IndexOutOfBoundsException or
[IllegalArgumentException] when [startIndex] or [endIndex] is out of range of this string builder indices or when
`startIndex > endIndex`.\n *\n @SinceKotlin("1.4")\n @WasExperimental(ExperimentalStdlibApi::class)\n
fun substring(startIndex: Int, endIndex: Int): String\n\n /**\n * Attempts to reduce storage used for this string
builder.\n *\n * If the backing storage of this string builder is larger than necessary to hold its current
contents,\n * then it may be resized to become more space efficient.\n * Calling this method may, but is not
required to, affect the value of the [capacity] property.\n *\n @SinceKotlin("1.4")\n
@WasExperimental(ExperimentalStdlibApi::class)\n fun trimToSize()\n\n /**\n * Clears
the content of this string builder making it empty and returns this instance.\n *\n * @sample
samples.text.Strings.clearStringBuilder\n *\n @SinceKotlin("1.3")\n\n public expect fun StringBuilder.clear():

```

StringBuilder\n\n/\*\*\n \* Sets the character at the specified [index] to the specified [value].\n \*\n \* @throws IndexOutOfBoundsException if [index] is out of bounds of this string builder.\n \*\n @SinceKotlin("1.4")\n @WasExperimental(ExperimentalStdlibApi::class)\n public expect operator fun  
String set(index: Int, value: Char)\n\n/\*\*\n \* Replaces characters in the specified range of this string builder with characters in the specified string [value] and returns this instance.\n \*\n \* @param startIndex the beginning (inclusive) of the range to replace.\n \* @param endIndex the end (exclusive) of the range to replace.\n \* @param value the string to replace with.\n \*\n \* @throws IndexOutOfBoundsException or [IllegalArgumentException] if [startIndex] is less than zero, greater than the length of this string builder, or `startIndex > endIndex`.\n \*\n @SinceKotlin("1.4")\n @WasExperimental(ExperimentalStdlibApi::class)\n public expect fun  
String setRange(startIndex: Int, endIndex: Int, value: String): StringBuilder\n\n/\*\*\n \* Removes the character at the specified [index] from this string builder and returns this instance.\n \*\n \* If the `Char` at the specified [index] is part of a supplementary code point, this method does not remove the entire supplementary character.\n \*\n \* @param index the index of `Char` to remove.\n \*\n \* @throws IndexOutOfBoundsException if [index] is out of bounds of this string builder.\n \*\n @SinceKotlin("1.4")\n @WasExperimental(ExperimentalStdlibApi::class)\n public expect fun  
String deleteAt(index: Int): StringBuilder\n\n/\*\*\n \* Removes characters in the specified range from this string builder and returns this instance.\n \*\n \* @param startIndex the beginning (inclusive) of the range to remove.\n \* @param endIndex the end (exclusive) of the range to remove.\n \*\n \* @throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] is out of range of this string builder indices or when `startIndex > endIndex`.\n \*\n @SinceKotlin("1.4")\n @WasExperimental(ExperimentalStdlibApi::class)\n public expect fun  
String deleteRange(startIndex: Int, endIndex: Int): StringBuilder\n\n/\*\*\n \* Copies characters from this string builder into the [destination] character array.\n \*\n \* @param destination the array to copy to.\n \* @param destinationOffset the position in the array to copy to, 0 by default.\n \* @param startIndex the beginning (inclusive) of the range to copy, 0 by default.\n \* @param endIndex the end (exclusive) of the range to copy, length of this string builder by default.\n \*\n \* @throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of range of this string builder indices or when `startIndex > endIndex`.\n \*\n \* @throws IndexOutOfBoundsException when the subrange doesn't fit into the [destination] array starting at the specified [destinationOffset],\n \* or when that index is out of the [destination] array indices range.\n \*\n @SinceKotlin("1.4")\n @WasExperimental(ExperimentalStdlibApi::class)\n public expect fun  
String toArray(destination: CharArray, destinationOffset: Int = 0, startIndex: Int = 0, endIndex: Int = this.length)\n\n/\*\*\n \* Appends characters in a subarray of the specified character array [value] to this string builder and returns this instance.\n \*\n \* Characters are appended in order, starting at specified [startIndex].\n \*\n \* @param value the array from which characters are appended.\n \* @param startIndex the beginning (inclusive) of the subarray to append.\n \* @param endIndex the end (exclusive) of the subarray to append.\n \*\n \* @throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of range of the [value] array indices or when `startIndex > endIndex`.\n \*\n @SinceKotlin("1.4")\n @WasExperimental(ExperimentalStdlibApi::class)\n public expect fun  
String appendRange(value: CharArray, startIndex: Int, endIndex: Int): StringBuilder\n\n/\*\*\n \* Appends a subsequence of the specified character sequence [value] to this string builder and returns this instance.\n \*\n \* @param value the character sequence from which a subsequence is appended.\n \* @param startIndex the beginning (inclusive) of the subsequence to append.\n \* @param endIndex the end (exclusive) of the subsequence to append.\n \*\n \* @throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of range of the [value] character sequence indices or when `startIndex > endIndex`.\n \*\n @SinceKotlin("1.4")\n @WasExperimental(ExperimentalStdlibApi::class)\n public expect fun  
String appendRange(value: CharSequence, startIndex: Int, endIndex: Int): StringBuilder\n\n/\*\*\n \* Inserts

characters in a subarray of the specified

character array [value] into this string builder at the specified [index] and returns this instance.\n \*\n \* The inserted characters go in same order as in the [value] array, starting at [index].\n \*\n \* @param index the position in this string builder to insert at.\n \* @param value the array from which characters are inserted.\n \* @param startIndex the beginning (inclusive) of the subarray to insert.\n \* @param endIndex the end (exclusive) of the subarray to insert.\n \*\n \* @throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of range of the [value] array indices or when `startIndex > endIndex`.\n \* @throws IndexOutOfBoundsException if [index] is less than zero or greater than the length of this string builder.\n

```
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic expect fun\nStringBuilder.insertRange(index: Int, value: CharArray, startIndex: Int, endIndex: Int): StringBuilder\n\n/**\n * Inserts characters
```

in a subsequence of the specified character sequence [value] into this string builder at the specified [index] and returns this instance.\n \*\n \* The inserted characters go in the same order as in the [value] character sequence, starting at [index].\n \*\n \* @param index the position in this string builder to insert at.\n \* @param value the character sequence from which a subsequence is inserted.\n \* @param startIndex the beginning (inclusive) of the subsequence to insert.\n \* @param endIndex the end (exclusive) of the subsequence to insert.\n \*\n \* @throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of range of the [value] character sequence indices or when `startIndex > endIndex`.\n \* @throws IndexOutOfBoundsException if [index] is less than zero or greater than the length of this string builder.\n

```
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic expect fun\nStringBuilder.insertRange(index: Int,\n value: CharSequence, startIndex: Int, endIndex: Int):
```

```
StringBuilder\n\n@Suppress("EXTENSION_SHADOWED_BY_MEMBER")\n@Deprecated("Use\nappend(value: Any?) instead", ReplaceWith("append(value = obj)"),
```

```
DeprecationLevel.WARNING)\n@kotlin.internal.InlineOnly\npublic inline fun StringBuilder.append(obj: Any?):\nStringBuilder = this.append(obj)\n\n/**\n * Builds new string by populating newly created [StringBuilder] using\n provided [builderAction]\n * and then converting it to [String].\n *\n@kotlin.internal.InlineOnly\npublic inline fun\nbuildString(builderAction: String Builder.() -> Unit): String {\n contract { callsInPlace(builderAction,\n InvocationKind.EXACTLY_ONCE) }\n return StringBuilder().apply(builderAction).toString()\n}\n\n/**\n * Builds new string by populating newly created [StringBuilder] initialized with the given [capacity]\n * using\n provided [builderAction] and then converting it to [String].\n
```

```
*\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic inline fun buildString(capacity:\n Int, builderAction: String Builder.() -> Unit): String {\n contract { callsInPlace(builderAction,\n InvocationKind.EXACTLY_ONCE) }\n return
```

```
StringBuilder(capacity).apply(builderAction).toString()\n}\n\n/**\n * Appends all arguments to the given\n String Builder.\n *\n@public fun StringBuilder.append(vararg value: String?): String Builder {\n for (item in\n value)\n append(item)\n return this\n}\n\n/**\n * Appends all arguments to the given String Builder.\n
```

```
*\n@public fun StringBuilder.append(vararg value: Any?): String Builder {\n for (item in value)\n append(item)\n return this\n}\n\n// KT-52336\n@Deprecated("Use appendRange instead.",\n ReplaceWith("this.appendRange(str, offset, offset + len)"), level =\n DeprecationLevel.ERROR)\n@kotlin.internal.InlineOnly\n@Suppress("UNUSED_PARAMETER")\npublic inline\nfun StringBuilder.append(str: CharArray, offset: Int, len: Int): String Builder = throw NotImplementedError()\n\n/**\n * Appends a line feed character
```

```
(`\\n`) to this String Builder. *\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun\nStringBuilder.appendLine(): String Builder = append("`\\n`)\n\n/**\n * Appends [value] to this [StringBuilder], followed\n by a line feed character (`\\n`). *\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun\nStringBuilder.appendLine(value: CharSequence?): String Builder = append(value).appendLine()\n\n/**\n * Appends\n [value] to this [StringBuilder], followed by a line feed character (`\\n`).
```

```

*^@SinceKotlin("1.4")^@kotlin.internal.InlineOnly^public inline fun StringBuilder.appendLine(value:
String?): StringBuilder = append(value).appendLine()\n\n/** Appends [value] to this [StringBuilder], followed by a
line feed character (`\n`). */^@SinceKotlin("1.4")^@kotlin.internal.InlineOnly^public inline fun
StringBuilder.appendLine(value: Any?): StringBuilder = append(value).appendLine()\n\n/** Appends [value] to this
[StringBuilder], followed by a line feed character
(`\n`). */^@SinceKotlin("1.4")^@kotlin.internal.InlineOnly^public inline fun StringBuilder.appendLine(value:
CharArray): StringBuilder = append(value).appendLine()\n\n/** Appends [value] to this [StringBuilder], followed
by a line feed character (`\n`). */^@SinceKotlin("1.4")^@kotlin.internal.InlineOnly^public inline fun
StringBuilder.appendLine(value: Char): StringBuilder = append(value).appendLine()\n\n/** Appends [value] to this
[StringBuilder], followed by a line feed character (`\n`).
*/^@SinceKotlin("1.4")^@kotlin.internal.InlineOnly^public inline fun StringBuilder.appendLine(value:
Boolean): StringBuilder = append(value).appendLine()\n\n/* Copyright 2010-2021 JetBrains s.r.o. and Kotlin
Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be
found in the license/LICENSE.txt file.\n */^@npackage kotlin.text\n\nimport
kotlin.js.RegExp\n\n@kotlin.internal.InlineOnly^internal actual inline fun String.nativeIndexOf(ch:
Char, fromIndex: Int): Int = nativeIndexOf(ch.toString(), fromIndex)\n\n@kotlin.internal.InlineOnly^internal
actual inline fun String.nativeLastIndexOf(ch: Char, fromIndex: Int): Int = nativeLastIndexOf(ch.toString(),
fromIndex)\n\n/**\n * Returns `true` if this string starts with the specified prefix.\n
*/^@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")^public actual fun
String.startsWith(prefix: String, ignoreCase: Boolean = false): Boolean {\n    if (!ignoreCase)\n        return
nativeStartsWith(prefix, 0)\n    else\n        return regionMatches(0, prefix, 0, prefix.length, ignoreCase)\n}\n\n/**\n * Returns `true` if a substring of this string starting at the specified offset [startIndex] starts with the specified prefix.\n
*/^@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")^public actual fun
String.startsWith(prefix: String, startIndex: Int, ignoreCase: Boolean = false): Boolean {\n    if (!ignoreCase)\n        return nativeStartsWith(prefix, startIndex)\n
    else\n        return regionMatches(startIndex, prefix, 0, prefix.length, ignoreCase)\n}\n\n/**\n * Returns `true` if
this string ends with the specified suffix.\n
*/^@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")^public actual fun
String.endsWith(suffix: String, ignoreCase: Boolean = false): Boolean {\n    if (!ignoreCase)\n        return
nativeEndsWith(suffix)\n    else\n        return regionMatches(length - suffix.length, suffix, 0, suffix.length,
ignoreCase)\n}\n\n@Deprecated("Use Regex.matches() instead",
ReplaceWith("regex.toRegex().matches(this)"))^@DeprecatedSinceKotlin(warningSince = "1.6")^public fun
String.matches(regex: String): Boolean {\n    @Suppress("DEPRECATION")\n    val result = this.match(regex)\n    return result != null && result.size != 0\n}\n\n/**\n * Returns `true` if this string is empty or consists solely of
whitespace characters.\n
*/\n * @sample samples.text.Strings.stringIsBlank\n */^public actual fun
CharSequence.isBlank():
Boolean = length == 0 || indices.all { this[it].isWhitespace() }\n\n/**\n * Returns `true` if this string is equal to
[other], optionally ignoring character case.\n
*/\n * Two strings are considered to be equal if they have the same
length and the same character at the same index.\n
*/\n * If [ignoreCase] is true, the result of
`Char.uppercaseChar().lowercaseChar()` on each character is compared.\n
*/\n * @param ignoreCase `true` to ignore
character case when comparing strings. By default `false`.\n
*/^@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")^public actual fun
String?.equals(other: String?, ignoreCase: Boolean = false): Boolean {\n    if (this == null) return other == null\n    if
(other == null) return false\n    if (!ignoreCase) return this == other\n    if (this.length != other.length) return
false\n    for (index in 0 until this.length) {\n        val thisChar = this[index]\n        val otherChar = other[index]\n        if (!thisChar.equals(otherChar, ignoreCase)) {\n
            return false\n        }\n    }\n    return
true\n}\n\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")^public actual fun

```

```

CharSequence.regionMatches(thisOffset: Int, other: CharSequence, otherOffset: Int, length: Int, ignoreCase:
Boolean = false): Boolean =\n    regionMatchesImpl(thisOffset, other, otherOffset, length, ignoreCase)\n\n/**\n *
Returns a copy of this string having its first letter titlecased using the rules of the default locale,\n * or the original
string if it's empty or already starts with a title case letter.\n * \n * The title case of a character is usually the same as
its upper case with several exceptions.\n * The particular list of characters with the special title case form depends
on the underlying platform.\n * \n * @sample samples.text.Strings.capitalize\n * \n * @Deprecated("Use
replaceFirstChar instead.")\n * \n * @DeprecatedSinceKotlin(warningSince =
\n * 1.5)\n * \n * public actual fun String.capitalize(): String {\n *     return if (isEmpty()) substring(0, 1).uppercase() +
substring(1) else this\n * }\n\n/**\n * Returns a copy of this string having its first letter lowercased using the rules of
the default locale,\n * or the original string if it's empty or already starts with a lower case letter.\n * \n * @sample
samples.text.Strings.decapitalize\n * \n * @Deprecated("Use replaceFirstChar instead.")\n * \n * @DeprecatedSinceKotlin(warningSince = \n * 1.5)\n * \n * public
actual fun String.decapitalize(): String {\n *     return if (isEmpty()) substring(0, 1).lowercase() + substring(1) else
this\n * }\n\n/**\n * Returns a string containing this char sequence repeated [n] times.\n * \n * @throws
[IllegalArgumentException] when n < 0.\n * \n * @sample samples.text.Strings.repeat\n * \n * public actual fun
CharSequence.repeat(n: Int): String {\n *     require(n >= 0) { "Count 'n' must be non-negative, but was $n." }\n *
return\n *     when (n) {\n *         0 -> ""\n *         1 -> this.toString()\n *         else -> {\n *             var result = ""\n *             if (!isEmpty())\n *                 var s = this.toString()\n *                 var count = n\n *                 while (true) {\n *                     if ((count and 1)
== 1) {\n *                         result += s\n *                     }\n *                     count = count ushr 1\n *                     if (count == 0)\n *                         break\n *                     s += s\n *                 }\n *                 return result\n *             }\n *         }\n *     }\n\n/**\n * Returns a new string obtained by replacing all occurrences of the [oldValue] substring in this
string\n * with the specified [newValue] string.\n * \n * @sample samples.text.Strings.replace\n * \n * @Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\n * \n * public actual fun
String.replace(oldValue: String, newValue: String, ignoreCase: Boolean = false): String =\n *     nativeReplace(Regex.escape(oldValue),\n *         if (ignoreCase) "gui" else "gu"), Regex.nativeEscapeReplacement(newValue))\n\n/**\n * Returns a new string
with all occurrences of [oldChar] replaced with [newChar].\n * \n * @sample samples.text.Strings.replace\n * \n * @Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\n * \n * public actual fun
String.replace(oldChar: Char, newChar: Char, ignoreCase: Boolean = false): String =\n *     nativeReplace(Regex.escape(oldChar.toString()), if (ignoreCase) "gui" else "gu"),\n *         newChar.toString())\n\n/**\n * Returns a new string with the first occurrence of [oldValue] replaced with [newValue].\n * \n * @sample samples.text.Strings.replaceFirst\n * \n * @Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\n * \n * public actual fun
String.replaceFirst(oldValue: String, newValue: String, ignoreCase: Boolean = false): String =\n *     nativeReplace(Regex.escape(oldValue), if (ignoreCase) "ui" else "u"),\n *         Regex.nativeEscapeReplacement(newValue))\n\n/**\n * Returns a new string with the first occurrence of [oldChar] replaced with [newChar].\n * \n * @sample samples.text.Strings.replaceFirst\n * \n * @Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\n * \n * public actual fun
String.replaceFirst(oldChar: Char, newChar: Char, ignoreCase: Boolean = false): String =\n *     nativeReplace(Regex.escape(oldChar.toString()),\n *         if (ignoreCase) "ui" else "u"), newChar.toString())\n\n/**\n * Copyright 2010-2019 JetBrains s.r.o. and Kotlin
Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be
found in the license/LICENSE.txt file.\n * \n * @package kotlin.text\n\n/**\n * Returns the negative [size] if
[throwOnMalformed] is false, throws [CharacterCodingException] otherwise. \n * \n * private fun malformed(size: Int,
index: Int, throwOnMalformed: Boolean): Int {\n *     if (throwOnMalformed) throw\n *     CharacterCodingException("Malformed sequence starting at ${index - 1}")\n *     return -size\n * }\n\n/**\n * Returns
code point corresponding to UTF-16 surrogate pair,\n * where the first of the pair is the [high] and the second is in
the [string] at the [index].\n * Returns zero if the pair is malformed and [throwOnMalformed] is false.\n * \n * @throws CharacterCodingException if the pair is malformed and [throwOnMalformed] is true.\n * \n * private

```

```

fun codePointFromSurrogate(string: String, high: Int, index: Int, endIndex: Int, throwOnMalformed: Boolean): Int
{
    if (high !in 0xD800..0xDBFF || index >= endIndex) {
        return malformed(0, index, throwOnMalformed)
    }
    val low = string[index].code
    if (low !in 0xDC00..0xDFFF) {
        return malformed(0, index, throwOnMalformed)
    }
    return 0x10000 + ((high and 0x3FF) shl 10) or (low and 0x3FF)
}

Returns code point corresponding to UTF-8 sequence of two bytes, where the first byte of the sequence is the
[byte1] and the second byte is in the [bytes] array at the [index]. Returns zero if the sequence is malformed and
[throwOnMalformed] is false. @throws CharacterCodingException if the sequence of two bytes is
malformed and [throwOnMalformed] is true.

private fun codePointFrom2(bytes: ByteArray, byte1: Int, index:
Int, endIndex: Int, throwOnMalformed: Boolean): Int {
    if (byte1 and 0x1E == 0 || index >= endIndex)
    {
        return malformed(0, index, throwOnMalformed)
    }
    val byte2 = bytes[index].toInt()
    if (byte2 and 0xC0 != 0x80)
    {
        return malformed(0, index, throwOnMalformed)
    }
    return (byte1 shl 6) xor byte2 xor 0xF8
}

Returns code point corresponding to UTF-8 sequence of three bytes, where the first byte of
the sequence is the [byte1] and the others are in the [bytes] array starting from the [index]. Returns a non-
positive value indicating number of bytes from [bytes] included in malformed sequence if the sequence is
malformed and [throwOnMalformed] is false. @throws CharacterCodingException if the sequence of three
bytes is malformed and [throwOnMalformed] is true.

private fun codePointFrom3(bytes: ByteArray, byte1:
Int, index: Int, endIndex: Int, throwOnMalformed: Boolean): Int {
    if (index >= endIndex)
    {
        return malformed(0, index, throwOnMalformed)
    }
    val byte2 = bytes[index].toInt()
    if (byte1
and 0xF == 0)
    {
        if (byte2 and 0xE0 != 0xA0)
        {
            // Non-shortest form
            return malformed(0, index, throwOnMalformed)
        }
    }
    else if (byte1 and 0xF == 0xD)
    {
        if (byte2 and 0xE0 != 0x80)
        {
            // Surrogate code point
            return malformed(0, index, throwOnMalformed)
        }
    }
    else if (byte2 and 0xC0 != 0x80)
    {
        return malformed(0, index, throwOnMalformed)
    }
    if (index + 1 == endIndex)
    {
        return malformed(1, index, throwOnMalformed)
    }
    val byte3 = bytes[index + 1].toInt()
    if (byte3 and 0xC0 != 0x80)
    {
        return malformed(1, index, throwOnMalformed)
    }
    return (byte1 shl 12) xor (byte2
shl 6) xor byte3 xor -0x1E080
}

Returns code point corresponding to UTF-8 sequence of four bytes, where the first byte of the sequence is the
[byte1] and the others are in the [bytes] array starting from the [index]. Returns a non-positive value indicating
number of bytes from [bytes] included in malformed sequence if the sequence is malformed and
[throwOnMalformed] is false. @throws CharacterCodingException if the sequence of four bytes is
malformed and [throwOnMalformed] is true.

private fun codePointFrom4(bytes: ByteArray, byte1: Int, index:
Int, endIndex: Int, throwOnMalformed: Boolean): Int {
    if (index >= endIndex)
    {
        return malformed(0, index, throwOnMalformed)
    }
    val byte2 = bytes[index].toInt()
    if (byte1 and 0xF == 0x0)
    {
        if (byte2 and 0xF0 <= 0x80)
        {
            // Non-shortest form
            return malformed(0, index, throwOnMalformed)
        }
    }
    else if (byte1 and 0xF == 0x4)
    {
        if (byte2 and 0xF0 != 0x80)
        {
            // Out of Unicode code points
            domain (larger than U+10FFFF)
            return malformed(0, index, throwOnMalformed)
        }
    }
    else if (byte1 and 0xF > 0x4)
    {
        return malformed(0, index, throwOnMalformed)
    }
    else if (byte2
and 0xC0 != 0x80)
    {
        return malformed(0, index, throwOnMalformed)
    }
    if (index + 1 == endIndex)
    {
        return malformed(1, index, throwOnMalformed)
    }
    val byte3 = bytes[index + 1].toInt()
    if (byte3
and 0xC0 != 0x80)
    {
        return malformed(1, index, throwOnMalformed)
    }
    if (index + 2 == endIndex)
    {
        return malformed(2, index, throwOnMalformed)
    }
    val byte4 = bytes[index + 2].toInt()
    if (byte4
and 0xC0 != 0x80)
    {
        return malformed(2, index, throwOnMalformed)
    }
    return (byte1 shl 18) xor
(byte2 shl 12) xor (byte3 shl 6) xor byte4 xor 0x381F80
}

Maximum number of bytes needed to encode
a single char. Code points in `0..0x7F` are encoded in a single byte. Code points in `0x80..0x7FF` are
encoded in two bytes. Code points in `0x800..0xD7FF` or in `0xE000..0xFFFF` are encoded in three bytes.
Surrogate code points in `0xD800..0xDFFF` are not Unicode scalar values, therefore
aren't encoded. Code points in `0x10000..0x10FFFF` are represented by a pair of surrogate `Char`s and are
encoded in four bytes.

private const val MAX_BYTES_PER_CHAR = 3
private val REPLACEMENT_BYTE_SEQUENCE:

```

ByteArray = byteArrayOf(0xEF.toByte(), 0xBF.toByte(), 0xBD.toByte())\n\n/\*\*\n \* Encodes the [string] using UTF-8 and returns the resulting [ByteArray].\n \* @param string the string to encode.\n \* @param startIndex the start offset (inclusive) of the substring to encode.\n \* @param endIndex the end offset (exclusive) of the substring to encode.\n \* @param throwOnMalformed whether to throw on malformed char sequence or replace by the [REPLACEMENT\_BYTE\_SEQUENCE].\n \* @throws CharacterCodingException if the char sequence is malformed and [throwOnMalformed] is true.\n \*/\ninternal fun encodeUtf8(string: String, startIndex: Int, endIndex: Int, throwOnMalformed: Boolean): ByteArray

```
{\n    require(startIndex >= 0 && endIndex <= string.length && startIndex <= endIndex)\n    val bytes = ByteArray((endIndex - startIndex) * MAX_BYTES_PER_CHAR)\n    var byteIndex = 0\n    var charIndex = startIndex\n    while (charIndex < endIndex) {\n        val code = string[charIndex++].code\n        when {\n            code < 0x80 ->\n                bytes[byteIndex++] = code.toByte()\n            code < 0x800 -> {\n                bytes[byteIndex++] = ((code shr 6) or 0xC0).toByte()\n                bytes[byteIndex++] = ((code and 0x3F) or 0x80).toByte()\n            }\n            code < 0xD800 || code >= 0xE000 -> {\n                bytes[byteIndex++] = ((code shr 12) or 0xE0).toByte()\n                bytes[byteIndex++] = (((code shr 6) and 0x3F) or 0x80).toByte()\n                bytes[byteIndex++] = ((code and 0x3F) or 0x80).toByte()\n            }\n            else -> { // Surrogate char value\n                val codePoint = codePointFromSurrogate(string, code, charIndex, endIndex, throwOnMalformed)\n                if (codePoint <= 0) {\n                    bytes[byteIndex++] = REPLACEMENT_BYTE_SEQUENCE[0]\n                    bytes[byteIndex++] = REPLACEMENT_BYTE_SEQUENCE[1]\n                    bytes[byteIndex++] = REPLACEMENT_BYTE_SEQUENCE[2]\n                } else {\n                    bytes[byteIndex++] = ((codePoint shr 18) or 0xF0).toByte()\n                    bytes[byteIndex++] = (((codePoint shr 12) and 0x3F) or 0x80).toByte()\n                    bytes[byteIndex++] = (((codePoint shr 6) and 0x3F) or 0x80).toByte()\n                    bytes[byteIndex++] = ((codePoint and 0x3F) or 0x80).toByte()\n                }\n                charIndex++\n            }\n        }\n    }\n    return if (bytes.size == byteIndex) bytes else bytes.copyOf(byteIndex)\n}\n\n/**\n * The character a malformed UTF-8 byte sequence is replaced by.\n */\nprivate const val REPLACEMENT_CHAR = "\uFFFF"\n\n/**\n * Decodes the UTF-8 [bytes] array and returns
```

```
the resulting [String].\n * @param bytes the byte array to decode.\n * @param startIndex the start offset (inclusive) of the array to be decoded.\n * @param endIndex the end offset (exclusive) of the array to be encoded.\n * @param throwOnMalformed whether to throw on malformed byte sequence or replace by the [REPLACEMENT_CHAR].\n * @throws CharacterCodingException if the array is malformed UTF-8 byte sequence and [throwOnMalformed] is true.\n */\ninternal fun decodeUtf8(bytes: ByteArray, startIndex: Int, endIndex: Int, throwOnMalformed: Boolean): String {\n    require(startIndex >= 0 && endIndex <= bytes.size && startIndex <= endIndex)\n    var byteIndex = startIndex\n    val stringBuilder = StringBuilder()\n    while (byteIndex < endIndex) {\n        val byte = bytes[byteIndex++].toInt()\n        when {\n            byte >= 0 ->\n                stringBuilder.append(byte.toChar())\n            byte shr 5 == -2 -> {\n                val code = codePointFrom2(bytes, byte, byteIndex, endIndex, throwOnMalformed)\n                if (code <= 0) {\n                    stringBuilder.append(REPLACEMENT_CHAR)\n                    byteIndex += -code\n                } else {\n                    stringBuilder.append(code.toChar())\n                    byteIndex += 1\n                }\n            }\n            byte shr 4 == -2 -> {\n                val code = codePointFrom3(bytes, byte, byteIndex, endIndex, throwOnMalformed)\n                if (code <= 0) {\n                    stringBuilder.append(REPLACEMENT_CHAR)\n                    byteIndex += -code\n                } else {\n                    stringBuilder.append(code.toChar())\n                    byteIndex += 2\n                }\n            }\n            byte shr 3 == -2 -> {\n                val code = codePointFrom4(bytes, byte, byteIndex, endIndex, throwOnMalformed)\n                if (code <= 0) {\n                    stringBuilder.append(REPLACEMENT_CHAR)\n                    byteIndex += -code\n                } else {\n                    val high = (code - 0x10000) shr 10 or 0xD800\n                    val low = (code and 0x3FF) or 0xDC00\n                    stringBuilder.append(high.toChar())\n                    stringBuilder.append(low.toChar())\n                    byteIndex += 3\n                }\n            }\n            else -> {\n
```



```

malformed(0, byteIndex, throwOnMalformed)\n        stringBuilder.append(REPLACEMENT_CHAR)\n
}\n    }\n    }\n\n    return stringBuilder.toString()\n}", /*\n * Copyright 2010-2020 JetBrains s.r.o. and Kotlin
Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be
found in the license/LICENSE.txt file.\n *^\n\npackage kotlin\n\n/**\n * Returns the detailed description of this
throwable with its stack trace.\n *^\n * The detailed description includes:\n * - the short description (see
[Throwable.toString]) of this throwable;\n * - the complete
stack trace;\n * - detailed descriptions of the exceptions that were [suppressed][suppressedExceptions] in order to
deliver this exception;\n * - the detailed description of each throwable in the [Throwable.cause] chain.\n
*^\n\n@SinceKotlin("1.4")\npublic actual fun Throwable.stackTraceToString(): String =
ExceptionTraceBuilder().buildFor(this)\n\n/**\n * Prints the [detailed description][Throwable.stackTraceToString]
of this throwable to console error output.\n *^\n\n@SinceKotlin("1.4")\npublic actual fun
Throwable.printStackTrace() {\n    console.error(this.stackTraceToString())\n}\n\n/**\n * Adds the specified
exception to the list of exceptions that were\n * suppressed in order to deliver this exception.\n
*^\n\n@SinceKotlin("1.4")\npublic actual fun Throwable.addSuppressed(exception: Throwable) {\n    if (this !==
exception) {\n        val suppressed = this.asDynamic()._suppressed.unsafeCast<MutableList<Throwable>?>()\n
if (suppressed == null) {\n            this.asDynamic()._suppressed
= mutableListOf(exception)\n        } else {\n            suppressed.add(exception)\n        }\n    }\n}\n\n/**\n * Returns
a list of all exceptions that were suppressed in order to deliver this exception.\n *^\n\n@SinceKotlin("1.4")\npublic
actual val Throwable.suppressedExceptions: List<Throwable>\n    get() {\n        return
this.asDynamic()._suppressed?.unsafeCast<List<Throwable>>() ?: emptyList()\n    }\n\nprivate class
ExceptionTraceBuilder {\n    private val target = StringBuilder()\n    private val visited = arrayOf<Throwable>()\n
private var topStack: String = ""\n    private var topStackStart: Int = 0\n    fun buildFor(exception: Throwable):
String {\n        exception.dumpFullTrace("", "")\n        return target.toString()\n    }\n    private fun
hasSeen(exception: Throwable): Boolean = visited.any { it === exception }\n    private fun
Throwable.dumpFullTrace(indent: String, qualifier: String) {\n        this.dumpSelfTrace(indent, qualifier)
|| return\n        var cause = this.cause\n        while (cause != null) {\n            cause.dumpSelfTrace(indent, "Caused
by: ") || return\n            cause = cause.cause\n        }\n    }\n    private fun Throwable.dumpSelfTrace(indent:
String, qualifier: String): Boolean {\n        target.append(indent).append(qualifier)\n        val shortInfo =
this.toString()\n        if (hasSeen(this)) {\n            target.append("[CIRCULAR REFERENCE, SEE ABOVE:
\").append(shortInfo).append("]\n")\n            return false\n        }\n        visited.asDynamic().push(this)\n        var
stack = this.asDynamic().stack as String?\n        if (stack != null) {\n            val stackStart =
stack.indexOf(shortInfo).let { if (it < 0) 0 else it + shortInfo.length }\n            if (stackStart == 0)
target.append(shortInfo).append("\n")\n            if (topStack.isEmpty()) {\n                topStack = stack\n
topStackStart = stackStart\n            } else {\n
                stack = dropCommonFrames(stack, stackStart)\n            }\n            if (indent.isNotEmpty()) {\n                //
indent stack, but avoid indenting exception message lines\n                val messageLines = if (stackStart == 0) 0 else
1 + shortInfo.count { c -> c == '\n' }\n                stack.lineSequence().forEachIndexed { index: Int, line: String ->{\n
                    if (index >= messageLines) target.append(indent)\n                    target.append(line).append("\n")\n
                }\n            } else {\n                target.append(stack).append("\n")\n            } else {\n
target.append(shortInfo).append("\n")\n            }\n            val suppressed = suppressedExceptions\n            if
(suppressed.isNotEmpty()) {\n                val suppressedIndent = indent + "  "\n                for (s in suppressed) {\n
                    s.dumpFullTrace(suppressedIndent, "Suppressed: ")\n                }\n            }\n            return true\n        }\n
private fun dropCommonFrames(stack: String, stackStart: Int): String {\n        var commonFrames: Int = 0\n
var lastBreak: Int = 0\n        var preLastBreak: Int = 0\n        for (pos in 0 until minOf(topStack.length -
topStackStart, stack.length - stackStart)) {\n            val c = stack[stack.lastIndex - pos]\n            if (c !=
topStack[topStack.lastIndex - pos]) break\n            if (c == '\n') {\n                commonFrames += 1\n
preLastBreak = lastBreak\n                lastBreak = pos\n            }\n        }\n        if (commonFrames <= 1) return
stack\n        while (preLastBreak > 0 && stack[stack.lastIndex - (preLastBreak - 1)] == ')'\n            preLastBreak -=

```

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1\n\n // leave 1 common frame to ease matching with the top exception stack\n return
stack.dropLast(preLastBreak) + "\"... and ${commonFrames - 1} more common stack frames skipped\"\n
}\n}\", /*\n * Copyright 2010-2021 JetBrains s.r.o. and Kotlin Programming Language
contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n */\n\npackage kotlin.time\n\nimport kotlin.js.json\nimport kotlin.math.*\n\ninternal
actual inline val durationAssertionsEnabled: Boolean get() = true\n\ninternal actual fun
formatToExactDecimals(value: Double, decimals: Int): String {\n val rounded = if (decimals == 0) {\n value\n
} else {\n val pow = 10.0.pow(decimals)\n JsMath.round(abs(value) * pow) / pow * sign(value)\n }\n
return if (abs(rounded) < 1e21) {\n // toFixed switches to scientific format after 1e21\n
rounded.asDynamic().toFixed(decimals).unsafeCast<String>()\n } else {\n // toPrecision outputs the specified
number of digits, but only for positive numbers\n val positive = abs(rounded)\n val positiveString =
positive.asDynamic().toPrecision(ceil(log10(positive)) + decimals).unsafeCast<String>()\n if (rounded < 0)
\"-$positiveString\" else positiveString\n }\n}\n\ninternal actual fun formatUpToDecimals(value: Double,
decimals: Int): String {\n return value.asDynamic().toLocaleString(\"en-us\", json(\"maximumFractionDigits\" to
decimals)).unsafeCast<String>()\n}\n}\", /*\n * Copyright 2010-2021 JetBrains s.r.o. and Kotlin Programming
Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n */\n\npackage
kotlin.time\n\n@SinceKotlin(\"1.6\")\n@WasExperimental(ExperimentalTime::class)\npublic actual enum class
DurationUnit(internal val scale: Double) {\n /**\n * Time unit representing one nanosecond, which is 1/1000
of a microsecond.\n */\n NANOSECONDS(1e0),\n /**\n * Time unit representing one microsecond, which is
1/1000 of a millisecond.\n */\n MICROSECONDS(1e3),\n /**\n * Time unit representing one millisecond,
which is 1/1000 of a second.\n */\n MILLISECONDS(1e6),\n
/**\n * Time unit representing one second.\n */\n SECONDS(1e9),\n /**\n * Time unit representing
one minute.\n */\n MINUTES(60e9),\n /**\n * Time unit representing one hour.\n */\n
HOURS(3600e9),\n /**\n * Time unit representing one day, which is always equal to 24 hours.\n */\n
DAYS(86400e9);\n}\n}\n\n@SinceKotlin(\"1.3\")\ninternal actual fun convertDurationUnit(value: Double, sourceUnit:
DurationUnit, targetUnit: DurationUnit): Double {\n val sourceCompareTarget =
sourceUnit.scale.compareTo(targetUnit.scale)\n return when {\n sourceCompareTarget > 0 -> value *
(sourceUnit.scale / targetUnit.scale)\n sourceCompareTarget < 0 -> value / (targetUnit.scale /
sourceUnit.scale)\n else -> value\n }\n}\n}\n\n@SinceKotlin(\"1.5\")\ninternal actual fun
convertDurationUnitOverflow(value: Long, sourceUnit: DurationUnit, targetUnit: DurationUnit): Long {\n val
sourceCompareTarget = sourceUnit.scale.compareTo(targetUnit.scale)\n
return when {\n sourceCompareTarget > 0 -> value * (sourceUnit.scale / targetUnit.scale).toLong()\n
sourceCompareTarget < 0 -> value / (targetUnit.scale / sourceUnit.scale).toLong()\n else -> value\n
}\n}\n}\n\n@SinceKotlin(\"1.5\")\ninternal actual fun convertDurationUnit(value: Long, sourceUnit: DurationUnit,
targetUnit: DurationUnit): Long {\n val sourceCompareTarget = sourceUnit.scale.compareTo(targetUnit.scale)\n
return when {\n sourceCompareTarget > 0 -> {\n val scale = (sourceUnit.scale /
targetUnit.scale).toLong()\n val result = value * scale\n when {\n result / scale == value ->
result\n value > 0 -> Long.MAX_VALUE\n else -> Long.MIN_VALUE\n }\n }\n
sourceCompareTarget < 0 -> value / (targetUnit.scale / sourceUnit.scale).toLong()\n else -> value\n
}\n}\n}\n}\", /*\n * Copyright 2010-2022 JetBrains s.r.o. and Kotlin
Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be
found in the license/LICENSE.txt file.\n */\n\npackage kotlin.time\n\nimport
org.w3c.performance.GlobalPerformance\nimport org.w3c.performance.Performance\nimport
kotlin.math.truncate\nimport kotlin.time.Duration.Companion.milliseconds\nimport
kotlin.time.TimeSource.Monotonic.ValueTimeMark\n\n@Suppress(\"ACTUAL_WITHOUT_EXPECT\") //
visibility\n\ninternal actual typealias ValueTimeMarkReading = Any\n\n@ExperimentalTime\n\ninternal interface
DefaultTimeSource : TimeSource.WithComparableMarks {\n override fun markNow(): ValueTimeMark\n fun

```

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elapsedFrom(timeMark: ValueTimeMark): Duration\n fun differenceBetween(one: ValueTimeMark, another:
ValueTimeMark): Duration\n fun adjustReading(timeMark: ValueTimeMark, duration: Duration):
ValueTimeMark\n}\n\n@SinceKotlin("1.3")\n@ExperimentalTime\ninternal actual object MonotonicTimeSource
: DefaultTimeSource, TimeSource.WithComparableMarks
{ // TODO: interface should not be required here\n\n private val actualSource: DefaultTimeSource = run {\n
val isNode: Boolean = js("typeof process !== 'undefined' && process.versions && !process.versions.node")\n\n
if (isNode)\n HrTimeSource(js("process").unsafeCast<Process>())\n else\n js("typeof self !==
'undefined' ? self : globalThis")\n .unsafeCast<GlobalPerformance?>()\n ?.performance\n
?.let(::PerformanceTimeSource)\n ?: DateNowTimeSource\n }\n\n actual override fun markNow():
ValueTimeMark = actualSource.markNow()\n actual override fun elapsedFrom(timeMark: ValueTimeMark):
Duration = actualSource.elapsedFrom(timeMark)\n actual override fun differenceBetween(one: ValueTimeMark,
another: ValueTimeMark): Duration = actualSource.differenceBetween(one, another)\n\n actual override fun
adjustReading(timeMark: ValueTimeMark, duration: Duration):
ValueTimeMark =\n actualSource.adjustReading(timeMark, duration)\n}\n\ninternal external interface Process
{\n fun hrtime(time: Array<Double> = definedExternally):
Array<Double>\n}\n\n@SinceKotlin("1.3")\n@ExperimentalTime\ninternal class HrTimeSource(private val
process: Process) : DefaultTimeSource {\n\n override fun markNow(): ValueTimeMark =
ValueTimeMark(process.hrtime())\n override fun elapsedFrom(timeMark: ValueTimeMark): Duration =\n
@Suppress("UNCHECKED_CAST")\n process.hrtime(timeMark.reading as Array<Double>)\n .let {
(seconds, nanos) -> seconds.toDuration(DurationUnit.SECONDS) +
nanos.toDuration(DurationUnit.NANOSECONDS) }\n\n @Suppress("UNCHECKED_CAST")\n override fun
differenceBetween(one: ValueTimeMark, another: ValueTimeMark): Duration {\n val (s1, n1) = one.reading as
Array<Double>\n val (s2, n2) = another.reading as Array<Double>\n return (if (s1 == s2 && n1 == n2)
Duration.ZERO else (s1 - s2).toDuration(DurationUnit.SECONDS))
+ (n1 - n2).toDuration(DurationUnit.NANOSECONDS)\n }\n\n override fun adjustReading(timeMark:
ValueTimeMark, duration: Duration): ValueTimeMark =\n @Suppress("UNCHECKED_CAST")\n
(timeMark.reading as Array<Double>).let { (seconds, nanos) ->\n duration.toComponents { _, addNanos ->\n
val resultSeconds = sumCheckNaN(seconds + truncate(duration.toDouble(DurationUnit.SECONDS)))\n
arrayOf<Double>(resultSeconds, if (resultSeconds.isFinite()) nanos + addNanos else 0.0)\n }\n
}.let(TimeSource.Monotonic::ValueTimeMark)\n}\n\n override fun toString(): String =
"TimeSource(process.hrtime())"\n}\n\n@SinceKotlin("1.3")\n@ExperimentalTime\ninternal class
PerformanceTimeSource(val performance: Performance) : DefaultTimeSource { //
AbstractDoubleTimeSource(unit = DurationUnit.MILLISECONDS) {\n private fun read(): Double =
performance.now()\n\n override fun markNow(): ValueTimeMark
= ValueTimeMark(read())\n\n override fun elapsedFrom(timeMark: ValueTimeMark): Duration = (read() -
timeMark.reading as Double).milliseconds\n\n override fun differenceBetween(one: ValueTimeMark, another:
ValueTimeMark): Duration {\n val ms1 = one.reading as Double\n val ms2 = another.reading as Double\n
return if (ms1 == ms2) Duration.ZERO else (ms1 - ms2).milliseconds\n }\n\n override fun
adjustReading(timeMark: ValueTimeMark, duration: Duration): ValueTimeMark =\n
ValueTimeMark(sumCheckNaN(timeMark.reading as Double +
duration.toDouble(DurationUnit.MILLISECONDS)))\n\n override fun toString(): String =
"TimeSource(self.performance.now())"\n}\n\n@SinceKotlin("1.3")\n@ExperimentalTime\ninternal object
DateNowTimeSource : DefaultTimeSource {\n private fun read(): Double = kotlin.js.Date.now()\n\n override
fun markNow(): ValueTimeMark = ValueTimeMark(read())\n\n override fun elapsedFrom(timeMark:
ValueTimeMark): Duration = (read()
- timeMark.reading as Double).milliseconds\n\n override fun differenceBetween(one: ValueTimeMark, another:
ValueTimeMark): Duration {\n val ms1 = one.reading as Double\n val ms2 = another.reading as Double\n
return if (ms1 == ms2) Duration.ZERO else (ms1 - ms2).milliseconds\n }\n\n override fun

```

```

adjustReading(timeMark: ValueTimeMark, duration: Duration): ValueTimeMark =\n
ValueTimeMark(sumCheckNaN(timeMark.reading as Double +
duration.toDouble(DurationUnit.MILLISECONDS)))\n\n  override fun toString(): String =
`\"TimeSource(Date.now())\"`\n\nprivate fun sumCheckNaN(value: Double): Double = value.also { if (it.isNaN())
throw IllegalArgumentException(`\"Summing infinities of different signs\"`) }`,`/*\n * Copyright 2010-2020
JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the
Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\npackage kotlin.dom\n\nimport
org.w3c.dom.*\n\nimport
kotlin.contracts.*\n\n/**\n * Creates a new element with the specified [name].\n * The element is initialized
with the specified [init] function.\n */\n\n@SinceKotlin(`\"1.4\"`)\npublic fun Document.createElement(name: String,
init: Element.() -> Unit): Element {\n    contract { callsInPlace(init, InvocationKind.EXACTLY_ONCE) }\n    return createElement(name).apply(init)\n}\n\n/**\n * Appends a newly created element with the specified [name] to
this element.\n * The element is initialized with the specified [init] function.\n */\n\n@SinceKotlin(`\"1.4\"`)\npublic fun Element.appendChild(name: String, init: Element.() -> Unit): Element {\n    contract { callsInPlace(init, InvocationKind.EXACTLY_ONCE) }\n    return
ownerDocument!!.createElement(name, init).also { appendChild(it) }\n}\n\n`,`/*\n * Copyright 2010-2018
JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the
Apache 2.0 license that can be found in the license/LICENSE.txt
file.\n */\n\npackage kotlin.dom\n\nimport org.w3c.dom.*\n\n/**\n * Returns true if the element has the given CSS
class style in its 'class' attribute\n */\n\n@SinceKotlin(`\"1.4\"`)\nfun Element.hasClass(cssClass: String): Boolean =
className.matches(`\"\\\"(\\\"|^.*\\|s+)$cssClass($\\|s+.*)`\".toRegex())\n\n/**\n * Adds CSS class to element. Has no
effect if all specified classes are already in class attribute of the element\n */\n * @return true if at least one class has
been added\n */\n\n@SinceKotlin(`\"1.4\"`)\nfun Element.addClass(vararg cssClasses: String): Boolean {\n    val
missingClasses = cssClasses.filterNot { hasClass(it) }\n    if (missingClasses.isNotEmpty()) {\n        val
presentClasses = className.trim()\n        className = buildString {\n            append(presentClasses)\n            if
(!presentClasses.isEmpty()) {\n                append(`\" `\"`\n            }\n            missingClasses.joinTo(this, `\" `\"`\n
        }\n        return true\n    }\n    return false\n}\n\n/**\n * Removes all [cssClasses] from element. Has no effect if all specified classes are missing in class attribute of the
element\n */\n * @return true if at least one class has been removed\n */\n\n@SinceKotlin(`\"1.4\"`)\nfun
Element.removeClass(vararg cssClasses: String): Boolean {\n    if (cssClasses.any { hasClass(it) }) {\n        val
toBeRemoved = cssClasses.toSet()\n        className = className.trim().split(`\"\\|s+\".toRegex()).filter { it !in
toBeRemoved }.joinToString(`\" `\"`\n        return true\n    }\n    return false\n}\n`,`/*\n * Copyright 2010-2018
JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the
Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\n@file:kotlin.jvm.JvmMultifileClass\n@file:kotlin.jvm.JvmName(`\"StringsKt\"`)\n\npackage
kotlin.text\n\n/**\n * Converts the string into a regular expression [Regex] with the default options.\n */\n\n@kotlin.internal.InlineOnly\npublic inline
fun String.toRegex(): Regex = Regex(this)\n\n/**\n * Converts the string into a regular expression [Regex] with the
specified single [option].\n */\n\n@kotlin.internal.InlineOnly\npublic inline fun String.toRegex(option: RegexOption):
Regex = Regex(this, option)\n\n/**\n * Converts the string into a regular expression [Regex] with the specified set
of [options].\n */\n\n@kotlin.internal.InlineOnly\npublic inline fun String.toRegex(options: Set<RegexOption>):
Regex = Regex(this, options)\n`,`/*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language
contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n */\n\npackage kotlin.dom\n\nimport org.w3c.dom.*\n\n/**\n * Gets a value indicating
whether this node is a TEXT_NODE or a CDATA_SECTION_NODE.\n */\n\n@SinceKotlin(`\"1.4\"`)\npublic val
Node.isText: Boolean\n    get() = nodeType == Node.TEXT_NODE || nodeType ==
Node.CDATA_SECTION_NODE\n\n/**\n *

```

```

Gets a value indicating whether this node is an [Element].\n *\n@SinceKotlin("1.4")\npublic val Node.isElement:
Boolean\n  get() = nodeType == Node.ELEMENT_NODE\n", "/*\n * Copyright 2010-2018 JetBrains s.r.o. and
Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that
can be found in the license/LICENSE.txt file.\n *\n\npackage kotlinx.dom\n\nimport org.w3c.dom.*\n\n/**
Removes all the children from this node. *\n@SinceKotlin("1.4")\npublic fun Node.clear() {\n  while
(hasChildNodes()) {\n    removeChild(firstChild!!)\n  }\n}\n\n/**\n * Creates text node and append it to the
element.\n *\n * @return this element\n *\n@SinceKotlin("1.4")\nfun Element.appendText(text: String): Element
{\n  appendChild(ownerDocument!!.createTextNode(text))\n  return this\n}\n", "/*\n * Copyright 2010-2019
JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the
Apache 2.0 license
that can be found in the license/LICENSE.txt file.\n *\n\npackage org.w3c.dom\n\n@Deprecated("Use
UnionMessagePortOrWindowProxy instead.", ReplaceWith("UnionMessagePortOrWindowProxy"))\ntypealias
UnionMessagePortOrWindow = UnionMessagePortOrWindowProxy\n\n@Deprecated("Use `as` instead.",
ReplaceWith("`as`"))\nvar HTMLLinkElement.as_ get() = `as`\n  set(value) {\n    `as` = value\n  }\n\n@Deprecated("Use `is` instead.", ReplaceWith("`is`"))\nvar ElementCreationOptions.is_ get() = `is`\n  set(value) {\n    `is` = value\n  }", "/*\n * Copyright 2010-2021 JetBrains s.r.o. and Kotlin Programming
Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n *\n\n// NOTE: THIS FILE IS AUTO-GENERATED, DO NOT EDIT!\n// See
github.com/kotlin/dukat for details\n\npackage org.khronos.webgl\n\nimport kotlin.js.*\nimport
org.w3c.dom.*\nimport org.w3c.dom.events.*\n\npublic external
interface WebGLContextAttributes {\n  var alpha: Boolean? /* = true */\n    get() = definedExternally\n  set(value) = definedExternally\n  var depth: Boolean? /* = true */\n    get() = definedExternally\n  set(value)
= definedExternally\n  var stencil: Boolean? /* = false */\n    get() = definedExternally\n  set(value) =
definedExternally\n  var antialias: Boolean? /* = true */\n    get() = definedExternally\n  set(value) =
definedExternally\n  var premultipliedAlpha: Boolean? /* = true */\n    get() = definedExternally\n  set(value) = definedExternally\n  var preserveDrawingBuffer: Boolean? /* = false */\n    get() =
definedExternally\n  set(value) = definedExternally\n  var preferLowPowerToHighPerformance: Boolean? /* =
false */\n    get() = definedExternally\n  set(value) = definedExternally\n  var failIfMajorPerformanceCaveat:
Boolean? /* = false */\n    get() = definedExternally\n  set(value) = definedExternally\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n\n@kotlin.internal.InlineOnly\npublic inline fun WebGLContextAttributes(alpha:
Boolean? = true, depth: Boolean? = true, stencil: Boolean? = false, antialias: Boolean? = true, premultipliedAlpha:
Boolean? = true, preserveDrawingBuffer: Boolean? = false, preferLowPowerToHighPerformance: Boolean? = false,
failIfMajorPerformanceCaveat: Boolean? = false): WebGLContextAttributes {\n  val o = js("{}")\n  o["alpha"] = alpha\n  o["depth"] = depth\n  o["stencil"] = stencil\n  o["antialias"] = antialias\n  o["premultipliedAlpha"] = premultipliedAlpha\n  o["preserveDrawingBuffer"] = preserveDrawingBuffer\n  o["preferLowPowerToHighPerformance"] = preferLowPowerToHighPerformance\n  o["failIfMajorPerformanceCaveat"] = failIfMajorPerformanceCaveat\n  return o\n}\n\npublic external abstract
class WebGLObject\n\n/**\n * Exposes the JavaScript
[WebGLBuffer](https://developer.mozilla.org/en/docs/Web/API/WebGLBuffer)
to Kotlin\n *\n\npublic external abstract class WebGLBuffer : WebGLObject\n\n/**\n * Exposes the JavaScript
[WebGLFramebuffer](https://developer.mozilla.org/en/docs/Web/API/WebGLFramebuffer) to Kotlin\n *\n\npublic
external abstract class WebGLFramebuffer : WebGLObject\n\n/**\n * Exposes the JavaScript
[WebGLProgram](https://developer.mozilla.org/en/docs/Web/API/WebGLProgram) to Kotlin\n *\n\npublic external
abstract class WebGLProgram : WebGLObject\n\n/**\n * Exposes the JavaScript
[WebGLRenderbuffer](https://developer.mozilla.org/en/docs/Web/API/WebGLRenderbuffer) to Kotlin\n *\n\npublic
external abstract class WebGLRenderbuffer : WebGLObject\n\n/**\n * Exposes the JavaScript
[WebGLShader](https://developer.mozilla.org/en/docs/Web/API/WebGLShader) to Kotlin\n *\n\npublic external

```

```

abstract class WebGLShader : WebGLObject\n\n/**\n * Exposes the JavaScript
[WebGLTexture](https://developer.mozilla.org/en/docs/Web/API/WebGLTexture) to Kotlin\n *\npublic
external abstract class WebGLTexture : WebGLObject\n\n/**\n * Exposes the JavaScript
[WebGLUniformLocation](https://developer.mozilla.org/en/docs/Web/API/WebGLUniformLocation) to Kotlin\n
*\npublic external abstract class WebGLUniformLocation\n\n/**\n * Exposes the JavaScript
[WebGLActiveInfo](https://developer.mozilla.org/en/docs/Web/API/WebGLActiveInfo) to Kotlin\n *\npublic
external abstract class WebGLActiveInfo {\n  open val size: Int\n  open val type: Int\n  open val name:
String\n}\n\n/**\n * Exposes the JavaScript
[WebGLShaderPrecisionFormat](https://developer.mozilla.org/en/docs/Web/API/WebGLShaderPrecisionFormat) to
Kotlin\n *\npublic external abstract class WebGLShaderPrecisionFormat {\n  open val rangeMin: Int\n  open val
rangeMax: Int\n  open val precision:
Int\n}\n\n@Suppress("NESTED_CLASS_IN_EXTERNAL_INTERFACE")\npublic external interface
WebGLRenderingContextBase {\n  val canvas: HTMLCanvasElement\n  val drawingBufferWidth: Int\n  val
drawingBufferHeight:
Int\n  fun getContextAttributes(): WebGLContextAttributes?\n  fun isContextLost(): Boolean\n  fun
getSupportedExtensions(): Array<String>?\n  fun getExtension(name: String): dynamic\n  fun
activeTexture(texture: Int)\n  fun attachShader(program: WebGLProgram?, shader: WebGLShader?)\n  fun
bindAttribLocation(program: WebGLProgram?, index: Int, name: String)\n  fun bindBuffer(target: Int, buffer:
WebGLBuffer?)\n  fun bindFramebuffer(target: Int, framebuffer: WebGLFramebuffer?)\n  fun
bindRenderbuffer(target: Int, renderbuffer: WebGLRenderbuffer?)\n  fun bindTexture(target: Int, texture:
WebGLTexture?)\n  fun blendColor(red: Float, green: Float, blue: Float, alpha: Float)\n  fun
blendEquation(mode: Int)\n  fun blendEquationSeparate(modeRGB: Int, modeAlpha: Int)\n  fun
blendFunc(sfactor: Int, dfactor: Int)\n  fun blendFuncSeparate(srcRGB: Int, dstRGB: Int, srcAlpha: Int, dstAlpha:
Int)\n  fun bufferData(target: Int, size: Int, usage: Int)\n
  fun bufferData(target: Int, data: BufferDataSource?, usage: Int)\n  fun bufferSubData(target: Int, offset: Int, data:
BufferDataSource?)\n  fun checkFramebufferStatus(target: Int): Int\n  fun clear(mask: Int)\n  fun clearColor(red:
Float, green: Float, blue: Float, alpha: Float)\n  fun clearDepth(depth: Float)\n  fun clearStencil(s: Int)\n  fun
colorMask(red: Boolean, green: Boolean, blue: Boolean, alpha: Boolean)\n  fun compileShader(shader:
WebGLShader?)\n  fun compressedTexImage2D(target: Int, level: Int, internalformat: Int, width: Int, height: Int,
border: Int, data: ArrayBufferView)\n  fun compressedTexSubImage2D(target: Int, level: Int, xoffset: Int, yoffset:
Int, width: Int, height: Int, format: Int, data: ArrayBufferView)\n  fun copyTexImage2D(target: Int, level: Int,
internalformat: Int, x: Int, y: Int, width: Int, height: Int, border: Int)\n  fun copyTexSubImage2D(target: Int, level:
Int, xoffset: Int, yoffset: Int, x: Int, y: Int, width: Int, height:
Int)\n  fun createBuffer(): WebGLBuffer?\n  fun createFramebuffer(): WebGLFramebuffer?\n  fun
createProgram(): WebGLProgram?\n  fun createRenderbuffer(): WebGLRenderbuffer?\n  fun createShader(type:
Int): WebGLShader?\n  fun createTexture(): WebGLTexture?\n  fun cullFace(mode: Int)\n  fun
deleteBuffer(buffer: WebGLBuffer?)\n  fun deleteFramebuffer(framebuffer: WebGLFramebuffer?)\n  fun
deleteProgram(program: WebGLProgram?)\n  fun deleteRenderbuffer(renderbuffer: WebGLRenderbuffer?)\n  fun
deleteShader(shader: WebGLShader?)\n  fun deleteTexture(texture: WebGLTexture?)\n  fun depthFunc(func:
Int)\n  fun depthMask(flag: Boolean)\n  fun depthRange(zNear: Float, zFar: Float)\n  fun detachShader(program:
WebGLProgram?, shader: WebGLShader?)\n  fun disable(cap: Int)\n  fun disableVertexAttribArray(index: Int)\n
  fun drawArrays(mode: Int, first: Int, count: Int)\n  fun drawElements(mode: Int, count: Int, type: Int, offset: Int)\n
  fun enable(cap:
Int)\n  fun enableVertexAttribArray(index: Int)\n  fun finish()\n  fun flush()\n  fun
framebufferRenderbuffer(target: Int, attachment: Int, renderbuffertarget: Int, renderbuffer: WebGLRenderbuffer?)\n
  fun framebufferTexture2D(target: Int, attachment: Int, textarget: Int, texture: WebGLTexture?, level: Int)\n  fun
frontFace(mode: Int)\n  fun generateMipmap(target: Int)\n  fun getActiveAttrib(program: WebGLProgram?,
index: Int): WebGLActiveInfo?\n  fun getActiveUniform(program: WebGLProgram?, index: Int):

```

```

WebGLActiveInfo? fun getAttachedShaders(program: WebGLProgram?): Array<WebGLShader>? fun
getAttribLocation(program: WebGLProgram?, name: String): Int? fun getBufferParameter(target: Int, pname:
Int): Any? fun getParameter(pname: Int): Any? fun getError(): Int? fun
getFramebufferAttachmentParameter(target: Int, attachment: Int, pname: Int): Any? fun
getProgramParameter(program: WebGLProgram?, pname: Int): Any? fun getProgramInfoLog(program:
WebGLProgram?): String? fun getRenderbufferParameter(target: Int, pname: Int): Any? fun
getShaderParameter(shader: WebGLShader?, pname: Int): Any? fun getShaderPrecisionFormat(shaderType: Int,
precisionType: Int): WebGLShaderPrecisionFormat? fun getShaderInfoLog(shader: WebGLShader?): String?
fun getShaderSource(shader: WebGLShader?): String? fun getTexParameter(target: Int, pname: Int): Any?
fun getUniform(program: WebGLProgram?, location: WebGLUniformLocation?): Any? fun
getUniformLocation(program: WebGLProgram?, name: String): WebGLUniformLocation? fun
getVertexAttrib(index: Int, pname: Int): Any? fun getVertexAttribOffset(index: Int, pname: Int): Int? fun
hint(target: Int, mode: Int)? fun isBuffer(buffer: WebGLBuffer?): Boolean? fun isEnabled(cap: Int): Boolean?
fun isFramebuffer(framebuffer: WebGLFramebuffer?): Boolean? fun isProgram(program: WebGLProgram?):
Boolean? fun isRenderbuffer(renderbuffer:
WebGLRenderbuffer?): Boolean? fun isShader(shader: WebGLShader?): Boolean? fun isTexture(texture:
WebGLTexture?): Boolean? fun lineWidth(width: Float)? fun linkProgram(program: WebGLProgram?)?
fun pixelStorei(pname: Int, param: Int)? fun polygonOffset(factor: Float, units: Float)? fun readPixels(x: Int, y:
Int, width: Int, height: Int, format: Int, type: Int, pixels: ArrayBufferView?)? fun renderbufferStorage(target: Int,
internalformat: Int, width: Int, height: Int)? fun sampleCoverage(value: Float, invert: Boolean)? fun scissor(x:
Int, y: Int, width: Int, height: Int)? fun shaderSource(shader: WebGLShader?, source: String)? fun
stencilFunc(func: Int, ref: Int, mask: Int)? fun stencilFuncSeparate(face: Int, func: Int, ref: Int, mask: Int)? fun
stencilMask(mask: Int)? fun stencilMaskSeparate(face: Int, mask: Int)? fun stencilOp(fail: Int, zfail: Int, zpass:
Int)? fun stencilOpSeparate(face: Int, fail: Int, zfail: Int,
zpass: Int)? fun texImage2D(target: Int, level: Int, internalformat: Int, width: Int, height: Int, border: Int, format:
Int, type: Int, pixels: ArrayBufferView?)? fun texImage2D(target: Int, level: Int, internalformat: Int, format: Int,
type: Int, source: TexImageSource?)? fun texParameterf(target: Int, pname: Int, param: Float)? fun
texParameteri(target: Int, pname: Int, param: Int)? fun texSubImage2D(target: Int, level: Int, xoffset: Int, yoffset:
Int, width: Int, height: Int, format: Int, type: Int, pixels: ArrayBufferView?)? fun texSubImage2D(target: Int,
level: Int, xoffset: Int, yoffset: Int, format: Int, type: Int, source: TexImageSource?)? fun uniform1f(location:
WebGLUniformLocation?, x: Float)? fun uniform1fv(location: WebGLUniformLocation?, v: Float32Array)?
fun uniform1fv(location: WebGLUniformLocation?, v: Array<Float>)? fun uniform1i(location:
WebGLUniformLocation?, x: Int)? fun uniform1iv(location: WebGLUniformLocation?, v:
Int32Array)? fun uniform1iv(location: WebGLUniformLocation?, v: Array<Int>)? fun uniform2f(location:
WebGLUniformLocation?, x: Float, y: Float)? fun uniform2fv(location: WebGLUniformLocation?, v:
Float32Array)? fun uniform2fv(location: WebGLUniformLocation?, v: Array<Float>)? fun
uniform2i(location: WebGLUniformLocation?, x: Int, y: Int)? fun uniform2iv(location:
WebGLUniformLocation?, v: Int32Array)? fun uniform2iv(location: WebGLUniformLocation?, v: Array<Int>)?
fun uniform3f(location: WebGLUniformLocation?, x: Float, y: Float, z: Float)? fun uniform3fv(location:
WebGLUniformLocation?, v: Float32Array)? fun uniform3fv(location: WebGLUniformLocation?, v:
Array<Float>)? fun uniform3i(location: WebGLUniformLocation?, x: Int, y: Int, z: Int)? fun
uniform3iv(location: WebGLUniformLocation?, v: Int32Array)? fun uniform3iv(location:
WebGLUniformLocation?, v: Array<Int>)? fun uniform4f(location: WebGLUniformLocation?, x: Float, y: Float,
z: Float, w: Float)? fun uniform4fv(location: WebGLUniformLocation?, v: Float32Array)? fun
uniform4fv(location: WebGLUniformLocation?, v: Array<Float>)? fun uniform4i(location:
WebGLUniformLocation?, x: Int, y: Int, z: Int, w: Int)? fun uniform4iv(location: WebGLUniformLocation?, v:
Int32Array)? fun uniform4iv(location: WebGLUniformLocation?, v: Array<Int>)? fun
uniformMatrix2fv(location: WebGLUniformLocation?, transpose: Boolean, value: Float32Array)? fun

```

```

uniformMatrix2fv(location: WebGLUniformLocation?, transpose: Boolean, value: Array<Float>)\n fun
uniformMatrix3fv(location: WebGLUniformLocation?, transpose: Boolean, value: Float32Array)\n fun
uniformMatrix3fv(location: WebGLUniformLocation?, transpose: Boolean, value: Array<Float>)\n fun
uniformMatrix4fv(location: WebGLUniformLocation?, transpose: Boolean, value: Float32Array)\n fun
uniformMatrix4fv(location: WebGLUniformLocation?, transpose: Boolean, value: Array<Float>)\n fun
useProgram(program:
WebGLProgram?)\n fun validateProgram(program: WebGLProgram?)\n fun vertexAttrib1f(index: Int, x:
Float)\n fun vertexAttrib1fv(index: Int, values: dynamic)\n fun vertexAttrib2f(index: Int, x: Float, y: Float)\n
fun vertexAttrib2fv(index: Int, values: dynamic)\n fun vertexAttrib3f(index: Int, x: Float, y: Float, z: Float)\n fun
vertexAttrib3fv(index: Int, values: dynamic)\n fun vertexAttrib4f(index: Int, x: Float, y: Float, z: Float, w: Float)\n
fun vertexAttrib4fv(index: Int, values: dynamic)\n fun vertexAttribPointer(index: Int, size: Int, type: Int,
normalized: Boolean, stride: Int, offset: Int)\n fun viewport(x: Int, y: Int, width: Int, height: Int)\n\n companion
object {\n val DEPTH_BUFFER_BIT: Int\n val STENCIL_BUFFER_BIT: Int\n val
COLOR_BUFFER_BIT: Int\n val POINTS: Int\n val LINES: Int\n val LINE_LOOP: Int\n val
LINE_STRIP: Int\n val TRIANGLES: Int\n val TRIANGLE_STRIP:
Int\n val TRIANGLE_FAN: Int\n val ZERO: Int\n val ONE: Int\n val SRC_COLOR: Int\n
val ONE_MINUS_SRC_COLOR: Int\n val SRC_ALPHA: Int\n val ONE_MINUS_SRC_ALPHA: Int\n
val DST_ALPHA: Int\n val ONE_MINUS_DST_ALPHA: Int\n val DST_COLOR: Int\n val
ONE_MINUS_DST_COLOR: Int\n val SRC_ALPHA_SATURATE: Int\n val FUNC_ADD: Int\n val
BLEND_EQUATION: Int\n val BLEND_EQUATION_RGB: Int\n val BLEND_EQUATION_ALPHA:
Int\n val FUNC_SUBTRACT: Int\n val FUNC_REVERSE_SUBTRACT: Int\n val
BLEND_DST_RGB: Int\n val BLEND_SRC_RGB: Int\n val BLEND_DST_ALPHA: Int\n val
BLEND_SRC_ALPHA: Int\n val CONSTANT_COLOR: Int\n val ONE_MINUS_CONSTANT_COLOR:
Int\n val CONSTANT_ALPHA: Int\n val ONE_MINUS_CONSTANT_ALPHA: Int\n val
BLEND_COLOR: Int\n val ARRAY_BUFFER: Int\n val ELEMENT_ARRAY_BUFFER: Int\n val
ARRAY_BUFFER_BINDING:
Int\n val ELEMENT_ARRAY_BUFFER_BINDING: Int\n val STREAM_DRAW: Int\n val
STATIC_DRAW: Int\n val DYNAMIC_DRAW: Int\n val BUFFER_SIZE: Int\n val
BUFFER_USAGE: Int\n val CURRENT_VERTEX_ATTRIB: Int\n val FRONT: Int\n val BACK:
Int\n val FRONT_AND_BACK: Int\n val CULL_FACE: Int\n val BLEND: Int\n val DITHER:
Int\n val STENCIL_TEST: Int\n val DEPTH_TEST: Int\n val SCISSOR_TEST: Int\n val
POLYGON_OFFSET_FILL: Int\n val SAMPLE_ALPHA_TO_COVERAGE: Int\n val
SAMPLE_COVERAGE: Int\n val NO_ERROR: Int\n val INVALID_ENUM: Int\n val
INVALID_VALUE: Int\n val INVALID_OPERATION: Int\n val OUT_OF_MEMORY: Int\n val CW:
Int\n val CCW: Int\n val LINE_WIDTH: Int\n val ALIASED_POINT_SIZE_RANGE: Int\n val
ALIASED_LINE_WIDTH_RANGE: Int\n val CULL_FACE_MODE: Int\n val FRONT_FACE: Int\n
val DEPTH_RANGE: Int\n val DEPTH_WRITEMASK: Int\n val DEPTH_CLEAR_VALUE: Int\n
val DEPTH_FUNC: Int\n val STENCIL_CLEAR_VALUE: Int\n val STENCIL_FUNC: Int\n val
STENCIL_FAIL: Int\n val STENCIL_PASS_DEPTH_FAIL: Int\n val STENCIL_PASS_DEPTH_PASS:
Int\n val STENCIL_REF: Int\n val STENCIL_VALUE_MASK: Int\n val STENCIL_WRITEMASK:
Int\n val STENCIL_BACK_FUNC: Int\n val STENCIL_BACK_FAIL: Int\n val
STENCIL_BACK_PASS_DEPTH_FAIL: Int\n val STENCIL_BACK_PASS_DEPTH_PASS: Int\n val
STENCIL_BACK_REF: Int\n val STENCIL_BACK_VALUE_MASK: Int\n val
STENCIL_BACK_WRITEMASK: Int\n val VIEWPORT: Int\n val SCISSOR_BOX: Int\n val
COLOR_CLEAR_VALUE: Int\n val COLOR_WRITEMASK: Int\n val UNPACK_ALIGNMENT: Int\n
val PACK_ALIGNMENT: Int\n val MAX_TEXTURE_SIZE: Int\n val MAX_VIEWPORT_DIMS: Int\n
val SUBPIXEL_BITS: Int\n

```



val RED\_BITS: Int\n     val GREEN\_BITS: Int\n     val BLUE\_BITS: Int\n     val ALPHA\_BITS: Int\n  
 val DEPTH\_BITS: Int\n     val STENCIL\_BITS: Int\n     val POLYGON\_OFFSET\_UNITS: Int\n     val  
 POLYGON\_OFFSET\_FACTOR: Int\n     val TEXTURE\_BINDING\_2D: Int\n     val SAMPLE\_BUFFERS:  
 Int\n     val SAMPLES: Int\n     val SAMPLE\_COVERAGE\_VALUE: Int\n     val  
 SAMPLE\_COVERAGE\_INVERT: Int\n     val COMPRESSED\_TEXTURE\_FORMATS: Int\n     val  
 DONT\_CARE: Int\n     val FASTEST: Int\n     val NICEST: Int\n     val GENERATE\_MIPMAP\_HINT: Int\n  
    val BYTE: Int\n     val UNSIGNED\_BYTE: Int\n     val SHORT: Int\n     val UNSIGNED\_SHORT: Int\n  
    val INT: Int\n     val UNSIGNED\_INT: Int\n     val FLOAT: Int\n     val DEPTH\_COMPONENT: Int\n  
 val ALPHA: Int\n     val RGB: Int\n     val RGBA: Int\n     val LUMINANCE: Int\n     val  
 LUMINANCE\_ALPHA: Int\n     val UNSIGNED\_SHORT\_4\_4\_4\_4: Int\n     val  
 UNSIGNED\_SHORT\_5\_5\_5\_1:  
 Int\n     val UNSIGNED\_SHORT\_5\_6\_5: Int\n     val FRAGMENT\_SHADER: Int\n     val  
 VERTEX\_SHADER: Int\n     val MAX\_VERTEX\_ATTRIBS: Int\n     val  
 MAX\_VERTEX\_UNIFORM\_VECTORS: Int\n     val MAX\_VARYING\_VECTORS: Int\n     val  
 MAX\_COMBINED\_TEXTURE\_IMAGE\_UNITS: Int\n     val MAX\_VERTEX\_TEXTURE\_IMAGE\_UNITS:  
 Int\n     val MAX\_TEXTURE\_IMAGE\_UNITS: Int\n     val MAX\_FRAGMENT\_UNIFORM\_VECTORS: Int\n  
    val SHADER\_TYPE: Int\n     val DELETE\_STATUS: Int\n     val LINK\_STATUS: Int\n     val  
 VALIDATE\_STATUS: Int\n     val ATTACHED\_SHADERS: Int\n     val ACTIVE\_UNIFORMS: Int\n     val  
 ACTIVE\_ATTRIBUTES: Int\n     val SHADING\_LANGUAGE\_VERSION: Int\n     val  
 CURRENT\_PROGRAM: Int\n     val NEVER: Int\n     val LESS: Int\n     val EQUAL: Int\n     val  
 LEQUAL: Int\n     val GREATER: Int\n     val NOTEQUAL: Int\n     val GEQUAL: Int\n     val ALWAYS:  
 Int\n     val KEEP: Int\n     val REPLACE: Int\n     val  
 INCR: Int\n     val DECR: Int\n     val INVERT: Int\n     val INCR\_WRAP: Int\n     val DECR\_WRAP: Int\n  
    val VENDOR: Int\n     val RENDERER: Int\n     val VERSION: Int\n     val NEAREST: Int\n     val  
 LINEAR: Int\n     val NEAREST\_MIPMAP\_NEAREST: Int\n     val LINEAR\_MIPMAP\_NEAREST: Int\n  
 val NEAREST\_MIPMAP\_LINEAR: Int\n     val LINEAR\_MIPMAP\_LINEAR: Int\n     val  
 TEXTURE\_MAG\_FILTER: Int\n     val TEXTURE\_MIN\_FILTER: Int\n     val TEXTURE\_WRAP\_S: Int\n  
 val TEXTURE\_WRAP\_T: Int\n     val TEXTURE\_2D: Int\n     val TEXTURE: Int\n     val  
 TEXTURE\_CUBE\_MAP: Int\n     val TEXTURE\_BINDING\_CUBE\_MAP: Int\n     val  
 TEXTURE\_CUBE\_MAP\_POSITIVE\_X: Int\n     val TEXTURE\_CUBE\_MAP\_NEGATIVE\_X: Int\n     val  
 TEXTURE\_CUBE\_MAP\_POSITIVE\_Y: Int\n     val TEXTURE\_CUBE\_MAP\_NEGATIVE\_Y: Int\n     val  
 TEXTURE\_CUBE\_MAP\_POSITIVE\_Z: Int\n     val TEXTURE\_CUBE\_MAP\_NEGATIVE\_Z: Int\n     val  
 MAX\_CUBE\_MAP\_TEXTURE\_SIZE: Int\n  
    val TEXTURE0: Int\n     val TEXTURE1: Int\n     val TEXTURE2: Int\n     val TEXTURE3: Int\n  
 val TEXTURE4: Int\n     val TEXTURE5: Int\n     val TEXTURE6: Int\n     val TEXTURE7: Int\n     val  
 TEXTURE8: Int\n     val TEXTURE9: Int\n     val TEXTURE10: Int\n     val TEXTURE11: Int\n     val  
 TEXTURE12: Int\n     val TEXTURE13: Int\n     val TEXTURE14: Int\n     val TEXTURE15: Int\n     val  
 TEXTURE16: Int\n     val TEXTURE17: Int\n     val TEXTURE18: Int\n     val TEXTURE19: Int\n     val  
 TEXTURE20: Int\n     val TEXTURE21: Int\n     val TEXTURE22: Int\n     val TEXTURE23: Int\n     val  
 TEXTURE24: Int\n     val TEXTURE25: Int\n     val TEXTURE26: Int\n     val TEXTURE27: Int\n     val  
 TEXTURE28: Int\n     val TEXTURE29: Int\n     val TEXTURE30: Int\n     val TEXTURE31: Int\n     val  
 ACTIVE\_TEXTURE: Int\n     val REPEAT: Int\n     val CLAMP\_TO\_EDGE: Int\n     val  
 MIRRORED\_REPEAT:  
 Int\n     val FLOAT\_VEC2: Int\n     val FLOAT\_VEC3: Int\n     val FLOAT\_VEC4: Int\n     val  
 INT\_VEC2: Int\n     val INT\_VEC3: Int\n     val INT\_VEC4: Int\n     val BOOL: Int\n     val BOOL\_VEC2:  
 Int\n     val BOOL\_VEC3: Int\n     val BOOL\_VEC4: Int\n     val FLOAT\_MAT2: Int\n     val  
 FLOAT\_MAT3: Int\n     val FLOAT\_MAT4: Int\n     val SAMPLER\_2D: Int\n     val SAMPLER\_CUBE:  
 Int\n     val VERTEX\_ATTRIB\_ARRAY\_ENABLED: Int\n     val VERTEX\_ATTRIB\_ARRAY\_SIZE: Int\n

```

val VERTEX_ATTRIB_ARRAY_STRIDE: Int\n    val VERTEX_ATTRIB_ARRAY_TYPE: Int\n    val
VERTEX_ATTRIB_ARRAY_NORMALIZED: Int\n    val VERTEX_ATTRIB_ARRAY_POINTER: Int\n
val VERTEX_ATTRIB_ARRAY_BUFFER_BINDING: Int\n    val
IMPLEMENTATION_COLOR_READ_TYPE: Int\n    val IMPLEMENTATION_COLOR_READ_FORMAT:
Int\n    val COMPILE_STATUS: Int\n    val LOW_FLOAT: Int\n    val MEDIUM_FLOAT: Int\n    val
HIGH_FLOAT: Int\n    val LOW_INT: Int\n
    val MEDIUM_INT: Int\n    val HIGH_INT: Int\n    val FRAMEBUFFER: Int\n    val
RENDERBUFFER: Int\n    val RGBA4: Int\n    val RGB5_A1: Int\n    val RGB565: Int\n    val
DEPTH_COMPONENT16: Int\n    val STENCIL_INDEX: Int\n    val STENCIL_INDEX8: Int\n    val
DEPTH_STENCIL: Int\n    val RENDERBUFFER_WIDTH: Int\n    val RENDERBUFFER_HEIGHT: Int\n
    val RENDERBUFFER_INTERNAL_FORMAT: Int\n    val RENDERBUFFER_RED_SIZE: Int\n    val
RENDERBUFFER_GREEN_SIZE: Int\n    val RENDERBUFFER_BLUE_SIZE: Int\n    val
RENDERBUFFER_ALPHA_SIZE: Int\n    val RENDERBUFFER_DEPTH_SIZE: Int\n    val
RENDERBUFFER_STENCIL_SIZE: Int\n    val FRAMEBUFFER_ATTACHMENT_OBJECT_TYPE: Int\n
val FRAMEBUFFER_ATTACHMENT_OBJECT_NAME: Int\n    val
FRAMEBUFFER_ATTACHMENT_TEXTURE_LEVEL: Int\n    val
FRAMEBUFFER_ATTACHMENT_TEXTURE_CUBE_MAP_FACE: Int\n    val COLOR_ATTACHMENT0:
Int\n    val DEPTH_ATTACHMENT: Int\n
    val STENCIL_ATTACHMENT: Int\n    val DEPTH_STENCIL_ATTACHMENT: Int\n    val NONE: Int\n
    val FRAMEBUFFER_COMPLETE: Int\n    val FRAMEBUFFER_INCOMPLETE_ATTACHMENT: Int\n
    val FRAMEBUFFER_INCOMPLETE_MISSING_ATTACHMENT: Int\n    val
FRAMEBUFFER_INCOMPLETE_DIMENSIONS: Int\n    val FRAMEBUFFER_UNSUPPORTED: Int\n
val FRAMEBUFFER_BINDING: Int\n    val RENDERBUFFER_BINDING: Int\n    val
MAX_RENDERBUFFER_SIZE: Int\n    val INVALID_FRAMEBUFFER_OPERATION: Int\n    val
UNPACK_FLIP_Y_WEBGL: Int\n    val UNPACK_PREMULTIPLY_ALPHA_WEBGL: Int\n    val
CONTEXT_LOST_WEBGL: Int\n    val UNPACK_COLORSPACE_CONVERSION_WEBGL: Int\n    val
BROWSER_DEFAULT_WEBGL: Int\n    }\n}\n\n/**\n * Exposes the JavaScript
[WebGLRenderingContext](https://developer.mozilla.org/en/docs/Web/API/WebGLRenderingContext) to Kotlin\n
*\npublic external abstract class WebGLRenderingContext : WebGLRenderingContextBase, RenderingContext {\n
companion object
{\n    val DEPTH_BUFFER_BIT: Int\n    val STENCIL_BUFFER_BIT: Int\n    val
COLOR_BUFFER_BIT: Int\n    val POINTS: Int\n    val LINES: Int\n    val LINE_LOOP: Int\n    val
LINE_STRIP: Int\n    val TRIANGLES: Int\n    val TRIANGLE_STRIP: Int\n    val TRIANGLE_FAN:
Int\n    val ZERO: Int\n    val ONE: Int\n    val SRC_COLOR: Int\n    val ONE_MINUS_SRC_COLOR:
Int\n    val SRC_ALPHA: Int\n    val ONE_MINUS_SRC_ALPHA: Int\n    val DST_ALPHA: Int\n    val
ONE_MINUS_DST_ALPHA: Int\n    val DST_COLOR: Int\n    val ONE_MINUS_DST_COLOR: Int\n
val SRC_ALPHA_SATURATE: Int\n    val FUNC_ADD: Int\n    val BLEND_EQUATION: Int\n    val
BLEND_EQUATION_RGB: Int\n    val BLEND_EQUATION_ALPHA: Int\n    val FUNC_SUBTRACT:
Int\n    val FUNC_REVERSE_SUBTRACT: Int\n    val BLEND_DST_RGB: Int\n    val
BLEND_SRC_RGB: Int\n    val BLEND_DST_ALPHA: Int\n    val BLEND_SRC_ALPHA: Int\n
    val CONSTANT_COLOR: Int\n    val ONE_MINUS_CONSTANT_COLOR: Int\n    val
CONSTANT_ALPHA: Int\n    val ONE_MINUS_CONSTANT_ALPHA: Int\n    val BLEND_COLOR: Int\n
    val ARRAY_BUFFER: Int\n    val ELEMENT_ARRAY_BUFFER: Int\n    val
ARRAY_BUFFER_BINDING: Int\n    val ELEMENT_ARRAY_BUFFER_BINDING: Int\n    val
STREAM_DRAW: Int\n    val STATIC_DRAW: Int\n    val DYNAMIC_DRAW: Int\n    val
BUFFER_SIZE: Int\n    val BUFFER_USAGE: Int\n    val CURRENT_VERTEX_ATTRIB: Int\n    val
FRONT: Int\n    val BACK: Int\n    val FRONT_AND_BACK: Int\n    val CULL_FACE: Int\n    val
BLEND: Int\n    val DITHER: Int\n    val STENCIL_TEST: Int\n    val DEPTH_TEST: Int\n    val

```

SCISSOR\_TEST: Int\n val POLYGON\_OFFSET\_FILL: Int\n val SAMPLE\_ALPHA\_TO\_COVERAGE:  
 Int\n val SAMPLE\_COVERAGE: Int\n val NO\_ERROR: Int\n val INVALID\_ENUM: Int\n val  
 INVALID\_VALUE: Int\n val INVALID\_OPERATION:  
 Int\n val OUT\_OF\_MEMORY: Int\n val CW: Int\n val CCW: Int\n val LINE\_WIDTH: Int\n  
 val ALIASED\_POINT\_SIZE\_RANGE: Int\n val ALIASED\_LINE\_WIDTH\_RANGE: Int\n val  
 CULL\_FACE\_MODE: Int\n val FRONT\_FACE: Int\n val DEPTH\_RANGE: Int\n val  
 DEPTH\_WRITEMASK: Int\n val DEPTH\_CLEAR\_VALUE: Int\n val DEPTH\_FUNC: Int\n val  
 STENCIL\_CLEAR\_VALUE: Int\n val STENCIL\_FUNC: Int\n val STENCIL\_FAIL: Int\n val  
 STENCIL\_PASS\_DEPTH\_FAIL: Int\n val STENCIL\_PASS\_DEPTH\_PASS: Int\n val STENCIL\_REF:  
 Int\n val STENCIL\_VALUE\_MASK: Int\n val STENCIL\_WRITEMASK: Int\n val  
 STENCIL\_BACK\_FUNC: Int\n val STENCIL\_BACK\_FAIL: Int\n val  
 STENCIL\_BACK\_PASS\_DEPTH\_FAIL: Int\n val STENCIL\_BACK\_PASS\_DEPTH\_PASS: Int\n val  
 STENCIL\_BACK\_REF: Int\n val STENCIL\_BACK\_VALUE\_MASK: Int\n val  
 STENCIL\_BACK\_WRITEMASK: Int\n val VIEWPORT: Int\n  
 val SCISSOR\_BOX: Int\n val COLOR\_CLEAR\_VALUE: Int\n val COLOR\_WRITEMASK: Int\n  
 val UNPACK\_ALIGNMENT: Int\n val PACK\_ALIGNMENT: Int\n val MAX\_TEXTURE\_SIZE: Int\n  
 val MAX\_VIEWPORT\_DIMS: Int\n val SUBPIXEL\_BITS: Int\n val RED\_BITS: Int\n val  
 GREEN\_BITS: Int\n val BLUE\_BITS: Int\n val ALPHA\_BITS: Int\n val DEPTH\_BITS: Int\n val  
 STENCIL\_BITS: Int\n val POLYGON\_OFFSET\_UNITS: Int\n val POLYGON\_OFFSET\_FACTOR: Int\n  
 val TEXTURE\_BINDING\_2D: Int\n val SAMPLE\_BUFFERS: Int\n val SAMPLES: Int\n val  
 SAMPLE\_COVERAGE\_VALUE: Int\n val SAMPLE\_COVERAGE\_INVERT: Int\n val  
 COMPRESSED\_TEXTURE\_FORMATS: Int\n val DONT\_CARE: Int\n val FASTEST: Int\n val  
 NICEST: Int\n val GENERATE\_MIPMAP\_HINT: Int\n val BYTE: Int\n val UNSIGNED\_BYTE:  
 Int\n val SHORT: Int\n val UNSIGNED\_SHORT: Int\n val INT: Int\n val  
 UNSIGNED\_INT: Int\n val FLOAT: Int\n val DEPTH\_COMPONENT: Int\n val ALPHA: Int\n  
 val RGB: Int\n val RGBA: Int\n val LUMINANCE: Int\n val LUMINANCE\_ALPHA: Int\n val  
 UNSIGNED\_SHORT\_4\_4\_4\_4: Int\n val UNSIGNED\_SHORT\_5\_5\_5\_1: Int\n val  
 UNSIGNED\_SHORT\_5\_6\_5: Int\n val FRAGMENT\_SHADER: Int\n val VERTEX\_SHADER: Int\n  
 val MAX\_VERTEX\_ATTRIBS: Int\n val MAX\_VERTEX\_UNIFORM\_VECTORS: Int\n val  
 MAX\_VARYING\_VECTORS: Int\n val MAX\_COMBINED\_TEXTURE\_IMAGE\_UNITS: Int\n val  
 MAX\_VERTEX\_TEXTURE\_IMAGE\_UNITS: Int\n val MAX\_TEXTURE\_IMAGE\_UNITS: Int\n val  
 MAX\_FRAGMENT\_UNIFORM\_VECTORS: Int\n val SHADER\_TYPE: Int\n val DELETE\_STATUS:  
 Int\n val LINK\_STATUS: Int\n val VALIDATE\_STATUS: Int\n val ATTACHED\_SHADERS: Int\n  
 val ACTIVE\_UNIFORMS: Int\n val ACTIVE\_ATTRIBUTES: Int\n val  
 SHADING\_LANGUAGE\_VERSION: Int\n val CURRENT\_PROGRAM:  
 Int\n val NEVER: Int\n val LESS: Int\n val EQUAL: Int\n val LEQUAL: Int\n val  
 GREATER: Int\n val NOTEQUAL: Int\n val GEQUAL: Int\n val ALWAYS: Int\n val KEEP:  
 Int\n val REPLACE: Int\n val INCR: Int\n val DECR: Int\n val INVERT: Int\n val  
 INCR\_WRAP: Int\n val DECR\_WRAP: Int\n val VENDOR: Int\n val RENDERER: Int\n val  
 VERSION: Int\n val NEAREST: Int\n val LINEAR: Int\n val NEAREST\_MIPMAP\_NEAREST: Int\n  
 val LINEAR\_MIPMAP\_NEAREST: Int\n val NEAREST\_MIPMAP\_LINEAR: Int\n val  
 LINEAR\_MIPMAP\_LINEAR: Int\n val TEXTURE\_MAG\_FILTER: Int\n val TEXTURE\_MIN\_FILTER:  
 Int\n val TEXTURE\_WRAP\_S: Int\n val TEXTURE\_WRAP\_T: Int\n val TEXTURE\_2D: Int\n  
 val TEXTURE: Int\n val TEXTURE\_CUBE\_MAP: Int\n val TEXTURE\_BINDING\_CUBE\_MAP: Int\n  
 val TEXTURE\_CUBE\_MAP\_POSITIVE\_X: Int\n  
 val TEXTURE\_CUBE\_MAP\_NEGATIVE\_X: Int\n val TEXTURE\_CUBE\_MAP\_POSITIVE\_Y: Int\n  
 val TEXTURE\_CUBE\_MAP\_NEGATIVE\_Y: Int\n val TEXTURE\_CUBE\_MAP\_POSITIVE\_Z: Int\n val  
 TEXTURE\_CUBE\_MAP\_NEGATIVE\_Z: Int\n val MAX\_CUBE\_MAP\_TEXTURE\_SIZE: Int\n val



```

\invisible_member\)\n@kotlin.internal.InlineOnly\npublic inline fun
WebGLContextEventInit(statusMessage: String? = "", bubbles: Boolean? = false, cancelable: Boolean? = false,
composed: Boolean? = false): WebGLContextEventInit {\n    val o = js("{}")\n    o["statusMessage"] =
statusMessage\n    o["bubbles"]
= bubbles\n    o["cancelable"] = cancelable\n    o["composed"] = composed\n    return o\n}\n\n/**\n * Exposes
the JavaScript [ArrayBuffer](https://developer.mozilla.org/en/docs/Web/API/ArrayBuffer) to Kotlin\n */\npublic
external open class ArrayBuffer(length: Int) : BufferDataSource {\n    open val byteLength: Int\n    fun slice(begin:
Int, end: Int = definedExternally): ArrayBuffer\n\n    companion object {\n        fun isView(value: Any?): Boolean\n
    }\n}\n\n/**\n * Exposes the JavaScript
[ArrayBufferView](https://developer.mozilla.org/en/docs/Web/API/ArrayBufferView) to Kotlin\n */\npublic
external interface ArrayBufferView : BufferDataSource {\n    val buffer: ArrayBuffer\n    val byteOffset: Int\n    val
byteLength: Int\n}\n\n/**\n * Exposes the JavaScript
[Int8Array](https://developer.mozilla.org/en/docs/Web/API/Int8Array) to Kotlin\n */\npublic external open class
Int8Array : ArrayBufferView {\n    constructor(length: Int)\n    constructor(array: Int8Array)\n
    constructor(array: Array<Byte>)\n    constructor(buffer: ArrayBuffer, byteOffset: Int = definedExternally, length:
Int = definedExternally)\n    open val length: Int\n    override val buffer: ArrayBuffer\n    override val byteOffset:
Int\n    override val byteLength: Int\n    fun set(array: Int8Array, offset: Int = definedExternally)\n    fun set(array:
Array<Byte>, offset: Int = definedExternally)\n    fun subarray(start: Int, end: Int): Int8Array\n\n    companion
object {\n        val BYTES_PER_ELEMENT: Int\n    }\n}\n\n@Suppress("invisible_reference",
"invisible_member")\n@kotlin.internal.InlineOnly\npublic inline operator fun Int8Array.get(index: Int):
Byte = asDynamic()[index]\n\n@Suppress("invisible_reference",
"invisible_member")\n@kotlin.internal.InlineOnly\npublic inline operator fun Int8Array.set(index: Int,
value: Byte) { asDynamic()[index] = value }\n\n/**\n * Exposes the JavaScript
[Uint8Array](https://developer.mozilla.org/en/docs/Web/API/Uint8Array) to Kotlin\n
*/\npublic external open class Uint8Array : ArrayBufferView {\n    constructor(length: Int)\n    constructor(array:
Uint8Array)\n    constructor(array: Array<Byte>)\n    constructor(buffer: ArrayBuffer, byteOffset: Int =
definedExternally, length: Int = definedExternally)\n    open val length: Int\n    override val buffer: ArrayBuffer\n
    override val byteOffset: Int\n    override val byteLength: Int\n    fun set(array: Uint8Array, offset: Int =
definedExternally)\n    fun set(array: Array<Byte>, offset: Int = definedExternally)\n    fun subarray(start: Int, end:
Int): Uint8Array\n\n    companion object {\n        val BYTES_PER_ELEMENT: Int\n    }\n}\n\n@Suppress("invisible_reference",
"invisible_member")\n@kotlin.internal.InlineOnly\npublic inline operator fun Uint8Array.get(index: Int):
Byte = asDynamic()[index]\n\n@Suppress("invisible_reference",
"invisible_member")\n@kotlin.internal.InlineOnly\npublic inline operator fun Uint8Array.set(index: Int,
value: Byte) { asDynamic()[index]
= value }\n\n/**\n * Exposes the JavaScript
[Uint8ClampedArray](https://developer.mozilla.org/en/docs/Web/API/Uint8ClampedArray) to Kotlin\n */\npublic
external open class Uint8ClampedArray : ArrayBufferView {\n    constructor(length: Int)\n    constructor(array:
Uint8ClampedArray)\n    constructor(array: Array<Byte>)\n    constructor(buffer: ArrayBuffer, byteOffset: Int =
definedExternally, length: Int = definedExternally)\n    open val length: Int\n    override val buffer: ArrayBuffer\n
    override val byteOffset: Int\n    override val byteLength: Int\n    fun set(array: Uint8ClampedArray, offset: Int =
definedExternally)\n    fun set(array: Array<Byte>, offset: Int = definedExternally)\n    fun subarray(start: Int, end:
Int): Uint8ClampedArray\n\n    companion object {\n        val BYTES_PER_ELEMENT: Int\n    }\n}\n\n@Suppress("invisible_reference",
"invisible_member")\n@kotlin.internal.InlineOnly\npublic inline operator fun
Uint8ClampedArray.get(index: Int): Byte = asDynamic()[index]\n\n@Suppress("invisible_reference",
"invisible_member")\n@kotlin.internal.InlineOnly\npublic inline operator fun
Uint8ClampedArray.set(index: Int, value: Byte) { asDynamic()[index] = value }\n\n/**\n * Exposes the JavaScript

```

```

[Int16Array](https://developer.mozilla.org/en/docs/Web/API/Int16Array) to Kotlin\n *\npublic external open class
Int16Array : ArrayBufferView {\n  constructor(length: Int)\n  constructor(array: Int16Array)\n
constructor(array: Array<Short>)\n  constructor(buffer: ArrayBuffer, byteOffset: Int = definedExternally, length:
Int = definedExternally)\n  open val length: Int\n  override val buffer: ArrayBuffer\n  override val byteOffset:
Int\n  override val byteLength: Int\n  fun set(array: Int16Array, offset: Int = definedExternally)\n  fun set(array:
Array<Short>, offset: Int = definedExternally)\n  fun subarray(start: Int, end: Int): Int16Array\n\n  companion
object {\n    val BYTES_PER_ELEMENT: Int\n  }\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline operator fun Int16Array.get(index: Int):
Short = asDynamic()[index]\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline operator fun Int16Array.set(index: Int,
value: Short) { asDynamic()[index] = value }\n\n/**\n * Exposes the JavaScript
[Uint16Array](https://developer.mozilla.org/en/docs/Web/API/Uint16Array) to Kotlin\n *\npublic external open
class Uint16Array : ArrayBufferView {\n  constructor(length: Int)\n  constructor(array: Uint16Array)\n
constructor(array: Array<Short>)\n  constructor(buffer: ArrayBuffer, byteOffset: Int = definedExternally, length:
Int = definedExternally)\n  open val length: Int\n  override val buffer: ArrayBuffer\n  override val byteOffset:
Int\n  override val byteLength: Int\n  fun set(array: Uint16Array, offset: Int = definedExternally)\n  fun set(array:
Array<Short>, offset: Int = definedExternally)\n
fun subarray(start: Int, end: Int): Uint16Array\n\n  companion object {\n    val BYTES_PER_ELEMENT:
Int\n  }\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline operator fun Uint16Array.get(index: Int):
Short = asDynamic()[index]\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline operator fun Uint16Array.set(index: Int,
value: Short) { asDynamic()[index] = value }\n\n/**\n * Exposes the JavaScript
[Int32Array](https://developer.mozilla.org/en/docs/Web/API/Int32Array) to Kotlin\n *\npublic external open class
Int32Array : ArrayBufferView {\n  constructor(length: Int)\n  constructor(array: Int32Array)\n
constructor(array: Array<Int>)\n  constructor(buffer: ArrayBuffer, byteOffset: Int = definedExternally, length: Int
= definedExternally)\n  open val length: Int\n  override val buffer: ArrayBuffer\n  override val byteOffset: Int\n
override
val byteLength: Int\n  fun set(array: Int32Array, offset: Int = definedExternally)\n  fun set(array: Array<Int>,
offset: Int = definedExternally)\n  fun subarray(start: Int, end: Int): Int32Array\n\n  companion object {\n    val
BYTES_PER_ELEMENT: Int\n  }\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline operator fun Int32Array.get(index: Int): Int
= asDynamic()[index]\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline operator fun Int32Array.set(index: Int,
value: Int) { asDynamic()[index] = value }\n\n/**\n * Exposes the JavaScript
[Uint32Array](https://developer.mozilla.org/en/docs/Web/API/Uint32Array) to Kotlin\n *\npublic external open
class Uint32Array : ArrayBufferView {\n  constructor(length: Int)\n  constructor(array: Uint32Array)\n
constructor(array: Array<Int>)\n  constructor(buffer: ArrayBuffer, byteOffset: Int = definedExternally, length: Int
= definedExternally)\n  open val length: Int\n  override val buffer: ArrayBuffer\n  override val byteOffset: Int\n
override val byteLength: Int\n  fun set(array: Uint32Array, offset: Int = definedExternally)\n  fun set(array:
Array<Int>, offset: Int = definedExternally)\n  fun subarray(start: Int, end: Int): Uint32Array\n\n  companion
object {\n    val BYTES_PER_ELEMENT: Int\n  }\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline operator fun Uint32Array.get(index: Int):
Int = asDynamic()[index]\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline operator fun Uint32Array.set(index: Int,
value: Int) { asDynamic()[index] = value }\n\n/**\n * Exposes the JavaScript
[Float32Array](https://developer.mozilla.org/en/docs/Web/API/Float32Array) to Kotlin\n *\npublic external open
class Float32Array : ArrayBufferView {\n  constructor(length: Int)\n  constructor(array:

```

```

Float32Array)\n  constructor(array: Array<Float>)\n  constructor(buffer: ArrayBuffer, byteOffset: Int =
definedExternally, length: Int = definedExternally)\n  open val length: Int\n  override val buffer: ArrayBuffer\n
override val byteOffset: Int\n  override val byteLength: Int\n  fun set(array: Float32Array, offset: Int =
definedExternally)\n  fun set(array: Array<Float>, offset: Int = definedExternally)\n  fun subarray(start: Int, end:
Int): Float32Array\n\n  companion object {\n    val BYTES_PER_ELEMENT: Int\n  }\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline operator fun Float32Array.get(index: Int):
Float = asDynamic()[index]\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline operator fun Float32Array.set(index: Int,
value: Float) { asDynamic()[index] = value }\n\n/**\n * Exposes the JavaScript
[Float64Array](https://developer.mozilla.org/en/docs/Web/API/Float64Array)
to Kotlin\n */\npublic external open class Float64Array : ArrayBufferView {\n  constructor(length: Int)\n
constructor(array: Float64Array)\n  constructor(array: Array<Double>)\n  constructor(buffer: ArrayBuffer,
byteOffset: Int = definedExternally, length: Int = definedExternally)\n  open val length: Int\n  override val buffer:
ArrayBuffer\n  override val byteOffset: Int\n  override val byteLength: Int\n  fun set(array: Float64Array, offset:
Int = definedExternally)\n  fun set(array: Array<Double>, offset: Int = definedExternally)\n  fun subarray(start:
Int, end: Int): Float64Array\n\n  companion object {\n    val BYTES_PER_ELEMENT: Int\n  }\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline operator fun Float64Array.get(index: Int):
Double = asDynamic()[index]\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline operator
fun Float64Array.set(index: Int, value: Double) { asDynamic()[index] = value }\n\n/**\n * Exposes the JavaScript
[DataView](https://developer.mozilla.org/en/docs/Web/API/DataView) to Kotlin\n */\npublic external open class
DataView(buffer: ArrayBuffer, byteOffset: Int = definedExternally, byteLength: Int = definedExternally) :
ArrayBufferView {\n  override val buffer: ArrayBuffer\n  override val byteOffset: Int\n  override val
byteLength: Int\n  fun getInt8(byteOffset: Int): Byte\n  fun getUint8(byteOffset: Int): Byte\n  fun
getInt16(byteOffset: Int, littleEndian: Boolean = definedExternally): Short\n  fun getUint16(byteOffset: Int,
littleEndian: Boolean = definedExternally): Short\n  fun getInt32(byteOffset: Int, littleEndian: Boolean =
definedExternally): Int\n  fun getUint32(byteOffset: Int, littleEndian: Boolean = definedExternally): Int\n  fun
getFloat32(byteOffset: Int, littleEndian: Boolean = definedExternally): Float\n  fun getFloat64(byteOffset: Int,
littleEndian: Boolean = definedExternally): Double\n  fun setInt8(byteOffset: Int, value: Byte)\n  fun
setUint8(byteOffset: Int, value: Byte)\n  fun setInt16(byteOffset: Int, value: Short, littleEndian: Boolean =
definedExternally)\n  fun setUint16(byteOffset: Int, value: Short, littleEndian: Boolean = definedExternally)\n
fun setInt32(byteOffset: Int, value: Int, littleEndian: Boolean = definedExternally)\n  fun setUint32(byteOffset: Int,
value: Int, littleEndian: Boolean = definedExternally)\n  fun setFloat32(byteOffset: Int, value: Float, littleEndian:
Boolean = definedExternally)\n  fun setFloat64(byteOffset: Int, value: Double, littleEndian: Boolean =
definedExternally)\n}\n\npublic external interface BufferDataSource\n\npublic external interface
TexImageSource", "/*\n * Copyright 2010-2021 JetBrains s.r.o. and Kotlin Programming Language contributors.\n *
Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt
file.\n */\n\n// NOTE: THIS FILE IS AUTO-GENERATED, DO NOT EDIT!\n// See github.com/kotlin/dukat for
details\n\npackage org.w3c.dom.clipboard\n\nimport kotlin.js.*\nimport org.khronos.webgl.*\nimport
org.w3c.dom.*\nimport org.w3c.dom.events.*\n\npublic external interface ClipboardEventInit : EventInit {\n  var
clipboardData: DataTransfer? /* = null */\n  get() = definedExternally\n  set(value) =
definedExternally\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline fun ClipboardEventInit(clipboardData:
DataTransfer? = null, bubbles: Boolean? = false, cancelable: Boolean? = false, composed: Boolean? = false):
ClipboardEventInit {\n  val o = js("{}")\n  o["clipboardData"] = clipboardData\n  o["bubbles"] = bubbles\n
o["cancelable"] = cancelable\n  o["composed"] = composed\n  return o\n}\n\n/**\n * Exposes the JavaScript

```

```

[ClipboardEvent](https://developer.mozilla.org/en/docs/Web/API/ClipboardEvent) to Kotlin\n */\npublic external open class ClipboardEvent(type: String, eventInitDict: ClipboardEventInit =
definedExternally) : Event {\n    open val clipboardData: DataTransfer?\n\n    companion object {\n        val NONE:
Short\n        val CAPTURING_PHASE: Short\n        val AT_TARGET: Short\n        val BUBBLING_PHASE:
Short\n    }\n}\n\n/**\n * Exposes the JavaScript
[Clipboard](https://developer.mozilla.org/en/docs/Web/API/Clipboard) to Kotlin\n */\npublic external abstract class
Clipboard : EventTarget {\n    fun read(): Promise<DataTransfer>\n    fun readText(): Promise<String>\n    fun
write(data: DataTransfer): Promise<Unit>\n    fun writeText(data: String): Promise<Unit>\n}\n\npublic external
interface ClipboardPermissionDescriptor {\n    var allowWithoutGesture: Boolean? /* = false */\n    get() =
definedExternally\n    set(value) = definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun
ClipboardPermissionDescriptor(allowWithoutGesture:
Boolean? = false): ClipboardPermissionDescriptor {\n    val o = js(\"({})\")\n    o[\"allowWithoutGesture\"] =
allowWithoutGesture\n    return o\n}\n\n/*\n * Copyright 2010-2021 JetBrains s.r.o. and Kotlin Programming
Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n */\n\n// NOTE: THIS FILE IS AUTO-GENERATED, DO NOT EDIT!\n\n// See
github.com/kotlin/dukat for details\n\npackage org.w3c.dom.css\n\nimport kotlin.js.*\nimport
org.khronos.webgl.*\nimport org.w3c.dom.*\n\npublic external abstract class MediaList : ItemArrayLike<String>
{\n    open var mediaText: String\n    fun appendMedium(medium: String)\n    fun deleteMedium(medium: String)\n
    override fun item(index: Int): String?\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline operator fun MediaList.get(index: Int):
String? = asDynamic()[index]\n\n/**\n * Exposes the JavaScript [StyleSheet](https://developer.mozilla.org/en/docs/Web/API/StyleSheet) to Kotlin\n
*/\npublic external abstract class StyleSheet {\n    open val type: String\n    open val href: String?\n    open val
ownerNode: UnionElementOrProcessingInstruction?\n    open val parentStyleSheet: StyleSheet?\n    open val title:
String?\n    open val media: MediaList\n    open var disabled: Boolean\n}\n\n/**\n * Exposes the JavaScript
[CSSStyleSheet](https://developer.mozilla.org/en/docs/Web/API/CSSStyleSheet) to Kotlin\n */\npublic external
abstract class CSSStyleSheet : StyleSheet {\n    open val ownerRule: CSSRule?\n    open val cssRules:
CSSRuleList\n    fun insertRule(rule: String, index: Int): Int\n    fun deleteRule(index: Int)\n}\n\n/**\n * Exposes the
JavaScript [StyleSheetList](https://developer.mozilla.org/en/docs/Web/API/StyleSheetList) to Kotlin\n */\npublic
external abstract class StyleSheetList : ItemArrayLike<StyleSheet> {\n    override fun item(index:
Int): StyleSheet?\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline operator fun StyleSheetList.get(index: Int):
StyleSheet? = asDynamic()[index]\n\n/**\n * Exposes the JavaScript
[LinkStyle](https://developer.mozilla.org/en/docs/Web/API/LinkStyle) to Kotlin\n */\npublic external interface
LinkStyle {\n    val sheet: StyleSheet?\n    get() = definedExternally\n}\n\n/**\n * Exposes the JavaScript
[CSSRuleList](https://developer.mozilla.org/en/docs/Web/API/CSSRuleList) to Kotlin\n */\npublic external abstract
class CSSRuleList : ItemArrayLike<CSSRule> {\n    override fun item(index: Int):
CSSRule?\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline operator fun CSSRuleList.get(index: Int):
CSSRule? = asDynamic()[index]\n\n/**\n * Exposes the JavaScript
[CSSRule](https://developer.mozilla.org/en/docs/Web/API/CSSRule) to Kotlin\n */\npublic external abstract class
CSSRule
{\n    open val type: Short\n    open var cssText: String\n    open val parentRule: CSSRule?\n    open val
parentStyleSheet: CSSStyleSheet?\n\n    companion object {\n        val STYLE_RULE: Short\n        val
CHARSET_RULE: Short\n        val IMPORT_RULE: Short\n        val MEDIA_RULE: Short\n        val
FONT_FACE_RULE: Short\n        val PAGE_RULE: Short\n        val MARGIN_RULE: Short\n        val
NAMESPACE_RULE: Short\n    }\n}\n\n/**\n * Exposes the JavaScript

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[CSSStyleRule](https://developer.mozilla.org/en/docs/Web/API/CSSStyleRule) to Kotlin\n *\npublic external
abstract class CSSStyleRule : CSSRule {\n  open var selectorText: String\n  open val style:
CSSStyleDeclaration\n\n  companion object {\n    val STYLE_RULE: Short\n    val CHARSET_RULE:
Short\n    val IMPORT_RULE: Short\n    val MEDIA_RULE: Short\n    val FONT_FACE_RULE: Short\n
    val PAGE_RULE: Short\n    val MARGIN_RULE: Short\n    val NAMESPACE_RULE: Short\n
  }\n}\n\npublic external
abstract class CSSImportRule : CSSRule {\n  open val href: String\n  open val media: MediaList\n  open val
styleSheet: CSSStyleSheet\n\n  companion object {\n    val STYLE_RULE: Short\n    val CHARSET_RULE:
Short\n    val IMPORT_RULE: Short\n    val MEDIA_RULE: Short\n    val FONT_FACE_RULE: Short\n
    val PAGE_RULE: Short\n    val MARGIN_RULE: Short\n    val NAMESPACE_RULE: Short\n
  }\n}\n\n/**\n * Exposes the JavaScript
[CSSGroupingRule](https://developer.mozilla.org/en/docs/Web/API/CSSGroupingRule) to Kotlin\n *\npublic
external abstract class CSSGroupingRule : CSSRule {\n  open val cssRules: CSSRuleList\n  fun insertRule(rule:
String, index: Int): Int\n  fun deleteRule(index: Int)\n\n  companion object {\n    val STYLE_RULE: Short\n
    val CHARSET_RULE: Short\n    val IMPORT_RULE: Short\n    val MEDIA_RULE: Short\n    val
FONT_FACE_RULE: Short\n    val PAGE_RULE: Short\n    val MARGIN_RULE: Short\n
    val NAMESPACE_RULE: Short\n  }\n}\n\n/**\n * Exposes the JavaScript
[CSSMediaRule](https://developer.mozilla.org/en/docs/Web/API/CSSMediaRule) to Kotlin\n *\npublic external
abstract class CSSMediaRule : CSSGroupingRule {\n  open val media: MediaList\n\n  companion object {\n
    val STYLE_RULE: Short\n    val CHARSET_RULE: Short\n    val IMPORT_RULE: Short\n    val
MEDIA_RULE: Short\n    val FONT_FACE_RULE: Short\n    val PAGE_RULE: Short\n    val
MARGIN_RULE: Short\n    val NAMESPACE_RULE: Short\n  }\n}\n\n/**\n * Exposes the JavaScript
[CSSPageRule](https://developer.mozilla.org/en/docs/Web/API/CSSPageRule) to Kotlin\n *\npublic external
abstract class CSSPageRule : CSSGroupingRule {\n  open var selectorText: String\n  open val style:
CSSStyleDeclaration\n\n  companion object {\n    val STYLE_RULE: Short\n    val CHARSET_RULE:
Short\n    val IMPORT_RULE: Short\n    val MEDIA_RULE: Short\n    val FONT_FACE_RULE:
Short\n    val PAGE_RULE: Short\n    val MARGIN_RULE: Short\n    val NAMESPACE_RULE: Short\n
  }\n}\n\npublic external abstract class CSSMarginRule : CSSRule {\n  open val name: String\n  open val style:
CSSStyleDeclaration\n\n  companion object {\n    val STYLE_RULE: Short\n    val CHARSET_RULE:
Short\n    val IMPORT_RULE: Short\n    val MEDIA_RULE: Short\n    val FONT_FACE_RULE: Short\n
    val PAGE_RULE: Short\n    val MARGIN_RULE: Short\n    val NAMESPACE_RULE: Short\n
  }\n}\n\n/**\n * Exposes the JavaScript
[CSSNamespaceRule](https://developer.mozilla.org/en/docs/Web/API/CSSNamespaceRule) to Kotlin\n *\npublic
external abstract class CSSNamespaceRule : CSSRule {\n  open val namespaceURI: String\n  open val prefix:
String\n\n  companion object {\n    val STYLE_RULE: Short\n    val CHARSET_RULE: Short\n    val
IMPORT_RULE: Short\n    val MEDIA_RULE: Short\n    val FONT_FACE_RULE: Short\n    val
PAGE_RULE:
Short\n    val MARGIN_RULE: Short\n    val NAMESPACE_RULE: Short\n  }\n}\n\n/**\n * Exposes the
JavaScript [CSSStyleDeclaration](https://developer.mozilla.org/en/docs/Web/API/CSSStyleDeclaration) to Kotlin\n
*\npublic external abstract class CSSStyleDeclaration : ItemArrayLike<String> {\n  open var cssText: String\n
open val parentRule: CSSRule?\n  open var cssFloat: String\n  open var alignContent: String\n  open var
alignItems: String\n  open var alignSelf: String\n  open var animation: String\n  open var animationDelay:
String\n  open var animationDirection: String\n  open var animationDuration: String\n  open var
animationFillMode: String\n  open var animationIterationCount: String\n  open var animationName: String\n
open var animationPlayState: String\n  open var animationTimingFunction: String\n  open var backfaceVisibility:
String\n  open var background: String\n  open var backgroundAttachment: String\n  open var backgroundClip:
String\n  open var backgroundColor: String\n  open var backgroundImage: String\n  open var
backgroundOrigin: String\n  open var backgroundPosition: String\n  open var backgroundRepeat: String\n  open

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var backgroundSize: String\n open var border: String\n open var borderBottom: String\n open var  
borderBottomColor: String\n open var borderBottomLeftRadius: String\n open var borderBottomRightRadius:  
String\n open var borderBottomStyle: String\n open var borderBottomWidth: String\n open var  
borderCollapse: String\n open var borderColor: String\n open var borderImage: String\n open var  
borderImageOutset: String\n open var borderImageRepeat: String\n open var borderImageSlice: String\n open  
var borderImageSource: String\n open var borderImageWidth: String\n open var borderLeft: String\n open var  
borderLeftColor: String\n open var borderLeftStyle: String\n open var borderLeftWidth: String\n open var  
borderRadius:  
String\n open var borderRight: String\n open var borderRightColor: String\n open var borderRightStyle:  
String\n open var borderRightWidth: String\n open var borderSpacing: String\n open var borderStyle: String\n  
open var borderTop: String\n open var borderTopColor: String\n open var borderTopLeftRadius: String\n  
open var borderTopRightRadius: String\n open var borderTopStyle: String\n open var borderTopWidth: String\n  
open var borderWidth: String\n open var bottom: String\n open var boxDecorationBreak: String\n open var  
boxShadow: String\n open var boxSizing: String\n open var breakAfter: String\n open var breakBefore:  
String\n open var breakInside: String\n open var captionSide: String\n open var clear: String\n open var clip:  
String\n open var color: String\n open var columnCount: String\n open var columnFill: String\n open var  
columnGap: String\n open var columnRule: String\n open var columnRuleColor:  
String\n open var columnRuleStyle: String\n open var columnRuleWidth: String\n open var columnSpan:  
String\n open var columnWidth: String\n open var columns: String\n open var content: String\n open var  
counterIncrement: String\n open var counterReset: String\n open var cursor: String\n open var direction:  
String\n open var display: String\n open var emptyCells: String\n open var filter: String\n open var flex:  
String\n open var flexBasis: String\n open var flexDirection: String\n open var flexFlow: String\n open var  
flexGrow: String\n open var flexShrink: String\n open var flexWrap: String\n open var font: String\n open  
var fontFamily: String\n open var fontFeatureSettings: String\n open var fontKerning: String\n open var  
fontLanguageOverride: String\n open var fontSize: String\n open var fontSizeAdjust: String\n open var  
fontStretch: String\n open var fontStyle: String\n open var fontSynthesis:  
String\n open var fontVariant: String\n open var fontVariantAlternates: String\n open var fontVariantCaps:  
String\n open var fontVariantEastAsian: String\n open var fontVariantLigatures: String\n open var  
fontVariantNumeric: String\n open var fontVariantPosition: String\n open var fontWeight: String\n open var  
hangingPunctuation: String\n open var height: String\n open var hyphens: String\n open var imageOrientation:  
String\n open var imageRendering: String\n open var imageResolution: String\n open var imeMode: String\n  
open var justifyContent: String\n open var left: String\n open var letterSpacing: String\n open var lineBreak:  
String\n open var lineHeight: String\n open var listStyle: String\n open var listStyleImage: String\n open var  
listStylePosition: String\n open var listStyleType: String\n open var margin: String\n open var marginBottom:  
String\n open var marginLeft: String\n open var marginRight:  
String\n open var marginTop: String\n open var mark: String\n open var markAfter: String\n open var  
markBefore: String\n open var marks: String\n open var marqueeDirection: String\n open var  
marqueePlayCount: String\n open var marqueeSpeed: String\n open var marqueeStyle: String\n open var  
mask: String\n open var maskType: String\n open var maxHeight: String\n open var maxWidth: String\n  
open var minHeight: String\n open var minWidth: String\n open var navDown: String\n open var navIndex:  
String\n open var navLeft: String\n open var navRight: String\n open var navUp: String\n open var objectFit:  
String\n open var objectPosition: String\n open var opacity: String\n open var order: String\n open var  
orphans: String\n open var outline: String\n open var outlineColor: String\n open var outlineOffset: String\n  
open var outlineStyle: String\n open var outlineWidth: String\n open var overflowWrap:  
String\n open var overflowX: String\n open var overflowY: String\n open var padding: String\n open var  
paddingBottom: String\n open var paddingLeft: String\n open var paddingRight: String\n open var  
paddingTop: String\n open var pageBreakAfter: String\n open var pageBreakBefore: String\n open var  
pageBreakInside: String\n open var perspective: String\n open var perspectiveOrigin: String\n open var

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phonemes: String\n open var position: String\n open var quotes: String\n open var resize: String\n open var
rest: String\n open var restAfter: String\n open var restBefore: String\n open var right: String\n open var
tabSize: String\n open var tableLayout: String\n open var textAlign: String\n open var textAlignLast: String\n
open var textCombineUpright: String\n open var textDecoration: String\n open var textDecorationColor:
String\n open var textDecorationLine: String\n open var textDecorationStyle:
String\n open var textIndent: String\n open var textJustify: String\n open var textOrientation: String\n open
var textOverflow: String\n open var textShadow: String\n open var textTransform: String\n open var
textUnderlinePosition: String\n open var top: String\n open var transform: String\n open var transformOrigin:
String\n open var transformStyle: String\n open var transition: String\n open var transitionDelay: String\n
open var transitionDuration: String\n open var transitionProperty: String\n open var transitionTimingFunction:
String\n open var unicodeBidi: String\n open var verticalAlign: String\n open var visibility: String\n open
var voiceBalance: String\n open var voiceDuration: String\n open var voicePitch: String\n open var
voicePitchRange: String\n open var voiceRate: String\n open var voiceStress: String\n open var voiceVolume:
String\n open var whiteSpace: String\n open var widows: String\n
open var width: String\n open var wordBreak: String\n open var wordSpacing: String\n open var wordWrap:
String\n open var writingMode: String\n open var zIndex: String\n open var _dashed_attribute: String\n open
var _camel_cased_attribute: String\n open var _webkit_cased_attribute: String\n fun getPropertyValue(property:
String): String\n fun getPropertyPriority(property: String): String\n fun setProperty(property: String, value:
String, priority: String = definedExternally)\n fun setPropertyValue(property: String, value: String)\n fun
setPropertyPriority(property: String, priority: String)\n fun removeProperty(property: String): String\n override
fun item(index: Int): String\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline operator fun
CSSStyleDeclaration.get(index: Int): String? = asDynamic()[index]\n\npublic external interface
ElementCSSInlineStyle {\n val style: CSSStyleDeclaration\n}\n\n/**\n
* Exposes the JavaScript [CSS](https://developer.mozilla.org/en/docs/Web/API/CSS) to Kotlin\n */\npublic
external abstract class CSS {\n companion object {\n fun escape(ident: String): String\n }\n}\n\npublic
external interface UnionElementOrProcessingInstruction\", \"/*\n * Copyright 2010-2021 JetBrains s.r.o. and Kotlin
Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be
found in the license/LICENSE.txt file.\n */\n\n// NOTE: THIS FILE IS AUTO-GENERATED, DO NOT EDIT!\n//
See github.com/kotlin/dukat for details\n\npackage org.w3c.dom.encryptedmedia\n\nimport kotlin.js.*\nimport
org.khronos.webgl.*\nimport org.w3c.dom.*\nimport org.w3c.dom.events.*\n\n/**\n * Exposes the JavaScript
[MediaKeySystemConfiguration](https://developer.mozilla.org/en/docs/Web/API/MediaKeySystemConfiguration)
to Kotlin\n */\n\npublic external interface MediaKeySystemConfiguration {\n var label: String? /* = \"\" */\n
get() = definedExternally\n set(value) = definedExternally\n var initDataTypes: Array<String>? /* =
arrayOf() */\n get() = definedExternally\n set(value) = definedExternally\n var audioCapabilities:
Array<MediaKeySystemMediaCapability>? /* = arrayOf() */\n get() = definedExternally\n set(value) =
definedExternally\n var videoCapabilities: Array<MediaKeySystemMediaCapability>? /* = arrayOf() */\n
get() = definedExternally\n set(value) = definedExternally\n var distinctiveIdentifier:
MediaKeysRequirement? /* = MediaKeysRequirement.OPTIONAL */\n get() = definedExternally\n
set(value) = definedExternally\n var persistentState: MediaKeysRequirement? /* =
MediaKeysRequirement.OPTIONAL */\n get() = definedExternally\n set(value) = definedExternally\n
var sessionTypes: Array<String>?\n get() = definedExternally\n set(value) =
definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun MediaKeySystemConfiguration(label:
String? = \"\", initDataTypes: Array<String>? = arrayOf(), audioCapabilities:
Array<MediaKeySystemMediaCapability>? = arrayOf(), videoCapabilities:
Array<MediaKeySystemMediaCapability>? = arrayOf(), distinctiveIdentifier: MediaKeysRequirement? =
MediaKeysRequirement.OPTIONAL, persistentState: MediaKeysRequirement? =

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MediaKeysRequirement.OPTIONAL, sessionTypes: Array<String>? = undefined): MediaKeySystemConfiguration
{\n val o = js(\("{}")\n o["label"] = label\n o["initDataTypes"] = initDataTypes\n
o["audioCapabilities"] = audioCapabilities\n o["videoCapabilities"] = videoCapabilities\n
o["distinctiveIdentifier"] = distinctiveIdentifier\n o["persistentState"] = persistentState\n o["sessionTypes"]
= sessionTypes\n return o\n}\n\npublic external interface MediaKeySystemMediaCapability {\n var
contentType: String? /* = "" */\n
get() = definedExternally\n set(value) = definedExternally\n var robustness: String? /* = "" */\n get() =
definedExternally\n set(value) = definedExternally\n}\n\n@Suppress(\ "INVISIBLE_REFERENCE",
\ "INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline fun
MediaKeySystemMediaCapability(contentType: String? = "", robustness: String? = ""):
MediaKeySystemMediaCapability {\n val o = js(\("{}")\n o["contentType"] = contentType\n
o["robustness"] = robustness\n return o\n}\n\n/**\n * Exposes the JavaScript
[MediaKeySystemAccess](https://developer.mozilla.org/en/docs/Web/API/MediaKeySystemAccess) to Kotlin\n
*/\npublic external abstract class MediaKeySystemAccess {\n open val keySystem: String\n fun
getConfiguration(): MediaKeySystemConfiguration\n fun createMediaKeys(): Promise<MediaKeys>\n}\n\n/**\n
* Exposes the JavaScript [MediaKeys](https://developer.mozilla.org/en/docs/Web/API/MediaKeys) to Kotlin\n
*/\npublic external
abstract class MediaKeys {\n fun createSession(sessionType: MediaKeySessionType = definedExternally):
MediaKeySession\n fun setServerCertificate(serverCertificate: dynamic): Promise<Boolean>\n}\n\n/**\n *
Exposes the JavaScript [MediaKeySession](https://developer.mozilla.org/en/docs/Web/API/MediaKeySession) to
Kotlin\n */\npublic external abstract class MediaKeySession : EventTarget {\n open val sessionId: String\n open
val expiration: Double\n open val closed: Promise<Unit>\n open val keyStatuses: MediaKeyStatusMap\n open
var onkeystatuschange: ((Event) -> dynamic)?\n open var onmessage: ((MessageEvent) -> dynamic)?\n fun
generateRequest(initDataType: String, initData: dynamic): Promise<Unit>\n fun load(sessionId: String):
Promise<Boolean>\n fun update(response: dynamic): Promise<Unit>\n fun close(): Promise<Unit>\n fun
remove(): Promise<Unit>\n}\n\n/**\n * Exposes the JavaScript
[MediaKeyStatusMap](https://developer.mozilla.org/en/docs/Web/API/MediaKeyStatusMap)
to Kotlin\n */\npublic external abstract class MediaKeyStatusMap {\n open val size: Int\n fun has(keyId:
dynamic): Boolean\n fun get(keyId: dynamic): Any?\n}\n\n/**\n * Exposes the JavaScript
[MediaKeyMessageEvent](https://developer.mozilla.org/en/docs/Web/API/MediaKeyMessageEvent) to Kotlin\n
*/\npublic external open class MediaKeyMessageEvent(type: String, eventInitDict: MediaKeyMessageEventInit) :
Event {\n open val messageType: MediaKeyMessageType\n open val message: ArrayBuffer\n\n companion
object {\n val NONE: Short\n val CAPTURING_PHASE: Short\n val AT_TARGET: Short\n val
BUBBLING_PHASE: Short\n }\n}\n\npublic external interface MediaKeyMessageEventInit : EventInit {\n var
messageType: MediaKeyMessageType?\n var message:
ArrayBuffer?\n}\n\n@Suppress(\ "INVISIBLE_REFERENCE",
\ "INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline fun
MediaKeyMessageEventInit(messageType: MediaKeyMessageType?, message:
ArrayBuffer?, bubbles: Boolean? = false, cancelable: Boolean? = false, composed: Boolean? = false):
MediaKeyMessageEventInit {\n val o = js(\("{}")\n o["messageType"] = messageType\n o["message"] =
message\n o["bubbles"] = bubbles\n o["cancelable"] = cancelable\n o["composed"] = composed\n return
o\n}\n\npublic external open class MediaEncryptedEvent(type: String, eventInitDict: MediaEncryptedEventInit =
definedExternally) : Event {\n open val initDataType: String\n open val initData: ArrayBuffer?\n\n companion
object {\n val NONE: Short\n val CAPTURING_PHASE: Short\n val AT_TARGET: Short\n val
BUBBLING_PHASE: Short\n }\n}\n\npublic external interface MediaEncryptedEventInit : EventInit {\n var
initDataType: String? /* = "" */\n get() = definedExternally\n set(value) = definedExternally\n var
initData: ArrayBuffer? /* = null */\n get() = definedExternally\n set(value) =

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definedExternally\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline fun
MediaEncryptedEventInit(initDataType: String? = "", initData: ArrayBuffer? = null, bubbles: Boolean? = false,
cancelable: Boolean? = false, composed: Boolean? = false): MediaEncryptedEventInit {\n    val o = js("{}")\n
o["initDataType"] = initDataType\n    o["initData"] = initData\n    o["bubbles"] = bubbles\n    o["cancelable"]
= cancelable\n    o["composed"] = composed\n    return o\n}\n\n/* please, don't implement this interface!
*/\n\n@JsName("null")\n@Suppress("NESTED_CLASS_IN_EXTERNAL_INTERFACE")\npublic external
interface MediaKeysRequirement {\n    companion object\n}\n\npublic inline val
MediaKeysRequirement.Companion.REQUIRED: MediaKeysRequirement get() =
"required".asDynamic().unsafeCast<MediaKeysRequirement>()\n\npublic inline val
MediaKeysRequirement.Companion.OPTIONAL: MediaKeysRequirement get() =
"optional".asDynamic().unsafeCast<MediaKeysRequirement>()\n\npublic
inline val MediaKeysRequirement.Companion.NOT_ALLOWED: MediaKeysRequirement get() = "not-
allowed".asDynamic().unsafeCast<MediaKeysRequirement>()\n\n/* please, don't implement this interface!
*/\n\n@JsName("null")\n@Suppress("NESTED_CLASS_IN_EXTERNAL_INTERFACE")\npublic external
interface MediaKeySessionType {\n    companion object\n}\n\npublic inline val
MediaKeySessionType.Companion.TEMPORARY: MediaKeySessionType get() =
"temporary".asDynamic().unsafeCast<MediaKeySessionType>()\n\npublic inline val
MediaKeySessionType.Companion.PERSISTENT_LICENSE: MediaKeySessionType get() = "persistent-
license".asDynamic().unsafeCast<MediaKeySessionType>()\n\n/* please, don't implement this interface!
*/\n\n@JsName("null")\n@Suppress("NESTED_CLASS_IN_EXTERNAL_INTERFACE")\npublic external
interface MediaKeyStatus {\n    companion object\n}\n\npublic inline val MediaKeyStatus.Companion.USABLE:
MediaKeyStatus get() = "usable".asDynamic().unsafeCast<MediaKeyStatus>()\n\npublic
inline val MediaKeyStatus.Companion.EXPIRED: MediaKeyStatus get() =
"expired".asDynamic().unsafeCast<MediaKeyStatus>()\n\npublic inline val
MediaKeyStatus.Companion.RELEASED: MediaKeyStatus get() =
"released".asDynamic().unsafeCast<MediaKeyStatus>()\n\npublic inline val
MediaKeyStatus.Companion.OUTPUT_RESTRICTED: MediaKeyStatus get() = "output-
restricted".asDynamic().unsafeCast<MediaKeyStatus>()\n\npublic inline val
MediaKeyStatus.Companion.OUTPUT_DOWNSCALED: MediaKeyStatus get() = "output-
downscaled".asDynamic().unsafeCast<MediaKeyStatus>()\n\npublic inline val
MediaKeyStatus.Companion.STATUS_PENDING: MediaKeyStatus get() = "status-
pending".asDynamic().unsafeCast<MediaKeyStatus>()\n\npublic inline val
MediaKeyStatus.Companion.INTERNAL_ERROR: MediaKeyStatus get() = "internal-
error".asDynamic().unsafeCast<MediaKeyStatus>()\n\n/* please, don't implement this interface!
*/\n\n@JsName("null")\n@Suppress("NESTED_CLASS_IN_EXTERNAL_INTERFACE")\npublic
external interface MediaKeyMessageType {\n    companion object\n}\n\npublic inline val
MediaKeyMessageType.Companion.LICENSE_REQUEST: MediaKeyMessageType get() = "license-
request".asDynamic().unsafeCast<MediaKeyMessageType>()\n\npublic inline val
MediaKeyMessageType.Companion.LICENSE_RENEWAL: MediaKeyMessageType get() = "license-
renewal".asDynamic().unsafeCast<MediaKeyMessageType>()\n\npublic inline val
MediaKeyMessageType.Companion.LICENSE_RELEASE: MediaKeyMessageType get() = "license-
release".asDynamic().unsafeCast<MediaKeyMessageType>()\n\npublic inline val
MediaKeyMessageType.Companion.INDIVIDUALIZATION_REQUEST: MediaKeyMessageType get() =
"individualization-request".asDynamic().unsafeCast<MediaKeyMessageType>()", /*\n * Copyright 2010-2021
JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the
Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\n// NOTE: THIS FILE IS AUTO-
GENERATED, DO NOT EDIT!\n//

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See github.com/kotlin/dukat for details\n\npackage org.w3c.dom.events\n\nimport kotlin.js.*\nimport
org.khronos.webgl.*\nimport org.w3c.dom.*\n\n/**\n * Exposes the JavaScript
[UIEvent](https://developer.mozilla.org/en/docs/Web/API/UIEvent) to Kotlin\n *\npublic external open class
UIEvent(type: String, eventInitDict: UIEventInit = definedExternally) : Event {\n  open val view: Window?\n
open val detail: Int\n  companion object {\n    val NONE: Short\n    val CAPTURING_PHASE: Short\n
val AT_TARGET: Short\n    val BUBBLING_PHASE: Short\n  }\n}\n\npublic external interface UIEventInit :
EventInit {\n  var view: Window? /* = null */\n  get() = definedExternally\n  set(value) =
definedExternally\n  var detail: Int? /* = 0 */\n  get() = definedExternally\n  set(value) =
definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n\n@kotlin.internal.InlineOnly\npublic inline fun UIEventInit(view: Window? =
null, detail: Int? = 0, bubbles: Boolean? = false, cancelable: Boolean? = false, composed: Boolean? = false):
UIEventInit {\n  val o = js(\"({})\")\n  o[\"view\"] = view\n  o[\"detail\"] = detail\n  o[\"bubbles\"] = bubbles\n
o[\"cancelable\"] = cancelable\n  o[\"composed\"] = composed\n  return o\n}\n\n/**\n * Exposes the JavaScript
[FocusEvent](https://developer.mozilla.org/en/docs/Web/API/FocusEvent) to Kotlin\n *\npublic external open class
FocusEvent(type: String, eventInitDict: FocusEventInit = definedExternally) : UIEvent {\n  open val relatedTarget:
EventTarget?\n\n  companion object {\n    val NONE: Short\n    val CAPTURING_PHASE: Short\n    val
AT_TARGET: Short\n    val BUBBLING_PHASE: Short\n  }\n}\n\npublic external interface FocusEventInit :
UIEventInit {\n  var relatedTarget: EventTarget? /* = null */\n  get() = definedExternally\n  set(value) =
definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n\n@kotlin.internal.InlineOnly\npublic
inline fun FocusEventInit(relatedTarget: EventTarget? = null, view: Window? = null, detail: Int? = 0, bubbles:
Boolean? = false, cancelable: Boolean? = false, composed: Boolean? = false): FocusEventInit {\n  val o =
js(\"({})\")\n  o[\"relatedTarget\"] = relatedTarget\n  o[\"view\"] = view\n  o[\"detail\"] = detail\n
o[\"bubbles\"] = bubbles\n  o[\"cancelable\"] = cancelable\n  o[\"composed\"] = composed\n  return
o\n}\n\n/**\n * Exposes the JavaScript [MouseEvent](https://developer.mozilla.org/en/docs/Web/API/MouseEvent)
to Kotlin\n *\npublic external open class MouseEvent(type: String, eventInitDict: MouseEventInit =
definedExternally) : UIEvent, UnionElementOrMouseEvent {\n  open val screenX: Int\n  open val screenY: Int\n
open val clientX: Int\n  open val clientY: Int\n  open val ctrlKey: Boolean\n  open val shiftKey: Boolean\n
open val altKey: Boolean\n  open val metaKey: Boolean\n  open val button: Short\n
open val buttons: Short\n  open val relatedTarget: EventTarget?\n  open val region: String?\n  open val pageX:
Double\n  open val pageY: Double\n  open val x: Double\n  open val y: Double\n  open val offsetX: Double\n
open val offsetY: Double\n  fun getModifierState(keyArg: String): Boolean\n\n  companion object {\n    val
NONE: Short\n    val CAPTURING_PHASE: Short\n    val AT_TARGET: Short\n    val
BUBBLING_PHASE: Short\n  }\n}\n\npublic external interface MouseEventInit : EventModifierInit {\n  var
screenX: Int? /* = 0 */\n  get() = definedExternally\n  set(value) = definedExternally\n  var screenY: Int? /*
= 0 */\n  get() = definedExternally\n  set(value) = definedExternally\n  var clientX: Int? /* = 0 */\n
get() = definedExternally\n  set(value) = definedExternally\n  var clientY: Int? /* = 0 */\n  get() =
definedExternally\n  set(value) = definedExternally\n  var button: Short?
/* = 0 */\n  get() = definedExternally\n  set(value) = definedExternally\n  var buttons: Short? /* = 0 */\n
get() = definedExternally\n  set(value) = definedExternally\n  var relatedTarget: EventTarget? /* = null */\n
get() = definedExternally\n  set(value) = definedExternally\n  var region: String? /* = null */\n  get() =
definedExternally\n  set(value) = definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n\n@kotlin.internal.InlineOnly\npublic inline fun MouseEventInit(screenX: Int? = 0,
screenY: Int? = 0, clientX: Int? = 0, clientY: Int? = 0, button: Short? = 0, buttons: Short? = 0, relatedTarget:
EventTarget? = null, region: String? = null, ctrlKey: Boolean? = false, shiftKey: Boolean? = false, altKey: Boolean?
= false, metaKey: Boolean? = false, modifierAltGraph: Boolean? = false, modifierCapsLock: Boolean? = false,
modifierFn: Boolean? = false, modifierFnLock: Boolean? = false, modifierHyper:

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Boolean? = false, modifierNumLock: Boolean? = false, modifierScrollLock: Boolean? = false, modifierSuper:
Boolean? = false, modifierSymbol: Boolean? = false, modifierSymbolLock: Boolean? = false, view: Window? =
null, detail: Int? = 0, bubbles: Boolean? = false, cancelable: Boolean? = false, composed: Boolean? = false):
MouseEventInit {\n val o = js\("\{\}\")\n o["screenX"] = screenX\n o["screenY"] = screenY\n
o["clientX"] = clientX\n o["clientY"] = clientY\n o["button"] = button\n o["buttons"] = buttons\n
o["relatedTarget"] = relatedTarget\n o["region"] = region\n o["ctrlKey"] = ctrlKey\n o["shiftKey"] =
shiftKey\n o["altKey"] = altKey\n o["metaKey"] = metaKey\n o["modifierAltGraph"] =
modifierAltGraph\n o["modifierCapsLock"] = modifierCapsLock\n o["modifierFn"] = modifierFn\n
o["modifierFnLock"] = modifierFnLock\n o["modifierHyper"] = modifierHyper\n o["modifierNumLock"] =
modifierNumLock\n
o["modifierScrollLock"] = modifierScrollLock\n o["modifierSuper"] = modifierSuper\n
o["modifierSymbol"] = modifierSymbol\n o["modifierSymbolLock"] = modifierSymbolLock\n o["view"] =
view\n o["detail"] = detail\n o["bubbles"] = bubbles\n o["cancelable"] = cancelable\n o["composed"] =
composed\n return o\n}\n\npublic external interface EventModifierInit : UIEventInit {\n var ctrlKey: Boolean?
/* = false */\n get() = definedExternally\n set(value) = definedExternally\n var shiftKey: Boolean? /* =
false */\n get() = definedExternally\n set(value) = definedExternally\n var altKey: Boolean? /* = false
*/\n get() = definedExternally\n set(value) = definedExternally\n var metaKey: Boolean? /* = false */\n
get() = definedExternally\n set(value) = definedExternally\n var modifierAltGraph: Boolean? /* = false */\n
get() = definedExternally\n set(value) = definedExternally\n
var modifierCapsLock: Boolean? /* = false */\n get() = definedExternally\n set(value) =
definedExternally\n var modifierFn: Boolean? /* = false */\n get() = definedExternally\n set(value) =
definedExternally\n var modifierFnLock: Boolean? /* = false */\n get() = definedExternally\n set(value) =
definedExternally\n var modifierHyper: Boolean? /* = false */\n get() = definedExternally\n set(value) =
definedExternally\n var modifierNumLock: Boolean? /* = false */\n get() = definedExternally\n
set(value) = definedExternally\n var modifierScrollLock: Boolean? /* = false */\n get() = definedExternally\n
set(value) = definedExternally\n var modifierSuper: Boolean? /* = false */\n get() = definedExternally\n
set(value) = definedExternally\n var modifierSymbol: Boolean? /* = false */\n get() = definedExternally\n
set(value) = definedExternally\n var
modifierSymbolLock: Boolean? /* = false */\n get() = definedExternally\n set(value) =
definedExternally\n}\n\n@Suppress\("INVISIBLE_REFERENCE",
\("INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline fun EventModifierInit(ctrlKey: Boolean? =
false, shiftKey: Boolean? = false, altKey: Boolean? = false, metaKey: Boolean? = false, modifierAltGraph:
Boolean? = false, modifierCapsLock: Boolean? = false, modifierFn: Boolean? = false, modifierFnLock: Boolean? =
false, modifierHyper: Boolean? = false, modifierNumLock: Boolean? = false, modifierScrollLock: Boolean? = false,
modifierSuper: Boolean? = false, modifierSymbol: Boolean? = false, modifierSymbolLock: Boolean? = false, view:
Window? = null, detail: Int? = 0, bubbles: Boolean? = false, cancelable: Boolean? = false, composed: Boolean? =
false): EventModifierInit {\n val o = js\("\{\}\")\n o["ctrlKey"] = ctrlKey\n o["shiftKey"] = shiftKey\n
o["altKey"] = altKey\n o["metaKey"] = metaKey\n o["modifierAltGraph"]
= modifierAltGraph\n o["modifierCapsLock"] = modifierCapsLock\n o["modifierFn"] = modifierFn\n
o["modifierFnLock"] = modifierFnLock\n o["modifierHyper"] = modifierHyper\n o["modifierNumLock"] =
modifierNumLock\n o["modifierScrollLock"] = modifierScrollLock\n o["modifierSuper"] = modifierSuper\n
o["modifierSymbol"] = modifierSymbol\n o["modifierSymbolLock"] = modifierSymbolLock\n o["view"] =
view\n o["detail"] = detail\n o["bubbles"] = bubbles\n o["cancelable"] = cancelable\n o["composed"] =
composed\n return o\n}\n\n/**\n * Exposes the JavaScript
[WheelEvent](https://developer.mozilla.org/en/docs/Web/API/WheelEvent) to Kotlin\n */\npublic external open
class WheelEvent(type: String, eventInitDict: WheelEventInit = definedExternally) : MouseEvent {\n open val
deltaX: Double\n open val deltaY: Double\n open val deltaZ: Double\n open val deltaMode: Int\n\ncompanion object {\n

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    val DOM_DELTA_PIXEL: Int\n    val DOM_DELTA_LINE: Int\n    val DOM_DELTA_PAGE: Int\n
    val NONE: Short\n    val CAPTURING_PHASE: Short\n    val AT_TARGET: Short\n    val
    BUBBLING_PHASE: Short\n } \n} \n\npublic external interface WheelEventInit : MouseEventInit { \n  var
    deltaX: Double? /* = 0.0 */ \n    get() = definedExternally \n    set(value) = definedExternally \n  var deltaY:
    Double? /* = 0.0 */ \n    get() = definedExternally \n    set(value) = definedExternally \n  var deltaZ: Double? /*
    = 0.0 */ \n    get() = definedExternally \n    set(value) = definedExternally \n  var deltaMode: Int? /* = 0 */ \n
    get() = definedExternally \n    set(value) = definedExternally \n} \n\n@Suppress(\"INVISIBLE_REFERENCE\",
    \"INVISIBLE_MEMBER\") \n@kotlin.internal.InlineOnly \npublic inline fun WheelEventInit(deltaX: Double? = 0.0,
    deltaY: Double? = 0.0, deltaZ: Double? = 0.0, deltaMode: Int? = 0, screenX: Int? = 0, screenY: Int? = 0, clientX:
    Int? = 0, clientY: Int? = 0, button: Short? = 0, buttons: Short? = 0, relatedTarget: EventTarget? = null, region:
    String? = null, ctrlKey: Boolean? = false, shiftKey: Boolean? = false, altKey: Boolean? = false, metaKey: Boolean?
    = false, modifierAltGraph: Boolean? = false, modifierCapsLock: Boolean? = false, modifierFn: Boolean? = false,
    modifierFnLock: Boolean? = false, modifierHyper: Boolean? = false, modifierNumLock: Boolean? = false,
    modifierScrollLock: Boolean? = false, modifierSuper: Boolean? = false, modifierSymbol: Boolean? = false,
    modifierSymbolLock: Boolean? = false, view: Window? = null, detail: Int? = 0, bubbles: Boolean? = false,
    cancelable: Boolean? = false, composed: Boolean? = false): WheelEventInit { \n  val o = js(\"({})\") \n
    o[\"deltaX\"] = deltaX \n  o[\"deltaY\"] = deltaY \n  o[\"deltaZ\"] = deltaZ \n  o[\"deltaMode\"] = deltaMode \n
    o[\"screenX\"] = screenX \n  o[\"screenY\"] = screenY \n  o[\"clientX\"] = clientX \n  o[\"clientY\"] = clientY \n
    o[\"button\"] = button \n  o[\"buttons\"] = buttons \n  o[\"relatedTarget\"] = relatedTarget \n  o[\"region\"] =
    region \n  o[\"ctrlKey\"] = ctrlKey \n  o[\"shiftKey\"] = shiftKey \n  o[\"altKey\"] = altKey \n  o[\"metaKey\"] =
    metaKey \n  o[\"modifierAltGraph\"] = modifierAltGraph \n  o[\"modifierCapsLock\"] = modifierCapsLock \n
    o[\"modifierFn\"] = modifierFn \n  o[\"modifierFnLock\"] = modifierFnLock \n  o[\"modifierHyper\"] =
    modifierHyper \n  o[\"modifierNumLock\"] = modifierNumLock \n  o[\"modifierScrollLock\"] =
    modifierScrollLock \n  o[\"modifierSuper\"] = modifierSuper \n  o[\"modifierSymbol\"] = modifierSymbol \n
    o[\"modifierSymbolLock\"] = modifierSymbolLock \n  o[\"view\"] = view \n  o[\"detail\"] = detail \n
    o[\"bubbles\"] = bubbles \n  o[\"cancelable\"] = cancelable \n  o[\"composed\"] = composed \n  return
    o \n} \n\n/** \n * Exposes the JavaScript [InputEvent](https://developer.mozilla.org/en/docs/Web/API/InputEvent) to
    Kotlin \n */ \npublic external
    open class InputEvent(type: String, eventInitDict: InputEventInit = definedExternally) : UIEvent { \n  open val
    data: String \n  open val isComposing: Boolean \n\n  companion object { \n    val NONE: Short \n    val
    CAPTURING_PHASE: Short \n    val AT_TARGET: Short \n    val BUBBLING_PHASE: Short \n
    } \n} \n\npublic external interface InputEventInit : UIEventInit { \n  var data: String? /* = \"\" */ \n    get() =
    definedExternally \n    set(value) = definedExternally \n  var isComposing: Boolean? /* = false */ \n    get() =
    definedExternally \n    set(value) = definedExternally \n} \n\n@Suppress(\"INVISIBLE_REFERENCE\",
    \"INVISIBLE_MEMBER\") \n@kotlin.internal.InlineOnly \npublic inline fun InputEventInit(data: String? = \"\",
    isComposing: Boolean? = false, view: Window? = null, detail: Int? = 0, bubbles: Boolean? = false, cancelable:
    Boolean? = false, composed: Boolean? = false): InputEventInit { \n  val o = js(\"({})\") \n  o[\"data\"] = data \n
    o[\"isComposing\"]
    = isComposing \n  o[\"view\"] = view \n  o[\"detail\"] = detail \n  o[\"bubbles\"] = bubbles \n  o[\"cancelable\"] =
    cancelable \n  o[\"composed\"] = composed \n  return o \n} \n\n/** \n * Exposes the JavaScript
    [KeyboardEvent](https://developer.mozilla.org/en/docs/Web/API/KeyboardEvent) to Kotlin \n */ \npublic external
    open class KeyboardEvent(type: String, eventInitDict: KeyboardEventInit = definedExternally) : UIEvent { \n
    open val key: String \n  open val code: String \n  open val location: Int \n  open val ctrlKey: Boolean \n  open val
    shiftKey: Boolean \n  open val altKey: Boolean \n  open val metaKey: Boolean \n  open val repeat: Boolean \n
    open val isComposing: Boolean \n  open val charCode: Int \n  open val keyCode: Int \n  open val which: Int \n
    fun getModifierState(keyArg: String): Boolean \n\n  companion object { \n    val
    DOM_KEY_LOCATION_STANDARD: Int \n    val DOM_KEY_LOCATION_LEFT: Int \n    val
    DOM_KEY_LOCATION_RIGHT: Int \n
  
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    val DOM_KEY_LOCATION_NUMPAD: Int\n    val NONE: Short\n    val CAPTURING_PHASE: Short\n    val AT_TARGET: Short\n    val BUBBLING_PHASE: Short\n } }\n\npublic external interface
KeyboardEventInit : EventModifierInit {\n    var key: String? /* = \"\" */\n    get() = definedExternally\n    set(value) = definedExternally\n    var code: String? /* = \"\" */\n    get() = definedExternally\n    set(value) =
definedExternally\n    var location: Int? /* = 0 */\n    get() = definedExternally\n    set(value) =
definedExternally\n    var repeat: Boolean? /* = false */\n    get() = definedExternally\n    set(value) =
definedExternally\n    var isComposing: Boolean? /* = false */\n    get() = definedExternally\n    set(value) =
definedExternally\n }\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n\n@kotlin.internal.InlineOnly\n\npublic inline fun KeyboardEventInit(key: String? = \"\",
code: String? = \"\", location: Int? = 0, repeat:
Boolean? = false, isComposing: Boolean? = false, ctrlKey: Boolean? = false, shiftKey: Boolean? = false, altKey:
Boolean? = false, metaKey: Boolean? = false, modifierAltGraph: Boolean? = false, modifierCapsLock: Boolean? =
false, modifierFn: Boolean? = false, modifierFnLock: Boolean? = false, modifierHyper: Boolean? = false,
modifierNumLock: Boolean? = false, modifierScrollLock: Boolean? = false, modifierSuper: Boolean? = false,
modifierSymbol: Boolean? = false, modifierSymbolLock: Boolean? = false, view: Window? = null, detail: Int? = 0,
bubbles: Boolean? = false, cancelable: Boolean? = false, composed: Boolean? = false): KeyboardEventInit {\n    val
o = js(\"({})\")\n    o[\"key\"] = key\n    o[\"code\"] = code\n    o[\"location\"] = location\n    o[\"repeat\"] = repeat\n    o[\"isComposing\"] = isComposing\n    o[\"ctrlKey\"] = ctrlKey\n    o[\"shiftKey\"] = shiftKey\n    o[\"altKey\"] =
altKey\n    o[\"metaKey\"] = metaKey\n    o[\"modifierAltGraph\"] = modifierAltGraph\n    o[\"modifierCapsLock\"]
= modifierCapsLock\n    o[\"modifierFn\"] = modifierFn\n    o[\"modifierFnLock\"] = modifierFnLock\n    o[\"modifierHyper\"] = modifierHyper\n    o[\"modifierNumLock\"] = modifierNumLock\n    o[\"modifierScrollLock\"] = modifierScrollLock\n    o[\"modifierSuper\"] = modifierSuper\n    o[\"modifierSymbol\"] = modifierSymbol\n    o[\"modifierSymbolLock\"] = modifierSymbolLock\n    o[\"view\"] =
view\n    o[\"detail\"] = detail\n    o[\"bubbles\"] = bubbles\n    o[\"cancelable\"] = cancelable\n    o[\"composed\"] =
composed\n    return o\n }\n\n/**\n * Exposes the JavaScript
[CompositionEvent](https://developer.mozilla.org/en/docs/Web/API/CompositionEvent) to Kotlin\n */\n\npublic
external open class CompositionEvent(type: String, eventInitDict: CompositionEventInit = definedExternally) :
UIEvent {\n    open val data: String\n\n    companion object {\n        val NONE: Short\n        val
CAPTURING_PHASE: Short\n        val AT_TARGET: Short\n        val BUBBLING_PHASE: Short\n    }\n\n\npublic external interface CompositionEventInit : UIEventInit {\n    var data: String? /* = \"\" */\n    get() = definedExternally\n    set(value) = definedExternally\n }\n\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n\n@kotlin.internal.InlineOnly\n\npublic inline fun CompositionEventInit(data: String? =
\"\", view: Window? = null, detail: Int? = 0, bubbles: Boolean? = false, cancelable: Boolean? = false, composed:
Boolean? = false): CompositionEventInit {\n    val o = js(\"({})\")\n    o[\"data\"] = data\n    o[\"view\"] = view\n    o[\"detail\"] = detail\n    o[\"bubbles\"] = bubbles\n    o[\"cancelable\"] = cancelable\n    o[\"composed\"] =
composed\n    return o\n }\n\n/**\n * Exposes the JavaScript
[Event](https://developer.mozilla.org/en/docs/Web/API/Event) to Kotlin\n */\n\npublic external open class
Event(type: String, eventInitDict: EventInit = definedExternally) {\n    open val type: String\n    open val target:
EventTarget?\n    open val currentTarget:
EventTarget?\n    open val eventPhase: Short\n    open val bubbles: Boolean\n    open val cancelable: Boolean\n    open val defaultPrevented: Boolean\n    open val composed: Boolean\n    open val isTrusted: Boolean\n    open val
timeStamp: Number\n    fun composedPath(): Array<EventTarget>\n    fun stopPropagation()\n    fun
stopImmediatePropagation()\n    fun preventDefault()\n    fun initEvent(type: String, bubbles: Boolean, cancelable:
Boolean)\n\n    companion object {\n        val NONE: Short\n        val CAPTURING_PHASE: Short\n        val
AT_TARGET: Short\n        val BUBBLING_PHASE: Short\n    }\n\n\n/**\n * Exposes the JavaScript
[EventTarget](https://developer.mozilla.org/en/docs/Web/API/EventTarget) to Kotlin\n */\n\npublic external abstract
class EventTarget {\n    fun addEventListener(type: String, callback: EventListener?, options: dynamic =

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definedExternally)\n fun addEventListener(type: String, callback: ((Event) -> Unit)?, options: dynamic =
definedExternally)\n
fun removeEventListener(type: String, callback: EventListener?, options: dynamic = definedExternally)\n fun
removeEventListener(type: String, callback: ((Event) -> Unit)?, options: dynamic = definedExternally)\n fun
dispatchEvent(event: Event): Boolean\n}\n\n**\n * Exposes the JavaScript
[EventListener](https://developer.mozilla.org/en/docs/Web/API/EventListener) to Kotlin\n *\n\npublic external
interface EventListener {\n fun handleEvent(event: Event)\n},"/*\n * Copyright 2010-2021 JetBrains s.r.o. and
Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that
can be found in the license/LICENSE.txt file.\n */\n\n// NOTE: THIS FILE IS AUTO-GENERATED, DO NOT
EDIT!\n// See github.com/kotlin/dukat for details\n\npackage org.w3c.dom\n\nimport kotlin.js.*\nimport
org.khronos.webgl.*\nimport org.w3c.dom.clipboard.*\nimport org.w3c.dom.css.*\nimport
org.w3c.dom.encryptedmedia.*\nimport org.w3c.dom.events.*\nimport org.w3c.dom.mediacapture.*\nimport
org.w3c.dom.mediasource.*\nimport org.w3c.dom.pointerevents.*\nimport org.w3c.dom.svg.*\nimport
org.w3c.fetch.*\nimport org.w3c.files.*\nimport org.w3c.performance.*\nimport org.w3c.workers.*\nimport
org.w3c.xhr.*\n\npublic external abstract class HTMLAllCollection {\n open val length: Int\n fun
item(nameOrIndex: String = definedExternally): UnionElementOrHTMLCollection?\n fun namedItem(name:
String): UnionElementOrHTMLCollection?\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\n\npublic inline operator fun
HTMLAllCollection.get(index: Int): Element? =
asDynamic()[index]\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\n\npublic inline operator fun
HTMLAllCollection.get(name: String): UnionElementOrHTMLCollection? = asDynamic()[name]\n\n**\n *
Exposes the JavaScript
[HTMLFormControlsCollection](https://developer.mozilla.org/en/docs/Web/API/HTMLFormControlsCollection)
to
Kotlin\n *\n\npublic external abstract class HTMLFormControlsCollection : HTMLCollection\n\n**\n * Exposes
the JavaScript [RadioNodeList](https://developer.mozilla.org/en/docs/Web/API/RadioNodeList) to Kotlin\n
*\n\npublic external abstract class RadioNodeList : NodeList, UnionElementOrRadioNodeList {\n open var value:
String\n}\n\n**\n * Exposes the JavaScript
[HTMLOptionsCollection](https://developer.mozilla.org/en/docs/Web/API/HTMLOptionsCollection) to Kotlin\n
*\n\npublic external abstract class HTMLOptionsCollection : HTMLCollection {\n override var length: Int\n open
var selectedIndex: Int\n fun add(element: UnionHTMLOptGroupElementOrHTMLOptionElement, before:
dynamic = definedExternally)\n fun remove(index: Int)\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\n\npublic inline operator fun
HTMLOptionsCollection.set(index: Int, option: HTMLOptionElement?) { asDynamic()[index] = option }\n\n**\n *
Exposes the JavaScript [HTMLElement](https://developer.mozilla.org/en/docs/Web/API/HTMLElement)
to Kotlin\n *\n\npublic external abstract class HTMLElement : Element, GlobalEventHandlers,
DocumentAndElementEventHandlers, ElementContentEditable, ElementCSSInlineStyle {\n open var title:
String\n open var lang: String\n open var translate: Boolean\n open var dir: String\n open val dataset:
DOMStringMap\n open var hidden: Boolean\n open var tabIndex: Int\n open var accessKey: String\n open
val accessKeyLabel: String\n open var draggable: Boolean\n open val dropzone: DOMTokenList\n open var
contextMenu: HTMLMenuElement?\n open var spellcheck: Boolean\n open var innerText: String\n open val
offsetParent: Element?\n open val offsetTop: Int\n open val offsetLeft: Int\n open val offsetWidth: Int\n open
val offsetHeight: Int\n fun click()\n fun focus()\n fun blur()\n fun forceSpellCheck()\n\n companion object
{\n val ELEMENT_NODE: Short\n
val ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n
val ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE: Short\n val
PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val

```

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DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n    val
DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n
    val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
    val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the JavaScript
[HTMLUnknownElement](https://developer.mozilla.org/en/docs/Web/API/HTMLUnknownElement) to Kotlin\n
*\npublic external abstract class HTMLUnknownElement : HTMLElement {\n    companion object {\n    val
ELEMENT_NODE: Short\n    val ATTRIBUTE_NODE:
Short\n    val TEXT_NODE: Short\n    val CDATA_SECTION_NODE: Short\n    val
ENTITY_REFERENCE_NODE: Short\n    val ENTITY_NODE: Short\n    val
PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE: Short\n    val
DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n    val
DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n
    val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
    val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the JavaScript
[DOMStringMap](https://developer.mozilla.org/en/docs/Web/API/DOMStringMap) to Kotlin\n
*\npublic external
abstract class DOMStringMap\n\n@Suppress(\\"INVISIBLE_REFERENCE\\",
\\"INVISIBLE_MEMBER\\")\n\n@kotlin.internal.InlineOnly\n\npublic inline operator fun DOMStringMap.get(name:
String): String? = asDynamic()[name]\n\n@Suppress(\\"INVISIBLE_REFERENCE\\",
\\"INVISIBLE_MEMBER\\")\n\n@kotlin.internal.InlineOnly\n\npublic inline operator fun DOMStringMap.set(name:
String, value: String) { asDynamic()[name] = value }\n\n\n/**\n * Exposes the JavaScript
[HTMLHtmlElement](https://developer.mozilla.org/en/docs/Web/API/HTMLHtmlElement) to Kotlin\n
*\npublic
external abstract class HTMLHtmlElement : HTMLElement {\n    open var version: String\n\n    companion object
{\n    val ELEMENT_NODE: Short\n    val ATTRIBUTE_NODE: Short\n    val TEXT_NODE: Short\n
val CDATA_SECTION_NODE: Short\n    val ENTITY_REFERENCE_NODE: Short\n    val
ENTITY_NODE: Short\n    val PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE:
Short\n    val DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n    val
DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n    val
DOCUMENT_POSITION_PRECEDING: Short\n    val DOCUMENT_POSITION_FOLLOWING: Short\n
val DOCUMENT_POSITION_CONTAINS: Short\n    val DOCUMENT_POSITION_CONTAINED_BY:
Short\n    val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes
the JavaScript [HTMLHeadElement](https://developer.mozilla.org/en/docs/Web/API/HTMLHeadElement) to
Kotlin\n
*\npublic external abstract class HTMLHeadElement : HTMLElement {\n    companion object {\n    val
ELEMENT_NODE: Short\n    val ATTRIBUTE_NODE: Short\n    val TEXT_NODE: Short\n    val
CDATA_SECTION_NODE: Short\n    val ENTITY_REFERENCE_NODE: Short\n    val ENTITY_NODE:
Short\n    val PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE: Short\n    val
DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n    val
DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING:
Short\n    val DOCUMENT_POSITION_FOLLOWING: Short\n    val
DOCUMENT_POSITION_CONTAINS: Short\n    val DOCUMENT_POSITION_CONTAINED_BY: Short\n
val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the
JavaScript [HTMLTitleElement](https://developer.mozilla.org/en/docs/Web/API/HTMLTitleElement) to Kotlin\n
*\npublic external abstract class HTMLTitleElement : HTMLElement {\n    open var text: String\n\n    companion

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```

object {
    val ELEMENT_NODE: Short
    val ATTRIBUTE_NODE: Short
    val TEXT_NODE: Short
    val CDATA_SECTION_NODE: Short
    val ENTITY_REFERENCE_NODE: Short
    val ENTITY_NODE: Short
    val PROCESSING_INSTRUCTION_NODE: Short
    val COMMENT_NODE: Short
    val DOCUMENT_NODE: Short
    val DOCUMENT_TYPE_NODE: Short
    val DOCUMENT_FRAGMENT_NODE: Short
    val NOTATION_NODE: Short
    val DOCUMENT_POSITION_DISCONNECTED: Short
    val DOCUMENT_POSITION_PRECEDING: Short
    val DOCUMENT_POSITION_FOLLOWING: Short
    val DOCUMENT_POSITION_CONTAINS: Short
    val DOCUMENT_POSITION_CONTAINED_BY: Short
    val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short
}

/** Exposes the JavaScript [HTMLElement](https://developer.mozilla.org/en/docs/Web/API/HTMLElement) to Kotlin
 *
 * public external abstract class HTMLElement : HTMLBaseElement {
    open var href: String
    open var target: String

    companion object {
        val ELEMENT_NODE: Short
        val ATTRIBUTE_NODE: Short
        val TEXT_NODE: Short
        val CDATA_SECTION_NODE: Short
        val ENTITY_REFERENCE_NODE: Short
        val ENTITY_NODE: Short
        val PROCESSING_INSTRUCTION_NODE: Short
        val COMMENT_NODE: Short
        val DOCUMENT_NODE: Short
        val DOCUMENT_TYPE_NODE: Short
        val DOCUMENT_FRAGMENT_NODE: Short
        val NOTATION_NODE: Short
        val DOCUMENT_POSITION_DISCONNECTED: Short
        val DOCUMENT_POSITION_PRECEDING: Short
        val DOCUMENT_POSITION_FOLLOWING: Short
        val DOCUMENT_POSITION_CONTAINS: Short
        val DOCUMENT_POSITION_CONTAINED_BY: Short
        val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short
    }
}

/** Exposes the JavaScript [HTMLLinkElement](https://developer.mozilla.org/en/docs/Web/API/HTMLLinkElement) to Kotlin
 *
 * public external abstract class HTMLLinkElement : HTMLElement, LinkStyle {
    open var href: String
    open var crossOrigin: String?
    open var rel: String
    open var `as`: RequestDestination
    open val relList: DOMTokenList
    open var media: String
    open var nonce: String
    open var hreflang: String
    open var type: String
    open val sizes: DOMTokenList
    open var referrerPolicy: String
    open var charset: String
    open var rev: String
    open var target: String
    open var scope: String
    open var workerType: WorkerType

    companion object {
        val ELEMENT_NODE: Short
        val ATTRIBUTE_NODE: Short
        val TEXT_NODE: Short
        val CDATA_SECTION_NODE: Short
        val ENTITY_REFERENCE_NODE: Short
        val ENTITY_NODE: Short
        val PROCESSING_INSTRUCTION_NODE: Short
        val COMMENT_NODE: Short
        val DOCUMENT_NODE: Short
        val DOCUMENT_TYPE_NODE: Short
        val DOCUMENT_FRAGMENT_NODE: Short
        val NOTATION_NODE: Short
        val DOCUMENT_POSITION_DISCONNECTED: Short
        val DOCUMENT_POSITION_PRECEDING: Short
        val DOCUMENT_POSITION_FOLLOWING: Short
        val DOCUMENT_POSITION_CONTAINS: Short
        val DOCUMENT_POSITION_CONTAINED_BY: Short
        val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short
    }
}

/** Exposes the JavaScript [HTMLMetaElement](https://developer.mozilla.org/en/docs/Web/API/HTMLMetaElement) to Kotlin
 *
 * public external abstract class HTMLMetaElement : HTMLElement {
    open var name: String
    open var httpEquiv: String
    open var content: String
    open var scheme: String

    companion object {
        val ELEMENT_NODE: Short
        val ATTRIBUTE_NODE: Short
        val TEXT_NODE: Short
        val CDATA_SECTION_NODE: Short
        val ENTITY_REFERENCE_NODE: Short
        val ENTITY_NODE: Short
        val PROCESSING_INSTRUCTION_NODE: Short
        val COMMENT_NODE: Short
        val DOCUMENT_NODE: Short
        val DOCUMENT_TYPE_NODE: Short
        val DOCUMENT_FRAGMENT_NODE: Short
        val NOTATION_NODE: Short
        val DOCUMENT_POSITION_DISCONNECTED: Short
        val DOCUMENT_POSITION_PRECEDING: Short
        val DOCUMENT_POSITION_FOLLOWING: Short
        val DOCUMENT_POSITION_CONTAINS: Short
    }
}

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    val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the JavaScript
[HTMLStyleElement](https://developer.mozilla.org/en/docs/Web/API/HTMLStyleElement) to Kotlin\n\n*\npublic
external abstract class HTMLStyleElement : HTMLElement, LinkStyle {\n    open var media: String\n    open var
nonce: String\n    open var type: String\n\n    companion object {\n        val ELEMENT_NODE: Short\n        val
ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val CDATA_SECTION_NODE: Short\n        val
ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE: Short\n        val
PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val
DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val
DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
        val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
        val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the JavaScript
[HTMLBodyElement](https://developer.mozilla.org/en/docs/Web/API/HTMLBodyElement)
to Kotlin\n\n*\npublic external abstract class HTMLBodyElement : HTMLElement, WindowEventHandlers {\n
    open var text: String\n    open var link: String\n    open var vLink: String\n    open var aLink: String\n
    open var
bgColor: String\n    open var background: String\n\n    companion object {\n        val ELEMENT_NODE: Short\n
        val ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val CDATA_SECTION_NODE: Short\n
        val ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE: Short\n        val
PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val
DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val
DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
        val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
        val DOCUMENT_POSITION_CONTAINED_BY:
Short\n        val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes
the JavaScript [HTMLHeadingElement](https://developer.mozilla.org/en/docs/Web/API/HTMLHeadingElement) to
Kotlin\n\n*\npublic external abstract class HTMLHeadingElement : HTMLElement {\n    open var align: String\n\n
    companion object {\n        val ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE: Short\n        val
TEXT_NODE: Short\n        val CDATA_SECTION_NODE: Short\n        val ENTITY_REFERENCE_NODE:
Short\n        val ENTITY_NODE: Short\n        val PROCESSING_INSTRUCTION_NODE: Short\n        val
COMMENT_NODE: Short\n        val DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n
        val DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
        val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
        val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the JavaScript
[HTMLParagraphElement](https://developer.mozilla.org/en/docs/Web/API/HTMLParagraphElement) to Kotlin\n\n*\n
public external abstract class HTMLParagraphElement : HTMLElement {\n    open var align: String\n\n    companion
object {\n        val ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE: Short\n        val
TEXT_NODE: Short\n        val CDATA_SECTION_NODE: Short\n        val ENTITY_REFERENCE_NODE:
Short\n        val ENTITY_NODE: Short\n        val PROCESSING_INSTRUCTION_NODE: Short\n        val
COMMENT_NODE: Short\n        val DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n
        val DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
        val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS:

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Short\n    val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the JavaScript
[HTMLHRElement](https://developer.mozilla.org/en/docs/Web/API/HTMLHRElement) to Kotlin\n *\npublic
external abstract class HTMLHRElement : HTMLElement {\n    open var align: String\n    open var color: String\n
open var noShade: Boolean\n    open var size: String\n    open var width: String\n\n    companion object {\n    val
ELEMENT_NODE: Short\n    val ATTRIBUTE_NODE: Short\n    val TEXT_NODE: Short\n    val
CDATA_SECTION_NODE: Short\n    val ENTITY_REFERENCE_NODE: Short\n    val ENTITY_NODE:
Short\n    val PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE: Short\n    val
DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n    val
DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n
    val DOCUMENT_POSITION_PRECEDING: Short\n    val DOCUMENT_POSITION_FOLLOWING:
Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n    val
DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the JavaScript
[HTMLPreElement](https://developer.mozilla.org/en/docs/Web/API/HTMLPreElement) to Kotlin\n *\npublic
external abstract class HTMLPreElement : HTMLElement {\n    open var width: Int\n\n    companion object {\n
val ELEMENT_NODE: Short\n    val ATTRIBUTE_NODE: Short\n    val TEXT_NODE: Short\n    val
CDATA_SECTION_NODE: Short\n    val ENTITY_REFERENCE_NODE: Short\n    val ENTITY_NODE:
Short\n    val PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE: Short\n    val
DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n    val
DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n
    val DOCUMENT_POSITION_PRECEDING: Short\n    val DOCUMENT_POSITION_FOLLOWING:
Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n    val
DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the JavaScript
[HTMLQuoteElement](https://developer.mozilla.org/en/docs/Web/API/HTMLQuoteElement) to Kotlin\n *\npublic
external abstract class HTMLQuoteElement : HTMLElement {\n    open var cite: String\n\n    companion object {\n
val ELEMENT_NODE: Short\n    val ATTRIBUTE_NODE: Short\n    val TEXT_NODE: Short\n    val
CDATA_SECTION_NODE: Short\n    val ENTITY_REFERENCE_NODE: Short\n    val ENTITY_NODE:
Short\n    val PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE: Short\n    val
DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n    val
DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED:
Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n    val
DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the JavaScript
[HTMLLOListElement](https://developer.mozilla.org/en/docs/Web/API/HTMLLOListElement) to Kotlin\n *\npublic
external abstract class HTMLLOListElement : HTMLElement {\n    open var reversed: Boolean\n    open var start:
Int\n    open var type: String\n    open var compact: Boolean\n\n    companion object {\n    val
ELEMENT_NODE: Short\n    val ATTRIBUTE_NODE: Short\n    val TEXT_NODE: Short\n    val
CDATA_SECTION_NODE: Short\n    val ENTITY_REFERENCE_NODE: Short\n    val ENTITY_NODE:
Short\n    val PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE: Short\n    val
DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n    val
DOCUMENT_FRAGMENT_NODE:

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Short\n    val NOTATION_NODE: Short\n    val DOCUMENT_POSITION_DISCONNECTED: Short\n
val DOCUMENT_POSITION_PRECEDING: Short\n    val DOCUMENT_POSITION_FOLLOWING: Short\n
    val DOCUMENT_POSITION_CONTAINS: Short\n    val DOCUMENT_POSITION_CONTAINED_BY:
Short\n    val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes
the JavaScript [HTMLUListElement](https://developer.mozilla.org/en/docs/Web/API/HTMLUListElement) to
Kotlin\n */\npublic external abstract class HTMLUListElement : HTMLElement {\n    open var compact: Boolean\n
    open var type: String\n\n    companion object {\n        val ELEMENT_NODE: Short\n        val
ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val CDATA_SECTION_NODE: Short\n        val
ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE: Short\n        val
PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val
DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE:
Short\n        val DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
        val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
        val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the JavaScript
[HTMLLIElement](https://developer.mozilla.org/en/docs/Web/API/HTMLLIElement) to Kotlin\n */\npublic
external abstract class HTMLLIElement : HTMLElement {\n    open var value: Int\n    open var type: String\n\n
    companion object {\n        val ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE: Short\n        val
TEXT_NODE: Short\n        val CDATA_SECTION_NODE: Short\n        val ENTITY_REFERENCE_NODE:
Short\n        val ENTITY_NODE: Short\n        val PROCESSING_INSTRUCTION_NODE: Short\n        val
COMMENT_NODE: Short\n        val DOCUMENT_NODE: Short\n
        val DOCUMENT_TYPE_NODE: Short\n        val DOCUMENT_FRAGMENT_NODE: Short\n        val
NOTATION_NODE: Short\n        val DOCUMENT_POSITION_DISCONNECTED: Short\n        val
DOCUMENT_POSITION_PRECEDING: Short\n        val DOCUMENT_POSITION_FOLLOWING: Short\n
        val DOCUMENT_POSITION_CONTAINS: Short\n        val DOCUMENT_POSITION_CONTAINED_BY:
Short\n        val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes
the JavaScript [HTMLDListElement](https://developer.mozilla.org/en/docs/Web/API/HTMLDListElement) to
Kotlin\n */\npublic external abstract class HTMLDListElement : HTMLElement {\n    open var compact:
Boolean\n\n    companion object {\n        val ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE: Short\n
        val TEXT_NODE: Short\n        val CDATA_SECTION_NODE: Short\n        val ENTITY_REFERENCE_NODE:
Short\n        val ENTITY_NODE: Short\n        val PROCESSING_INSTRUCTION_NODE: Short\n        val
COMMENT_NODE: Short\n        val DOCUMENT_NODE:
Short\n        val DOCUMENT_TYPE_NODE: Short\n        val DOCUMENT_FRAGMENT_NODE: Short\n
        val NOTATION_NODE: Short\n        val DOCUMENT_POSITION_DISCONNECTED: Short\n        val
DOCUMENT_POSITION_PRECEDING: Short\n        val DOCUMENT_POSITION_FOLLOWING: Short\n
        val DOCUMENT_POSITION_CONTAINS: Short\n        val DOCUMENT_POSITION_CONTAINED_BY:
Short\n        val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes
the JavaScript [HTMLDivElement](https://developer.mozilla.org/en/docs/Web/API/HTMLDivElement) to Kotlin\n
*/\npublic external abstract class HTMLDivElement : HTMLElement {\n    open var align: String\n\n    companion
object {\n        val ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE: Short\n        val TEXT_NODE:
Short\n        val CDATA_SECTION_NODE: Short\n        val ENTITY_REFERENCE_NODE: Short\n        val
ENTITY_NODE: Short\n        val PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE:
Short\n        val DOCUMENT_NODE:
Short\n        val DOCUMENT_TYPE_NODE: Short\n        val DOCUMENT_FRAGMENT_NODE: Short\n
        val NOTATION_NODE: Short\n        val DOCUMENT_POSITION_DISCONNECTED: Short\n        val
DOCUMENT_POSITION_PRECEDING: Short\n        val DOCUMENT_POSITION_FOLLOWING: Short\n
        val DOCUMENT_POSITION_CONTAINS: Short\n        val DOCUMENT_POSITION_CONTAINED_BY:

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Short\n    val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes
the JavaScript [HTMLAnchorElement](https://developer.mozilla.org/en/docs/Web/API/HTMLAnchorElement) to
Kotlin\n */\npublic external abstract class HTMLAnchorElement : HTMLInputElement, HTMLHyperlinkElementUtils
{\n    open var target: String\n    open var download: String\n    open var ping: String\n    open var rel: String\n
open val relList: DOMTokenList\n    open var hreflang: String\n    open var type: String\n    open var text: String\n
open varreferrerPolicy: String\n    open var coords: String\n    open var charset:
String\n    open var name: String\n    open var rev: String\n    open var shape: String\n\n    companion object {\n
val ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val
CDATA_SECTION_NODE: Short\n        val ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE:
Short\n        val PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val
DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val
DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
        val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
        val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the JavaScript
[HTMLDataElement](https://developer.mozilla.org/en/docs/Web/API/HTMLDataElement) to Kotlin\n
*/\npublic external abstract class HTMLDataElement : HTMLInputElement {\n    open var value: String\n\n
companion object {\n        val ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE: Short\n        val
TEXT_NODE: Short\n        val CDATA_SECTION_NODE: Short\n        val ENTITY_REFERENCE_NODE:
Short\n        val ENTITY_NODE: Short\n        val PROCESSING_INSTRUCTION_NODE: Short\n        val
COMMENT_NODE: Short\n        val DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n
        val DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
        val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
        val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the JavaScript
[HTMLTimeElement](https://developer.mozilla.org/en/docs/Web/API/HTMLTimeElement) to Kotlin\n
*/\npublic external abstract class HTMLTimeElement : HTMLInputElement {\n    open var dateTime: String\n\n
companion object {\n        val ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE: Short\n        val
TEXT_NODE: Short\n        val CDATA_SECTION_NODE: Short\n        val ENTITY_REFERENCE_NODE:
Short\n        val ENTITY_NODE: Short\n        val PROCESSING_INSTRUCTION_NODE: Short\n        val
COMMENT_NODE: Short\n        val DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n
        val DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
        val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
        val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the JavaScript
[HTMLSpanElement](https://developer.mozilla.org/en/docs/Web/API/HTMLSpanElement)
to Kotlin\n */\npublic external abstract class HTMLSpanElement : HTMLInputElement {\n    companion object {\n
val ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val
CDATA_SECTION_NODE: Short\n        val ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE:
Short\n        val PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val
DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val
DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
        val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
        val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val

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DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\n/**\n * Exposes the JavaScript  
[HTMLBRElement](https://developer.mozilla.org/en/docs/Web/API/HTMLBRElement) to Kotlin\n *\npublic  
external abstract class HTMLBRElement : HTMLElement {\n  open var clear: String\n\n  companion object {\n    val ELEMENT_NODE: Short\n    val ATTRIBUTE_NODE: Short\n    val TEXT_NODE: Short\n    val  
CDATA_SECTION_NODE: Short\n    val ENTITY_REFERENCE_NODE: Short\n    val ENTITY_NODE:  
Short\n    val PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE: Short\n    val  
DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n    val  
DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val  
DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n\n    val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n\n    val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val  
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\n/**\n * Exposes the JavaScript  
[HTMLHyperlinkElementUtils](https://developer.mozilla.org/en/docs/Web/API/HTMLHyperlinkElementUtils)  
to Kotlin\n *\npublic external interface HTMLHyperlinkElementUtils {\n  var href: String\n  val origin: String\n\n  var protocol: String\n  var username: String\n  var password: String\n  var host: String\n  var hostname:  
String\n  var port: String\n  var pathname: String\n  var search: String\n  var hash: String\n}\n\n/**\n * Exposes  
the JavaScript [HTMLModElement](https://developer.mozilla.org/en/docs/Web/API/HTMLModElement) to  
Kotlin\n *\npublic external abstract class HTMLModElement : HTMLElement {\n  open var cite: String\n  open  
var dateTime: String\n\n  companion object {\n    val ELEMENT_NODE: Short\n    val  
ATTRIBUTE_NODE: Short\n    val TEXT_NODE: Short\n    val CDATA_SECTION_NODE: Short\n    val  
ENTITY_REFERENCE_NODE: Short\n    val ENTITY_NODE: Short\n    val  
PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE: Short\n    val  
DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n    val  
DOCUMENT_FRAGMENT_NODE:  
Short\n    val NOTATION_NODE: Short\n    val DOCUMENT_POSITION_DISCONNECTED: Short\n\n    val DOCUMENT_POSITION_PRECEDING: Short\n    val DOCUMENT_POSITION_FOLLOWING: Short\n\n    val DOCUMENT_POSITION_CONTAINS: Short\n    val DOCUMENT_POSITION_CONTAINED_BY:  
Short\n    val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\n/**\n * Exposes  
the JavaScript [HTMLPictureElement](https://developer.mozilla.org/en/docs/Web/API/HTMLPictureElement) to  
Kotlin\n *\npublic external abstract class HTMLPictureElement : HTMLElement {\n  companion object {\n\n    val ELEMENT_NODE: Short\n    val ATTRIBUTE_NODE: Short\n    val TEXT_NODE: Short\n    val  
CDATA_SECTION_NODE: Short\n    val ENTITY_REFERENCE_NODE: Short\n    val ENTITY_NODE:  
Short\n    val PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE: Short\n    val  
DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n    val  
DOCUMENT_FRAGMENT_NODE:  
Short\n    val NOTATION_NODE: Short\n    val DOCUMENT_POSITION_DISCONNECTED: Short\n\n    val DOCUMENT_POSITION_PRECEDING: Short\n    val DOCUMENT_POSITION_FOLLOWING: Short\n\n    val DOCUMENT_POSITION_CONTAINS: Short\n    val DOCUMENT_POSITION_CONTAINED_BY:  
Short\n    val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\n/**\n * Exposes  
the JavaScript [HTMLSourceElement](https://developer.mozilla.org/en/docs/Web/API/HTMLSourceElement) to  
Kotlin\n *\npublic external abstract class HTMLSourceElement : HTMLElement {\n  open var src: String\n\n  open var type: String\n  open var srcset: String\n  open var sizes: String\n  open var media: String\n\n  companion object {\n    val ELEMENT_NODE: Short\n    val ATTRIBUTE_NODE: Short\n    val  
TEXT_NODE: Short\n    val CDATA_SECTION_NODE: Short\n    val ENTITY_REFERENCE_NODE:  
Short\n    val ENTITY_NODE: Short\n    val PROCESSING_INSTRUCTION_NODE: Short\n    val  
COMMENT_NODE:  
Short\n    val DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n    val  
DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
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DOCUMENT\_POSITION\_DISCONNECTED: Short\n     val DOCUMENT\_POSITION\_PRECEDING: Short\n  
     val DOCUMENT\_POSITION\_FOLLOWING: Short\n     val DOCUMENT\_POSITION\_CONTAINS: Short\n  
     val DOCUMENT\_POSITION\_CONTAINED\_BY: Short\n     val

DOCUMENT\_POSITION\_IMPLEMENTATION\_SPECIFIC: Short\n } \n} \n/n/\*\*\n \* Exposes the JavaScript [HTMLImageElement](https://developer.mozilla.org/en/docs/Web/API/HTMLImageElement) to Kotlin\n  
 \*\npublic external abstract class HTMLImageElement : HTMLDivElement, HTMLImageElement, TextImageSource {\n     open var alt: String\n     open var src: String\n     open var srcset: String\n     open var sizes: String\n     open var crossOrigin: String?\n     open var useMap: String\n     open var isMap: Boolean\n     open var width: Int\n     open var height: Int\n     open val naturalWidth: Int\n     open val naturalHeight: Int\n     open val complete: Boolean\n     open val currentSrc: String\n     open var referrerPolicy: String\n     open var name: String\n     open var lowsrc: String\n     open var align: String\n     open var hspace: Int\n     open var vspace: Int\n     open var longDesc: String\n     open var border: String\n     open val x: Int\n     open val y: Int\n     companion object {\n         val ELEMENT\_NODE: Short\n         val ATTRIBUTE\_NODE: Short\n         val TEXT\_NODE: Short\n         val CDATA\_SECTION\_NODE: Short\n         val ENTITY\_REFERENCE\_NODE: Short\n         val ENTITY\_NODE: Short\n         val PROCESSING\_INSTRUCTION\_NODE: Short\n         val COMMENT\_NODE: Short\n         val DOCUMENT\_NODE: Short\n         val DOCUMENT\_TYPE\_NODE: Short\n         val DOCUMENT\_FRAGMENT\_NODE: Short\n         val NOTATION\_NODE: Short

DOCUMENT\_POSITION\_DISCONNECTED: Short\n     val DOCUMENT\_POSITION\_PRECEDING: Short\n  
     val DOCUMENT\_POSITION\_FOLLOWING: Short\n  
     val DOCUMENT\_POSITION\_CONTAINS: Short\n     val DOCUMENT\_POSITION\_CONTAINED\_BY: Short\n  
     val DOCUMENT\_POSITION\_IMPLEMENTATION\_SPECIFIC: Short\n } \n} \n/n/\*\*\n \* Exposes the JavaScript [HTMLIFrameElement](https://developer.mozilla.org/en/docs/Web/API/HTMLIFrameElement) to Kotlin\n  
 \*\npublic external abstract class HTMLIFrameElement : HTMLDivElement {\n     open var src: String\n     open var srcdoc: String\n     open var name: String\n     open val sandbox: DOMTokenList\n     open var allowFullscreen: Boolean\n     open var allowUserMedia: Boolean\n     open var width: String\n     open var height: String\n     open var referrerPolicy: String\n     open val contentDocument: Document?\n     open val contentWindow: Window?\n     open var align: String\n     open var scrolling: String\n     open var frameborder: String\n     open var longDesc: String\n     open var marginHeight: String\n     open var marginWidth: String\n     fun getSVGDocument(): Document?\n     companion object {\n         val ELEMENT\_NODE: Short\n         val ATTRIBUTE\_NODE: Short\n         val TEXT\_NODE: Short\n         val CDATA\_SECTION\_NODE: Short\n         val ENTITY\_REFERENCE\_NODE: Short\n         val ENTITY\_NODE: Short\n         val PROCESSING\_INSTRUCTION\_NODE: Short\n         val COMMENT\_NODE: Short\n         val DOCUMENT\_NODE: Short\n         val DOCUMENT\_TYPE\_NODE: Short

DOCUMENT\_FRAGMENT\_NODE: Short\n     val NOTATION\_NODE: Short

DOCUMENT\_POSITION\_DISCONNECTED: Short\n     val DOCUMENT\_POSITION\_PRECEDING: Short\n  
     val DOCUMENT\_POSITION\_FOLLOWING: Short\n     val DOCUMENT\_POSITION\_CONTAINS: Short\n  
     val DOCUMENT\_POSITION\_CONTAINED\_BY: Short\n     val

DOCUMENT\_POSITION\_IMPLEMENTATION\_SPECIFIC: Short\n } \n} \n/n/\*\*\n \* Exposes the JavaScript [HTMLEmbedElement](https://developer.mozilla.org/en/docs/Web/API/HTMLEmbedElement) to Kotlin\n  
 \*\npublic external abstract class HTMLEmbedElement : HTMLDivElement {\n     open var src: String\n     open var type: String\n  
     open var width: String\n     open var height: String\n     open var align: String\n     open var name: String\n     fun getSVGDocument(): Document?\n     companion object {\n         val ELEMENT\_NODE: Short\n         val ATTRIBUTE\_NODE: Short\n         val TEXT\_NODE: Short\n         val CDATA\_SECTION\_NODE: Short\n         val ENTITY\_REFERENCE\_NODE: Short\n         val ENTITY\_NODE: Short\n         val PROCESSING\_INSTRUCTION\_NODE: Short\n         val COMMENT\_NODE: Short

DOCUMENT\_FRAGMENT\_NODE: Short\n     val DOCUMENT\_TYPE\_NODE: Short

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DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n
    val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
    val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    } \n} \n \n /** \n * Exposes the JavaScript
[HTMLObjectElement](https://developer.mozilla.org/en/docs/Web/API/HTMLObjectElement)
to Kotlin \n * \n public external abstract class HTMLObjectElement : HTMLElement { \n    open var data: String \n
open var type: String \n    open var typeMustMatch: Boolean \n    open var name: String \n    open var useMap:
String \n    open val form: HTMLFormElement? \n    open var width: String \n    open var height: String \n    open val
contentDocument: Document? \n    open val contentWindow: Window? \n    open val willValidate: Boolean \n    open
val validity: ValidityState \n    open val validationMessage: String \n    open var align: String \n    open var archive:
String \n    open var code: String \n    open var declare: Boolean \n    open var hspace: Int \n    open var standby:
String \n    open var vspace: Int \n    open var codeBase: String \n    open var codeType: String \n    open var border:
String \n    fun getSVGDocument(): Document? \n    fun checkValidity(): Boolean \n    fun reportValidity():
Boolean \n    fun setCustomValidity(error: String) \n \n
    companion object { \n        val ELEMENT_NODE: Short \n        val ATTRIBUTE_NODE: Short \n        val
TEXT_NODE: Short \n        val CDATA_SECTION_NODE: Short \n        val ENTITY_REFERENCE_NODE:
Short \n        val ENTITY_NODE: Short \n        val PROCESSING_INSTRUCTION_NODE: Short \n        val
COMMENT_NODE: Short \n        val DOCUMENT_NODE: Short \n        val DOCUMENT_TYPE_NODE: Short \n
        val DOCUMENT_FRAGMENT_NODE: Short \n        val NOTATION_NODE: Short \n        val
DOCUMENT_POSITION_DISCONNECTED: Short \n        val DOCUMENT_POSITION_PRECEDING: Short \n
        val DOCUMENT_POSITION_FOLLOWING: Short \n        val DOCUMENT_POSITION_CONTAINS: Short \n
        val DOCUMENT_POSITION_CONTAINED_BY: Short \n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short \n    } \n} \n \n /** \n * Exposes the JavaScript
[HTMLParamElement](https://developer.mozilla.org/en/docs/Web/API/HTMLParamElement) to Kotlin \n
* \n public external abstract class HTMLParamElement : HTMLElement { \n    open var name:
String \n    open var value: String \n    open var type: String \n    open var valueType: String \n \n    companion object
{ \n        val ELEMENT_NODE: Short \n        val ATTRIBUTE_NODE: Short \n        val TEXT_NODE: Short \n
        val CDATA_SECTION_NODE: Short \n        val ENTITY_REFERENCE_NODE: Short \n        val
ENTITY_NODE: Short \n        val PROCESSING_INSTRUCTION_NODE: Short \n        val COMMENT_NODE:
Short \n        val DOCUMENT_NODE: Short \n        val DOCUMENT_TYPE_NODE: Short \n        val
DOCUMENT_FRAGMENT_NODE: Short \n        val NOTATION_NODE: Short \n        val
DOCUMENT_POSITION_DISCONNECTED: Short \n        val DOCUMENT_POSITION_PRECEDING: Short \n
        val DOCUMENT_POSITION_FOLLOWING: Short \n        val DOCUMENT_POSITION_CONTAINS: Short \n
        val DOCUMENT_POSITION_CONTAINED_BY: Short \n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short \n    } \n} \n \n /** \n * Exposes the JavaScript
[HTMLVideoElement](https://developer.mozilla.org/en/docs/Web/API/HTMLVideoElement)
to Kotlin \n * \n public external abstract class HTMLVideoElement : HTMLMediaElement, CanvasImageSource,
TexImageSource { \n    open var width: Int \n    open var height: Int \n    open val videoWidth: Int \n    open val
videoHeight: Int \n    open var poster: String \n    open var playsInline: Boolean \n \n    companion object { \n        val
NETWORK_EMPTY: Short \n        val NETWORK_IDLE: Short \n        val NETWORK_LOADING: Short \n
        val NETWORK_NO_SOURCE: Short \n        val HAVE_NOTHING: Short \n        val HAVE_METADATA:
Short \n        val HAVE_CURRENT_DATA: Short \n        val HAVE_FUTURE_DATA: Short \n        val
HAVE_ENOUGH_DATA: Short \n        val ELEMENT_NODE: Short \n        val ATTRIBUTE_NODE: Short \n
        val TEXT_NODE: Short \n        val CDATA_SECTION_NODE: Short \n        val ENTITY_REFERENCE_NODE:
Short \n        val ENTITY_NODE: Short \n        val PROCESSING_INSTRUCTION_NODE: Short \n        val
COMMENT_NODE: Short \n        val DOCUMENT_NODE: Short \n        val DOCUMENT_TYPE_NODE:

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Short\n    val DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n
    val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
    val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the JavaScript
[HTMLAudioElement](https://developer.mozilla.org/en/docs/Web/API/HTMLAudioElement) to Kotlin\n
*/\n\npublic external abstract class HTMLAudioElement : HTMLMediaElement {\n    companion object {\n    val
NETWORK_EMPTY: Short\n    val NETWORK_IDLE: Short\n    val NETWORK_LOADING: Short\n
val NETWORK_NO_SOURCE: Short\n    val HAVE_NOTHING: Short\n    val HAVE_METADATA:
Short\n    val HAVE_CURRENT_DATA: Short\n    val HAVE_FUTURE_DATA: Short\n    val
HAVE_ENOUGH_DATA: Short\n    val ELEMENT_NODE: Short\n    val ATTRIBUTE_NODE:
Short\n    val TEXT_NODE: Short\n    val CDATA_SECTION_NODE: Short\n    val
ENTITY_REFERENCE_NODE: Short\n    val ENTITY_NODE: Short\n    val
PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE: Short\n    val
DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n    val
DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n
    val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
    val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the JavaScript
[HTMLTrackElement](https://developer.mozilla.org/en/docs/Web/API/HTMLTrackElement) to Kotlin\n
*/\n\npublic external abstract class HTMLTrackElement : HTMLMediaElement {\n    open var kind: String\n    open var src: String\n
open var srclang: String\n    open var
label: String\n    open var default: Boolean\n    open val readyState: Short\n    open val track: TextTrack\n\n
companion object {\n    val NONE: Short\n    val LOADING: Short\n    val LOADED: Short\n    val
ERROR: Short\n    val ELEMENT_NODE: Short\n    val ATTRIBUTE_NODE: Short\n    val
TEXT_NODE: Short\n    val CDATA_SECTION_NODE: Short\n    val ENTITY_REFERENCE_NODE:
Short\n    val ENTITY_NODE: Short\n    val PROCESSING_INSTRUCTION_NODE: Short\n    val
COMMENT_NODE: Short\n    val DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n
val DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n
    val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
    val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the JavaScript
[HTMLMediaElement](https://developer.mozilla.org/en/docs/Web/API/HTMLMediaElement) to Kotlin\n
*/\n\npublic external abstract class HTMLMediaElement : HTMLMediaElement {\n    open val error: MediaError?\n    open
var src: String\n    open var srcObject: MediaProvider?\n    open val currentSrc: String\n    open var crossOrigin:
String?\n    open val networkState: Short\n    open var preload: String\n    open val buffered: TimeRanges\n    open
val readyState: Short\n    open val seeking: Boolean\n    open var currentTime: Double\n    open val duration:
Double\n    open val paused: Boolean\n    open var defaultPlaybackRate: Double\n    open var playbackRate:
Double\n    open val played: TimeRanges\n    open val seekable: TimeRanges\n    open val ended: Boolean\n    open
var autoplay: Boolean\n    open var loop: Boolean\n    open var controls: Boolean\n    open var volume: Double\n
open var muted: Boolean\n    open var defaultMuted: Boolean\n    open val audioTracks:
AudioTrackList\n    open val videoTracks: VideoTrackList\n    open val textTracks: TextTrackList\n    open val
mediaKeys: MediaKeys?\n    open var onencrypted: ((Event) -> dynamic)?\n    open var onwaitingforkey: ((Event) -
> dynamic)?\n    fun load()\n    fun canPlayType(type: String): CanPlayTypeResult\n    fun fastSeek(time: Double)\n
fun getStartDate(): dynamic\n    fun play(): Promise<Unit>\n    fun pause()\n    fun addTextTrack(kind:

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TextTrackKind, label: String = definedExternally, language: String = definedExternally): TextTrack\n fun
setMediaKeys(mediaKeys: MediaKeys?): Promise<Unit>\n\n companion object {\n val
NETWORK_EMPTY: Short\n val NETWORK_IDLE: Short\n val NETWORK_LOADING: Short\n
val NETWORK_NO_SOURCE: Short\n val HAVE_NOTHING: Short\n val HAVE_METADATA:
Short\n val HAVE_CURRENT_DATA: Short\n val HAVE_FUTURE_DATA: Short\n val
HAVE_ENOUGH_DATA: Short\n val ELEMENT_NODE: Short\n
val ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n
val ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE: Short\n val
PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val
DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val
DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n\n/**\n * Exposes the JavaScript
[MediaError](https://developer.mozilla.org/en/docs/Web/API/MediaError) to Kotlin\n */\npublic external abstract
class MediaError {\n open val code: Short\n\n companion object {\n val MEDIA_ERR_ABORTED: Short\n
val MEDIA_ERR_NETWORK:
Short\n val MEDIA_ERR_DECODE: Short\n val MEDIA_ERR_SRC_NOT_SUPPORTED: Short\n
}\n}\n\n/**\n * Exposes the JavaScript
[AudioTrackList](https://developer.mozilla.org/en/docs/Web/API/AudioTrackList) to Kotlin\n */\npublic external
abstract class AudioTrackList : EventTarget {\n open val length: Int\n open var onchange: ((Event) ->
dynamic)?\n open var onaddtrack: ((TrackEvent) -> dynamic)?\n open var onremovetrack: ((TrackEvent) ->
dynamic)?\n fun getTrackById(id: String): AudioTrack?\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline operator fun AudioTrackList.get(index:
Int): AudioTrack? = asDynamic()[index]\n\n/**\n * Exposes the JavaScript
[AudioTrack](https://developer.mozilla.org/en/docs/Web/API/AudioTrack) to Kotlin\n */\npublic external abstract
class AudioTrack : UnionAudioTrackOrTextTrackOrVideoTrack {\n open val id: String\n open val kind:
String\n open val label: String\n
open val language: String\n open var enabled: Boolean\n open val sourceBuffer: SourceBuffer?\n}\n\n/**\n *
Exposes the JavaScript [VideoTrackList](https://developer.mozilla.org/en/docs/Web/API/VideoTrackList) to
Kotlin\n */\npublic external abstract class VideoTrackList : EventTarget {\n open val length: Int\n open val
selectedIndex: Int\n open var onchange: ((Event) -> dynamic)?\n open var onaddtrack: ((TrackEvent) ->
dynamic)?\n open var onremovetrack: ((TrackEvent) -> dynamic)?\n fun getTrackById(id: String):
VideoTrack?\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline operator fun VideoTrackList.get(index:
Int): VideoTrack? = asDynamic()[index]\n\n/**\n * Exposes the JavaScript
[VideoTrack](https://developer.mozilla.org/en/docs/Web/API/VideoTrack) to Kotlin\n */\npublic external abstract
class VideoTrack : UnionAudioTrackOrTextTrackOrVideoTrack {\n open val id: String\n open val kind:
String\n
open val label: String\n open val language: String\n open var selected: Boolean\n open val sourceBuffer:
SourceBuffer?\n}\n\npublic external abstract class TextTrackList : EventTarget {\n open val length: Int\n open
var onchange: ((Event) -> dynamic)?\n open var onaddtrack: ((TrackEvent) -> dynamic)?\n open var
onremovetrack: ((TrackEvent) -> dynamic)?\n fun getTrackById(id: String):
TextTrack?\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline operator fun TextTrackList.get(index: Int):
TextTrack? = asDynamic()[index]\n\n/**\n * Exposes the JavaScript
[TextTrack](https://developer.mozilla.org/en/docs/Web/API/TextTrack) to Kotlin\n */\npublic external abstract

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class TextTrack : EventTarget, UnionAudioTrackOrTextTrackOrVideoTrack {
    open val kind: TextTrackKind
    open val label: String
    open val language: String
    open val id: String
    open val inBandMetadataTrackDispatchType: String
    open var mode: TextTrackMode
    open val cues: TextTrackCueList?
    open val activeCues: TextTrackCueList?
    open var oncuechange: ((Event) -> dynamic)?
    open val sourceBuffer: SourceBuffer?
    fun addCue(cue: TextTrackCue)
    fun removeCue(cue: TextTrackCue)
}

public external abstract class TextTrackCueList {
    open val length: Int
    fun getCueById(id: String): TextTrackCue?
}

@Suppress("INVISIBLE_REFERENCE", "INVISIBLE_MEMBER")
@kotlin.internal.InlineOnly
public inline operator fun TextTrackCueList.get(index: Int): TextTrackCue? = asDynamic()[index]

/** Exposes the JavaScript [TextTrackCue](https://developer.mozilla.org/en/docs/Web/API/TextTrackCue) to Kotlin */
public external abstract class TextTrackCue : EventTarget {
    open val track: TextTrack?
    open var id: String
    open var startTime: Double
    open var endTime: Double
    open var pauseOnExit: Boolean
    open var onenter: ((Event) -> dynamic)?
    open var onexit: ((Event) -> dynamic)?
}

/** Exposes the JavaScript [TimeRanges](https://developer.mozilla.org/en/docs/Web/API/TimeRanges) to Kotlin */
public external abstract class TimeRanges {
    open val length: Int
    fun start(index: Int): Double
    fun end(index: Int): Double
}

/** Exposes the JavaScript [TrackEvent](https://developer.mozilla.org/en/docs/Web/API/TrackEvent) to Kotlin */
public external open class TrackEvent(type: String, eventInitDict: TrackEventInit = definedExternally) : Event {
    open val track: UnionAudioTrackOrTextTrackOrVideoTrack?
}

companion object {
    val NONE: Short
    val CAPTURING_PHASE: Short
    val AT_TARGET: Short
    val BUBBLING_PHASE: Short
}

public external interface TrackEventInit : EventInit {
    var track: UnionAudioTrackOrTextTrackOrVideoTrack? /* = null */
    get() = definedExternally
    set(value) = definedExternally
}

@Suppress("INVISIBLE_REFERENCE", "INVISIBLE_MEMBER")
@kotlin.internal.InlineOnly
public inline fun TrackEventInit(track: UnionAudioTrackOrTextTrackOrVideoTrack? = null, bubbles: Boolean? = false, cancelable: Boolean? = false, composed: Boolean? = false): TrackEventInit {
    val o = js("{}")
    o["track"] = track
    o["bubbles"] = bubbles
    o["cancelable"] = cancelable
    o["composed"] = composed
    return o
}

/** Exposes the JavaScript [HTMLMapElement](https://developer.mozilla.org/en/docs/Web/API/HTMLMapElement) to Kotlin */
public external abstract class HTMLMapElement : HTMLElement {
    open val name: String
    open val areas: HTMLCollection
}

companion object {
    val ELEMENT_NODE: Short
    val ATTRIBUTE_NODE: Short
    val TEXT_NODE: Short
    val CDATA_SECTION_NODE: Short
    val ENTITY_REFERENCE_NODE: Short
    val ENTITY_NODE: Short
    val PROCESSING_INSTRUCTION_NODE: Short
    val COMMENT_NODE: Short
    val DOCUMENT_NODE: Short
    val DOCUMENT_TYPE_NODE: Short
    val DOCUMENT_FRAGMENT_NODE: Short
    val NOTATION_NODE: Short
    val DOCUMENT_POSITION_DISCONNECTED: Short
    val DOCUMENT_POSITION_PRECEDING: Short
    val DOCUMENT_POSITION_FOLLOWING: Short
    val DOCUMENT_POSITION_CONTAINS: Short
    val DOCUMENT_POSITION_CONTAINED_BY: Short
    val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short
}

/** Exposes the JavaScript [HTMLAreaElement](https://developer.mozilla.org/en/docs/Web/API/HTMLAreaElement) to Kotlin */
public external abstract class HTMLAreaElement : HTMLElement, HTMLHyperlinkElementUtils {
    open val alt: String
    open val coords: String
    open val shape: String
    open val target: String
    open val download: String
    open val ping: String
    open val rel: String
    open val relList: DOMTokenList
    open var referrerPolicy: String
    open var noHref: Boolean
}

companion object {
    val ELEMENT_NODE:

```

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Short\n    val ATTRIBUTE_NODE: Short\n    val TEXT_NODE: Short\n    val
CDATA_SECTION_NODE: Short\n    val ENTITY_REFERENCE_NODE: Short\n    val ENTITY_NODE:
Short\n    val PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE: Short\n    val
DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n    val
DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n
    val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
    val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the JavaScript
[HTMLTableElement](https://developer.mozilla.org/en/docs/Web/API/HTMLTableElement) to Kotlin\n *\npublic
external abstract class HTMLTableElement : HTMLElement {\n    open var caption:
HTMLTableCaptionElement?\n    open var tHead:
HTMLTableSectionElement?\n    open var tFoot: HTMLTableSectionElement?\n    open val tBodies:
HTMLCollection\n    open val rows: HTMLCollection\n    open var align: String\n    open var border: String\n
open var frame: String\n    open var rules: String\n    open var summary: String\n    open var width: String\n
open
var bgColor: String\n    open var cellPadding: String\n    open var cellSpacing: String\n    fun createCaption():
HTMLTableCaptionElement\n    fun deleteCaption()\n    fun createTHead(): HTMLTableSectionElement\n    fun
deleteTHead()\n    fun createTFoot(): HTMLTableSectionElement\n    fun deleteTFoot()\n    fun createTBody():
HTMLTableSectionElement\n    fun insertRow(index: Int = definedExternally): HTMLTableRowElement\n    fun
deleteRow(index: Int)\n\n    companion object {\n        val ELEMENT_NODE: Short\n        val
ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val CDATA_SECTION_NODE: Short\n        val
ENTITY_REFERENCE_NODE: Short\n
        val ENTITY_NODE: Short\n        val PROCESSING_INSTRUCTION_NODE: Short\n        val
COMMENT_NODE: Short\n        val DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n
        val DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
        val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
        val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the JavaScript
[HTMLTableCaptionElement](https://developer.mozilla.org/en/docs/Web/API/HTMLTableCaptionElement) to
Kotlin\n *\npublic external abstract class HTMLTableCaptionElement : HTMLElement {\n    open var align:
String\n\n    companion object {\n        val ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE: Short\n
        val TEXT_NODE: Short\n        val CDATA_SECTION_NODE: Short\n        val ENTITY_REFERENCE_NODE:
Short\n        val ENTITY_NODE: Short\n        val PROCESSING_INSTRUCTION_NODE: Short\n        val
COMMENT_NODE: Short\n        val DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n
        val DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
        val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
        val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the JavaScript
[HTMLTableColElement](https://developer.mozilla.org/en/docs/Web/API/HTMLTableColElement) to Kotlin\n *\npublic
external abstract class HTMLTableColElement : HTMLElement {\n    open var span: Int\n    open var
align: String\n    open var ch: String\n    open var chOff: String\n    open var vAlign: String\n    open var
width:
String\n\n    companion object {\n        val ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE: Short\n
        val TEXT_NODE: Short\n        val
CDATA_SECTION_NODE: Short\n        val ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE:
Short\n        val PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val
DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val

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DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n
    val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
    val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    } \n} \n \n /** \n * Exposes the JavaScript
[HTMLTableSectionElement](https://developer.mozilla.org/en/docs/Web/API/HTMLTableSectionElement) to
Kotlin \n * \n public external abstract class HTMLTableSectionElement : HTMLInputElement { \n    open val rows:
HTMLCollection \n
    open var align: String \n    open var ch: String \n    open var chOff: String \n    open var vAlign: String \n    fun
insertRow(index: Int = definedExternally): HTMLInputElement \n    fun deleteRow(index: Int) \n \n    companion object
{ \n        val ELEMENT_NODE: Short \n        val ATTRIBUTE_NODE: Short \n        val TEXT_NODE: Short \n
        val CDATA_SECTION_NODE: Short \n        val ENTITY_REFERENCE_NODE: Short \n        val
ENTITY_NODE: Short \n        val PROCESSING_INSTRUCTION_NODE: Short \n        val COMMENT_NODE:
Short \n        val DOCUMENT_NODE: Short \n        val DOCUMENT_TYPE_NODE: Short \n        val
DOCUMENT_FRAGMENT_NODE: Short \n        val NOTATION_NODE: Short \n        val
DOCUMENT_POSITION_DISCONNECTED: Short \n        val DOCUMENT_POSITION_PRECEDING: Short \n
        val DOCUMENT_POSITION_FOLLOWING: Short \n        val DOCUMENT_POSITION_CONTAINS: Short \n
        val DOCUMENT_POSITION_CONTAINED_BY: Short \n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short \n    } \n} \n \n /** \n
* Exposes the JavaScript
[HTMLTableRowElement](https://developer.mozilla.org/en/docs/Web/API/HTMLTableRowElement) to Kotlin \n
* \n public external abstract class HTMLTableRowElement : HTMLInputElement { \n    open val rowIndex: Int \n    open
val sectionRowIndex: Int \n    open val cells: HTMLCollection \n    open var align: String \n    open var ch: String \n
    open var chOff: String \n    open var vAlign: String \n    open var bgColor: String \n    fun insertCell(index: Int =
definedExternally): HTMLInputElement \n    fun deleteCell(index: Int) \n \n    companion object { \n        val
ELEMENT_NODE: Short \n        val ATTRIBUTE_NODE: Short \n        val TEXT_NODE: Short \n        val
CDATA_SECTION_NODE: Short \n        val ENTITY_REFERENCE_NODE: Short \n        val ENTITY_NODE:
Short \n        val PROCESSING_INSTRUCTION_NODE: Short \n        val COMMENT_NODE: Short \n        val
DOCUMENT_NODE: Short \n        val DOCUMENT_TYPE_NODE: Short \n        val
DOCUMENT_FRAGMENT_NODE: Short \n        val NOTATION_NODE:
Short \n        val DOCUMENT_POSITION_DISCONNECTED: Short \n        val
DOCUMENT_POSITION_PRECEDING: Short \n        val DOCUMENT_POSITION_FOLLOWING: Short \n
        val DOCUMENT_POSITION_CONTAINS: Short \n        val DOCUMENT_POSITION_CONTAINED_BY:
Short \n        val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short \n    } \n} \n \n /** \n
* Exposes the JavaScript
[HTMLTableCellElement](https://developer.mozilla.org/en/docs/Web/API/HTMLTableCellElement)
to Kotlin \n * \n public external abstract class HTMLTableCellElement : HTMLInputElement { \n    open var colSpan:
Int \n    open var rowSpan: Int \n    open var headers: String \n    open val cellIndex: Int \n    open var scope: String \n
    open var abbr: String \n    open var align: String \n    open var axis: String \n    open var height: String \n    open
var width: String \n    open var ch: String \n    open var chOff: String \n    open var noWrap: Boolean \n    open var vAlign:
String \n    open var bgColor: String \n \n    companion object { \n        val ELEMENT_NODE:
Short \n        val ATTRIBUTE_NODE: Short \n        val TEXT_NODE: Short \n        val
CDATA_SECTION_NODE: Short \n        val ENTITY_REFERENCE_NODE: Short \n        val ENTITY_NODE:
Short \n        val PROCESSING_INSTRUCTION_NODE: Short \n        val COMMENT_NODE: Short \n        val
DOCUMENT_NODE: Short \n        val DOCUMENT_TYPE_NODE: Short \n        val
DOCUMENT_FRAGMENT_NODE: Short \n        val NOTATION_NODE: Short \n        val
DOCUMENT_POSITION_DISCONNECTED: Short \n        val DOCUMENT_POSITION_PRECEDING: Short \n
        val DOCUMENT_POSITION_FOLLOWING: Short \n        val DOCUMENT_POSITION_CONTAINS: Short \n
        val DOCUMENT_POSITION_CONTAINED_BY: Short \n        val

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DOCUMENT\_POSITION\_IMPLEMENTATION\_SPECIFIC: Short\n } \n\n\n/\*\*\n \* Exposes the JavaScript [HTMLFormElement](https://developer.mozilla.org/en/docs/Web/API/HTMLFormElement) to Kotlin\n \*\npublic external abstract class HTMLFormElement : HTMLElement {\n open var acceptCharset: String\n open var action: String\n\n open var autocomplete: String\n open var enctype: String\n open var encoding: String\n open var method: String\n open var name: String\n open var noValidate: Boolean\n open var target: String\n open val elements: HTMLFormControlsCollection\n open val length: Int\n fun submit()\n fun reset()\n fun checkValidity(): Boolean\n fun reportValidity(): Boolean\n\n companion object {\n val ELEMENT\_NODE: Short\n val ATTRIBUTE\_NODE: Short\n val TEXT\_NODE: Short\n val CDATA\_SECTION\_NODE: Short\n val ENTITY\_REFERENCE\_NODE: Short\n val ENTITY\_NODE: Short\n val PROCESSING\_INSTRUCTION\_NODE: Short\n val COMMENT\_NODE: Short\n val DOCUMENT\_NODE: Short\n val DOCUMENT\_TYPE\_NODE: Short\n val DOCUMENT\_FRAGMENT\_NODE: Short\n val NOTATION\_NODE: Short\n val DOCUMENT\_POSITION\_DISCONNECTED: Short\n val DOCUMENT\_POSITION\_PRECEDING: Short\n val DOCUMENT\_POSITION\_FOLLOWING: Short\n val DOCUMENT\_POSITION\_CONTAINS: Short\n val DOCUMENT\_POSITION\_CONTAINED\_BY: Short\n\n DOCUMENT\_POSITION\_IMPLEMENTATION\_SPECIFIC: Short\n }\n}\n\n@Suppress(\"INVISIBLE\_REFERENCE\", \"INVISIBLE\_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline operator fun HTMLFormElement.get(index: Int): Element? = asDynamic()[index]\n\n@Suppress(\"INVISIBLE\_REFERENCE\", \"INVISIBLE\_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline operator fun HTMLFormElement.get(name: String): UnionElementOrRadioNodeList? = asDynamic()[name]\n\n\n/\*\*\n \* Exposes the JavaScript [HTMLLabelElement](https://developer.mozilla.org/en/docs/Web/API/HTMLLabelElement) to Kotlin\n \*\npublic external abstract class HTMLLabelElement : HTMLElement {\n open val form: HTMLFormElement?\n open var htmlFor: String\n open val control: HTMLElement?\n\n companion object {\n val ELEMENT\_NODE: Short\n val ATTRIBUTE\_NODE: Short\n val TEXT\_NODE: Short\n val CDATA\_SECTION\_NODE: Short\n val ENTITY\_REFERENCE\_NODE: Short\n val ENTITY\_NODE: Short\n val PROCESSING\_INSTRUCTION\_NODE: Short\n val COMMENT\_NODE: Short\n val DOCUMENT\_NODE: Short\n val DOCUMENT\_TYPE\_NODE: Short\n val DOCUMENT\_FRAGMENT\_NODE: Short\n val NOTATION\_NODE: Short\n val DOCUMENT\_POSITION\_DISCONNECTED: Short\n val DOCUMENT\_POSITION\_PRECEDING: Short\n val DOCUMENT\_POSITION\_FOLLOWING: Short\n val DOCUMENT\_POSITION\_CONTAINS: Short\n val DOCUMENT\_POSITION\_CONTAINED\_BY: Short\n\n DOCUMENT\_POSITION\_IMPLEMENTATION\_SPECIFIC: Short\n }\n}\n\n\n/\*\*\n \* Exposes the JavaScript [HTMLInputElement](https://developer.mozilla.org/en/docs/Web/API/HTMLInputElement) to Kotlin\n \*\npublic external abstract class HTMLInputElement : HTMLFormElement {\n open var accept: String\n open var alt: String\n\n open var autocomplete: String\n open var autofocus: Boolean\n open var defaultChecked: Boolean\n\n open var checked: Boolean\n open var dirName: String\n open var disabled: Boolean\n open val form: HTMLFormElement?\n open val files: FileList?\n open var formAction: String\n open var formEnctype: String\n open var formMethod: String\n open var formNoValidate: Boolean\n open var formTarget: String\n\n open var height: Int\n open var indeterminate: Boolean\n open var inputMode: String\n open val list: HTMLElement?\n\n open var max: String\n open var maxLength: Int\n open var min: String\n open var minLength: Int\n open var multiple: Boolean\n open var name: String\n open var pattern: String\n open var placeholder: String\n open var readOnly: Boolean\n open var required: Boolean\n open var size: Int\n\n open var src: String\n open var step: String\n open var type: String\n open var defaultValue: String\n\n open var

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value: String\n  open var valueAsDate: dynamic\n  open var valueAsNumber: Double\n
  open var width: Int\n  open val willValidate: Boolean\n  open val validity: ValidityState\n  open val
validationMessage: String\n  open val labels: NodeList\n  open var selectionStart: Int?\n  open var selectionEnd:
Int?\n  open var selectionDirection: String?\n  open var align: String\n  open var useMap: String\n  fun
stepUp(n: Int = definedExternally)\n  fun stepDown(n: Int = definedExternally)\n  fun checkValidity(): Boolean\n
  fun reportValidity(): Boolean\n  fun setCustomValidity(error: String)\n  fun select()\n  fun
setRangeText(replacement: String)\n  fun setRangeText(replacement: String, start: Int, end: Int, selectionMode:
SelectionMode = definedExternally)\n  fun setSelectionRange(start: Int, end: Int, direction: String =
definedExternally)\n\n  companion object {\n    val ELEMENT_NODE: Short\n    val ATTRIBUTE_NODE:
Short\n    val TEXT_NODE: Short\n    val CDATA_SECTION_NODE: Short\n    val
ENTITY_REFERENCE_NODE:
Short\n    val ENTITY_NODE: Short\n    val PROCESSING_INSTRUCTION_NODE: Short\n    val
COMMENT_NODE: Short\n    val DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n
    val DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n
    val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
    val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n  }\n\n  /**\n * Exposes the JavaScript
[HTMLButtonElement](https://developer.mozilla.org/en/docs/Web/API/HTMLButtonElement) to Kotlin\n
*/\npublic external abstract class HTMLButtonElement : HTMLElement {\n  open var autofocus: Boolean\n
  open var disabled: Boolean\n  open val form: HTMLFormElement?\n  open var formAction: String\n  open var
formEnctype: String\n  open var formMethod: String\n  open
var formNoValidate: Boolean\n  open var formTarget: String\n  open var name: String\n  open var type:
String\n  open var value: String\n  open var menu: HTMLMenuElement?\n  open val willValidate: Boolean\n
  open val validity: ValidityState\n  open val validationMessage: String\n  open val labels: NodeList\n  fun
checkValidity(): Boolean\n  fun reportValidity(): Boolean\n  fun setCustomValidity(error: String)\n\n
  companion object {\n    val ELEMENT_NODE: Short\n    val ATTRIBUTE_NODE: Short\n    val
TEXT_NODE: Short\n    val CDATA_SECTION_NODE: Short\n    val ENTITY_REFERENCE_NODE:
Short\n    val ENTITY_NODE: Short\n    val PROCESSING_INSTRUCTION_NODE: Short\n    val
COMMENT_NODE: Short\n    val DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n
    val DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n
    val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS:
Short\n    val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n  }\n\n  /**\n * Exposes the JavaScript
[HTMLSelectElement](https://developer.mozilla.org/en/docs/Web/API/HTMLSelectElement) to Kotlin\n
*/\npublic external abstract class HTMLSelectElement : HTMLElement, ItemArrayLike<Element> {\n  open var
autocomplete: String\n  open var autofocus: Boolean\n  open var disabled: Boolean\n  open val form:
HTMLFormElement?\n  open var multiple: Boolean\n  open var name: String\n  open var required: Boolean\n
  open var size: Int\n  open val type: String\n  open val options: HTMLOptionsCollection\n  override var length:
Int\n  open val selectedOptions: HTMLCollection\n  open var selectedIndex: Int\n  open var value: String\n
  open val willValidate: Boolean\n  open val validity: ValidityState\n  open val validationMessage:
String\n  open val labels: NodeList\n  fun namedItem(name: String): HTMLOptionElement?\n  fun
add(element: UnionHTMLOptGroupElementOrHTMLOptionElement, before: dynamic = definedExternally)\n
  fun remove(index: Int)\n  fun checkValidity(): Boolean\n  fun reportValidity(): Boolean\n  fun
setCustomValidity(error: String)\n  override fun item(index: Int): Element?\n\n  companion object {\n    val
ELEMENT_NODE: Short\n    val ATTRIBUTE_NODE: Short\n    val TEXT_NODE: Short\n    val
CDATA_SECTION_NODE: Short\n    val ENTITY_REFERENCE_NODE: Short\n    val ENTITY_NODE:

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Short\n    val PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE: Short\n    val
DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n    val
DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n
    val DOCUMENT_POSITION_FOLLOWING:
Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n    val
DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n
}\n}\n\n@Suppress(\\"INVISIBLE_REFERENCE\",
\\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline operator fun
HTMLSelectElement.get(index: Int): Element? =
asDynamic()[index]\n\n@Suppress(\\"INVISIBLE_REFERENCE\",
\\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline operator fun
HTMLSelectElement.set(index: Int, option: HTMLOptionElement?) { asDynamic()[index] = option }\n\n/**\n *
Exposes the JavaScript
[HTMLDataListElement](https://developer.mozilla.org/en/docs/Web/API/HTMLDataListElement) to Kotlin\n
*/\npublic external abstract class HTMLDataListElement : HTMLElement {\n    open val options:
HTMLCollection\n\n    companion object {\n        val ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE:
Short\n        val TEXT_NODE: Short\n        val CDATA_SECTION_NODE: Short\n        val
ENTITY_REFERENCE_NODE:
Short\n        val ENTITY_NODE: Short\n        val PROCESSING_INSTRUCTION_NODE: Short\n        val
COMMENT_NODE: Short\n        val DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n
        val DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
        val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
        val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the JavaScript
[HTMLOptGroupElement](https://developer.mozilla.org/en/docs/Web/API/HTMLOptGroupElement) to Kotlin\n
*/\npublic external abstract class HTMLOptGroupElement : HTMLElement,
UnionHTMLOptGroupElementOrHTMLOptionElement {\n    open var disabled: Boolean\n    open var label:
String\n\n    companion object {\n        val ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE: Short\n
        val TEXT_NODE: Short\n        val CDATA_SECTION_NODE: Short\n        val
ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE: Short\n        val
PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val
DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val
DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
        val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
        val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the JavaScript
[HTMLOptionElement](https://developer.mozilla.org/en/docs/Web/API/HTMLOptionElement) to Kotlin\n
*/\npublic external abstract class HTMLOptionElement : HTMLElement,
UnionHTMLOptGroupElementOrHTMLOptionElement {\n    open var disabled: Boolean\n    open val form:
HTMLFormElement?\n
    open var label: String\n    open var defaultSelected: Boolean\n    open var selected: Boolean\n    open var value:
String\n    open var text: String\n    open val index: Int\n\n    companion object {\n        val ELEMENT_NODE:
Short\n        val ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val CDATA_SECTION_NODE:
Short\n        val ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE: Short\n        val
}
```

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PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE: Short\n    val
DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n    val
DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n
    val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
    val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the JavaScript
[HTMLTextAreaElement](https://developer.mozilla.org/en/docs/Web/API/HTMLTextAreaElement) to Kotlin\n
*\n\npublic external abstract class HTMLTextAreaElement : HTMLInputElement {\n    open var autocomplete: String\n
open var autofocus: Boolean\n    open var cols: Int\n    open var dirName: String\n    open var disabled: Boolean\n
open val form: HTMLFormElement?\n    open var inputMode: String\n    open var maxLength: Int\n    open var
minLength: Int\n    open var name: String\n    open var placeholder: String\n    open var readOnly: Boolean\n    open
var required: Boolean\n    open var rows: Int\n    open var wrap: String\n    open val type: String\n    open var
defaultValue: String\n    open var value: String\n    open val textLength: Int\n    open val willValidate: Boolean\n
open val validity: ValidityState\n    open val validationMessage: String\n    open val labels: NodeList\n    open var
selectionStart: Int?\n    open var selectionEnd: Int?\n    open var selectionDirection:
String?\n    fun checkValidity(): Boolean\n    fun reportValidity(): Boolean\n    fun setCustomValidity(error:
String)\n    fun select()\n    fun setRangeText(replacement: String)\n    fun setRangeText(replacement: String, start:
Int, end: Int, selectionMode: SelectionMode = definedExternally)\n    fun setSelectionRange(start: Int, end: Int,
direction: String = definedExternally)\n\n    companion object {\n        val ELEMENT_NODE: Short\n        val
ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val CDATA_SECTION_NODE: Short\n        val
ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE: Short\n        val
PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val
DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val
DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
        val DOCUMENT_POSITION_FOLLOWING: Short\n
            val DOCUMENT_POSITION_CONTAINS: Short\n            val DOCUMENT_POSITION_CONTAINED_BY:
Short\n            val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n            }\n}\n\n/**\n * Exposes
the JavaScript [HTMLKeygenElement](https://developer.mozilla.org/en/docs/Web/API/HTMLKeygenElement) to
Kotlin\n
*\n\npublic external abstract class HTMLKeygenElement : HTMLInputElement {\n    open var autofocus:
Boolean\n    open var challenge: String\n    open var disabled: Boolean\n    open val form: HTMLFormElement?\n
open var keytype: String\n    open var name: String\n    open val type: String\n    open val willValidate: Boolean\n
open val validity: ValidityState\n    open val validationMessage: String\n    open val labels: NodeList\n    fun
checkValidity(): Boolean\n    fun reportValidity(): Boolean\n    fun setCustomValidity(error: String)\n\n    companion
object {\n        val ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE: Short\n        val
TEXT_NODE: Short\n        val CDATA_SECTION_NODE:
Short\n        val ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE: Short\n        val
PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val
DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val
DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
        val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
        val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n        }\n}\n\n/**\n * Exposes the JavaScript
[HTMLOutputElement](https://developer.mozilla.org/en/docs/Web/API/HTMLOutputElement) to Kotlin\n
*\n\npublic external abstract class HTMLOutputElement : HTMLInputElement {\n    open val htmlFor: DOMTokenList\n
open val form: HTMLFormElement?\n    open var name: String\n    open val type: String\n    open var

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defaultValue: String\n open
var value: String\n open val willValidate: Boolean\n open val validity: ValidityState\n open val
validationMessage: String\n open val labels: NodeList\n fun checkValidity(): Boolean\n fun reportValidity():
Boolean\n fun setCustomValidity(error: String)\n\n companion object {\n val ELEMENT_NODE: Short\n
val ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n
val ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE: Short\n val
PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val
DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val
DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\n/**\n * Exposes the JavaScript
[HTMLProgressElement](https://developer.mozilla.org/en/docs/Web/API/HTMLProgressElement) to Kotlin\n
*\npublic external abstract class HTMLProgressElement : HTMLElement {\n open var value: Double\n open
var max: Double\n open val position: Double\n open val labels: NodeList\n\n companion object {\n val
ELEMENT_NODE: Short\n val ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n val
CDATA_SECTION_NODE: Short\n val ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE:
Short\n val PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val
DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val
DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n
val DOCUMENT_POSITION_CONTAINS: Short\n val DOCUMENT_POSITION_CONTAINED_BY:
Short\n val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\n/**\n * Exposes
the JavaScript [HTMLMeterElement](https://developer.mozilla.org/en/docs/Web/API/HTMLMeterElement) to
Kotlin\n *\npublic external abstract class HTMLMeterElement : HTMLElement {\n open var value: Double\n
open var min: Double\n open var max: Double\n open var low: Double\n open var high: Double\n open var
optimum: Double\n open val labels: NodeList\n\n companion object {\n val ELEMENT_NODE: Short\n
val ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n
val ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE: Short\n val
PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val
DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val
DOCUMENT_FRAGMENT_NODE: Short\n
val NOTATION_NODE: Short\n val DOCUMENT_POSITION_DISCONNECTED: Short\n val
DOCUMENT_POSITION_PRECEDING: Short\n val DOCUMENT_POSITION_FOLLOWING: Short\n
val DOCUMENT_POSITION_CONTAINS: Short\n val DOCUMENT_POSITION_CONTAINED_BY:
Short\n val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\n/**\n * Exposes
the JavaScript [HTMLFieldSetElement](https://developer.mozilla.org/en/docs/Web/API/HTMLFieldSetElement)
to Kotlin\n *\npublic external abstract class HTMLFieldSetElement : HTMLElement {\n open var disabled:
Boolean\n open val form: HTMLFormElement?\n open var name: String\n open val type: String\n open val
elements: HTMLCollection\n open val willValidate: Boolean\n open val validity: ValidityState\n open val
validationMessage: String\n fun checkValidity(): Boolean\n fun reportValidity(): Boolean\n fun
setCustomValidity(error: String)\n\n companion object {\n val ELEMENT_NODE: Short\n
val ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n
val ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE: Short\n val
PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val
DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val

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DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n
    val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
    val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the JavaScript
[HTMLLegendElement](https://developer.mozilla.org/en/docs/Web/API/HTMLLegendElement) to Kotlin\n
*/\npublic external abstract class HTMLLegendElement : HTMLElement {\n    open val form:
HTMLFormElement?\n    open var align: String\n\n    companion
object {\n        val ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE: Short\n        val TEXT_NODE:
Short\n        val CDATA_SECTION_NODE: Short\n        val ENTITY_REFERENCE_NODE: Short\n        val
ENTITY_NODE: Short\n        val PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE:
Short\n        val DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val
DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
        val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
        val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\npublic external
abstract class ValidityState {\n    open val valueMissing: Boolean\n    open val typeMismatch:
Boolean\n    open val patternMismatch: Boolean\n    open val tooLong: Boolean\n    open val tooShort: Boolean\n
open val rangeUnderflow: Boolean\n    open val rangeOverflow: Boolean\n    open val stepMismatch: Boolean\n
open val badInput: Boolean\n    open val customError: Boolean\n    open val valid: Boolean\n}\n\n/**\n * Exposes
the JavaScript [HTMLDetailsElement](https://developer.mozilla.org/en/docs/Web/API/HTMLDetailsElement) to
Kotlin\n */\npublic external abstract class HTMLDetailsElement : HTMLElement {\n    open var open: Boolean\n
companion object {\n        val ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE: Short\n        val
TEXT_NODE: Short\n        val CDATA_SECTION_NODE: Short\n        val ENTITY_REFERENCE_NODE:
Short\n        val ENTITY_NODE: Short\n        val PROCESSING_INSTRUCTION_NODE: Short\n        val
COMMENT_NODE: Short\n        val DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n
        val DOCUMENT_FRAGMENT_NODE: Short\n
        val NOTATION_NODE: Short\n        val DOCUMENT_POSITION_DISCONNECTED: Short\n        val
DOCUMENT_POSITION_PRECEDING: Short\n        val DOCUMENT_POSITION_FOLLOWING: Short\n
        val DOCUMENT_POSITION_CONTAINS: Short\n        val DOCUMENT_POSITION_CONTAINED_BY:
Short\n        val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\npublic external
abstract class HTMLMenuElement : HTMLElement {\n    open var type: String\n    open var label: String\n    open
var compact: Boolean\n\n    companion object {\n        val ELEMENT_NODE: Short\n        val
ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val CDATA_SECTION_NODE: Short\n        val
ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE: Short\n        val
PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val
DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val
DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED:
Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n        val
DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
        val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\npublic external abstract class
HTMLMenuItemElement : HTMLElement {\n    open var type: String\n    open var label: String\n    open var icon:
String\n    open var disabled: Boolean\n    open var checked: Boolean\n    open var radiogroup: String\n    open var
default: Boolean\n\n    companion object {\n        val ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE:

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Short\n    val TEXT_NODE: Short\n    val CDATA_SECTION_NODE: Short\n    val
ENTITY_REFERENCE_NODE: Short\n    val ENTITY_NODE: Short\n    val
PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE: Short\n    val
DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n    val
DOCUMENT_FRAGMENT_NODE: Short\n
    val NOTATION_NODE: Short\n    val DOCUMENT_POSITION_DISCONNECTED: Short\n    val
DOCUMENT_POSITION_PRECEDING: Short\n    val DOCUMENT_POSITION_FOLLOWING: Short\n
val DOCUMENT_POSITION_CONTAINS: Short\n    val DOCUMENT_POSITION_CONTAINED_BY:
Short\n    val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\npublic external
open class RelatedEvent(type: String, eventInitDict: RelatedEventInit = definedExternally) : Event {\n    open val
relatedTarget: EventTarget?\n\n    companion object {\n        val NONE: Short\n        val CAPTURING_PHASE:
Short\n        val AT_TARGET: Short\n        val BUBBLING_PHASE: Short\n    }\n}\n\npublic external interface
RelatedEventInit : EventInit {\n    var relatedTarget: EventTarget? /* = null */\n        get() = definedExternally\n
set(value) = definedExternally\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\n\npublic inline fun RelatedEventInit(relatedTarget:
EventTarget?
= null, bubbles: Boolean? = false, cancelable: Boolean? = false, composed: Boolean? = false): RelatedEventInit {\n
val o = js("{}")\n    o["relatedTarget"] = relatedTarget\n    o["bubbles"] = bubbles\n    o["cancelable"] =
cancelable\n    o["composed"] = composed\n    return o\n}\n\n/**\n * Exposes the JavaScript
[HTMLDialogElement](https://developer.mozilla.org/en/docs/Web/API/HTMLDialogElement) to Kotlin\n
*/\n\npublic external abstract class HTMLDialogElement : HTMLInputElement {\n    open var open: Boolean\n    open var
returnValue: String\n    fun show(anchor: UnionElementOrMouseEvent = definedExternally)\n    fun
showModal(anchor: UnionElementOrMouseEvent = definedExternally)\n    fun close(returnValue: String =
definedExternally)\n\n    companion object {\n        val ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE:
Short\n        val TEXT_NODE: Short\n        val CDATA_SECTION_NODE: Short\n        val
ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE: Short\n
        val PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val
DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val
DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
        val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
        val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the JavaScript
[HTMLScriptElement](https://developer.mozilla.org/en/docs/Web/API/HTMLScriptElement) to Kotlin\n
*/\n\npublic external abstract class HTMLScriptElement : HTMLInputElement, HTMLOrSVGScriptElement {\n    open var src:
String\n    open var type: String\n    open var charset: String\n    open var async: Boolean\n    open var defer:
Boolean\n    open var crossOrigin: String?\n    open var text: String\n    open var nonce:
String\n    open var event: String\n    open var htmlFor: String\n\n    companion object {\n        val
ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val
CDATA_SECTION_NODE: Short\n        val ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE:
Short\n        val PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val
DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val
DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
        val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
        val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the JavaScript
[HTMLTemplateElement](https://developer.mozilla.org/en/docs/Web/API/HTMLTemplateElement) to Kotlin\n
*/

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*\npublic external
abstract class HTMLTemplateElement : HTMLElement {\n  open val content: DocumentFragment\n\n  companion object {\n    val ELEMENT_NODE: Short\n    val ATTRIBUTE_NODE: Short\n    val TEXT_NODE: Short\n    val CDATA_SECTION_NODE: Short\n    val ENTITY_REFERENCE_NODE: Short\n    val ENTITY_NODE: Short\n    val PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE: Short\n    val DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n    val DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n    val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n    val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n  }\n}\n\n/**\n * Exposes the JavaScript [HTMLSlotElement](https://developer.mozilla.org/en/docs/Web/API/HTMLSlotElement) to Kotlin\n */\n\n*\npublic external abstract class HTMLSlotElement : HTMLElement {\n  open var name: String\n  fun assignedNodes(options: AssignedNodesOptions = definedExternally): Array<Node>\n\n  companion object {\n    val ELEMENT_NODE: Short\n    val ATTRIBUTE_NODE: Short\n    val TEXT_NODE: Short\n    val CDATA_SECTION_NODE: Short\n    val ENTITY_REFERENCE_NODE: Short\n    val ENTITY_NODE: Short\n    val PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE: Short\n    val DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n    val DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n    val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n    val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n  }\n}\n\npublic external interface AssignedNodesOptions {\n  var flatten: Boolean? /* = false */\n  fun get() = definedExternally\n  fun set(value) = definedExternally\n}\n\n@Suppress("INVISIBLE_REFERENCE", "INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline fun AssignedNodesOptions(flatten: Boolean? = false): AssignedNodesOptions {\n  val o = js("{}")\n  o["flatten"] = flatten\n  return o\n}\n\n/**\n * Exposes the JavaScript [HTMLCanvasElement](https://developer.mozilla.org/en/docs/Web/API/HTMLCanvasElement) to Kotlin\n */\n\n*\npublic external abstract class HTMLCanvasElement : HTMLElement, CanvasImageSource, TexImageSource {\n  open var width: Int\n  open var height: Int\n  fun getContext(contextId: String, vararg arguments: Any?): RenderingContext?\n  fun toDataURL(type: String = definedExternally, quality: Any? = definedExternally): String\n  fun toBlob(_callback: (Blob?) -> Unit, type: String = definedExternally, quality: Any? = definedExternally)\n\n  companion object {\n    val ELEMENT_NODE: Short\n    val ATTRIBUTE_NODE: Short\n    val TEXT_NODE: Short\n    val CDATA_SECTION_NODE: Short\n    val ENTITY_REFERENCE_NODE: Short\n    val ENTITY_NODE: Short\n    val PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE: Short\n    val DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n    val DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n    val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n    val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n  }\n}\n\npublic external interface CanvasRenderingContext2DSettings {\n  var alpha: Boolean? /* = true */\n  fun get() = definedExternally\n  fun set(value) = definedExternally\n}\n\n@Suppress("INVISIBLE_REFERENCE", "INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline fun CanvasRenderingContext2DSettings(alpha: Boolean? = true): CanvasRenderingContext2DSettings {\n  val o = js("{}")\n  o["alpha"] = alpha\n  return o\n}\n\n/**\n * Exposes the JavaScript

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[CanvasRenderingContext2D](https://developer.mozilla.org/en/docs/Web/API/CanvasRenderingContext2D) to
Kotlin\n *\npublic external abstract class CanvasRenderingContext2D : CanvasState, CanvasTransform,
CanvasCompositing, CanvasImageSmoothing, CanvasFillStrokeStyles, CanvasShadowStyles, CanvasFilters,
CanvasRect, CanvasDrawPath, CanvasUserInterface, CanvasText, CanvasDrawImage, CanvasHitRegion,
CanvasImageData, CanvasPathDrawingStyles, CanvasTextDrawingStyles, CanvasPath, RenderingContext {\n
open val canvas: HTMLCanvasElement\n}\n\npublic external interface CanvasState {\n fun save()\n fun
restore()\n}\n\npublic external interface CanvasTransform {\n fun scale(x: Double, y: Double)\n fun
rotate(angle: Double)\n fun translate(x:
Double, y: Double)\n fun transform(a: Double, b: Double, c: Double, d: Double, e: Double, f: Double)\n fun
getTransform(): DOMMatrix\n fun setTransform(a: Double, b: Double, c: Double, d: Double, e: Double, f:
Double)\n fun setTransform(transform: dynamic = definedExternally)\n fun resetTransform()\n}\n\npublic
external interface CanvasCompositing {\n var globalAlpha: Double\n var globalCompositeOperation:
String\n}\n\npublic external interface CanvasImageSmoothing {\n var imageSmoothingEnabled: Boolean\n var
imageSmoothingQuality: ImageSmoothingQuality\n}\n\npublic external interface CanvasFillStrokeStyles {\n var
strokeStyle: dynamic\n get() = definedExternally\n set(value) = definedExternally\n var fillStyle:
dynamic\n get() = definedExternally\n set(value) = definedExternally\n fun createLinearGradient(x0:
Double, y0: Double, x1: Double, y1: Double): CanvasGradient\n fun createRadialGradient(x0: Double, y0:
Double,
r0: Double, x1: Double, y1: Double, r1: Double): CanvasGradient\n fun createPattern(image:
CanvasImageSource, repetition: String): CanvasPattern?\n}\n\npublic external interface CanvasShadowStyles {\n
var shadowOffsetX: Double\n var shadowOffsetY: Double\n var shadowBlur: Double\n var shadowColor:
String\n}\n\npublic external interface CanvasFilters {\n var filter: String\n}\n\npublic external interface
CanvasRect {\n fun clearRect(x: Double, y: Double, w: Double, h: Double)\n fun fillRect(x: Double, y: Double,
w: Double, h: Double)\n fun strokeRect(x: Double, y: Double, w: Double, h: Double)\n}\n\npublic external
interface CanvasDrawPath {\n fun beginPath()\n fun fill(fillRule: CanvasFillRule = definedExternally)\n fun
fill(path: Path2D, fillRule: CanvasFillRule = definedExternally)\n fun stroke()\n fun stroke(path: Path2D)\n
fun clip(fillRule: CanvasFillRule = definedExternally)\n fun clip(path: Path2D, fillRule: CanvasFillRule =
definedExternally)\n
fun resetClip()\n fun isPointInPath(x: Double, y: Double, fillRule: CanvasFillRule = definedExternally):
Boolean\n fun isPointInPath(path: Path2D, x: Double, y: Double, fillRule: CanvasFillRule = definedExternally):
Boolean\n fun isPointInStroke(x: Double, y: Double): Boolean\n fun isPointInStroke(path: Path2D, x: Double,
y: Double): Boolean\n}\n\npublic external interface CanvasUserInterface {\n fun drawFocusIfNeeded(element:
Element)\n fun drawFocusIfNeeded(path: Path2D, element: Element)\n fun scrollPathIntoView()\n fun
scrollPathIntoView(path: Path2D)\n}\n\npublic external interface CanvasText {\n fun fillText(text: String, x:
Double, y: Double, maxWidth: Double = definedExternally)\n fun strokeText(text: String, x: Double, y: Double,
maxWidth: Double = definedExternally)\n fun measureText(text: String): TextMetrics\n}\n\npublic external
interface CanvasDrawImage {\n fun drawImage(image: CanvasImageSource, dx: Double, dy: Double)\n
fun drawImage(image: CanvasImageSource, dx: Double, dy: Double, dw: Double, dh: Double)\n fun
drawImage(image: CanvasImageSource, sx: Double, sy: Double, sw: Double, sh: Double, dx: Double, dy: Double,
dw: Double, dh: Double)\n}\n\npublic external interface CanvasHitRegion {\n fun addHitRegion(options:
HitRegionOptions = definedExternally)\n fun removeHitRegion(id: String)\n fun clearHitRegions()\n}\n\npublic
external interface CanvasImageData {\n fun createImageData(sw: Double, sh: Double): ImageData\n fun
createImageData(imagedata: ImageData): ImageData\n fun getImageData(sx: Double, sy: Double, sw: Double, sh:
Double): ImageData\n fun putImageData(imagedata: ImageData, dx: Double, dy: Double)\n fun
putImageData(imagedata: ImageData, dx: Double, dy: Double, dirtyX: Double, dirtyY: Double, dirtyWidth: Double,
dirtyHeight: Double)\n}\n\npublic external interface CanvasPathDrawingStyles {\n var lineWidth: Double\n var
lineCap: CanvasLineCap\n
```

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var lineJoin: CanvasLineJoin\n var miterLimit: Double\n var lineDashOffset: Double\n fun
setLineDash(segments: Array<Double>)\n fun getLineDash(): Array<Double>\n}\n\npublic external interface
CanvasTextDrawingStyles {\n var font: String\n var textAlign: CanvasTextAlign\n var textBaseline:
CanvasTextBaseline\n var direction: CanvasDirection\n}\n\npublic external interface CanvasPath {\n fun
closePath()\n fun moveTo(x: Double, y: Double)\n fun lineTo(x: Double, y: Double)\n fun
quadraticCurveTo(cpx: Double, cpy: Double, x: Double, y: Double)\n fun bezierCurveTo(cp1x: Double, cp1y:
Double, cp2x: Double, cp2y: Double, x: Double, y: Double)\n fun arcTo(x1: Double, y1: Double, x2: Double, y2:
Double, radius: Double)\n fun arcTo(x1: Double, y1: Double, x2: Double, y2: Double, radiusX: Double, radiusY:
Double, rotation: Double)\n fun rect(x: Double, y: Double, w: Double, h: Double)\n fun arc(x: Double, y:
Double, radius: Double, startAngle: Double,
endAngle: Double, anticlockwise: Boolean = definedExternally)\n fun ellipse(x: Double, y: Double, radiusX:
Double, radiusY: Double, rotation: Double, startAngle: Double, endAngle: Double, anticlockwise: Boolean =
definedExternally)\n}\n\n/**\n * Exposes the JavaScript
[CanvasGradient](https://developer.mozilla.org/en/docs/Web/API/CanvasGradient) to Kotlin\n */\n\npublic external
abstract class CanvasGradient {\n fun addColorStop(offset: Double, color: String)\n}\n\n/**\n * Exposes the
JavaScript [CanvasPattern](https://developer.mozilla.org/en/docs/Web/API/CanvasPattern) to Kotlin\n */\n\npublic
external abstract class CanvasPattern {\n fun setTransform(transform: dynamic = definedExternally)\n}\n\n/**\n *
Exposes the JavaScript [TextMetrics](https://developer.mozilla.org/en/docs/Web/API/TextMetrics) to Kotlin\n
*/\n\npublic external abstract class TextMetrics {\n open val width: Double\n open val actualBoundingBoxLeft:
Double\n open val actualBoundingBoxRight: Double\n
open val fontBoundingBoxAscent: Double\n open val fontBoundingBoxDescent: Double\n open val
actualBoundingBoxAscent: Double\n open val actualBoundingBoxDescent: Double\n open val
emHeightAscent: Double\n open val emHeightDescent: Double\n open val hangingBaseline: Double\n open
val alphabeticBaseline: Double\n open val ideographicBaseline: Double\n}\n\npublic external interface
HitRegionOptions {\n var path: Path2D? /* = null */\n get() = definedExternally\n set(value) =
definedExternally\n var fillRule: CanvasFillRule? /* = CanvasFillRule.NONZERO */\n get() =
definedExternally\n set(value) = definedExternally\n var id: String? /* = "" */\n get() =
definedExternally\n set(value) = definedExternally\n var parentId: String? /* = null */\n get() =
definedExternally\n set(value) = definedExternally\n var cursor: String? /* = "inherit" */\n get() =
definedExternally\n set(value)
= definedExternally\n var control: Element? /* = null */\n get() = definedExternally\n set(value) =
definedExternally\n var label: String? /* = null */\n get() = definedExternally\n set(value) =
definedExternally\n var role: String? /* = null */\n get() = definedExternally\n set(value) =
definedExternally\n}\n\n@Suppress("\nINVISIBLE_REFERENCE",
"\nINVISIBLE_MEMBER")\n\n@kotlin.internal.InlineOnly\n\npublic inline fun HitRegionOptions(path: Path2D? =
null, fillRule: CanvasFillRule? = CanvasFillRule.NONZERO, id: String? = "", parentId: String? = null, cursor:
String? = "inherit", control: Element? = null, label: String? = null, role: String? = null): HitRegionOptions {\n
val
o = js("{}")\n o["path"] = path\n o["fillRule"] = fillRule\n o["id"] = id\n o["parentId"] = parentId\n
o["cursor"] = cursor\n o["control"] = control\n o["label"] = label\n o["role"] = role\n return
o}\n}\n\n/**\n * Exposes the JavaScript [ImageData](https://developer.mozilla.org/en/docs/Web/API/ImageData) to Kotlin\n
*/\n\npublic external open class ImageData : ImageBitmapSource, TexImageSource {\n constructor(sw: Int, sh:
Int)\n constructor(data: Uint8ClampedArray, sw: Int, sh: Int = definedExternally)\n open val width: Int\n open
val height: Int\n open val data: Uint8ClampedArray\n}\n\n/**\n * Exposes the JavaScript
[Path2D](https://developer.mozilla.org/en/docs/Web/API/Path2D) to Kotlin\n */\n\npublic external open class
Path2D() : CanvasPath {\n constructor(path: Path2D)\n constructor(paths: Array<Path2D>, fillRule:
CanvasFillRule = definedExternally)\n constructor(d: String)\n fun addPath(path: Path2D, transform: dynamic =
definedExternally)\n override fun closePath()\n override fun moveTo(x: Double, y: Double)\n override fun

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lineTo(x: Double, y: Double)\n  override fun quadraticCurveTo(cpx: Double, cpy: Double, x: Double, y: Double)\n
  override fun bezierCurveTo(cp1x:
  Double, cp1y: Double, cp2x: Double, cp2y: Double, x: Double, y: Double)\n  override fun arcTo(x1: Double, y1:
  Double, x2: Double, y2: Double, radius: Double)\n  override fun arcTo(x1: Double, y1: Double, x2: Double, y2:
  Double, radiusX: Double, radiusY: Double, rotation: Double)\n  override fun rect(x: Double, y: Double, w: Double,
  h: Double)\n  override fun arc(x: Double, y: Double, radius: Double, startAngle: Double, endAngle: Double,
  anticlockwise: Boolean /* = definedExternally */) \n  override fun ellipse(x: Double, y: Double, radiusX: Double,
  radiusY: Double, rotation: Double, startAngle: Double, endAngle: Double, anticlockwise: Boolean /* =
  definedExternally */) \n} \n\n/** \n * Exposes the JavaScript
[ImageBitmapRenderingContext](https://developer.mozilla.org/en/docs/Web/API/ImageBitmapRenderingContext)
to Kotlin \n * \npublic external abstract class ImageBitmapRenderingContext { \n  open val canvas:
HTMLCanvasElement \n  fun transferFromImageBitmap(bitmap:
  ImageBitmap?) \n} \n\npublic external interface ImageBitmapRenderingContextSettings { \n  var alpha: Boolean? /*
= true */ \n  get() = definedExternally \n  set(value) =
  definedExternally \n} \n\n@Suppress("INVISIBLE_REFERENCE",
  "INVISIBLE_MEMBER") \n@kotlin.internal.InlineOnly \npublic inline fun
ImageBitmapRenderingContextSettings(alpha: Boolean? = true): ImageBitmapRenderingContextSettings { \n  val o
= js("{}") \n  o["alpha"] = alpha \n  return o \n} \n\n/** \n * Exposes the JavaScript
[CustomElementRegistry](https://developer.mozilla.org/en/docs/Web/API/CustomElementRegistry) to Kotlin \n
* \npublic external abstract class CustomElementRegistry { \n  fun define(name: String, constructor: () -> dynamic,
  options: ElementDefinitionOptions = definedExternally) \n  fun get(name: String): Any? \n  fun
  whenDefined(name: String): Promise<Unit> \n} \n\npublic external interface ElementDefinitionOptions { \n  var
  extends: String? \n  get() = definedExternally \n
  set(value) = definedExternally \n} \n\n@Suppress("INVISIBLE_REFERENCE",
  "INVISIBLE_MEMBER") \n@kotlin.internal.InlineOnly \npublic inline fun ElementDefinitionOptions(extends:
  String? = undefined): ElementDefinitionOptions { \n  val o = js("{}") \n  o["extends"] = extends \n  return
  o \n} \n\npublic external interface ElementContentEditable { \n  var contentEditable: String \n  val
  isContentEditable: Boolean \n} \n\n/** \n * Exposes the JavaScript
[DataTransfer](https://developer.mozilla.org/en/docs/Web/API/DataTransfer) to Kotlin \n * \npublic external
  abstract class DataTransfer { \n  open var dropEffect: String \n  open var effectAllowed: String \n  open val items:
  DataTransferItemList \n  open val types: Array<out String> \n  open val files: FileList \n  fun
  setDragImage(image: Element, x: Int, y: Int) \n  fun getData(format: String): String \n  fun setData(format: String,
  data: String) \n  fun clearData(format: String = definedExternally) \n} \n\n/** \n * Exposes the
  JavaScript [DataTransferItemList](https://developer.mozilla.org/en/docs/Web/API/DataTransferItemList) to
  Kotlin \n * \npublic external abstract class DataTransferItemList { \n  open val length: Int \n  fun add(data: String,
  type: String): DataTransferItem? \n  fun add(data: File): DataTransferItem? \n  fun remove(index: Int) \n  fun
  clear() \n} \n\n@Suppress("INVISIBLE_REFERENCE",
  "INVISIBLE_MEMBER") \n@kotlin.internal.InlineOnly \npublic inline operator fun
  DataTransferItemList.get(index: Int): DataTransferItem? = asDynamic()[index] \n} \n\n/** \n * Exposes the JavaScript
  [DataTransferItem](https://developer.mozilla.org/en/docs/Web/API/DataTransferItem) to Kotlin \n * \npublic
  external abstract class DataTransferItem { \n  open val kind: String \n  open val type: String \n  fun
  getAsString(_callback: ((String) -> Unit)?) \n  fun getAsFile(): File? \n} \n\n/** \n * Exposes the JavaScript
  [DragEvent](https://developer.mozilla.org/en/docs/Web/API/TouchEvent) to Kotlin \n * \npublic external
  open class DragEvent(type: String, eventInitDict: DragEventInit = definedExternally) : MouseEvent { \n  open val
  dataTransfer: DataTransfer? \n\n  companion object { \n    val NONE: Short \n    val CAPTURING_PHASE:
    Short \n    val AT_TARGET: Short \n    val BUBBLING_PHASE: Short \n  } \n} \n\npublic external interface
  DragEventInit : MouseEventInit { \n  var dataTransfer: DataTransfer? /* = null */ \n  get() = definedExternally \n
  set(value) = definedExternally \n} \n\n@Suppress("INVISIBLE_REFERENCE",

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\ "INVISIBLE_MEMBER"\n@kotlin.internal.InlineOnly\npublic inline fun DragEventInit(dataTransfer:
DataTransfer? = null, screenX: Int? = 0, screenY: Int? = 0, clientX: Int? = 0, clientY: Int? = 0, button: Short? = 0,
buttons: Short? = 0, relatedTarget: EventTarget? = null, region: String? = null, ctrlKey: Boolean? = false, shiftKey:
Boolean? = false, altKey: Boolean? = false, metaKey: Boolean? = false, modifierAltGraph: Boolean? = false,
modifierCapsLock: Boolean?
= false, modifierFn: Boolean? = false, modifierFnLock: Boolean? = false, modifierHyper: Boolean? = false,
modifierNumLock: Boolean? = false, modifierScrollLock: Boolean? = false, modifierSuper: Boolean? = false,
modifierSymbol: Boolean? = false, modifierSymbolLock: Boolean? = false, view: Window? = null, detail: Int? = 0,
bubbles: Boolean? = false, cancelable: Boolean? = false, composed: Boolean? = false): DragEventInit {\n val o =
js("{}")\n o["dataTransfer"] = dataTransfer\n o["screenX"] = screenX\n o["screenY"] = screenY\n
o["clientX"] = clientX\n o["clientY"] = clientY\n o["button"] = button\n o["buttons"] = buttons\n
o["relatedTarget"] = relatedTarget\n o["region"] = region\n o["ctrlKey"] = ctrlKey\n o["shiftKey"] =
shiftKey\n o["altKey"] = altKey\n o["metaKey"] = metaKey\n o["modifierAltGraph"] =
modifierAltGraph\n o["modifierCapsLock"] = modifierCapsLock\n o["modifierFn"] = modifierFn\n
o["modifierFnLock"] = modifierFnLock\n o["modifierHyper"] = modifierHyper\n o["modifierNumLock"]
= modifierNumLock\n o["modifierScrollLock"] = modifierScrollLock\n o["modifierSuper"] =
modifierSuper\n o["modifierSymbol"] = modifierSymbol\n o["modifierSymbolLock"] =
modifierSymbolLock\n o["view"] = view\n o["detail"] = detail\n o["bubbles"] = bubbles\n
o["cancelable"] = cancelable\n o["composed"] = composed\n return o\n}\n\n/**\n * Exposes the JavaScript
[Window](https://developer.mozilla.org/en/docs/Web/API/Window) to Kotlin\n */\npublic external abstract class
Window : EventTarget, GlobalEventHandlers, WindowEventHandlers, WindowOrWorkerGlobalScope,
WindowSessionStorage, WindowLocalStorage, GlobalPerformance, UnionMessagePortOrWindowProxy {\n open
val window: Window\n open val self: Window\n open val document: Document\n open val name: String\n
open val location: Location\n open val history: History\n open
val customElements: CustomElementRegistry\n open val locationbar: BarProp\n open val menubar: BarProp\n
open val personalbar: BarProp\n open val scrollbars: BarProp\n open val statusbar: BarProp\n open val
toolbar: BarProp\n open val status: String\n open val closed: Boolean\n open val frames: Window\n open val
length: Int\n open val top: Window\n open val opener: Any?\n open val parent: Window\n open val
frameElement: Element?\n open val navigator: Navigator\n open val applicationCache: ApplicationCache\n
open val external: External\n open val screen: Screen\n open val innerWidth: Int\n open val innerHeight: Int\n
open val scrollX: Double\n open val pageXOffset: Double\n open val scrollY: Double\n open val
pageYOffset: Double\n open val screenX: Int\n open val screenY: Int\n open val outerWidth: Int\n open val
outerHeight: Int\n open val devicePixelRatio: Double\n fun close()\n fun stop()\n
fun focus()\n fun blur()\n fun open(url: String = definedExternally, target: String = definedExternally,
features: String = definedExternally): Window?\n fun alert()\n fun alert(message: String)\n fun
confirm(message: String = definedExternally): Boolean\n fun prompt(message: String = definedExternally,
default: String = definedExternally): String?\n fun print()\n fun requestAnimationFrame(callback: (Double) ->
Unit): Int\n fun cancelAnimationFrame(handle: Int)\n fun postMessage(message: Any?, targetOrigin: String,
transfer: Array<dynamic> = definedExternally)\n fun captureEvents()\n fun releaseEvents()\n fun
matchMedia(query: String): MediaQueryList\n fun moveTo(x: Int, y: Int)\n fun moveBy(x: Int, y: Int)\n fun
resizeTo(x: Int, y: Int)\n fun resizeBy(x: Int, y: Int)\n fun scroll(options: ScrollToOptions = definedExternally)\n
fun scroll(x: Double, y: Double)\n fun scrollTo(options: ScrollToOptions = definedExternally)\n
fun scrollTo(x: Double, y: Double)\n fun scrollBy(options: ScrollToOptions = definedExternally)\n fun
scrollBy(x: Double, y: Double)\n fun getComputedStyle(elt: Element, pseudoElt: String? = definedExternally):
CSSStyleDeclaration\n}\n\n@Suppress("INVISIBLE_REFERENCE",
\ "INVISIBLE_MEMBER"\n@kotlin.internal.InlineOnly\npublic inline operator fun Window.get(name: String):
dynamic = asDynamic()[name]\n\npublic external abstract class BarProp {\n open val visible: Boolean\n}\n\n/**\n
* Exposes the JavaScript [History](https://developer.mozilla.org/en/docs/Web/API/History) to Kotlin\n */\npublic

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external abstract class History {
    open val length: Int
    open var scrollRestoration: ScrollRestoration
    open val state: Any?
    fun go(delta: Int = definedExternally)
    fun back()
    fun forward()
    fun pushState(data: Any?, title: String, url: String? = definedExternally)
    fun replaceState(data: Any?, title: String, url: String? = definedExternally)
}

* Exposes the JavaScript [Location](https://developer.mozilla.org/en/docs/Web/API/Location) to Kotlin
public external abstract class Location {
    open var href: String
    open val origin: String
    open var protocol: String
    open var host: String
    open var hostname: String
    open var port: String
    open var pathname: String
    open var search: String
    open var hash: String
    open val ancestorOrigins: Array<out String>
    fun assign(url: String)
    fun replace(url: String)
    fun reload()
}

* Exposes the JavaScript [PopStateEvent](https://developer.mozilla.org/en/docs/Web/API/PopStateEvent) to Kotlin
public external open class PopStateEvent(type: String, eventInitDict: PopStateEventInit = definedExternally) : Event {
    open val state: Any?
    companion object {
        val NONE: Short
        val CAPTURING_PHASE: Short
        val AT_TARGET: Short
        val BUBBLING_PHASE: Short
    }
}

public external interface PopStateEventInit : EventInit {
    var state: Any? /* = null */
    get() = definedExternally
    set(value) = definedExternally
}

@Suppress("INVISIBLE_REFERENCE", "INVISIBLE_MEMBER")
@kotlin.internal.InlineOnly
public inline fun PopStateEventInit(state: Any? = null, bubbles: Boolean? = false, cancelable: Boolean? = false, composed: Boolean? = false): PopStateEventInit {
    val o = js("{}")
    o["state"] = state
    o["bubbles"] = bubbles
    o["cancelable"] = cancelable
    o["composed"] = composed
    return o
}

* Exposes the JavaScript [HashChangeEvent](https://developer.mozilla.org/en/docs/Web/API/HashChangeEvent) to Kotlin
public external open class HashChangeEvent(type: String, eventInitDict: HashChangeEventInit = definedExternally) : Event {
    open val oldURL: String
    open val newURL: String
    companion object {
        val NONE: Short
        val CAPTURING_PHASE: Short
        val AT_TARGET: Short
        val BUBBLING_PHASE: Short
    }
}

public external interface HashChangeEventInit : EventInit {
    var oldURL: String? /* = "" */
    get() = definedExternally
    set(value) = definedExternally
    var newURL: String? /* = "" */
    get() = definedExternally
    set(value) = definedExternally
}

@Suppress("INVISIBLE_REFERENCE", "INVISIBLE_MEMBER")
@kotlin.internal.InlineOnly
public inline fun HashChangeEventInit(oldURL: String? = "", newURL: String? = "", bubbles: Boolean? = false, cancelable: Boolean? = false, composed: Boolean? = false): HashChangeEventInit {
    val o = js("{}")
    o["oldURL"] = oldURL
    o["newURL"] = newURL
    o["bubbles"] = bubbles
    o["cancelable"] = cancelable
    o["composed"] = composed
    return o
}

* Exposes the JavaScript [PageTransitionEvent](https://developer.mozilla.org/en/docs/Web/API/PageTransitionEvent) to Kotlin
public external open class PageTransitionEvent(type: String, eventInitDict: PageTransitionEventInit = definedExternally) : Event {
    open val persisted: Boolean
    companion object {
        val NONE: Short
        val CAPTURING_PHASE: Short
        val AT_TARGET: Short
        val BUBBLING_PHASE: Short
    }
}

public external interface PageTransitionEventInit : EventInit {
    var persisted: Boolean? /* = false */
    get() = definedExternally
    set(value) = definedExternally
}

@Suppress("INVISIBLE_REFERENCE", "INVISIBLE_MEMBER")
@kotlin.internal.InlineOnly
public inline fun PageTransitionEventInit(persisted: Boolean? = false, bubbles: Boolean? = false, cancelable: Boolean? = false, composed: Boolean? = false): PageTransitionEventInit {
    val o = js("{}")
    o["persisted"] = persisted
    o["bubbles"] = bubbles
    o["cancelable"] = cancelable
    o["composed"] = composed
    return o
}

* Exposes the JavaScript [BeforeUnloadEvent](https://developer.mozilla.org/en/docs/Web/API/BeforeUnloadEvent) to Kotlin
public external open class BeforeUnloadEvent : Event {
    var returnValue: String
    companion object {
        val NONE: Short
        val CAPTURING_PHASE: Short
        val AT_TARGET: Short
        val BUBBLING_PHASE: Short
    }
}

public external abstract class ApplicationCache : EventTarget {
    open val status: Short
    open var onchecking: ((Event) -> dynamic)?
    open var onerror:

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((Event) -> dynamic)?\n  open var onnoupdate: ((Event) -> dynamic)?\n  open var ondownloading: ((Event) ->
dynamic)?\n  open var onprogress: ((ProgressEvent) -> dynamic)?\n  open var onupdateready: ((Event) ->
dynamic)?\n  open var oncached: ((Event) -> dynamic)?\n  open var onobsolete: ((Event) -> dynamic)?\n  fun
update()\n  fun abort()\n  fun swapCache()\n\n  companion object {\n    val UNCACHED: Short\n    val
IDLE: Short\n    val CHECKING: Short\n    val DOWNLOADING: Short\n    val UPDATEREADY:
Short\n    val OBSOLETE: Short\n  }\n}\n\n/**\n * Exposes the JavaScript
[NavigatorOnLine](https://developer.mozilla.org/en/docs/Web/API/NavigatorOnLine) to Kotlin\n *\npublic
external interface NavigatorOnLine {\n  val onLine: Boolean\n}\n\n/**\n * Exposes the JavaScript
[ErrorEvent](https://developer.mozilla.org/en/docs/Web/API/ErrorEvent) to Kotlin\n *\npublic external open class
ErrorEvent(type: String, eventInitDict: ErrorEventInit = definedExternally) : Event {\n  open val message: String\n
  open val filename: String\n  open val lineno: Int\n  open val colno: Int\n  open val error: Any?\n\n  companion
object {\n    val NONE: Short\n    val CAPTURING_PHASE: Short\n    val AT_TARGET: Short\n    val
BUBBLING_PHASE: Short\n  }\n}\n\npublic external interface ErrorEventInit : EventInit {\n  var message:
String? /* = \"\" */\n  get() = definedExternally\n  set(value) = definedExternally\n  var filename: String? /*
= \"\"
*\n  get() = definedExternally\n  set(value) = definedExternally\n  var lineno: Int? /* = 0 */\n  get() =
definedExternally\n  set(value) = definedExternally\n  var colno: Int? /* = 0 */\n  get() =
definedExternally\n  set(value) = definedExternally\n  var error: Any? /* = null */\n  get() =
definedExternally\n  set(value) = definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun ErrorEventInit(message: String? = \"\",
filename: String? = \"\", lineno: Int? = 0, colno: Int? = 0, error: Any? = null, bubbles: Boolean? = false, cancelable:
Boolean? = false, composed: Boolean? = false): ErrorEventInit {\n  val o = js(\"({})\")\n  o[\"message\"] =
message\n  o[\"filename\"] = filename\n  o[\"lineno\"] = lineno\n  o[\"colno\"] = colno\n  o[\"error\"] = error\n
o[\"bubbles\"] = bubbles\n  o[\"cancelable\"] = cancelable\n  o[\"composed\"] = composed\n
  return o\n}\n\n/**\n * Exposes the JavaScript
[PromiseRejectionEvent](https://developer.mozilla.org/en/docs/Web/API/PromiseRejectionEvent) to Kotlin\n
*\npublic external open class PromiseRejectionEvent(type: String, eventInitDict: PromiseRejectionEventInit) :
Event {\n  open val promise: Promise<Any?>\n  open val reason: Any?\n\n  companion object {\n    val
NONE: Short\n    val CAPTURING_PHASE: Short\n    val AT_TARGET: Short\n    val
BUBBLING_PHASE: Short\n  }\n}\n\npublic external interface PromiseRejectionEventInit : EventInit {\n  var
promise: Promise<Any?>?\n  var reason: Any?\n  get() = definedExternally\n  set(value) =
definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun PromiseRejectionEventInit(promise:
Promise<Any?>?, reason: Any? = undefined, bubbles: Boolean? = false, cancelable: Boolean? = false, composed:
Boolean? = false): PromiseRejectionEventInit
{\n  val o = js(\"({})\")\n  o[\"promise\"] = promise\n  o[\"reason\"] = reason\n  o[\"bubbles\"] = bubbles\n
o[\"cancelable\"] = cancelable\n  o[\"composed\"] = composed\n  return o\n}\n\n/**\n * Exposes the JavaScript
[GlobalEventHandlers](https://developer.mozilla.org/en/docs/Web/API/GlobalEventHandlers) to Kotlin\n
*\npublic external interface GlobalEventHandlers {\n  var onabort: ((Event) -> dynamic)?\n  get() =
definedExternally\n  set(value) = definedExternally\n  var onblur: ((FocusEvent) -> dynamic)?\n  get() =
definedExternally\n  set(value) = definedExternally\n  var oncancel: ((Event) -> dynamic)?\n  get() =
definedExternally\n  set(value) = definedExternally\n  var oncanplay: ((Event) -> dynamic)?\n  get() =
definedExternally\n  set(value) = definedExternally\n  var oncanplaythrough: ((Event) -> dynamic)?\n  get()
= definedExternally\n  set(value) = definedExternally\n  var onchange:
((Event) -> dynamic)?\n  get() = definedExternally\n  set(value) = definedExternally\n  var onclick:
((MouseEvent) -> dynamic)?\n  get() = definedExternally\n  set(value) = definedExternally\n  var onclose:
((Event) -> dynamic)?\n  get() = definedExternally\n  set(value) = definedExternally\n  var oncontextmenu:
((MouseEvent) -> dynamic)?\n  get() = definedExternally\n  set(value) = definedExternally\n  var

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oncuechange: ((Event) -> dynamic)?\n    get() = definedExternally\n    set(value) = definedExternally\n    var
ondblclick: ((MouseEvent) -> dynamic)?\n    get() = definedExternally\n    set(value) = definedExternally\n
var ondrag: ((DragEvent) -> dynamic)?\n    get() = definedExternally\n    set(value) = definedExternally\n    var
ondragend: ((DragEvent) -> dynamic)?\n    get() = definedExternally\n    set(value) = definedExternally\n    var
ondragenter: ((DragEvent) -> dynamic)?\n    get()
= definedExternally\n    set(value) = definedExternally\n    var ondragexit: ((DragEvent) -> dynamic)?\n
get() = definedExternally\n    set(value) = definedExternally\n    var ondragleave: ((DragEvent) -> dynamic)?\n
get() = definedExternally\n    set(value) = definedExternally\n    var ondragover: ((DragEvent) -> dynamic)?\n
get() = definedExternally\n    set(value) = definedExternally\n    var ondragstart: ((DragEvent) -> dynamic)?\n
get() = definedExternally\n    set(value) = definedExternally\n    var ondrop: ((DragEvent) -> dynamic)?\n
get() = definedExternally\n    set(value) = definedExternally\n    var ondurationchange: ((Event) -> dynamic)?\n
get() = definedExternally\n    set(value) = definedExternally\n    var onemptied: ((Event) -> dynamic)?\n
get() = definedExternally\n    set(value) = definedExternally\n    var onended: ((Event) -> dynamic)?\n    get() =
definedExternally\n    set(value)
= definedExternally\n    var onerror: ((dynamic, String, Int, Int, Any?) -> dynamic)?\n    get() =
definedExternally\n    set(value) = definedExternally\n    var onfocus: ((FocusEvent) -> dynamic)?\n    get() =
definedExternally\n    set(value) = definedExternally\n    var oninput: ((InputEvent) -> dynamic)?\n    get() =
definedExternally\n    set(value) = definedExternally\n    var oninvalid: ((Event) -> dynamic)?\n    get() =
definedExternally\n    set(value) = definedExternally\n    var onkeydown: ((KeyboardEvent) -> dynamic)?\n
get() = definedExternally\n    set(value) = definedExternally\n    var onkeypress: ((KeyboardEvent) ->
dynamic)?\n    get() = definedExternally\n    set(value) = definedExternally\n    var onkeyup: ((KeyboardEvent)
-> dynamic)?\n    get() = definedExternally\n    set(value) = definedExternally\n    var onload: ((Event) ->
dynamic)?\n    get() = definedExternally\n    set(value) = definedExternally\n
var onloadeddata: ((Event) -> dynamic)?\n    get() = definedExternally\n    set(value) = definedExternally\n
var onloadedmetadata: ((Event) -> dynamic)?\n    get() = definedExternally\n    set(value) =
definedExternally\n    var onloadend: ((Event) -> dynamic)?\n    get() = definedExternally\n    set(value) =
definedExternally\n    var onloadstart: ((ProgressEvent) -> dynamic)?\n    get() = definedExternally\n
set(value) = definedExternally\n    var onmousedown: ((MouseEvent) -> dynamic)?\n    get() =
definedExternally\n    set(value) = definedExternally\n    var onmouseenter: ((MouseEvent) -> dynamic)?\n
get() = definedExternally\n    set(value) = definedExternally\n    var onmouseleave: ((MouseEvent) ->
dynamic)?\n    get() = definedExternally\n    set(value) = definedExternally\n    var onmousemove:
((MouseEvent) -> dynamic)?\n    get() = definedExternally\n    set(value) = definedExternally\n
var onmouseout: ((MouseEvent) -> dynamic)?\n    get() = definedExternally\n    set(value) =
definedExternally\n    var onmouseover: ((MouseEvent) -> dynamic)?\n    get() = definedExternally\n
set(value) = definedExternally\n    var onmouseup: ((MouseEvent) -> dynamic)?\n    get() = definedExternally\n
set(value) = definedExternally\n    var onwheel: ((WheelEvent) -> dynamic)?\n    get() = definedExternally\n
set(value) = definedExternally\n    var onpause: ((Event) -> dynamic)?\n    get() = definedExternally\n
set(value) = definedExternally\n    var onplay: ((Event) -> dynamic)?\n    get() = definedExternally\n
set(value) = definedExternally\n    var onplaying: ((Event) -> dynamic)?\n    get() = definedExternally\n
set(value) = definedExternally\n    var onprogress: ((ProgressEvent) -> dynamic)?\n    get() = definedExternally\n
set(value) = definedExternally\n    var onratechange: ((Event) -> dynamic)?\n
get() = definedExternally\n    set(value) = definedExternally\n    var onreset: ((Event) -> dynamic)?\n
get() = definedExternally\n    set(value) = definedExternally\n    var onresize: ((Event) -> dynamic)?\n    get() =
definedExternally\n    set(value) = definedExternally\n    var onscroll: ((Event) -> dynamic)?\n    get() =
definedExternally\n    set(value) = definedExternally\n    var onseeked: ((Event) -> dynamic)?\n    get() =
definedExternally\n    set(value) = definedExternally\n    var onseeking: ((Event) -> dynamic)?\n    get() =
definedExternally\n    set(value) = definedExternally\n    var onselect: ((Event) -> dynamic)?\n    get() =
definedExternally\n    set(value) = definedExternally\n    var onshow: ((Event) -> dynamic)?\n    get() =

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definedExternally\n    set(value) = definedExternally\n    var onstalled: ((Event) -> dynamic)?\n    get() =
definedExternally\n    set(value) = definedExternally\n
    var onsubmit: ((Event) -> dynamic)?\n    get() = definedExternally\n    set(value) = definedExternally\n    var
onsuspend: ((Event) -> dynamic)?\n    get() = definedExternally\n    set(value) = definedExternally\n    var
ontimeupdate: ((Event) -> dynamic)?\n    get() = definedExternally\n    set(value) = definedExternally\n    var
ontoggle: ((Event) -> dynamic)?\n    get() = definedExternally\n    set(value) = definedExternally\n    var
onvolumechange: ((Event) -> dynamic)?\n    get() = definedExternally\n    set(value) = definedExternally\n
var onwaiting: ((Event) -> dynamic)?\n    get() = definedExternally\n    set(value) = definedExternally\n    var
ongotpointercapture: ((PointerEvent) -> dynamic)?\n    get() = definedExternally\n    set(value) =
definedExternally\n    var onlostpointercapture: ((PointerEvent) -> dynamic)?\n    get() = definedExternally\n
set(value) = definedExternally\n    var onpointerdown:
((PointerEvent) -> dynamic)?\n    get() = definedExternally\n    set(value) = definedExternally\n    var
onpointermove: ((PointerEvent) -> dynamic)?\n    get() = definedExternally\n    set(value) =
definedExternally\n    var onpointerup: ((PointerEvent) -> dynamic)?\n    get() = definedExternally\n
set(value) = definedExternally\n    var onpointercancel: ((PointerEvent) -> dynamic)?\n    get() =
definedExternally\n    set(value) = definedExternally\n    var onpointerover: ((PointerEvent) -> dynamic)?\n
get() = definedExternally\n    set(value) = definedExternally\n    var onpointerout: ((PointerEvent) -> dynamic)?\n
get() = definedExternally\n    set(value) = definedExternally\n    var onpointerenter: ((PointerEvent) ->
dynamic)?\n    get() = definedExternally\n    set(value) = definedExternally\n    var onpointerleave:
((PointerEvent) -> dynamic)?\n    get() = definedExternally\n    set(value) = definedExternally\n}\n\n/**\n
* Exposes the JavaScript
[WindowEventHandlers](https://developer.mozilla.org/en/docs/Web/API/WindowEventHandlers) to Kotlin\n
*\n\npublic external interface WindowEventHandlers {\n    var onafterprint: ((Event) -> dynamic)?\n    get() =
definedExternally\n    set(value) = definedExternally\n    var onbeforeprint: ((Event) -> dynamic)?\n    get() =
definedExternally\n    set(value) = definedExternally\n    var onbeforeunload: ((BeforeUnloadEvent) ->
String)?\n    get() = definedExternally\n    set(value) = definedExternally\n    var onhashchange:
((HashChangeEvent) -> dynamic)?\n    get() = definedExternally\n    set(value) = definedExternally\n    var
onlanguagechange: ((Event) -> dynamic)?\n    get() = definedExternally\n    set(value) = definedExternally\n
var onmessage: ((MessageEvent) -> dynamic)?\n    get() = definedExternally\n    set(value) =
definedExternally\n    var onoffline: ((Event) -> dynamic)?\n
get() = definedExternally\n    set(value) = definedExternally\n    var ononline: ((Event) -> dynamic)?\n
get() = definedExternally\n    set(value) = definedExternally\n    var onpagehide: ((PageTransitionEvent) ->
dynamic)?\n    get() = definedExternally\n    set(value) = definedExternally\n    var onpageshow:
((PageTransitionEvent) -> dynamic)?\n    get() = definedExternally\n    set(value) = definedExternally\n    var
onpopstate: ((PopStateEvent) -> dynamic)?\n    get() = definedExternally\n    set(value) = definedExternally\n
var onrejectionhandled: ((Event) -> dynamic)?\n    get() = definedExternally\n    set(value) =
definedExternally\n    var onstorage: ((StorageEvent) -> dynamic)?\n    get() = definedExternally\n    set(value)
= definedExternally\n    var onunhandledrejection: ((PromiseRejectionEvent) -> dynamic)?\n    get() =
definedExternally\n    set(value) = definedExternally\n    var onunload: ((Event) ->
dynamic)?\n    get() = definedExternally\n    set(value) = definedExternally\n}\n\npublic external interface
DocumentAndElementEventHandlers {\n    var oncopy: ((ClipboardEvent) -> dynamic)?\n    get() =
definedExternally\n    set(value) = definedExternally\n    var oncut: ((ClipboardEvent) -> dynamic)?\n    get() =
definedExternally\n    set(value) = definedExternally\n    var onpaste: ((ClipboardEvent) -> dynamic)?\n    get()
= definedExternally\n    set(value) = definedExternally\n}\n\n/**\n
* Exposes the JavaScript
[WindowOrWorkerGlobalScope](https://developer.mozilla.org/en/docs/Web/API/WindowOrWorkerGlobalScope)
to Kotlin\n
*\n\npublic external interface WindowOrWorkerGlobalScope {\n    val origin: String\n    val caches:
CacheStorage\n    fun btoa(data: String): String\n    fun atob(data: String): String\n    fun setTimeout(handler:
dynamic, timeout: Int = definedExternally, vararg arguments: Any?): Int\n    fun clearTimeout(handle: Int =

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definedExternally)\n
    fun setInterval(handler: dynamic, timeout: Int = definedExternally, vararg arguments: Any?): Int\n    fun
clearInterval(handle: Int = definedExternally)\n    fun createImageBitmap(image: ImageBitmapSource, options:
ImageBitmapOptions = definedExternally): Promise<ImageBitmap>\n    fun createImageBitmap(image:
ImageBitmapSource, sx: Int, sy: Int, sw: Int, sh: Int, options: ImageBitmapOptions = definedExternally):
Promise<ImageBitmap>\n    fun fetch(input: dynamic, init: RequestInit = definedExternally):
Promise<Response>\n}\n\n/**\n * Exposes the JavaScript
[Navigator](https://developer.mozilla.org/en/docs/Web/API/Navigator) to Kotlin\n */\n\npublic external abstract class
Navigator : NavigatorID, NavigatorLanguage, NavigatorOnLine, NavigatorContentUtils, NavigatorCookies,
NavigatorPlugins, NavigatorConcurrentHardware {\n    open val clipboard: Clipboard\n    open val mediaDevices:
MediaDevices\n    open val maxTouchPoints: Int\n    open val serviceWorker: ServiceWorkerContainer\n
    fun requestMediaKeySystemAccess(keySystem: String, supportedConfigurations:
Array<MediaKeySystemConfiguration>): Promise<MediaKeySystemAccess>\n    fun getUserMedia(constraints:
MediaStreamConstraints, successCallback: (MediaStream) -> Unit, errorCallback: (dynamic) -> Unit)\n    fun
vibrate(pattern: dynamic): Boolean\n}\n\n/**\n * Exposes the JavaScript
[NavigatorID](https://developer.mozilla.org/en/docs/Web/API/NavigatorID) to Kotlin\n */\n\npublic external interface
NavigatorID {\n    val appCodeName: String\n    val appName: String\n    val appVersion: String\n    val platform:
String\n    val product: String\n    val productSub: String\n    val userAgent: String\n    val vendor: String\n    val
vendorSub: String\n    val oscpu: String\n    fun taintEnabled(): Boolean\n}\n\n/**\n * Exposes the JavaScript
[NavigatorLanguage](https://developer.mozilla.org/en/docs/Web/API/NavigatorLanguage) to Kotlin\n */\n\npublic
external interface NavigatorLanguage {\n    val language: String\n
    val languages: Array<out String>\n}\n\npublic external interface NavigatorContentUtils {\n    fun
registerProtocolHandler(scheme: String, url: String, title: String)\n    fun registerContentHandler(mimeType: String,
url: String, title: String)\n    fun isProtocolHandlerRegistered(scheme: String, url: String): String\n    fun
isContentHandlerRegistered(mimeType: String, url: String): String\n    fun unregisterProtocolHandler(scheme:
String, url: String)\n    fun unregisterContentHandler(mimeType: String, url: String)\n}\n\npublic external interface
NavigatorCookies {\n    val cookieEnabled: Boolean\n}\n\n/**\n * Exposes the JavaScript
[NavigatorPlugins](https://developer.mozilla.org/en/docs/Web/API/NavigatorPlugins) to Kotlin\n */\n\npublic
external interface NavigatorPlugins {\n    val plugins: PluginArray\n    val mimeTypes: MimeTypeArray\n    fun
javaEnabled(): Boolean\n}\n\n/**\n * Exposes the JavaScript
[PluginArray](https://developer.mozilla.org/en/docs/Web/API/PluginArray) to
Kotlin\n */\n\npublic external abstract class PluginArray : ItemArrayLike<Plugin> {\n    fun refresh(reload: Boolean
= definedExternally)\n    override fun item(index: Int): Plugin?\n    fun namedItem(name: String):
Plugin?\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\n\npublic inline operator fun PluginArray.get(index: Int):
Plugin? = asDynamic()[index]\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\n\npublic inline operator fun PluginArray.get(name:
String): Plugin? = asDynamic()[name]\n\n/**\n * Exposes the JavaScript
[MimeTypeArray](https://developer.mozilla.org/en/docs/Web/API/MimeTypeArray) to Kotlin\n */\n\npublic external
abstract class MimeTypeArray : ItemArrayLike<MimeType> {\n    override fun item(index: Int): MimeType?\n    fun
namedItem(name: String): MimeType?\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\n\npublic inline operator fun MimeTypeArray.get(index:
Int): MimeType? = asDynamic()[index]\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\n\npublic inline operator fun MimeTypeArray.get(name:
String): MimeType? = asDynamic()[name]\n\n/**\n * Exposes the JavaScript
[Plugin](https://developer.mozilla.org/en/docs/Web/API/Plugin) to Kotlin\n */\n\npublic external abstract class Plugin
: ItemArrayLike<MimeType> {\n    open val name: String\n    open val description: String\n    open val filename:
String\n    override fun item(index: Int): MimeType?\n    fun namedItem(name: String):

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composed\n    return o\n}\n\n/**\n * Exposes the JavaScript
[EventSource](https://developer.mozilla.org/en/docs/Web/API/EventSource) to Kotlin\n *\npublic external open
class EventSource(url: String, eventSourceInitDict: EventSourceInit = definedExternally) : EventTarget {\n    open
val url: String\n    open val withCredentials: Boolean\n    open val readyState: Short\n    var onopen: ((Event) ->
dynamic)?\n    var onmessage: ((MessageEvent) -> dynamic)?\n    var onerror: ((Event) -> dynamic)?\n    fun
close()\n\n    companion object {\n        val CONNECTING: Short\n        val OPEN: Short\n        val CLOSED:
Short\n    }\n}\n\npublic external interface EventSourceInit {\n    var withCredentials: Boolean? /* = false *\n    get() = definedExternally\n
    set(value) = definedExternally\n}\n\n@Suppress(\\"INVISIBLE_REFERENCE\",
\\"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline fun EventSourceInit(withCredentials:
Boolean? = false): EventSourceInit {\n    val o = js(\\"({})")\n    o[\"withCredentials\"] = withCredentials\n    return
o\n}\n\n/**\n * Exposes the JavaScript [WebSocket](https://developer.mozilla.org/en/docs/Web/API/WebSocket) to
Kotlin\n *\npublic external open class WebSocket(url: String, protocols: dynamic = definedExternally) :
EventTarget {\n    open val url: String\n    open val readyState: Short\n    open val bufferedAmount: Number\n    var
onopen: ((Event) -> dynamic)?\n    var onerror: ((Event) -> dynamic)?\n    var onclose: ((Event) -> dynamic)?\n
open val extensions: String\n    open val protocol: String\n    var onmessage: ((MessageEvent) -> dynamic)?\n    var
binaryType: BinaryType\n    fun close(code: Short = definedExternally, reason: String = definedExternally)\n    fun
send(data: String)\n    fun send(data: Blob)\n    fun send(data: ArrayBuffer)\n    fun send(data:
ArrayBufferView)\n\n    companion object {\n        val CONNECTING: Short\n        val OPEN: Short\n        val
CLOSING: Short\n        val CLOSED: Short\n    }\n}\n\n/**\n * Exposes the JavaScript
[CloseEvent](https://developer.mozilla.org/en/docs/Web/API/CloseEvent) to Kotlin\n *\npublic external open class
CloseEvent(type: String, eventInitDict: CloseEventInit = definedExternally) : Event {\n    open val wasClean:
Boolean\n    open val code: Short\n    open val reason: String\n\n    companion object {\n        val NONE: Short\n
        val CAPTURING_PHASE: Short\n        val AT_TARGET: Short\n        val BUBBLING_PHASE: Short\n    }\n}\n\npublic external interface CloseEventInit : EventInit {\n    var wasClean: Boolean? /* = false *\n    get() =
definedExternally\n    set(value) = definedExternally\n    var code: Short? /* = 0 *\n    get() =
definedExternally\n    set(value)
= definedExternally\n    var reason: String? /* = \\\\" *\n    get() = definedExternally\n    set(value) =
definedExternally\n}\n\n@Suppress(\\"INVISIBLE_REFERENCE\",
\\"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline fun CloseEventInit(wasClean: Boolean? =
false, code: Short? = 0, reason: String? = \\\\", bubbles: Boolean? = false, cancelable: Boolean? = false, composed:
Boolean? = false): CloseEventInit {\n    val o = js(\\"({})")\n    o[\"wasClean\"] = wasClean\n    o[\"code\"] = code\n
o[\"reason\"] = reason\n    o[\"bubbles\"] = bubbles\n    o[\"cancelable\"] = cancelable\n    o[\"composed\"] =
composed\n    return o\n}\n\n/**\n * Exposes the JavaScript
[MessageChannel](https://developer.mozilla.org/en/docs/Web/API/MessageChannel) to Kotlin\n *\npublic external
open class MessageChannel {\n    open val port1: MessagePort\n    open val port2: MessagePort\n}\n\n/**\n *
Exposes the JavaScript [MessagePort](https://developer.mozilla.org/en/docs/Web/API/MessagePort)
to Kotlin\n *\npublic external abstract class MessagePort : EventTarget, UnionMessagePortOrWindowProxy,
UnionMessagePortOrServiceWorker, UnionClientOrMessagePortOrServiceWorker {\n    open var onmessage:
((MessageEvent) -> dynamic)?\n    fun postMessage(message: Any?, transfer: Array<dynamic> =
definedExternally)\n    fun start()\n    fun close()\n}\n\n/**\n * Exposes the JavaScript
[BroadcastChannel](https://developer.mozilla.org/en/docs/Web/API/BroadcastChannel) to Kotlin\n *\npublic
external open class BroadcastChannel(name: String) : EventTarget {\n    open val name: String\n    var onmessage:
((MessageEvent) -> dynamic)?\n    fun postMessage(message: Any?)\n    fun close()\n}\n\n/**\n * Exposes the
JavaScript [WorkerGlobalScope](https://developer.mozilla.org/en/docs/Web/API/WorkerGlobalScope) to Kotlin\n
*\npublic external abstract class WorkerGlobalScope : EventTarget, WindowOrWorkerGlobalScope,
GlobalPerformance {\n    open val self: WorkerGlobalScope\n    open

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val location: WorkerLocation\n open val navigator: WorkerNavigator\n open var onerror: ((dynamic, String, Int, Int, Any?) -> dynamic)?\n open var onlanguagechange: ((Event) -> dynamic)?\n open var onoffline: ((Event) -> dynamic)?\n open var ononline: ((Event) -> dynamic)?\n open var onrejectionhandled: ((Event) -> dynamic)?\n open var onunhandledrejection: ((PromiseRejectionEvent) -> dynamic)?\n fun importScripts(vararg urls: String)\n}\n\n/**\n * Exposes the JavaScript
[DedicatedWorkerGlobalScope](https://developer.mozilla.org/en/docs/Web/API/DedicatedWorkerGlobalScope) to Kotlin\n */\npublic external abstract class DedicatedWorkerGlobalScope : WorkerGlobalScope {\n open var onmessage: ((MessageEvent) -> dynamic)?\n fun postMessage(message: Any?, transfer: Array<dynamic> = definedExternally)\n fun close()\n}\n\n/**\n * Exposes the JavaScript
[SharedWorkerGlobalScope](https://developer.mozilla.org/en/docs/Web/API/SharedWorkerGlobalScope) to Kotlin\n */\npublic external abstract class SharedWorkerGlobalScope : WorkerGlobalScope {\n open val name: String\n open val applicationCache: ApplicationCache\n open var onconnect: ((Event) -> dynamic)?\n fun close()\n}\n\n/**\n * Exposes the JavaScript
[AbstractWorker](https://developer.mozilla.org/en/docs/Web/API/AbstractWorker) to Kotlin\n */\npublic external interface AbstractWorker {\n var onerror: ((Event) -> dynamic)?\n get() = definedExternally\n set(value) = definedExternally\n}\n\n/**\n * Exposes the JavaScript
[Worker](https://developer.mozilla.org/en/docs/Web/API/Worker) to Kotlin\n */\npublic external open class Worker(scriptURL: String, options: WorkerOptions = definedExternally) : EventTarget, AbstractWorker {\n var onmessage: ((MessageEvent) -> dynamic)?\n override var onerror: ((Event) -> dynamic)?\n fun terminate()\n fun postMessage(message: Any?, transfer: Array<dynamic> = definedExternally)\n}\n\npublic external interface WorkerOptions {\n var type: WorkerType? /* = WorkerType.CLASSIC */\n get() = definedExternally\n set(value) = definedExternally\n var credentials: RequestCredentials? /* = RequestCredentials.OMIT */\n get() = definedExternally\n set(value) = definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\", \"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun WorkerOptions(type: WorkerType? = WorkerType.CLASSIC, credentials: RequestCredentials? = RequestCredentials.OMIT): WorkerOptions {\n val o = js(\"({})\")\n o[\"type\"] = type\n o[\"credentials\"] = credentials\n return o\n}\n\n/**\n * Exposes the JavaScript
[SharedWorker](https://developer.mozilla.org/en/docs/Web/API/SharedWorker) to Kotlin\n */\npublic external open class SharedWorker(scriptURL: String, name: String = definedExternally, options: WorkerOptions = definedExternally) : EventTarget, AbstractWorker {\n open val port: MessagePort\n override var onerror: ((Event) -> dynamic)?\n}\n\n/**\n * Exposes the JavaScript
[NavigatorConcurrentHardware](https://developer.mozilla.org/en/docs/Web/API/NavigatorConcurrentHardware) to Kotlin\n */\npublic external interface NavigatorConcurrentHardware {\n val hardwareConcurrency: Number\n}\n\n/**\n * Exposes the JavaScript
[WorkerNavigator](https://developer.mozilla.org/en/docs/Web/API/WorkerNavigator) to Kotlin\n */\npublic external abstract class WorkerNavigator : NavigatorID, NavigatorLanguage, NavigatorOnLine, NavigatorConcurrentHardware {\n open val serviceWorker: ServiceWorkerContainer\n}\n\n/**\n * Exposes the JavaScript
[WorkerLocation](https://developer.mozilla.org/en/docs/Web/API/WorkerLocation) to Kotlin\n */\npublic external abstract class WorkerLocation {\n open val href: String\n open val origin: String\n open val protocol: String\n open val host: String\n open val hostname: String\n open val port: String\n open val pathname: String\n open val search: String\n open val hash: String\n}\n\n/**\n * Exposes the JavaScript
[Storage](https://developer.mozilla.org/en/docs/Web/API/Storage) to Kotlin\n */\npublic external abstract class Storage {\n open val length: Int\n fun key(index: Int): String?\n fun removeItem(key: String)\n fun clear()\n fun getItem(key: String): String?\n fun setItem(key: String, value: String)\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\", \"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline operator fun Storage.get(key: String): String? = asDynamic()[key]\n\n@Suppress(\"INVISIBLE_REFERENCE\",

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\INVISIBLE_MEMBER\)\n@kotlin.internal.InlineOnly\npublic inline operator fun Storage.set(key: String, value:
String) { asDynamic()[key] = value }\n\n/**\n * Exposes the JavaScript
[WindowSessionStorage](https://developer.mozilla.org/en/docs/Web/API/WindowSessionStorage) to Kotlin\n
*\npublic external interface WindowSessionStorage {\n    val sessionStorage: Storage\n}\n\n/**\n * Exposes the
JavaScript [WindowLocalStorage](https://developer.mozilla.org/en/docs/Web/API/WindowLocalStorage)
to Kotlin\n
*\npublic external interface WindowLocalStorage {\n    val localStorage: Storage\n}\n\n/**\n *
Exposes the JavaScript [StorageEvent](https://developer.mozilla.org/en/docs/Web/API/StorageEvent) to Kotlin\n
*\npublic external open class StorageEvent(type: String, eventInitDict: StorageEventInit = definedExternally) :
Event {\n    open val key: String?\n    open val oldValue: String?\n    open val newValue: String?\n    open val url:
String\n    open val storageArea: Storage?\n\n    companion object {\n        val NONE: Short\n        val
CAPTURING_PHASE: Short\n        val AT_TARGET: Short\n        val BUBBLING_PHASE: Short\n
    }\n\n\npublic external interface StorageEventInit : EventInit {\n    var key: String? /* = null */\n        get() =
definedExternally\n        set(value) = definedExternally\n    var oldValue: String? /* = null */\n        get() =
definedExternally\n        set(value) = definedExternally\n    var newValue: String? /* = null */\n        get() =
definedExternally\n        set(value) = definedExternally\n    var url: String? /* = "" */\n        get() =
definedExternally\n        set(value) = definedExternally\n    var storageArea:
Storage? /* = null */\n        get() = definedExternally\n        set(value) =
definedExternally\n}\n\n@Suppress(\INVISIBLE_REFERENCE"),
\INVISIBLE_MEMBER\)\n@kotlin.internal.InlineOnly\npublic inline fun StorageEventInit(key: String? = null,
oldValue: String? = null, newValue: String? = null, url: String? = "", storageArea: Storage? = null, bubbles:
Boolean? = false, cancelable: Boolean? = false, composed: Boolean? = false): StorageEventInit {\n    val o =
js("{}")\n    o["key"] = key\n    o["oldValue"] = oldValue\n    o["newValue"] = newValue\n    o["url"] =
url\n    o["storageArea"] = storageArea\n    o["bubbles"] = bubbles\n    o["cancelable"] = cancelable\n
o["composed"] = composed\n    return o\n}\n\npublic
external abstract class HTMLAppletElement : HTMLDivElement {\n    open var align: String\n    open var alt: String\n
open var archive: String\n    open var code: String\n    open var codeBase: String\n    open var height: String\n
open var hspace: Int\n    open var name: String\n    open var _object: String\n    open var vspace: Int\n    open var
width: String\n\n    companion object {\n        val ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE:
Short\n        val TEXT_NODE: Short\n        val CDATA_SECTION_NODE: Short\n        val
ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE: Short\n        val
PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val
DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val
DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
        val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS:
Short\n        val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the JavaScript
[HTMLMarqueeElement](https://developer.mozilla.org/en/docs/Web/API/HTMLMarqueeElement) to Kotlin\n
*\npublic external abstract class HTMLMarqueeElement : HTMLDivElement {\n    open var behavior: String\n    open
var bgColor: String\n    open var direction: String\n    open var height: String\n    open var hspace: Int\n    open
var loop: Int\n    open var scrollAmount: Int\n    open var scrollDelay: Int\n    open var trueSpeed: Boolean\n    open
var vspace: Int\n    open var width: String\n    open var onbounce: ((Event) -> dynamic)?\n    open var onfinish:
((Event) -> dynamic)?\n    open var onstart: ((Event) -> dynamic)?\n    fun start()\n    fun stop()\n\n    companion object {\n
        val ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val
CDATA_SECTION_NODE:
Short\n        val ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE: Short\n        val
PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val
DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val

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DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n
    val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
    val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }n}n\n\npublic external interface External
{\n    fun AddSearchProvider()\n    fun IsSearchProviderInstalled()\n}\n\npublic external interface EventInit {\n
var bubbles: Boolean?
/* = false */\n    get() = definedExternally\n    set(value) = definedExternally\n    var cancelable: Boolean? /* =
false */\n    get() = definedExternally\n    set(value) = definedExternally\n    var composed: Boolean? /* = false
*/\n    get() = definedExternally\n    set(value) =
definedExternally\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\n\npublic inline fun EventInit(bubbles: Boolean? = false,
cancelable: Boolean? = false, composed: Boolean? = false): EventInit {\n    val o = js("{}")\n    o["bubbles"] =
bubbles\n    o["cancelable"] = cancelable\n    o["composed"] = composed\n    return o\n}\n\n/**\n * Exposes the
JavaScript [CustomEvent](https://developer.mozilla.org/en/docs/Web/API/CustomEvent) to Kotlin\n */\n\npublic
external open class CustomEvent(type: String, eventInitDict: CustomEventInit = definedExternally) : Event {\n
open val detail: Any?\n    fun initCustomEvent(type: String, bubbles:
Boolean, cancelable: Boolean, detail: Any?)\n    companion object {\n        val NONE: Short\n        val
CAPTURING_PHASE: Short\n        val AT_TARGET: Short\n        val BUBBLING_PHASE: Short\n
}\n}\n\npublic external interface CustomEventInit : EventInit {\n    var detail: Any? /* = null */\n    get() =
definedExternally\n    set(value) = definedExternally\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\n\npublic inline fun CustomEventInit(detail: Any? = null,
bubbles: Boolean? = false, cancelable: Boolean? = false, composed: Boolean? = false): CustomEventInit {\n    val o
= js("{}")\n    o["detail"] = detail\n    o["bubbles"] = bubbles\n    o["cancelable"] = cancelable\n
o["composed"] = composed\n    return o\n}\n\npublic external interface EventListenerOptions {\n    var capture:
Boolean? /* = false */\n    get() = definedExternally\n    set(value) =
definedExternally\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\n\npublic inline fun EventListenerOptions(capture:
Boolean? = false): EventListenerOptions {\n    val o = js("{}")\n    o["capture"] = capture\n    return
o\n}\n\npublic external interface AddEventListenerOptions : EventListenerOptions {\n    var passive: Boolean? /* =
false */\n    get() = definedExternally\n    set(value) = definedExternally\n    var once: Boolean? /* = false */\n
get() = definedExternally\n    set(value) = definedExternally\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\n\npublic inline fun AddEventListenerOptions(passive:
Boolean? = false, once: Boolean? = false, capture: Boolean? = false): AddEventListenerOptions {\n    val o =
js("{}")\n    o["passive"] = passive\n    o["once"] = once\n    o["capture"] = capture\n    return o\n}\n\npublic
external interface NonElementParentNode {\n    fun getElementById(elementId: String): Element?\n}\n\n/**\n * Exposes the JavaScript
[DocumentOrShadowRoot](https://developer.mozilla.org/en/docs/Web/API/DocumentOrShadowRoot) to Kotlin\n */\n\npublic
external interface DocumentOrShadowRoot {\n    val fullscreenElement: Element?\n    get() =
definedExternally\n}\n\n/**\n * Exposes the JavaScript
[ParentNode](https://developer.mozilla.org/en/docs/Web/API/ParentNode) to Kotlin\n */\n\npublic external interface
ParentNode {\n    val children: HTMLCollection\n    val firstElementChild: Element?\n    get() =
definedExternally\n    val lastElementChild: Element?\n    get() = definedExternally\n    val childElementCount:
Int\n    fun prepend(vararg nodes: dynamic)\n    fun append(vararg nodes: dynamic)\n    fun querySelector(selectors:
String): Element?\n    fun querySelectorAll(selectors: String): NodeList\n}\n\n/**\n * Exposes the JavaScript
[NonDocumentTypeChildNode](https://developer.mozilla.org/en/docs/Web/API/NonDocumentTypeChildNode) to
Kotlin\n */\n\npublic external interface

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NonDocumentTypeChildNode {\n    val previousElementSibling: Element?\n        get() = definedExternally\n    val
nextElementSibling: Element?\n        get() = definedExternally\n}\n\n/**\n * Exposes the JavaScript
[ChildNode](https://developer.mozilla.org/en/docs/Web/API/ChildNode) to Kotlin\n */\n\npublic external interface
ChildNode {\n    fun before(vararg nodes: dynamic)\n    fun after(vararg nodes: dynamic)\n    fun
replaceWith(vararg nodes: dynamic)\n    fun remove()\n}\n\n/**\n * Exposes the JavaScript
[Slotable](https://developer.mozilla.org/en/docs/Web/API/Slotable) to Kotlin\n */\n\npublic external interface Slotable
{\n    val assignedSlot: HTMLSlotElement?\n        get() = definedExternally\n}\n\n/**\n * Exposes the JavaScript
[NodeList](https://developer.mozilla.org/en/docs/Web/API/NodeList) to Kotlin\n */\n\npublic external abstract class
NodeList : ItemArrayLike<Node> {\n    override fun item(index: Int):
Node?\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\n\npublic
inline operator fun NodeList.get(index: Int): Node? = asDynamic()[index]\n\n/**\n * Exposes the JavaScript
[HTMLCollection](https://developer.mozilla.org/en/docs/Web/API/HTMLCollection) to Kotlin\n */\n\npublic
external abstract class HTMLCollection : ItemArrayLike<Element>, UnionElementOrHTMLCollection {\n
override fun item(index: Int): Element?\n    fun namedItem(name: String):
Element?\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\n\npublic inline operator fun HTMLCollection.get(index:
Int): Element? = asDynamic()[index]\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\n\npublic inline operator fun HTMLCollection.get(name:
String): Element? = asDynamic()[name]\n\n/**\n * Exposes the JavaScript
[MutationObserver](https://developer.mozilla.org/en/docs/Web/API/MutationObserver) to Kotlin\n */\n\npublic
external open class MutationObserver(callback: (Array<MutationRecord>,
MutationObserver) -> Unit) {\n    fun observe(target: Node, options: MutationObserverInit = definedExternally)\n
fun disconnect()\n    fun takeRecords(): Array<MutationRecord>\n}\n\n/**\n * Exposes the JavaScript
[MutationObserverInit](https://developer.mozilla.org/en/docs/Web/API/MutationObserverInit) to Kotlin\n
*/\n\npublic external interface MutationObserverInit {\n    var childList: Boolean? /* = false */\n        get() =
definedExternally\n    set(value) = definedExternally\n    var attributes: Boolean?\n        get() =
definedExternally\n    set(value) = definedExternally\n    var characterData: Boolean?\n        get() =
definedExternally\n    set(value) = definedExternally\n    var subtree: Boolean? /* = false */\n        get() =
definedExternally\n    set(value) = definedExternally\n    var attributeOldValue: Boolean?\n        get() =
definedExternally\n    set(value) = definedExternally\n    var characterDataOldValue: Boolean?\n        get() =
definedExternally\n    set(value) = definedExternally\n    var attributeFilter: Array<String>?\n        get() =
definedExternally\n    set(value) = definedExternally\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\n\npublic inline fun MutationObserverInit(childList:
Boolean? = false, attributes: Boolean? = undefined, characterData: Boolean? = undefined, subtree: Boolean? = false,
attributeOldValue: Boolean? = undefined, characterDataOldValue: Boolean? = undefined, attributeFilter:
Array<String>? = undefined): MutationObserverInit {\n    val o = js("{}")\n    o["childList"] = childList\n
o["attributes"] = attributes\n    o["characterData"] = characterData\n    o["subtree"] = subtree\n
o["attributeOldValue"] = attributeOldValue\n    o["characterDataOldValue"] = characterDataOldValue\n
o["attributeFilter"] = attributeFilter\n    return o\n}\n\n/**\n * Exposes the JavaScript
[MutationRecord](https://developer.mozilla.org/en/docs/Web/API/MutationRecord)
to Kotlin\n */\n\npublic external abstract class MutationRecord {\n    open val type: String\n    open val target:
Node\n    open val addedNodes: NodeList\n    open val removedNodes: NodeList\n    open val previousSibling:
Node?\n    open val nextSibling: Node?\n    open val attributeName: String?\n    open val attributeNamespace:
String?\n    open val oldValue: String?\n}\n\n/**\n * Exposes the JavaScript
[Node](https://developer.mozilla.org/en/docs/Web/API/Node) to Kotlin\n */\n\npublic external abstract class Node :
EventTarget {\n    open val nodeType: Short\n    open val nodeName: String\n    open val baseURI: String\n    open

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val isConnected: Boolean\n  open val ownerDocument: Document?\n  open val parentNode: Node?\n  open val
parentElement: Element?\n  open val childNodes: NodeList\n  open val firstChild: Node?\n  open val lastChild:
Node?\n  open val previousSibling: Node?\n  open val nextSibling: Node?\n  open var nodeValue: String?\n
  open var textContent: String?\n  fun getRootNode(options: GetRootNodeOptions = definedExternally): Node\n
fun hasChildNodes(): Boolean\n  fun normalize()\n  fun cloneNode(deep: Boolean = definedExternally): Node\n
fun isEqualNode(otherNode: Node?): Boolean\n  fun isSameNode(otherNode: Node?): Boolean\n  fun
compareDocumentPosition(other: Node): Short\n  fun contains(other: Node?): Boolean\n  fun
lookupPrefix(namespace: String?): String?\n  fun lookupNamespaceURI(prefix: String?): String?\n  fun
isDefaultNamespace(namespace: String?): Boolean\n  fun insertBefore(node: Node, child: Node?): Node\n  fun
appendChild(node: Node): Node\n  fun replaceChild(node: Node, child: Node): Node\n  fun removeChild(child:
Node): Node\n\n  companion object {\n    val ELEMENT_NODE: Short\n    val ATTRIBUTE_NODE:
Short\n    val TEXT_NODE: Short\n    val CDATA_SECTION_NODE: Short\n    val
ENTITY_REFERENCE_NODE: Short\n    val ENTITY_NODE: Short\n
    val PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE: Short\n    val
DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n    val
DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n
    val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
    val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n  }\n\n  public external interface
GetRootNodeOptions {\n    var composed: Boolean? /* = false */\n    get() = definedExternally\n    set(value) =
definedExternally\n  }\n\n  @Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n  @kotlin.internal.InlineOnly\n  public inline fun GetRootNodeOptions(composed:
Boolean? = false): GetRootNodeOptions {\n    val o = js(\"({})\")\n    o[\"composed\"] = composed\n    return
o\n  }\n\n  /**\n   * Exposes the JavaScript
[Document](https://developer.mozilla.org/en/docs/Web/API/Document) to Kotlin\n  */\n  public external open class
Document : Node, GlobalEventHandlers, DocumentAndElementEventHandlers, NonElementParentNode,
DocumentOrShadowRoot, ParentNode, GeometryUtils {\n    open val implementation: DOMImplementation\n
open val URL: String\n  open val documentURI: String\n  open val origin: String\n  open val compatMode:
String\n  open val characterSet: String\n  open val charset: String\n  open val inputEncoding: String\n  open val
contentType: String\n  open val doctype: DocumentType?\n  open val documentElement: Element?\n  open val
location: Location?\n  var domain: String\n  open val referrer: String\n  var cookie: String\n  open val
lastModified: String\n  open val readyState: DocumentReadyState\n  var title: String\n  var dir: String\n  var
body: HTMLElement?\n  open val head: HTMLHeadElement?\n  open val images: HTMLCollection\n  open val
embeds:
HTMLCollection\n  open val plugins: HTMLCollection\n  open val links: HTMLCollection\n  open val forms:
HTMLCollection\n  open val scripts: HTMLCollection\n  open val currentScript: HTMLScriptElement?\n
open val defaultView: Window?\n  open val activeElement: Element?\n  var designMode: String\n  var
onreadystatechange: ((Event) -> dynamic)?\n  var fgColor: String\n  var linkColor: String\n  var vlinkColor:
String\n  var alinkColor: String\n  var bgColor: String\n  open val anchors: HTMLCollection\n  open val
applets: HTMLCollection\n  open val all: HTMLAllCollection\n  open val scrollingElement: Element?\n  open
val styleSheets: StyleSheetList\n  open val rootElement: SVGSVGElement?\n  open val fullscreenEnabled:
Boolean\n  open val fullscreen: Boolean\n  var onfullscreenchange: ((Event) -> dynamic)?\n  var
onfullscreenerror: ((Event) -> dynamic)?\n  override var onabort: ((Event) -> dynamic)?\n  override var onblur:
((FocusEvent)
-> dynamic)?\n  override var oncancel: ((Event) -> dynamic)?\n  override var oncanplay: ((Event) -> dynamic)?\n
override var oncanplaythrough: ((Event) -> dynamic)?\n  override var onchange: ((Event) -> dynamic)?\n
override var onclick: ((MouseEvent) -> dynamic)?\n  override var onclose: ((Event) -> dynamic)?\n  override var

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oncontextmenu: ((MouseEvent) -> dynamic)?\n  override var oncuechange: ((Event) -> dynamic)?\n  override var
ondblclick: ((MouseEvent) -> dynamic)?\n  override var ondrag: ((DragEvent) -> dynamic)?\n  override var
ondragend: ((DragEvent) -> dynamic)?\n  override var ondragenter: ((DragEvent) -> dynamic)?\n  override var
ondragexit: ((DragEvent) -> dynamic)?\n  override var ondragleave: ((DragEvent) -> dynamic)?\n  override var
ondragover: ((DragEvent) -> dynamic)?\n  override var ondragstart: ((DragEvent) -> dynamic)?\n  override var
ondrop: ((DragEvent) -> dynamic)?\n  override var ondurationchange: ((Event) -> dynamic)?\n
  override var onemptied: ((Event) -> dynamic)?\n  override var onended: ((Event) -> dynamic)?\n  override var
onerror: ((dynamic, String, Int, Int, Any?) -> dynamic)?\n  override var onfocus: ((FocusEvent) -> dynamic)?\n
  override var oninput: ((InputEvent) -> dynamic)?\n  override var oninvalid: ((Event) -> dynamic)?\n  override var
onkeydown: ((KeyboardEvent) -> dynamic)?\n  override var onkeypress: ((KeyboardEvent) -> dynamic)?\n
  override var onkeyup: ((KeyboardEvent) -> dynamic)?\n  override var onload: ((Event) -> dynamic)?\n  override
var onloadeddata: ((Event) -> dynamic)?\n  override var onloadedmetadata: ((Event) -> dynamic)?\n  override var
onloadend: ((Event) -> dynamic)?\n  override var onloadstart: ((ProgressEvent) -> dynamic)?\n  override var
onmousedown: ((MouseEvent) -> dynamic)?\n  override var onmouseenter: ((MouseEvent) -> dynamic)?\n
  override var onmouseleave: ((MouseEvent) -> dynamic)?\n  override var onmousemove: ((MouseEvent)
-> dynamic)?\n  override var onmouseout: ((MouseEvent) -> dynamic)?\n  override var onmouseover:
((MouseEvent) -> dynamic)?\n  override var onmouseup: ((MouseEvent) -> dynamic)?\n  override var onwheel:
((WheelEvent) -> dynamic)?\n  override var onpause: ((Event) -> dynamic)?\n  override var onplay: ((Event) ->
dynamic)?\n  override var onplaying: ((Event) -> dynamic)?\n  override var onprogress: ((ProgressEvent) ->
dynamic)?\n  override var onratechange: ((Event) -> dynamic)?\n  override var onreset: ((Event) -> dynamic)?\n
  override var onresize: ((Event) -> dynamic)?\n  override var onscroll: ((Event) -> dynamic)?\n  override var
onseeked: ((Event) -> dynamic)?\n  override var onseeking: ((Event) -> dynamic)?\n  override var onselect:
((Event) -> dynamic)?\n  override var onshow: ((Event) -> dynamic)?\n  override var onstalled: ((Event) ->
dynamic)?\n  override var onsubmit: ((Event) -> dynamic)?\n  override var onsuspend: ((Event) -> dynamic)?\n
  override var ontimeupdate: ((Event) -> dynamic)?\n  override var ontoggle: ((Event) -> dynamic)?\n  override
var onvolumechange: ((Event) -> dynamic)?\n  override var onwaiting: ((Event) -> dynamic)?\n  override var
ongotpointercapture: ((PointerEvent) -> dynamic)?\n  override var onlostpointercapture: ((PointerEvent) ->
dynamic)?\n  override var onpointerdown: ((PointerEvent) -> dynamic)?\n  override var onpointermove:
((PointerEvent) -> dynamic)?\n  override var onpointerup: ((PointerEvent) -> dynamic)?\n  override var
onpointercancel: ((PointerEvent) -> dynamic)?\n  override var onpointerover: ((PointerEvent) -> dynamic)?\n
  override var onpointerout: ((PointerEvent) -> dynamic)?\n  override var onpointerenter: ((PointerEvent) ->
dynamic)?\n  override var onpointerleave: ((PointerEvent) -> dynamic)?\n  override var oncopy:
((ClipboardEvent) -> dynamic)?\n  override var oncut: ((ClipboardEvent) -> dynamic)?\n  override var onpaste:
((ClipboardEvent)
-> dynamic)?\n  override val fullscreenElement: Element?\n  override val children: HTMLCollection\n  override
val firstElementChild: Element?\n  override val lastElementChild: Element?\n  override val childElementCount:
Int\n  fun getElementsByTagName(qualifiedName: String): HTMLCollection\n  fun
getElementsByTagNameNS(namespace: String?, localName: String): HTMLCollection\n  fun
getElementsByTagName(className: String): HTMLCollection\n  fun createElement(localName: String,
options: ElementCreationOptions = definedExternally): Element\n  fun createElementNS(namespace: String?,
qualifiedName: String, options: ElementCreationOptions = definedExternally): Element\n  fun
createDocumentFragment(): DocumentFragment\n  fun createTextNode(data: String): Text\n  fun
createCDATASection(data: String): CDATASection\n  fun createComment(data: String): Comment\n  fun
createProcessingInstruction(target: String, data: String): ProcessingInstruction\n  fun importNode(node:
Node, deep: Boolean = definedExternally): Node\n  fun adoptNode(node: Node): Node\n  fun
createAttribute(localName: String): Attr\n  fun createAttributeNS(namespace: String?, qualifiedName: String):
Attr\n  fun createEvent(`interface`: String): Event\n  fun createRange(): Range\n  fun createNodeIterator(root:
Node, whatToShow: Int = definedExternally, filter: NodeFilter? = definedExternally): NodeIterator\n  fun

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createNodeIterator(root: Node, whatToShow: Int = definedExternally, filter: ((Node) -> Short)? =
definedExternally): NodeIterator\n fun createTreeWalker(root: Node, whatToShow: Int = definedExternally, filter:
NodeFilter? = definedExternally): TreeWalker\n fun createTreeWalker(root: Node, whatToShow: Int =
definedExternally, filter: ((Node) -> Short)? = definedExternally): TreeWalker\n fun
getElementsByName(elementName: String): NodeList\n fun open(type: String = definedExternally, replace:
String = definedExternally): Document\n fun
open(url: String, name: String, features: String): Window\n fun close()\n fun write(vararg text: String)\n fun
writeln(vararg text: String)\n fun hasFocus(): Boolean\n fun execCommand(commandId: String, showUI:
Boolean = definedExternally, value: String = definedExternally): Boolean\n fun
queryCommandEnabled(commandId: String): Boolean\n fun queryCommandIndeterm(commandId: String):
Boolean\n fun queryCommandState(commandId: String): Boolean\n fun queryCommandSupported(commandId:
String): Boolean\n fun queryCommandValue(commandId: String): String\n fun clear()\n fun captureEvents()\n
fun releaseEvents()\n fun elementFromPoint(x: Double, y: Double): Element?\n fun elementsFromPoint(x:
Double, y: Double): Array<Element>\n fun caretPositionFromPoint(x: Double, y: Double): CaretPosition?\n fun
createTouch(view: Window, target: EventTarget, identifier: Int, pageX: Int, pageY: Int, screenX: Int, screenY: Int):
Touch\n fun createTouchList(vararg
touches: Touch): TouchList\n fun exitFullscreen(): Promise<Unit>\n override fun getElementById(elementId:
String): Element?\n override fun prepend(vararg nodes: dynamic)\n override fun append(vararg nodes:
dynamic)\n override fun querySelector(selectors: String): Element?\n override fun querySelectorAll(selectors:
String): NodeList\n override fun getBoxQuads(options: BoxQuadOptions /* = definedExternally */):
Array<DOMQuad>\n override fun convertQuadFromNode(quad: dynamic, from: dynamic, options:
ConvertCoordinateOptions /* = definedExternally */): DOMQuad\n override fun convertRectFromNode(rect:
DOMRectReadOnly, from: dynamic, options: ConvertCoordinateOptions /* = definedExternally */): DOMQuad\n
override fun convertPointFromNode(point: DOMPointInit, from: dynamic, options: ConvertCoordinateOptions /* =
definedExternally */): DOMPoint\n companion object {\n val ELEMENT_NODE: Short\n val
ATTRIBUTE_NODE: Short\n val TEXT_NODE:
Short\n val CDATA_SECTION_NODE: Short\n val ENTITY_REFERENCE_NODE: Short\n val
ENTITY_NODE: Short\n val PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE:
Short\n val DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val
DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n
}\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline operator fun Document.get(name: String):
dynamic = asDynamic()[name]\n\n/**\n * Exposes the JavaScript
[XMLDocument](https://developer.mozilla.org/en/docs/Web/API/XMLDocument) to Kotlin\n */\npublic external
open class XMLDocument
: Document {\n companion object {\n val ELEMENT_NODE: Short\n val ATTRIBUTE_NODE: Short\n
val TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n val
ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE: Short\n val
PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val
DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val
DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n val

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DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n } \n\npublic external interface
ElementCreationOptions {\n var `is`: String?\n get() = definedExternally\n set(value) =
definedExternally\n}\n\n@Suppress(\`INVISIBLE_REFERENCE\`,
\`INVISIBLE_MEMBER\`)\n@kotlin.internal.InlineOnly\npublic
inline fun ElementCreationOptions(`is`: String? = undefined): ElementCreationOptions {\n val o = js(\`({})\`)\n
o[\`is\`] = `is`\n return o\n}\n\n**\n * Exposes the JavaScript
[DOMImplementation](https://developer.mozilla.org/en/docs/Web/API/DOMImplementation) to Kotlin\n
*\npublic external abstract class DOMImplementation {\n fun createDocumentType(qualifiedName: String,
publicId: String, systemId: String): DocumentType\n fun createDocument(namespace: String?, qualifiedName:
String, doctype: DocumentType? = definedExternally): XMLDocument\n fun createHTMLDocument(title: String
= definedExternally): Document\n fun hasFeature(): Boolean\n}\n\n**\n * Exposes the JavaScript
[DocumentType](https://developer.mozilla.org/en/docs/Web/API/DocumentType) to Kotlin\n
*\npublic external
abstract class DocumentType : Node, ChildNode {\n open val name: String\n open val publicId: String\n open
val systemId: String\n\n companion object {\n val ELEMENT_NODE: Short\n val ATTRIBUTE_NODE: Short\n val
TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n val ENTITY_REFERENCE_NODE:
Short\n val ENTITY_NODE: Short\n val PROCESSING_INSTRUCTION_NODE: Short\n val
COMMENT_NODE: Short\n val DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n
val DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n } \n}\n\n**\n * Exposes the JavaScript
[DocumentFragment](https://developer.mozilla.org/en/docs/Web/API/DocumentFragment) to Kotlin\n
*\npublic external open class DocumentFragment : Node, NonElementParentNode, ParentNode
{\n override val children: HTMLCollection\n override val firstElementChild: Element?\n override val
lastElementChild: Element?\n override val childElementCount: Int\n override fun getElementById(elementId:
String): Element?\n override fun prepend(vararg nodes: dynamic)\n override fun append(vararg nodes:
dynamic)\n override fun querySelector(selectors: String): Element?\n override fun querySelectorAll(selectors:
String): NodeList\n\n companion object {\n val ELEMENT_NODE: Short\n val ATTRIBUTE_NODE:
Short\n val TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n val
ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE: Short\n val
PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val
DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val
DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING:
Short\n val DOCUMENT_POSITION_FOLLOWING: Short\n val
DOCUMENT_POSITION_CONTAINS: Short\n val DOCUMENT_POSITION_CONTAINED_BY: Short\n
val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n } \n}\n\n**\n * Exposes the
JavaScript [ShadowRoot](https://developer.mozilla.org/en/docs/Web/API/ShadowRoot) to Kotlin\n
*\npublic external open class ShadowRoot : DocumentFragment, DocumentOrShadowRoot {\n open val mode:
ShadowRootMode\n open val host: Element\n override val fullscreenElement: Element?\n\n companion object
{\n val ELEMENT_NODE: Short\n val ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n
val CDATA_SECTION_NODE: Short\n val ENTITY_REFERENCE_NODE: Short\n val
ENTITY_NODE: Short\n val PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE:
Short\n val DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val
DOCUMENT_FRAGMENT_NODE: Short\n

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    val NOTATION_NODE: Short\n    val DOCUMENT_POSITION_DISCONNECTED: Short\n    val
DOCUMENT_POSITION_PRECEDING: Short\n    val DOCUMENT_POSITION_FOLLOWING: Short\n
val DOCUMENT_POSITION_CONTAINS: Short\n    val DOCUMENT_POSITION_CONTAINED_BY:
Short\n    val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n } \n} \n \n /** \n * Exposes
the JavaScript [Element](https://developer.mozilla.org/en/docs/Web/API/Element) to Kotlin \n * \n public external
abstract class Element : Node, ParentNode, NonDocumentTypeChildNode, ChildNode, Slotable, GeometryUtils,
UnionElementOrHTMLCollection, UnionElementOrRadioNodeList, UnionElementOrMouseEvent,
UnionElementOrProcessingInstruction { \n    open val namespaceURI: String? \n    open val prefix: String? \n    open
val localName: String \n    open val tagName: String \n    open var id: String \n    open var className: String \n    open
val classList: DOMTokenList \n    open var slot: String \n    open val attributes: NamedNodeMap \n    open
val shadowRoot: ShadowRoot? \n    open var scrollTop: Double \n    open var scrollLeft: Double \n    open val
scrollWidth: Int \n    open val scrollHeight: Int \n    open val clientTop: Int \n    open val clientLeft: Int \n    open val
clientWidth: Int \n    open val clientHeight: Int \n    open var innerHTML: String \n    open var outerHTML: String \n
fun hasAttributes(): Boolean \n    fun getAttributeNames(): Array<String> \n    fun getAttribute(qualifiedName:
String): String? \n    fun getAttributeNS(namespace: String?, localName: String): String? \n    fun
setAttribute(qualifiedName: String, value: String) \n    fun setAttributeNS(namespace: String?, qualifiedName:
String, value: String) \n    fun removeAttribute(qualifiedName: String) \n    fun removeAttributeNS(namespace:
String?, localName: String) \n    fun hasAttribute(qualifiedName: String): Boolean \n    fun
hasAttributeNS(namespace: String?, localName: String): Boolean \n    fun getAttributeNode(qualifiedName: String):
Attr? \n    fun getAttributeNodeNS(namespace:
String?, localName: String): Attr? \n    fun setAttributeNode(attr: Attr): Attr? \n    fun setAttributeNodeNS(attr: Attr):
Attr? \n    fun removeAttributeNode(attr: Attr): Attr? \n    fun attachShadow(init: ShadowRootInit): ShadowRoot \n
fun closest(selectors: String): Element? \n    fun matches(selectors: String): Boolean \n    fun
webkitMatchesSelector(selectors: String): Boolean \n    fun getElementsByTagName(qualifiedName: String):
HTMLCollection \n    fun getElementsByTagNameNS(namespace: String?, localName: String): HTMLCollection \n
fun getElementsByClassName(classNames: String): HTMLCollection \n    fun insertAdjacentElement(when: String,
element: Element): Element? \n    fun insertAdjacentText(when: String, data: String) \n    fun getClientRects():
Array<DOMRect> \n    fun getBoundingClientRect(): DOMRect \n    fun scrollIntoView() \n    fun
scrollIntoView(arg: dynamic) \n    fun scroll(options: ScrollToOptions = definedExternally) \n    fun scroll(x: Double,
y:
Double) \n    fun scrollTo(options: ScrollToOptions = definedExternally) \n    fun scrollTo(x: Double, y: Double) \n
fun scrollBy(options: ScrollToOptions = definedExternally) \n    fun scrollBy(x: Double, y: Double) \n    fun
insertAdjacentHTML(position: String, text: String) \n    fun setPointerCapture(pointerId: Int) \n    fun
releasePointerCapture(pointerId: Int) \n    fun hasPointerCapture(pointerId: Int): Boolean \n    fun requestFullscreen():
Promise<Unit> \n \n    companion object { \n        val ELEMENT_NODE: Short \n        val ATTRIBUTE_NODE:
Short \n        val TEXT_NODE: Short \n        val CDATA_SECTION_NODE: Short \n        val
ENTITY_REFERENCE_NODE: Short \n        val ENTITY_NODE: Short \n        val
PROCESSING_INSTRUCTION_NODE: Short \n        val COMMENT_NODE: Short \n        val
DOCUMENT_NODE: Short \n        val DOCUMENT_TYPE_NODE: Short \n        val
DOCUMENT_FRAGMENT_NODE: Short \n        val NOTATION_NODE: Short \n        val
DOCUMENT_POSITION_DISCONNECTED: Short \n        val DOCUMENT_POSITION_PRECEDING:
Short \n        val DOCUMENT_POSITION_FOLLOWING: Short \n        val
DOCUMENT_POSITION_CONTAINS: Short \n        val DOCUMENT_POSITION_CONTAINED_BY: Short \n
        val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short \n    } \n} \n \n public external interface
ShadowRootInit { \n    var mode: ShadowRootMode? \n} \n \n @Suppress(\\"INVISIBLE_REFERENCE\",
\\"INVISIBLE_MEMBER") \n @kotlin.internal.InlineOnly \n public inline fun ShadowRootInit(mode:
ShadowRootMode?): ShadowRootInit { \n    val o = js(\\"({})") \n    o[\\"mode\\"] = mode \n    return o \n} \n \n /** \n *
Exposes the JavaScript [NamedNodeMap](https://developer.mozilla.org/en/docs/Web/API/NamedNodeMap) to

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Kotlin\n *\/\npublic external abstract class NamedNodeMap : ItemArrayLike<Attr> {\n fun
getNamedItemNS(namespace: String?, localName: String): Attr?\n fun setNamedItem(attr: Attr): Attr?\n fun
setNamedItemNS(attr: Attr): Attr?\n fun removeNamedItem(qualifiedName: String): Attr\n fun
removeNamedItemNS(namespace: String?,
localName: String): Attr\n override fun item(index: Int): Attr?\n fun getNamedItem(qualifiedName: String):
Attr?\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline operator fun NamedNodeMap.get(index:
Int): Attr? = asDynamic()[index]\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline operator fun
NamedNodeMap.get(qualifiedName: String): Attr? = asDynamic()[qualifiedName]\n\n/**\n * Exposes the
JavaScript [Attr](https://developer.mozilla.org/en/docs/Web/API/Attr) to Kotlin\n *\/\npublic external abstract class
Attr : Node {\n open val namespaceURI: String?\n open val prefix: String?\n open val localName: String\n
open val name: String\n open var value: String\n open val ownerElement: Element?\n open val specified:
Boolean\n\n companion object {\n val ELEMENT_NODE: Short\n val ATTRIBUTE_NODE: Short\n
val TEXT_NODE: Short\n
val CDATA_SECTION_NODE: Short\n val ENTITY_REFERENCE_NODE: Short\n val
ENTITY_NODE: Short\n val PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE:
Short\n val DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val
DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\n/**\n * Exposes the JavaScript
[CharacterData](https://developer.mozilla.org/en/docs/Web/API/CharacterData) to Kotlin\n *\/\npublic external
abstract class CharacterData : Node, NonDocumentTypeChildNode, ChildNode {\n open var data: String\n open
val length: Int\n fun substringData(offset: Int, count: Int): String\n fun appendData(data:
String)\n fun insertData(offset: Int, data: String)\n fun deleteData(offset: Int, count: Int)\n fun
replaceData(offset: Int, count: Int, data: String)\n\n companion object {\n val ELEMENT_NODE: Short\n
val ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n
val ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE: Short\n val
PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val
DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val
DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\n/**\n * Exposes the JavaScript
[Text](https://developer.mozilla.org/en/docs/Web/API/Text)
to Kotlin\n *\/\npublic external open class Text(data: String = definedExternally) : CharacterData, Slotable,
GeometryUtils {\n open val wholeText: String\n override val assignedSlot: HTMLSlotElement?\n override val
previousElementSibling: Element?\n override val nextElementSibling: Element?\n fun splitText(offset: Int):
Text\n override fun getBoxQuads(options: BoxQuadOptions /* = definedExternally */): Array<DOMQuad>\n
override fun convertQuadFromNode(quad: dynamic, from: dynamic, options: ConvertCoordinateOptions /* =
definedExternally */): DOMQuad\n override fun convertRectFromNode(rect: DOMRectReadOnly, from:
dynamic, options: ConvertCoordinateOptions /* = definedExternally */): DOMQuad\n override fun
convertPointFromNode(point: DOMPointInit, from: dynamic, options: ConvertCoordinateOptions /* =
definedExternally */): DOMPoint\n override fun before(vararg nodes: dynamic)\n override fun after(vararg
nodes:

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dynamic)\n  override fun replaceWith(vararg nodes: dynamic)\n  override fun remove()\n\n  companion object
{\n  val ELEMENT_NODE: Short\n  val ATTRIBUTE_NODE: Short\n  val TEXT_NODE: Short\n
val CDATA_SECTION_NODE: Short\n  val ENTITY_REFERENCE_NODE: Short\n  val
ENTITY_NODE: Short\n  val PROCESSING_INSTRUCTION_NODE: Short\n  val COMMENT_NODE:
Short\n  val DOCUMENT_NODE: Short\n  val DOCUMENT_TYPE_NODE: Short\n  val
DOCUMENT_FRAGMENT_NODE: Short\n  val NOTATION_NODE: Short\n  val
DOCUMENT_POSITION_DISCONNECTED: Short\n  val DOCUMENT_POSITION_PRECEDING: Short\n
  val DOCUMENT_POSITION_FOLLOWING: Short\n  val DOCUMENT_POSITION_CONTAINS: Short\n
  val DOCUMENT_POSITION_CONTAINED_BY: Short\n  val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n  }\n}\n\n/**\n * Exposes the JavaScript
[CDATASection](https://developer.mozilla.org/en/docs/Web/API/CDATASection) to Kotlin\n
*/\npublic external open class CDATASection : Text {\n  companion object {\n  val ELEMENT_NODE:
Short\n  val ATTRIBUTE_NODE: Short\n  val TEXT_NODE: Short\n  val CDATA_SECTION_NODE:
Short\n  val ENTITY_REFERENCE_NODE: Short\n  val ENTITY_NODE: Short\n  val
PROCESSING_INSTRUCTION_NODE: Short\n  val COMMENT_NODE: Short\n  val
DOCUMENT_NODE: Short\n  val DOCUMENT_TYPE_NODE: Short\n  val
DOCUMENT_FRAGMENT_NODE: Short\n  val NOTATION_NODE: Short\n  val
DOCUMENT_POSITION_DISCONNECTED: Short\n  val DOCUMENT_POSITION_PRECEDING: Short\n
  val DOCUMENT_POSITION_FOLLOWING: Short\n  val DOCUMENT_POSITION_CONTAINS: Short\n
  val DOCUMENT_POSITION_CONTAINED_BY: Short\n  val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n  }\n}\n\n/**\n * Exposes the JavaScript
[ProcessingInstruction](https://developer.mozilla.org/en/docs/Web/API/ProcessingInstruction) to Kotlin\n
*/\npublic external abstract
class ProcessingInstruction : CharacterData, LinkStyle, UnionElementOrProcessingInstruction {\n  open val
target: String\n\n  companion object {\n  val ELEMENT_NODE: Short\n  val ATTRIBUTE_NODE:
Short\n  val TEXT_NODE: Short\n  val CDATA_SECTION_NODE: Short\n  val
ENTITY_REFERENCE_NODE: Short\n  val ENTITY_NODE: Short\n  val
PROCESSING_INSTRUCTION_NODE: Short\n  val COMMENT_NODE: Short\n  val
DOCUMENT_NODE: Short\n  val DOCUMENT_TYPE_NODE: Short\n  val
DOCUMENT_FRAGMENT_NODE: Short\n  val NOTATION_NODE: Short\n  val
DOCUMENT_POSITION_DISCONNECTED: Short\n  val DOCUMENT_POSITION_PRECEDING: Short\n
  val DOCUMENT_POSITION_FOLLOWING: Short\n  val DOCUMENT_POSITION_CONTAINS: Short\n
  val DOCUMENT_POSITION_CONTAINED_BY: Short\n  val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n  }\n}\n\n/**\n * Exposes the JavaScript
[Comment](https://developer.mozilla.org/en/docs/Web/API/Comment)
to Kotlin\n */\npublic external open class Comment(data: String = definedExternally) : CharacterData {\n
  override val previousElementSibling: Element?\n  override val nextElementSibling: Element?\n  override fun
before(vararg nodes: dynamic)\n  override fun after(vararg nodes: dynamic)\n  override fun replaceWith(vararg
nodes: dynamic)\n  override fun remove()\n\n  companion object {\n  val ELEMENT_NODE: Short\n  val
ATTRIBUTE_NODE: Short\n  val TEXT_NODE: Short\n  val CDATA_SECTION_NODE: Short\n  val
ENTITY_REFERENCE_NODE: Short\n  val ENTITY_NODE: Short\n  val
PROCESSING_INSTRUCTION_NODE: Short\n  val COMMENT_NODE: Short\n  val
DOCUMENT_NODE: Short\n  val DOCUMENT_TYPE_NODE: Short\n  val
DOCUMENT_FRAGMENT_NODE: Short\n  val NOTATION_NODE: Short\n  val
DOCUMENT_POSITION_DISCONNECTED: Short\n  val DOCUMENT_POSITION_PRECEDING: Short\n
  val DOCUMENT_POSITION_FOLLOWING: Short\n
  val DOCUMENT_POSITION_CONTAINS: Short\n  val DOCUMENT_POSITION_CONTAINED_BY:
Short\n  val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n  }\n}\n\n/**\n * Exposes

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the JavaScript [\[Range\]](https://developer.mozilla.org/en/docs/Web/API/Range)(<https://developer.mozilla.org/en/docs/Web/API/Range>) to Kotlin\n \*\npublic external open class Range {\n open val startContainer: Node\n open val startOffset: Int\n open val endContainer: Node\n open val endOffset: Int\n open val collapsed: Boolean\n open val commonAncestorContainer: Node\n fun setStart(node: Node, offset: Int)\n fun setEnd(node: Node, offset: Int)\n fun setStartBefore(node: Node)\n fun setStartAfter(node: Node)\n fun setEndBefore(node: Node)\n fun setEndAfter(node: Node)\n fun collapse(toStart: Boolean = definedExternally)\n fun selectNode(node: Node)\n fun selectNodeContents(node: Node)\n fun compareBoundaryPoints(how: Short, sourceRange: Range): Short\n fun deleteContents()\n fun extractContents(): DocumentFragment\n fun cloneContents(): DocumentFragment\n fun insertNode(node: Node)\n fun surroundContents(newParent: Node)\n fun cloneRange(): Range\n fun detach()\n fun isPointInRange(node: Node, offset: Int): Boolean\n fun comparePoint(node: Node, offset: Int): Short\n fun intersectsNode(node: Node): Boolean\n fun getClientRects(): Array<DOMRect>\n fun getBoundingClientRect(): DOMRect\n fun createContextualFragment(fragment: String): DocumentFragment\n companion object {\n val START\_TO\_START: Short\n val START\_TO\_END: Short\n val END\_TO\_END: Short\n val END\_TO\_START: Short\n }\n}\n\n\*\*\n \* Exposes the JavaScript [\[NodeIterator\]](https://developer.mozilla.org/en/docs/Web/API/NodeIterator)(<https://developer.mozilla.org/en/docs/Web/API/NodeIterator>) to Kotlin\n \*\npublic external abstract class NodeIterator {\n open val root: Node\n open val referenceNode: Node\n open val pointerBeforeReferenceNode: Boolean\n open val whatToShow: Int\n open val filter: NodeFilter?\n fun nextNode(): Node?\n fun previousNode(): Node?\n fun detach()\n}\n\n\*\*\n \* Exposes the JavaScript [\[TreeWalker\]](https://developer.mozilla.org/en/docs/Web/API/TreeWalker)(<https://developer.mozilla.org/en/docs/Web/API/TreeWalker>) to Kotlin\n \*\npublic external abstract class TreeWalker {\n open val root: Node\n open val whatToShow: Int\n open val filter: NodeFilter?\n open var currentNode: Node\n fun parentNode(): Node?\n fun firstChild(): Node?\n fun lastChild(): Node?\n fun previousSibling(): Node?\n fun nextSibling(): Node?\n fun previousNode(): Node?\n fun nextNode(): Node?\n}\n\n\*\*\n \* Exposes the JavaScript [\[NodeFilter\]](https://developer.mozilla.org/en/docs/Web/API/NodeFilter)(<https://developer.mozilla.org/en/docs/Web/API/NodeFilter>) to Kotlin\n \*\n@Suppress("NESTED\_CLASS\_IN\_EXTERNAL\_INTERFACE")\npublic external interface NodeFilter {\n fun acceptNode(node: Node): Short\n companion object {\n val FILTER\_ACCEPT: Short\n val FILTER\_REJECT: Short\n val FILTER\_SKIP: Short\n val SHOW\_ALL: Int\n val SHOW\_ELEMENT: Int\n val SHOW\_ATTRIBUTE: Int\n val SHOW\_TEXT: Int\n val SHOW\_CDATA\_SECTION: Int\n val SHOW\_ENTITY\_REFERENCE: Int\n val SHOW\_ENTITY: Int\n val SHOW\_PROCESSING\_INSTRUCTION: Int\n val SHOW\_COMMENT: Int\n val SHOW\_DOCUMENT: Int\n val SHOW\_DOCUMENT\_TYPE: Int\n val SHOW\_DOCUMENT\_FRAGMENT: Int\n val SHOW\_NOTATION: Int\n }\n}\n\n\*\*\n \* Exposes the JavaScript [\[DOMTokenList\]](https://developer.mozilla.org/en/docs/Web/API/DOMTokenList)(<https://developer.mozilla.org/en/docs/Web/API/DOMTokenList>) to Kotlin\n \*\npublic external abstract class DOMTokenList : ItemArrayLike<String> {\n open var value: String\n fun contains(token: String): Boolean\n fun add(vararg tokens: String)\n fun remove(vararg tokens: String)\n fun toggle(token: String, force: Boolean = definedExternally): Boolean\n fun replace(token: String, newToken: String)\n fun supports(token: String): Boolean\n override fun item(index: Int): String?\n}\n\n@Suppress("INVISIBLE\_REFERENCE", "INVISIBLE\_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline operator fun DOMTokenList.get(index: Int): String? = asDynamic()[index]\n\n\*\*\n \* Exposes the JavaScript [\[DOMPointReadOnly\]](https://developer.mozilla.org/en/docs/Web/API/DOMPointReadOnly)(<https://developer.mozilla.org/en/docs/Web/API/DOMPointReadOnly>) to Kotlin\n \*\npublic external open class DOMPointReadOnly(x: Double, y: Double, z: Double, w: Double) {\n open val x: Double\n open val y: Double\n open val z: Double\n open val w: Double\n fun matrixTransform(matrix: DOMMatrixReadOnly): DOMPoint\n}\n\n\*\*\n \* Exposes the JavaScript [\[DOMPoint\]](https://developer.mozilla.org/en/docs/Web/API/DOMPoint)(<https://developer.mozilla.org/en/docs/Web/API/DOMPoint>) to Kotlin\n \*\npublic external open class DOMPoint : DOMPointReadOnly {\n constructor(point: DOMPointInit)\n constructor(x: Double =



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definedExternally, y: Double = definedExternally, z: Double = definedExternally, w: Double = definedExternally)\n
override var x: Double\n override var y: Double\n override var z: Double\n override var w:
Double\n}\n\n/**\n
 * Exposes the JavaScript [DOMPointInit](https://developer.mozilla.org/en/docs/Web/API/DOMPointInit) to
Kotlin\n */\npublic external interface DOMPointInit {\n var x: Double? /* = 0.0 */\n get() =
definedExternally\n set(value) = definedExternally\n var y: Double? /* = 0.0 */\n get() =
definedExternally\n set(value) = definedExternally\n var z: Double? /* = 0.0 */\n get() =
definedExternally\n set(value) = definedExternally\n var w: Double? /* = 1.0 */\n get() =
definedExternally\n set(value) = definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun DOMPointInit(x: Double? = 0.0, y:
Double? = 0.0, z: Double? = 0.0, w: Double? = 1.0): DOMPointInit {\n val o = js(\"({})\")\n o[\"x\"] = x\n
o[\"y\"] = y\n o[\"z\"] = z\n o[\"w\"] = w\n return o\n}\n\n/**\n * Exposes the JavaScript
[DOMRect](https://developer.mozilla.org/en/docs/Web/API/DOMRect)
to Kotlin\n */\npublic external open class DOMRect(x: Double = definedExternally, y: Double = definedExternally,
width: Double = definedExternally, height: Double = definedExternally) : DOMRectReadOnly {\n override var x:
Double\n override var y: Double\n override var width: Double\n override var height: Double\n}\n\n/**\n *
Exposes the JavaScript [DOMRectReadOnly](https://developer.mozilla.org/en/docs/Web/API/DOMRectReadOnly)
to Kotlin\n */\npublic external open class DOMRectReadOnly(x: Double, y: Double, width: Double, height:
Double) {\n open val x: Double\n open val y: Double\n open val width: Double\n open val height: Double\n
open val top: Double\n open val right: Double\n open val bottom: Double\n open val left: Double\n}\n\npublic
external interface DOMRectInit {\n var x: Double? /* = 0.0 */\n get() = definedExternally\n set(value) =
definedExternally\n var y: Double? /* = 0.0 */\n get() = definedExternally\n
set(value) = definedExternally\n var width: Double? /* = 0.0 */\n get() = definedExternally\n
set(value) = definedExternally\n var height: Double? /* = 0.0 */\n get() = definedExternally\n set(value) =
definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun DOMRectInit(x: Double? = 0.0, y:
Double? = 0.0, width: Double? = 0.0, height: Double? = 0.0): DOMRectInit {\n val o = js(\"({})\")\n o[\"x\"] =
x\n o[\"y\"] = y\n o[\"width\"] = width\n o[\"height\"] = height\n return o\n}\n\npublic external interface
DOMRectList : ItemArrayLike<DOMRect> {\n override fun item(index: Int):
DOMRect?\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline operator fun DOMRectList.get(index: Int):
DOMRect? = asDynamic()[index]\n\n/**\n * Exposes the JavaScript
[DOMQuad](https://developer.mozilla.org/en/docs/Web/API/DOMQuad)
to Kotlin\n */\npublic external open class DOMQuad {\n constructor(p1: DOMPointInit = definedExternally, p2:
DOMPointInit = definedExternally, p3: DOMPointInit = definedExternally, p4: DOMPointInit =
definedExternally)\n constructor(rect: DOMRectInit)\n open val p1: DOMPoint\n open val p2: DOMPoint\n
open val p3: DOMPoint\n open val p4: DOMPoint\n open val bounds: DOMRectReadOnly\n}\n\n/**\n *
Exposes the JavaScript
[DOMMatrixReadOnly](https://developer.mozilla.org/en/docs/Web/API/DOMMatrixReadOnly) to Kotlin\n
*/\npublic external open class DOMMatrixReadOnly(numberSequence: Array<Double>) {\n open val a: Double\n
open val b: Double\n open val c: Double\n open val d: Double\n open val e: Double\n open val f: Double\n
open val m11: Double\n open val m12: Double\n open val m13: Double\n open val m14: Double\n open val
m21: Double\n open val m22: Double\n open val m23: Double\n open val m24: Double\n open val m31:
Double\n open val m32: Double\n open val m33: Double\n open val m34: Double\n open val m41: Double\n
open val m42: Double\n open val m43: Double\n open val m44: Double\n open val is2D: Boolean\n open
val isIdentity: Boolean\n fun translate(tx: Double, ty: Double, tz: Double = definedExternally): DOMMatrix\n
fun scale(scale: Double, originX: Double = definedExternally, originY: Double = definedExternally): DOMMatrix\n
fun scale3d(scale: Double, originX: Double = definedExternally, originY: Double = definedExternally, originZ:

```

```

Double = definedExternally): DOMMatrix\n fun scaleNonUniform(scaleX: Double, scaleY: Double =
definedExternally, scaleZ: Double = definedExternally, originX: Double = definedExternally, originY: Double =
definedExternally, originZ: Double = definedExternally): DOMMatrix\n fun rotate(angle: Double, originX:
Double = definedExternally, originY: Double = definedExternally): DOMMatrix\n fun rotateFromVector(x:
Double, y: Double):
DOMMatrix\n fun rotateAxisAngle(x: Double, y: Double, z: Double, angle: Double): DOMMatrix\n fun
skewX(sx: Double): DOMMatrix\n fun skewY(sy: Double): DOMMatrix\n fun multiply(other: DOMMatrix):
DOMMatrix\n fun flipX(): DOMMatrix\n fun flipY(): DOMMatrix\n fun inverse(): DOMMatrix\n fun
transformPoint(point: DOMPointInit = definedExternally): DOMPoint\n fun toFloat32Array(): Float32Array\n
fun toFloat64Array(): Float64Array\n}\n\n/**\n * Exposes the JavaScript
[DOMMatrix](https://developer.mozilla.org/en/docs/Web/API/DOMMatrix) to Kotlin\n *\npublic external open
class DOMMatrix() : DOMMatrixReadOnly {\n constructor(transformList: String)\n constructor(other:
DOMMatrixReadOnly)\n constructor(array32: Float32Array)\n constructor(array64: Float64Array)\n
constructor(numberSequence: Array<Double>)\n override var a: Double\n override var b: Double\n override
var c: Double\n override var d: Double\n override var e: Double\n
override var f: Double\n override var m11: Double\n override var m12: Double\n override var m13:
Double\n override var m14: Double\n override var m21: Double\n override var m22: Double\n override var
m23: Double\n override var m24: Double\n override var m31: Double\n override var m32: Double\n override
var m33: Double\n override var m34: Double\n override var m41: Double\n override var m42: Double\n
override var m43: Double\n override var m44: Double\n fun multiplySelf(other: DOMMatrix): DOMMatrix\n
fun preMultiplySelf(other: DOMMatrix): DOMMatrix\n fun translateSelf(tx: Double, ty: Double, tz: Double =
definedExternally): DOMMatrix\n fun scaleSelf(scale: Double, originX: Double = definedExternally, originY:
Double = definedExternally): DOMMatrix\n fun scale3dSelf(scale: Double, originX: Double = definedExternally,
originY: Double = definedExternally, originZ: Double = definedExternally): DOMMatrix\n fun
scaleNonUniformSelf(scaleX:
Double, scaleY: Double = definedExternally, scaleZ: Double = definedExternally, originX: Double =
definedExternally, originY: Double = definedExternally, originZ: Double = definedExternally): DOMMatrix\n fun
rotateSelf(angle: Double, originX: Double = definedExternally, originY: Double = definedExternally):
DOMMatrix\n fun rotateFromVectorSelf(x: Double, y: Double): DOMMatrix\n fun rotateAxisAngleSelf(x:
Double, y: Double, z: Double, angle: Double): DOMMatrix\n fun skewXSelf(sx: Double): DOMMatrix\n fun
skewYSelf(sy: Double): DOMMatrix\n fun invertSelf(): DOMMatrix\n fun setMatrixValue(transformList:
String): DOMMatrix\n}\n\npublic external interface ScrollOptions {\n var behavior: ScrollBehavior? /* =
ScrollBehavior.AUTO */\n get() = definedExternally\n set(value) =
definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun ScrollOptions(behavior:
ScrollBehavior?
= ScrollBehavior.AUTO): ScrollOptions {\n val o = js(\"({})\")\n o[\"behavior\"] = behavior\n return
o\n}\n\n/**\n * Exposes the JavaScript
[ScrollToOptions](https://developer.mozilla.org/en/docs/Web/API/ScrollToOptions) to Kotlin\n *\npublic external
interface ScrollToOptions : ScrollOptions {\n var left: Double?\n get() = definedExternally\n set(value) =
definedExternally\n var top: Double?\n get() = definedExternally\n set(value) =
definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun ScrollToOptions(left: Double? =
undefined, top: Double? = undefined, behavior: ScrollBehavior? = ScrollBehavior.AUTO): ScrollToOptions {\n
val o = js(\"({})\")\n o[\"left\"] = left\n o[\"top\"] = top\n o[\"behavior\"] = behavior\n return o\n}\n\n/**\n *
Exposes the JavaScript [MediaQueryList](https://developer.mozilla.org/en/docs/Web/API/MediaQueryList) to
Kotlin\n *\npublic

```

```

external abstract class MediaQueryList : EventTarget {
    open val media: String
    open val matches: Boolean
    open var onchange: ((Event) -> dynamic)?
    fun addListener(listener: EventListener?)
    fun addListener(listener: ((Event) -> Unit)?)
    fun removeListener(listener: EventListener?)
    fun removeListener(listener: ((Event) -> Unit)?)
}

/** Exposes the JavaScript [MediaQueryListEvent](https://developer.mozilla.org/en/docs/Web/API/MediaQueryListEvent) to Kotlin
 *
 * public external open class MediaQueryListEvent(type: String, eventInitDict: MediaQueryListEventInit = definedExternally) : Event {
    open val media: String
    open val matches: Boolean
    companion object {
        val NONE: Short
        val CAPTURING_PHASE: Short
        val AT_TARGET: Short
        val BUBBLING_PHASE: Short
    }
}

public external interface MediaQueryListEventInit : EventInit {
    var media: String? /* = "" */
    get() = definedExternally
    var matches: Boolean? /* = false */
    get() = definedExternally
    set(value) = definedExternally
}

@Suppress("INVISIBLE_REFERENCE", "INVISIBLE_MEMBER")
@kotlin.internal.InlineOnly
public inline fun MediaQueryListEventInit(media: String? = "", matches: Boolean? = false, bubbles: Boolean? = false, cancelable: Boolean? = false, composed: Boolean? = false): MediaQueryListEventInit {
    val o = js("{}")
    o["media"] = media
    o["matches"] = matches
    o["bubbles"] = bubbles
    o["cancelable"] = cancelable
    o["composed"] = composed
    return o
}

/** Exposes the JavaScript [Screen](https://developer.mozilla.org/en/docs/Web/API/Screen) to Kotlin
 *
 * public external abstract class Screen {
    open val availWidth: Int
    open val availHeight: Int
    open val width: Int
    open val height: Int
    open val colorDepth: Int
    open val pixelDepth: Int
}

/** Exposes the JavaScript [CaretPosition](https://developer.mozilla.org/en/docs/Web/API/CaretPosition) to Kotlin
 *
 * public external abstract class CaretPosition {
    open val offsetNode: Node
    open val offset: Int
    fun getClientRect(): DOMRect?
}

public external interface ScrollIntoViewOptions : ScrollOptions {
    var block: ScrollLogicalPosition? /* = ScrollLogicalPosition.CENTER */
    get() = definedExternally
    set(value) = definedExternally
    var inline: ScrollLogicalPosition? /* = ScrollLogicalPosition.CENTER */
    get() = definedExternally
    set(value) = definedExternally
}

@Suppress("INVISIBLE_REFERENCE", "INVISIBLE_MEMBER")
@kotlin.internal.InlineOnly
public inline fun ScrollIntoViewOptions(block: ScrollLogicalPosition? = ScrollLogicalPosition.CENTER, inline: ScrollLogicalPosition? = ScrollLogicalPosition.CENTER, behavior: ScrollBehavior? = ScrollBehavior.AUTO): ScrollIntoViewOptions {
    val o = js("{}")
    o["block"] = block
    o["inline"] = inline
    o["behavior"] = behavior
    return o
}

public external interface BoxQuadOptions {
    var box: CSSBoxType? /* = CSSBoxType.BORDER */
    get() = definedExternally
    set(value) = definedExternally
    var relativeTo: dynamic
    get() = definedExternally
    set(value) = definedExternally
}

@Suppress("INVISIBLE_REFERENCE", "INVISIBLE_MEMBER")
@kotlin.internal.InlineOnly
public inline fun BoxQuadOptions(box: CSSBoxType? = CSSBoxType.BORDER, relativeTo: dynamic = undefined): BoxQuadOptions {
    val o = js("{}")
    o["box"] = box
    o["relativeTo"] = relativeTo
    return o
}

public external interface ConvertCoordinateOptions {
    var fromBox: CSSBoxType? /* = CSSBoxType.BORDER */
    get() = definedExternally
    set(value) = definedExternally
    var toBox: CSSBoxType? /* = CSSBoxType.BORDER */
    get() = definedExternally
    set(value) = definedExternally
}

@Suppress("INVISIBLE_REFERENCE", "INVISIBLE_MEMBER")
@kotlin.internal.InlineOnly
public inline fun ConvertCoordinateOptions(fromBox: CSSBoxType? = CSSBoxType.BORDER, toBox: CSSBoxType? = CSSBoxType.BORDER): ConvertCoordinateOptions {
    val o = js("{}")
    o["fromBox"] = fromBox
    o["toBox"] = toBox
    return o
}

/** Exposes the JavaScript [GeometryUtils](https://developer.mozilla.org/en/docs/Web/API/GeometryUtils) to Kotlin
 *
 * public external interface GeometryUtils {
    fun getBoxQuads(options: BoxQuadOptions = definedExternally): Array<DOMQuad>
    fun convertQuadFromNode(quad: dynamic, from: dynamic, options:

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ConvertCoordinateOptions = definedExternally): DOMQuad\n fun convertRectFromNode(rect:
DOMRectReadOnly, from: dynamic, options: ConvertCoordinateOptions = definedExternally): DOMQuad\n fun
convertPointFromNode(point: DOMPointInit, from: dynamic, options: ConvertCoordinateOptions =
definedExternally): DOMPoint\n}\n\n/**\n * Exposes the JavaScript
[Touch](https://developer.mozilla.org/en/docs/Web/API/Touch) to Kotlin\n */\npublic external abstract class Touch
{\n open val identifier: Int\n open val target: EventTarget\n open val screenX: Int\n open val screenY: Int\n
open val clientX: Int\n open val clientY: Int\n open val pageX: Int\n open val pageY: Int\n open val region:
String?\n}\n\npublic external abstract class TouchList : ItemArrayLike<Touch> {\n override fun item(index: Int):
Touch?\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline operator fun TouchList.get(index: Int):
Touch? = asDynamic()[index]\n\npublic external open class TouchEvent : UIEvent {\n open val touches:
TouchList\n open val targetTouches: TouchList\n open val changedTouches: TouchList\n open val altKey:
Boolean\n open val metaKey: Boolean\n open val ctrlKey: Boolean\n open val shiftKey: Boolean\n\n
companion object {\n val NONE:
Short\n val CAPTURING_PHASE: Short\n val AT_TARGET: Short\n val BUBBLING_PHASE:
Short\n }\n}\n\n/**\n * Exposes the JavaScript [Image](https://developer.mozilla.org/en/docs/Web/API/Image) to
Kotlin\n */\npublic external open class Image(width: Int = definedExternally, height: Int = definedExternally) :
HTMLImageElement {\n override var onabort: ((Event) -> dynamic)?\n override var onblur: ((FocusEvent) ->
dynamic)?\n override var onCancel: ((Event) -> dynamic)?\n override var oncanplay: ((Event) -> dynamic)?\n
override var oncanplaythrough: ((Event) -> dynamic)?\n override var onChange: ((Event) -> dynamic)?\n
override var onclick: ((MouseEvent) -> dynamic)?\n override var onClose: ((Event) -> dynamic)?\n override var
oncontextmenu: ((MouseEvent) -> dynamic)?\n override var oncuechange: ((Event) -> dynamic)?\n override var
ondblclick: ((MouseEvent) -> dynamic)?\n override var ondrag: ((DragEvent) -> dynamic)?\n override var
ondragend: ((DragEvent) -> dynamic)?\n override var ondragenter: ((DragEvent) -> dynamic)?\n override var
ondragexit: ((DragEvent) -> dynamic)?\n override var ondragleave: ((DragEvent) -> dynamic)?\n override var
ondragover: ((DragEvent) -> dynamic)?\n override var ondragstart: ((DragEvent) -> dynamic)?\n override var
ondrop: ((DragEvent) -> dynamic)?\n override var ondurationchange: ((Event) -> dynamic)?\n override var
onemptied: ((Event) -> dynamic)?\n override var onended: ((Event) -> dynamic)?\n override var onerror:
((dynamic, String, Int, Int, Any?) -> dynamic)?\n override var onfocus: ((FocusEvent) -> dynamic)?\n override
var oninput: ((InputEvent) -> dynamic)?\n override var oninvalid: ((Event) -> dynamic)?\n override var
onkeydown: ((KeyboardEvent) -> dynamic)?\n override var onkeypress: ((KeyboardEvent) -> dynamic)?\n
override var onkeyup: ((KeyboardEvent) -> dynamic)?\n override var onload: ((Event) -> dynamic)?\n override
var onloadeddata: ((Event) -> dynamic)?\n override var onloadedmetadata: ((Event) -> dynamic)?\n override
var onloadend: ((Event) -> dynamic)?\n override var onloadstart: ((ProgressEvent) -> dynamic)?\n override var
onmousedown: ((MouseEvent) -> dynamic)?\n override var onmouseenter: ((MouseEvent) -> dynamic)?\n
override var onmouseleave: ((MouseEvent) -> dynamic)?\n override var onmousemove: ((MouseEvent) ->
dynamic)?\n override var onmouseout: ((MouseEvent) -> dynamic)?\n override var onmouseover:
((MouseEvent) -> dynamic)?\n override var onmouseup: ((MouseEvent) -> dynamic)?\n override var onwheel:
((WheelEvent) -> dynamic)?\n override var onpause: ((Event) -> dynamic)?\n override var onplay: ((Event) ->
dynamic)?\n override var onplaying: ((Event) -> dynamic)?\n override var onprogress: ((ProgressEvent) ->
dynamic)?\n override var onratechange: ((Event) -> dynamic)?\n override var onreset: ((Event) -> dynamic)?\n
override var
onresize: ((Event) -> dynamic)?\n override var onscroll: ((Event) -> dynamic)?\n override var onseeked:
((Event) -> dynamic)?\n override var onseeking: ((Event) -> dynamic)?\n override var onselect: ((Event) ->
dynamic)?\n override var onshow: ((Event) -> dynamic)?\n override var onstalled: ((Event) -> dynamic)?\n
override var onsubmit: ((Event) -> dynamic)?\n override var onsuspend: ((Event) -> dynamic)?\n override var
ontimeupdate: ((Event) -> dynamic)?\n override var ontoggle: ((Event) -> dynamic)?\n override var
onvolumechange: ((Event) -> dynamic)?\n override var onwaiting: ((Event) -> dynamic)?\n override var

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ongotpointercapture: ((PointerEvent) -> dynamic)?\n  override var onlostpointercapture: ((PointerEvent) ->
dynamic)?\n  override var onpointerdown: ((PointerEvent) -> dynamic)?\n  override var onpointermove:
((PointerEvent) -> dynamic)?\n  override var onpointerup: ((PointerEvent) -> dynamic)?\n  override var
onpointercancel:
((PointerEvent) -> dynamic)?\n  override var onpointerover: ((PointerEvent) -> dynamic)?\n  override var
onpointerout: ((PointerEvent) -> dynamic)?\n  override var onpointerenter: ((PointerEvent) -> dynamic)?\n
override var onpointerleave: ((PointerEvent) -> dynamic)?\n  override var oncopy: ((ClipboardEvent) ->
dynamic)?\n  override var oncut: ((ClipboardEvent) -> dynamic)?\n  override var onpaste: ((ClipboardEvent) ->
dynamic)?\n  override var contentEditable: String\n  override val isContentEditable: Boolean\n  override val
style: CSSStyleDeclaration\n  override val children: HTMLCollection\n  override val firstElementChild:
Element?\n  override val lastElementChild: Element?\n  override val childElementCount: Int\n  override val
previousElementSibling: Element?\n  override val nextElementSibling: Element?\n  override val assignedSlot:
HTMLSlotElement?\n  override fun prepend(vararg nodes: dynamic)\n  override fun append(vararg nodes:
dynamic)\n
  override fun querySelector(selectors: String): Element?\n  override fun querySelectorAll(selectors: String):
NodeList\n  override fun before(vararg nodes: dynamic)\n  override fun after(vararg nodes: dynamic)\n  override
fun replaceWith(vararg nodes: dynamic)\n  override fun remove()\n  override fun getBoxQuads(options:
BoxQuadOptions /* = definedExternally */): Array<DOMQuad>\n  override fun convertQuadFromNode(quad:
dynamic, from: dynamic, options: ConvertCoordinateOptions /* = definedExternally */): DOMQuad\n  override
fun convertRectFromNode(rect: DOMRectReadOnly, from: dynamic, options: ConvertCoordinateOptions /* =
definedExternally */): DOMQuad\n  override fun convertPointFromNode(point: DOMPointInit, from: dynamic,
options: ConvertCoordinateOptions /* = definedExternally */): DOMPoint\n\n  companion object {\n    val
ELEMENT_NODE: Short\n    val ATTRIBUTE_NODE: Short\n    val TEXT_NODE: Short\n    val
CDATA_SECTION_NODE: Short\n
    val ENTITY_REFERENCE_NODE: Short\n    val ENTITY_NODE: Short\n    val
PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE: Short\n    val
DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n    val
DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n
    val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
    val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n  }\n\n  public external open class
Audio(src: String = definedExternally) : HTMLAudioElement {\n    override var onabort: ((Event) -> dynamic)?\n
override var onblur: ((FocusEvent) -> dynamic)?\n  override var oncancel: ((Event) -> dynamic)?\n  override var
oncanplay: ((Event) -> dynamic)?\n  override var oncanplaythrough: ((Event) -> dynamic)?\n  override var
onchange: ((Event)
-> dynamic)?\n  override var onclick: ((MouseEvent) -> dynamic)?\n  override var onclose: ((Event) ->
dynamic)?\n  override var oncontextmenu: ((MouseEvent) -> dynamic)?\n  override var oncuechange: ((Event) ->
dynamic)?\n  override var ondblclick: ((MouseEvent) -> dynamic)?\n  override var ondrag: ((DragEvent) ->
dynamic)?\n  override var ondragend: ((DragEvent) -> dynamic)?\n  override var ondragenter: ((DragEvent) ->
dynamic)?\n  override var ondragexit: ((DragEvent) -> dynamic)?\n  override var ondragleave: ((DragEvent) ->
dynamic)?\n  override var ondragover: ((DragEvent) -> dynamic)?\n  override var ondragstart: ((DragEvent) ->
dynamic)?\n  override var ondrop: ((DragEvent) -> dynamic)?\n  override var ondurationchange: ((Event) ->
dynamic)?\n  override var onemptied: ((Event) -> dynamic)?\n  override var onended: ((Event) -> dynamic)?\n
override var onerror: ((dynamic, String, Int, Int, Any?) -> dynamic)?\n  override var onfocus: ((FocusEvent)
-> dynamic)?\n  override var oninput: ((InputEvent) -> dynamic)?\n  override var oninvalid: ((Event) ->
dynamic)?\n  override var onkeydown: ((KeyboardEvent) -> dynamic)?\n  override var onkeypress:
((KeyboardEvent) -> dynamic)?\n  override var onkeyup: ((KeyboardEvent) -> dynamic)?\n  override var onload:

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((Event) -> dynamic)?\n  override var onloadeddata: ((Event) -> dynamic)?\n  override var onloadedmetadata:
((Event) -> dynamic)?\n  override var onloadend: ((Event) -> dynamic)?\n  override var onloadstart:
((ProgressEvent) -> dynamic)?\n  override var onmousedown: ((MouseEvent) -> dynamic)?\n  override var
onmouseenter: ((MouseEvent) -> dynamic)?\n  override var onmouseleave: ((MouseEvent) -> dynamic)?\n
override var onmousemove: ((MouseEvent) -> dynamic)?\n  override var onmouseout: ((MouseEvent) ->
dynamic)?\n  override var onmouseover: ((MouseEvent) -> dynamic)?\n  override var onmouseup: ((MouseEvent)
-> dynamic)?\n  override var onwheel:
((WheelEvent) -> dynamic)?\n  override var onpause: ((Event) -> dynamic)?\n  override var onplay: ((Event) ->
dynamic)?\n  override var onplaying: ((Event) -> dynamic)?\n  override var onprogress: ((ProgressEvent) ->
dynamic)?\n  override var onratechange: ((Event) -> dynamic)?\n  override var onreset: ((Event) -> dynamic)?\n
override var onresize: ((Event) -> dynamic)?\n  override var onscroll: ((Event) -> dynamic)?\n  override var
onseeked: ((Event) -> dynamic)?\n  override var onseeking: ((Event) -> dynamic)?\n  override var onselect:
((Event) -> dynamic)?\n  override var onshow: ((Event) -> dynamic)?\n  override var onstalled: ((Event) ->
dynamic)?\n  override var onsubmit: ((Event) -> dynamic)?\n  override var onsuspend: ((Event) -> dynamic)?\n
override var ontimeupdate: ((Event) -> dynamic)?\n  override var ontoggle: ((Event) -> dynamic)?\n  override var
onvolumechange: ((Event) -> dynamic)?\n  override var onwaiting: ((Event) -> dynamic)?\n
  override var ongotpointercapture: ((PointerEvent) -> dynamic)?\n  override var onlostpointercapture:
((PointerEvent) -> dynamic)?\n  override var onpointerdown: ((PointerEvent) -> dynamic)?\n  override var
onpointermove: ((PointerEvent) -> dynamic)?\n  override var onpointerup: ((PointerEvent) -> dynamic)?\n
override var onpointercancel: ((PointerEvent) -> dynamic)?\n  override var onpointerover: ((PointerEvent) ->
dynamic)?\n  override var onpointerout: ((PointerEvent) -> dynamic)?\n  override var onpointerenter:
((PointerEvent) -> dynamic)?\n  override var onpointerleave: ((PointerEvent) -> dynamic)?\n  override var
oncopy: ((ClipboardEvent) -> dynamic)?\n  override var oncut: ((ClipboardEvent) -> dynamic)?\n  override var
onpaste: ((ClipboardEvent) -> dynamic)?\n  override var contentEditable: String\n  override val
isContentEditable: Boolean\n  override val style: CSSStyleDeclaration\n  override val children:
HTMLCollection\n  override val
  firstElementChild: Element?\n  override val lastElementChild: Element?\n  override val childElementCount:
Int\n  override val previousElementSibling: Element?\n  override val nextElementSibling: Element?\n  override
val assignedSlot: HTMLSlotElement?\n  override fun prepend(vararg nodes: dynamic)\n  override fun
append(vararg nodes: dynamic)\n  override fun querySelector(selectors: String): Element?\n  override fun
querySelectorAll(selectors: String): NodeList\n  override fun before(vararg nodes: dynamic)\n  override fun
after(vararg nodes: dynamic)\n  override fun replaceWith(vararg nodes: dynamic)\n  override fun remove()\n
override fun getBoxQuads(options: BoxQuadOptions /* = definedExternally */): Array<DOMQuad>\n  override
fun convertQuadFromNode(quad: dynamic, from: dynamic, options: ConvertCoordinateOptions /* =
definedExternally */): DOMQuad\n  override fun convertRectFromNode(rect: DOMRectReadOnly, from:
dynamic, options: ConvertCoordinateOptions
/* = definedExternally */): DOMQuad\n  override fun convertPointFromNode(point: DOMPointInit, from:
dynamic, options: ConvertCoordinateOptions /* = definedExternally */): DOMPoint\n\n  companion object {\n
val NETWORK_EMPTY: Short\n  val NETWORK_IDLE: Short\n  val NETWORK_LOADING: Short\n
val NETWORK_NO_SOURCE: Short\n  val HAVE_NOTHING: Short\n  val HAVE_METADATA:
Short\n  val HAVE_CURRENT_DATA: Short\n  val HAVE_FUTURE_DATA: Short\n  val
HAVE_ENOUGH_DATA: Short\n  val ELEMENT_NODE: Short\n  val ATTRIBUTE_NODE: Short\n
val TEXT_NODE: Short\n  val CDATA_SECTION_NODE: Short\n  val ENTITY_REFERENCE_NODE:
Short\n  val ENTITY_NODE: Short\n  val PROCESSING_INSTRUCTION_NODE: Short\n  val
COMMENT_NODE: Short\n  val DOCUMENT_NODE: Short\n  val DOCUMENT_TYPE_NODE: Short\n
val DOCUMENT_FRAGMENT_NODE: Short\n  val NOTATION_NODE: Short\n  val
DOCUMENT_POSITION_DISCONNECTED:

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Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n    val
DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    } \n } \n \n /** \n * Exposes the JavaScript
[Option](https://developer.mozilla.org/en/docs/Web/API/Option) to Kotlin \n * \n public external open class
Option(text: String = definedExternally, value: String = definedExternally, defaultSelected: Boolean =
definedExternally, selected: Boolean = definedExternally) : HTMLInputElement { \n    override var onabort:
((Event) -> dynamic)? \n    override var onblur: ((FocusEvent) -> dynamic)? \n    override var oncancel: ((Event) ->
dynamic)? \n    override var oncanplay: ((Event) -> dynamic)? \n    override var oncanplaythrough: ((Event) ->
dynamic)? \n    override var onchange: ((Event) -> dynamic)? \n    override var onclick: ((MouseEvent) ->
dynamic)? \n    override var onclose:
((Event) -> dynamic)? \n    override var oncontextmenu: ((MouseEvent) -> dynamic)? \n    override var
oncuechange: ((Event) -> dynamic)? \n    override var ondblclick: ((MouseEvent) -> dynamic)? \n    override var
ondrag: ((DragEvent) -> dynamic)? \n    override var ondragend: ((DragEvent) -> dynamic)? \n    override var
ondragenter: ((DragEvent) -> dynamic)? \n    override var ondragexit: ((DragEvent) -> dynamic)? \n    override var
ondragleave: ((DragEvent) -> dynamic)? \n    override var ondragover: ((DragEvent) -> dynamic)? \n    override var
ondragstart: ((DragEvent) -> dynamic)? \n    override var ondrop: ((DragEvent) -> dynamic)? \n    override var
ondurationchange: ((Event) -> dynamic)? \n    override var onemptied: ((Event) -> dynamic)? \n    override var
onended: ((Event) -> dynamic)? \n    override var onerror: ((dynamic, String, Int, Int, Any?) -> dynamic)? \n
override var onfocus: ((FocusEvent) -> dynamic)? \n    override var oninput: ((InputEvent) -> dynamic)? \n
override var oninvalid:
((Event) -> dynamic)? \n    override var onkeydown: ((KeyboardEvent) -> dynamic)? \n    override var onkeypress:
((KeyboardEvent) -> dynamic)? \n    override var onkeyup: ((KeyboardEvent) -> dynamic)? \n    override var onload:
((Event) -> dynamic)? \n    override var onloadeddata: ((Event) -> dynamic)? \n    override var onloadedmetadata:
((Event) -> dynamic)? \n    override var onloadend: ((Event) -> dynamic)? \n    override var onloadstart:
((ProgressEvent) -> dynamic)? \n    override var onmousedown: ((MouseEvent) -> dynamic)? \n    override var
onmouseenter: ((MouseEvent) -> dynamic)? \n    override var onmouseleave: ((MouseEvent) -> dynamic)? \n
override var onmousemove: ((MouseEvent) -> dynamic)? \n    override var onmouseout: ((MouseEvent) ->
dynamic)? \n    override var onmouseover: ((MouseEvent) -> dynamic)? \n    override var onmouseup: ((MouseEvent)
-> dynamic)? \n    override var onwheel: ((WheelEvent) -> dynamic)? \n    override var onpause: ((Event) ->
dynamic)? \n    override
var onplay: ((Event) -> dynamic)? \n    override var onplaying: ((Event) -> dynamic)? \n    override var onprogress:
((ProgressEvent) -> dynamic)? \n    override var onratechange: ((Event) -> dynamic)? \n    override var onreset:
((Event) -> dynamic)? \n    override var onresize: ((Event) -> dynamic)? \n    override var onscroll: ((Event) ->
dynamic)? \n    override var onseeked: ((Event) -> dynamic)? \n    override var onseeking: ((Event) -> dynamic)? \n
override var onselect: ((Event) -> dynamic)? \n    override var onshow: ((Event) -> dynamic)? \n    override var
onstalled: ((Event) -> dynamic)? \n    override var onsubmit: ((Event) -> dynamic)? \n    override var onsuspend:
((Event) -> dynamic)? \n    override var ontimeupdate: ((Event) -> dynamic)? \n    override var ontoggle: ((Event) ->
dynamic)? \n    override var onvolumechange: ((Event) -> dynamic)? \n    override var onwaiting: ((Event) ->
dynamic)? \n    override var ongotpointercapture: ((PointerEvent) -> dynamic)? \n    override var
onlostpointercapture:
((PointerEvent) -> dynamic)? \n    override var onpointerdown: ((PointerEvent) -> dynamic)? \n    override var
onpointermove: ((PointerEvent) -> dynamic)? \n    override var onpointerup: ((PointerEvent) -> dynamic)? \n
override var onpointercancel: ((PointerEvent) -> dynamic)? \n    override var onpointerover: ((PointerEvent) ->
dynamic)? \n    override var onpointerout: ((PointerEvent) -> dynamic)? \n    override var onpointerenter:
((PointerEvent) -> dynamic)? \n    override var onpointerleave: ((PointerEvent) -> dynamic)? \n    override var
oncopy: ((ClipboardEvent) -> dynamic)? \n    override var oncut: ((ClipboardEvent) -> dynamic)? \n    override var
onpaste: ((ClipboardEvent) -> dynamic)? \n    override var contentEditable: String \n    override val

```

```

isContentEditable: Boolean\n  override val style: CSSStyleDeclaration\n  override val children:
HTMLCollection\n  override val firstElementChild: Element?\n  override val lastElementChild: Element?\n
override val
  childElementCount: Int\n  override val previousElementSibling: Element?\n  override val nextElementSibling:
Element?\n  override val assignedSlot: HTMLSlotElement?\n  override fun prepend(vararg nodes: dynamic)\n
override fun append(vararg nodes: dynamic)\n  override fun querySelector(selectors: String): Element?\n
override fun querySelectorAll(selectors: String): NodeList\n  override fun before(vararg nodes: dynamic)\n
override fun after(vararg nodes: dynamic)\n  override fun replaceWith(vararg nodes: dynamic)\n  override fun
remove()\n  override fun getBoxQuads(options: BoxQuadOptions /* = definedExternally */): Array<DOMQuad>\n
  override fun convertQuadFromNode(quad: dynamic, from: dynamic, options: ConvertCoordinateOptions /* =
definedExternally */): DOMQuad\n  override fun convertRectFromNode(rect: DOMRectReadOnly, from:
dynamic, options: ConvertCoordinateOptions /* = definedExternally */): DOMQuad\n  override fun
convertPointFromNode(point: DOMPointInit,
  from: dynamic, options: ConvertCoordinateOptions /* = definedExternally */): DOMPoint\n\n  companion object
{\n    val ELEMENT_NODE: Short\n    val ATTRIBUTE_NODE: Short\n    val TEXT_NODE: Short\n
    val CDATA_SECTION_NODE: Short\n    val ENTITY_REFERENCE_NODE: Short\n    val
    ENTITY_NODE: Short\n    val PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE:
    Short\n    val DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n    val
    DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
    DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n
    val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
    val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
    DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n  }\n\n  public external interface
UnionElementOrHTMLCollection\n\n  public external interface UnionElementOrRadioNodeList\n\n  public
external interface UnionHTMLOptGroupElementOrHTMLOptionElement\n\n  public external interface
UnionAudioTrackOrTextTrackOrVideoTrack\n\n  public external interface UnionElementOrMouseEvent\n\n  public
external interface UnionMessagePortOrWindowProxy\n\n  public external interface MediaPlayer\n\n  public
external interface RenderingContext\n\n  public external interface HTMLOrSVGImageElement :
CanvasImageSource\n\n  public external interface CanvasImageSource : ImageBitmapSource\n\n  public external
interface ImageBitmapSource\n\n  public external interface HTMLOrSVGScriptElement\n\n/* please, don't
implement this interface!
*/\n\n@JsName("null")\n@Suppress("NESTED_CLASS_IN_EXTERNAL_INTERFACE")\n\n  public external
interface DocumentReadyState {\n    companion object\n  }\n\n  public inline val
DocumentReadyState.Companion.LOADING: DocumentReadyState get() =
"loading".asDynamic().unsafeCast<DocumentReadyState>()\n\n  public inline val
DocumentReadyState.Companion.INTERACTIVE: DocumentReadyState get() =
"interactive".asDynamic().unsafeCast<DocumentReadyState>()\n\n  public
inline val DocumentReadyState.Companion.COMPLETE: DocumentReadyState get() =
"complete".asDynamic().unsafeCast<DocumentReadyState>()\n\n/* please, don't implement this interface!
*/\n\n@JsName("null")\n@Suppress("NESTED_CLASS_IN_EXTERNAL_INTERFACE")\n\n  public external
interface CanPlayTypeResult {\n    companion object\n  }\n\n  public inline val
CanPlayTypeResult.Companion.EMPTY: CanPlayTypeResult get() =
"".asDynamic().unsafeCast<CanPlayTypeResult>()\n\n  public inline val CanPlayTypeResult.Companion.MAYBE:
CanPlayTypeResult get() = "maybe".asDynamic().unsafeCast<CanPlayTypeResult>()\n\n  public inline val
CanPlayTypeResult.Companion.PROBABLY: CanPlayTypeResult get() =
"probably".asDynamic().unsafeCast<CanPlayTypeResult>()\n\n/* please, don't implement this interface!
*/\n\n@JsName("null")\n@Suppress("NESTED_CLASS_IN_EXTERNAL_INTERFACE")\n\n  public external
interface TextTrackMode {\n    companion object\n  }\n\n  public

```



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inline val TextTrackMode.Companion.DISABLED: TextTrackMode get() =
\"disabled\".asDynamic().unsafeCast<TextTrackMode>()\n\npublic inline val
TextTrackMode.Companion.HIDDEN: TextTrackMode get() =
\"hidden\".asDynamic().unsafeCast<TextTrackMode>()\n\npublic inline val
TextTrackMode.Companion.SHOWING: TextTrackMode get() =
\"showing\".asDynamic().unsafeCast<TextTrackMode>()\n\n/* please, don't implement this interface!
*\n\n@JsName(\"null\")\n\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\n\npublic external
interface TextTrackKind {\n\n\ncompanion object{\n\n}\n\n\npublic inline val TextTrackKind.Companion.SUBTITLES:
TextTrackKind get() = \"subtitles\".asDynamic().unsafeCast<TextTrackKind>()\n\n\npublic inline val
TextTrackKind.Companion.CAPTIONS: TextTrackKind get() =
\"captions\".asDynamic().unsafeCast<TextTrackKind>()\n\n\npublic inline val
TextTrackKind.Companion.DESCRPTIONS: TextTrackKind get() =
\"descriptions\".asDynamic().unsafeCast<TextTrackKind>()\n\n\npublic inline val
TextTrackKind.Companion.CHAPTERS:
TextTrackKind get() = \"chapters\".asDynamic().unsafeCast<TextTrackKind>()\n\n\npublic inline val
TextTrackKind.Companion.METADATA: TextTrackKind get() =
\"metadata\".asDynamic().unsafeCast<TextTrackKind>()\n\n\n/* please, don't implement this interface!
*\n\n\n@JsName(\"null\")\n\n\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\n\n\npublic external
interface SelectionMode {\n\n\ncompanion object{\n\n}\n\n\npublic inline val SelectionMode.Companion.SELECT:
SelectionMode get() = \"select\".asDynamic().unsafeCast<SelectionMode>()\n\n\npublic inline val
SelectionMode.Companion.START: SelectionMode get() =
\"start\".asDynamic().unsafeCast<SelectionMode>()\n\n\npublic inline val SelectionMode.Companion.END:
SelectionMode get() = \"end\".asDynamic().unsafeCast<SelectionMode>()\n\n\npublic inline val
SelectionMode.Companion.PRESERVE: SelectionMode get() =
\"preserve\".asDynamic().unsafeCast<SelectionMode>()\n\n\n/* please, don't implement this interface!
*\n\n\n@JsName(\"null\")\n\n\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\n\n\npublic
external interface CanvasFillRule {\n\n\ncompanion object{\n\n}\n\n\npublic inline val
CanvasFillRule.Companion.NONZERO: CanvasFillRule get() =
\"nonzero\".asDynamic().unsafeCast<CanvasFillRule>()\n\n\npublic inline val
CanvasFillRule.Companion.EVENODD: CanvasFillRule get() =
\"evenodd\".asDynamic().unsafeCast<CanvasFillRule>()\n\n\n/* please, don't implement this interface!
*\n\n\n@JsName(\"null\")\n\n\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\n\n\npublic external
interface ImageSmoothingQuality {\n\n\ncompanion object{\n\n}\n\n\npublic inline val
ImageSmoothingQuality.Companion.LOW: ImageSmoothingQuality get() =
\"low\".asDynamic().unsafeCast<ImageSmoothingQuality>()\n\n\npublic inline val
ImageSmoothingQuality.Companion.MEDIUM: ImageSmoothingQuality get() =
\"medium\".asDynamic().unsafeCast<ImageSmoothingQuality>()\n\n\npublic inline val
ImageSmoothingQuality.Companion.HIGH: ImageSmoothingQuality get() =
\"high\".asDynamic().unsafeCast<ImageSmoothingQuality>()\n\n\n\n/*
please, don't implement this interface!
*\n\n\n@JsName(\"null\")\n\n\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\n\n\npublic external
interface CanvasLineCap {\n\n\ncompanion object{\n\n}\n\n\npublic inline val CanvasLineCap.Companion.BUTT:
CanvasLineCap get() = \"butt\".asDynamic().unsafeCast<CanvasLineCap>()\n\n\npublic inline val
CanvasLineCap.Companion.ROUND: CanvasLineCap get() =
\"round\".asDynamic().unsafeCast<CanvasLineCap>()\n\n\npublic inline val CanvasLineCap.Companion.SQUARE:
CanvasLineCap get() = \"square\".asDynamic().unsafeCast<CanvasLineCap>()\n\n\n\n/* please, don't implement this
interface!
*\n\n\n@JsName(\"null\")\n\n\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\n\n\npublic
external interface CanvasLineJoin {\n\n\ncompanion object{\n\n}\n\n\npublic inline val

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CanvasLineJoin.Companion.ROUND: CanvasLineJoin get() =
`round`.asDynamic().unsafeCast<CanvasLineJoin>()\n\npublic inline val CanvasLineJoin.Companion.BEVEL:
CanvasLineJoin get() = `bevel`.asDynamic().unsafeCast<CanvasLineJoin>()\n\npublic
inline val CanvasLineJoin.Companion.MITER: CanvasLineJoin get() =
`miter`.asDynamic().unsafeCast<CanvasLineJoin>()\n\n/* please, don't implement this interface!
*\n@JsName(`null`)\n@Suppress(`NESTED_CLASS_IN_EXTERNAL_INTERFACE`)\n\npublic external
interface CanvasTextAlign {\n  companion object\n}\n\npublic inline val CanvasTextAlign.Companion.START:
CanvasTextAlign get() = `start`.asDynamic().unsafeCast<CanvasTextAlign>()\n\npublic inline val
CanvasTextAlign.Companion.END: CanvasTextAlign get() =
`end`.asDynamic().unsafeCast<CanvasTextAlign>()\n\npublic inline val CanvasTextAlign.Companion.LEFT:
CanvasTextAlign get() = `left`.asDynamic().unsafeCast<CanvasTextAlign>()\n\npublic inline val
CanvasTextAlign.Companion.RIGHT: CanvasTextAlign get() =
`right`.asDynamic().unsafeCast<CanvasTextAlign>()\n\npublic inline val
CanvasTextAlign.Companion.CENTER: CanvasTextAlign get() =
`center`.asDynamic().unsafeCast<CanvasTextAlign>()\n\n/* please, don't implement this interface!
*\n@JsName(`null`)\n@Suppress(`NESTED_CLASS_IN_EXTERNAL_INTERFACE`)\n\npublic external
interface CanvasTextBaseline {\n  companion object\n}\n\npublic inline val CanvasTextBaseline.Companion.TOP:
CanvasTextBaseline get() = `top`.asDynamic().unsafeCast<CanvasTextBaseline>()\n\npublic inline val
CanvasTextBaseline.Companion.HANGING: CanvasTextBaseline get() =
`hanging`.asDynamic().unsafeCast<CanvasTextBaseline>()\n\npublic inline val
CanvasTextBaseline.Companion.MIDDLE: CanvasTextBaseline get() =
`middle`.asDynamic().unsafeCast<CanvasTextBaseline>()\n\npublic inline val
CanvasTextBaseline.Companion.ALPHABETIC: CanvasTextBaseline get() =
`alphabetic`.asDynamic().unsafeCast<CanvasTextBaseline>()\n\npublic inline val
CanvasTextBaseline.Companion.IDEOGRAPHIC: CanvasTextBaseline get() =
`ideographic`.asDynamic().unsafeCast<CanvasTextBaseline>()\n\npublic inline val
CanvasTextBaseline.Companion.BOTTOM: CanvasTextBaseline get() =
`bottom`.asDynamic().unsafeCast<CanvasTextBaseline>()\n\n/*
please, don't implement this interface!
*\n@JsName(`null`)\n@Suppress(`NESTED_CLASS_IN_EXTERNAL_INTERFACE`)\n\npublic external
interface CanvasDirection {\n  companion object\n}\n\npublic inline val CanvasDirection.Companion.LTR:
CanvasDirection get() = `ltr`.asDynamic().unsafeCast<CanvasDirection>()\n\npublic inline val
CanvasDirection.Companion.RTL: CanvasDirection get() =
`rtl`.asDynamic().unsafeCast<CanvasDirection>()\n\npublic inline val CanvasDirection.Companion.INHERIT:
CanvasDirection get() = `inherit`.asDynamic().unsafeCast<CanvasDirection>()\n\n/* please, don't implement this
interface! *\n@JsName(`null`)\n@Suppress(`NESTED_CLASS_IN_EXTERNAL_INTERFACE`)\n\npublic
external interface ScrollRestoration {\n  companion object\n}\n\npublic inline val
ScrollRestoration.Companion.AUTO: ScrollRestoration get() =
`auto`.asDynamic().unsafeCast<ScrollRestoration>()\n\npublic inline val
ScrollRestoration.Companion.MANUAL: ScrollRestoration get() =
`manual`.asDynamic().unsafeCast<ScrollRestoration>()\n\n/*
please, don't implement this interface!
*\n@JsName(`null`)\n@Suppress(`NESTED_CLASS_IN_EXTERNAL_INTERFACE`)\n\npublic external
interface ImageOrientation {\n  companion object\n}\n\npublic inline val ImageOrientation.Companion.NONE:
ImageOrientation get() = `none`.asDynamic().unsafeCast<ImageOrientation>()\n\npublic inline val
ImageOrientation.Companion.FLIPY: ImageOrientation get() =
`flipY`.asDynamic().unsafeCast<ImageOrientation>()\n\n/* please, don't implement this interface!
*\n@JsName(`null`)\n@Suppress(`NESTED_CLASS_IN_EXTERNAL_INTERFACE`)\n\npublic external

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interface PremultiplyAlpha {\n  companion object\n}\n\npublic inline val PremultiplyAlpha.Companion.NONE:
PremultiplyAlpha get() = \"none\".asDynamic().unsafeCast<PremultiplyAlpha>()\n\npublic inline val
PremultiplyAlpha.Companion.PREMULTIPLY: PremultiplyAlpha get() =
\"premultiply\".asDynamic().unsafeCast<PremultiplyAlpha>()\n\npublic inline val
PremultiplyAlpha.Companion.DEFAULT:
PremultiplyAlpha get() = \"default\".asDynamic().unsafeCast<PremultiplyAlpha>()\n\n/* please, don't implement
this interface! */\n\n@JsName(\"null\")\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\n\npublic
external interface ColorSpaceConversion {\n  companion object\n}\n\npublic inline val
ColorSpaceConversion.Companion.NONE: ColorSpaceConversion get() =
\"none\".asDynamic().unsafeCast<ColorSpaceConversion>()\n\npublic inline val
ColorSpaceConversion.Companion.DEFAULT: ColorSpaceConversion get() =
\"default\".asDynamic().unsafeCast<ColorSpaceConversion>()\n\n/* please, don't implement this interface!
*/\n\n@JsName(\"null\")\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\n\npublic external
interface ResizeQuality {\n  companion object\n}\n\npublic inline val ResizeQuality.Companion.PIXELATED:
ResizeQuality get() = \"pixelated\".asDynamic().unsafeCast<ResizeQuality>()\n\npublic inline val
ResizeQuality.Companion.LOW: ResizeQuality get() =
\"low\".asDynamic().unsafeCast<ResizeQuality>()\n\npublic
inline val ResizeQuality.Companion.MEDIUM: ResizeQuality get() =
\"medium\".asDynamic().unsafeCast<ResizeQuality>()\n\npublic inline val ResizeQuality.Companion.HIGH:
ResizeQuality get() = \"high\".asDynamic().unsafeCast<ResizeQuality>()\n\n/* please, don't implement this
interface! */\n\n@JsName(\"null\")\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\n\npublic
external interface BinaryType {\n  companion object\n}\n\npublic inline val BinaryType.Companion.BLOB:
BinaryType get() = \"blob\".asDynamic().unsafeCast<BinaryType>()\n\npublic inline val
BinaryType.Companion.ARRAYBUFFER: BinaryType get() =
\"arraybuffer\".asDynamic().unsafeCast<BinaryType>()\n\n/* please, don't implement this interface!
*/\n\n@JsName(\"null\")\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\n\npublic external
interface WorkerType {\n  companion object\n}\n\npublic inline val WorkerType.Companion.CLASSIC:
WorkerType get() = \"classic\".asDynamic().unsafeCast<WorkerType>()\n\npublic
inline val WorkerType.Companion.MODULE: WorkerType get() =
\"module\".asDynamic().unsafeCast<WorkerType>()\n\n/* please, don't implement this interface!
*/\n\n@JsName(\"null\")\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\n\npublic external
interface ShadowRootMode {\n  companion object\n}\n\npublic inline val ShadowRootMode.Companion.OPEN:
ShadowRootMode get() = \"open\".asDynamic().unsafeCast<ShadowRootMode>()\n\npublic inline val
ShadowRootMode.Companion.CLOSED: ShadowRootMode get() =
\"closed\".asDynamic().unsafeCast<ShadowRootMode>()\n\n/* please, don't implement this interface!
*/\n\n@JsName(\"null\")\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\n\npublic external
interface ScrollBehavior {\n  companion object\n}\n\npublic inline val ScrollBehavior.Companion.AUTO:
ScrollBehavior get() = \"auto\".asDynamic().unsafeCast<ScrollBehavior>()\n\npublic inline val
ScrollBehavior.Companion.INSTANT: ScrollBehavior get() =
\"instant\".asDynamic().unsafeCast<ScrollBehavior>()\n\npublic
inline val ScrollBehavior.Companion.SMOOTH: ScrollBehavior get() =
\"smooth\".asDynamic().unsafeCast<ScrollBehavior>()\n\n/* please, don't implement this interface!
*/\n\n@JsName(\"null\")\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\n\npublic external
interface ScrollLogicalPosition {\n  companion object\n}\n\npublic inline val
ScrollLogicalPosition.Companion.START: ScrollLogicalPosition get() =
\"start\".asDynamic().unsafeCast<ScrollLogicalPosition>()\n\npublic inline val
ScrollLogicalPosition.Companion.CENTER: ScrollLogicalPosition get() =
\"center\".asDynamic().unsafeCast<ScrollLogicalPosition>()\n\npublic inline val

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ScrollLogicalPosition.Companion.END: ScrollLogicalPosition get() =
    \"end\".asDynamic().unsafeCast<ScrollLogicalPosition>()\n\npublic inline val
ScrollLogicalPosition.Companion.NEAREST: ScrollLogicalPosition get() =
    \"nearest\".asDynamic().unsafeCast<ScrollLogicalPosition>()\n\n/* please, don't implement this interface!
*\n\n@JsName(\"null\")\n\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\n\npublic
external interface CSSBoxType {\n    companion object\n}\n\npublic inline val
CSSBoxType.Companion.MARGIN: CSSBoxType get() =
    \"margin\".asDynamic().unsafeCast<CSSBoxType>()\n\npublic inline val CSSBoxType.Companion.BORDER:
CSSBoxType get() = \"border\".asDynamic().unsafeCast<CSSBoxType>()\n\npublic inline val
CSSBoxType.Companion.PADDING: CSSBoxType get() =
    \"padding\".asDynamic().unsafeCast<CSSBoxType>()\n\npublic inline val CSSBoxType.Companion.CONTENT:
CSSBoxType get() = \"content\".asDynamic().unsafeCast<CSSBoxType>()\", \"/*\n\n * Copyright 2010-2021 JetBrains
s.r.o. and Kotlin Programming Language contributors.\n\n * Use of this source code is governed by the Apache 2.0
license that can be found in the license/LICENSE.txt file.\n\n *\n\n// NOTE: THIS FILE IS AUTO-GENERATED,
DO NOT EDIT!\n\n// See github.com/kotlin/dukat for details\n\n\npackage org.w3c.fetch\n\nimport kotlin.js.*\nimport
org.khronos.webgl.*\nimport org.w3c.files.*\nimport
org.w3c.xhr.*\n\n/**\n\n * Exposes the JavaScript
[Headers](https://developer.mozilla.org/en/docs/Web/API/Headers) to Kotlin\n\n *\n\npublic external open class
Headers(init: dynamic = definedExternally) {\n    fun append(name: String, value: String)\n    fun delete(name:
String)\n    fun get(name: String): String?\n    fun has(name: String): Boolean\n    fun set(name: String, value:
String)\n}\n\n\n/**\n\n * Exposes the JavaScript [Body](https://developer.mozilla.org/en/docs/Web/API/Body) to
Kotlin\n\n *\n\npublic external interface Body {\n    val bodyUsed: Boolean\n    fun arrayBuffer():
Promise<ArrayBuffer>\n    fun blob(): Promise<Blob>\n    fun formData(): Promise<FormData>\n    fun json():
Promise<Any?>\n    fun text(): Promise<String>\n}\n\n\n/**\n\n * Exposes the JavaScript
[Request](https://developer.mozilla.org/en/docs/Web/API/Request) to Kotlin\n\n *\n\npublic external open class
Request(input: dynamic, init: RequestInit = definedExternally) : Body {\n    open val method: String\n    open val
url: String\n    open val headers: Headers\n    open val type: RequestType\n    open val destination:
RequestDestination\n    open val referrer: String\n    open val referrerPolicy: dynamic\n    open val mode:
RequestMode\n    open val credentials: RequestCredentials\n    open val cache: RequestCache\n    open val redirect:
RequestRedirect\n    open val integrity: String\n    open val keepalive: Boolean\n    override val bodyUsed:
Boolean\n    fun clone(): Request\n    override fun arrayBuffer(): Promise<ArrayBuffer>\n    override fun blob():
Promise<Blob>\n    override fun formData(): Promise<FormData>\n    override fun json(): Promise<Any?>\n    override
fun text(): Promise<String>\n}\n\n\npublic external interface RequestInit {\n    var method: String?\n    get() =
definedExternally\n    set(value) = definedExternally\n    var headers: dynamic\n    get() =
definedExternally\n    set(value) = definedExternally\n    var body: dynamic\n    get() = definedExternally\n    set(
value) = definedExternally\n    var referrer: String?\n    get() = definedExternally\n    set(value) =
definedExternally\n    var referrerPolicy: dynamic\n    get() = definedExternally\n    set(value) =
definedExternally\n    var mode: RequestMode?\n    get() = definedExternally\n    set(value) =
definedExternally\n    var credentials: RequestCredentials?\n    get() = definedExternally\n    set(value) =
definedExternally\n    var cache: RequestCache?\n    get() = definedExternally\n    set(value) =
definedExternally\n    var redirect: RequestRedirect?\n    get() = definedExternally\n    set(value) =
definedExternally\n    var integrity: String?\n    get() = definedExternally\n    set(value) = definedExternally\n    var
keepalive: Boolean?\n    get() = definedExternally\n    set(value) = definedExternally\n    var window:
Any?\n    get() = definedExternally\n    set(value) =
definedExternally\n}\n\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n\n@kotlin.internal.InlineOnly\n\npublic inline fun RequestInit(method: String? =
undefined, headers: dynamic = undefined, body: dynamic = undefined, referrer: String? = undefined, referrerPolicy:
dynamic = undefined, mode: RequestMode? = undefined, credentials: RequestCredentials? = undefined, cache:

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RequestCache? = undefined, redirect: RequestRedirect? = undefined, integrity: String? = undefined, keepalive:
Boolean? = undefined, window: Any? = undefined): RequestInit {\n  val o = js("{}")\n  o["method"] =
method\n  o["headers"] = headers\n  o["body"] = body\n  o["referrer"] = referrer\n  o["referrerPolicy"] =
referrerPolicy\n  o["mode"] = mode\n  o["credentials"] = credentials\n  o["cache"] = cache\n  o["redirect"]
= redirect\n  o["integrity"] = integrity\n  o["keepalive"] = keepalive\n  o["window"] = window\n  return
o}\n\n/**\n * Exposes the JavaScript [Response](https://developer.mozilla.org/en/docs/Web/API/Response)
to Kotlin\n */\npublic external open class Response(body: dynamic = definedExternally, init: ResponseInit =
definedExternally) : Body {\n  open val type: ResponseType\n  open val url: String\n  open val redirected:
Boolean\n  open val status: Short\n  open val ok: Boolean\n  open val statusText: String\n  open val headers:
Headers\n  open val body: dynamic\n  open val trailer: Promise<Headers>\n  override val bodyUsed: Boolean\n
fun clone(): Response\n  override fun arrayBuffer(): Promise<ArrayBuffer>\n  override fun blob():
Promise<Blob>\n  override fun formData(): Promise<FormData>\n  override fun json(): Promise<Any?>\n
override fun text(): Promise<String>\n\n  companion object {\n    fun error(): Response\n    fun redirect(url:
String, status: Short = definedExternally): Response\n  }\n\n  public external interface ResponseInit {\n    var
status: Short? /* = 200 */\n    get() = definedExternally\n    set(value) = definedExternally\n    var statusText: String? /* = "OK" */\n    get() = definedExternally\n
set(value) = definedExternally\n    var headers: dynamic\n    get() = definedExternally\n    set(value) =
definedExternally\n  }\n\n  @Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n  @kotlin.internal.InlineOnly\n  public inline fun ResponseInit(status: Short? = 200,
statusText: String? = "OK", headers: dynamic = undefined): ResponseInit {\n    val o = js("{}")\n    o["status"]
= status\n    o["statusText"] = statusText\n    o["headers"] = headers\n    return o}\n\n  /** please, don't implement
this interface! */\n  @JsName("null")\n  @Suppress("NESTED_CLASS_IN_EXTERNAL_INTERFACE")\n  public
external interface RequestType {\n    companion object\n  }\n\n  public inline val RequestType.Companion.EMPTY:
RequestType get() = ""\n\n  public inline val
RequestType.Companion.AUDIO: RequestType get() =
"audio"\n\n  public inline val RequestType.Companion.FONT: RequestType get() =
"font"\n\n  public inline val RequestType.Companion.IMAGE:
RequestType get() = "image"\n\n  public inline val
RequestType.Companion.SCRIPT: RequestType get() =
"script"\n\n  public inline val RequestType.Companion.STYLE:
RequestType get() = "style"\n\n  public inline val
RequestType.Companion.TRACK: RequestType get() =
"track"\n\n  public inline val RequestType.Companion.VIDEO:
RequestType get() = "video"\n\n  /** please, don't implement this
interface! */\n  @JsName("null")\n  @Suppress("NESTED_CLASS_IN_EXTERNAL_INTERFACE")\n  public
external interface RequestDestination {\n    companion object\n  }\n\n  public inline val
RequestDestination.Companion.EMPTY: RequestDestination
get() = ""\n\n  public inline val
RequestDestination.Companion.DOCUMENT: RequestDestination get() =
"document"\n\n  public inline val
RequestDestination.Companion.EMBED: RequestDestination get() =
"embed"\n\n  public inline val
RequestDestination.Companion.FONT: RequestDestination get() =
"font"\n\n  public inline val
RequestDestination.Companion.IMAGE: RequestDestination get() =
"image"\n\n  public inline val
RequestDestination.Companion.MANIFEST: RequestDestination get() =

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\"manifest\".asDynamic().unsafeCast<RequestDestination>()\n\npublic inline val
RequestDestination.Companion.MEDIA: RequestDestination get() =
\"media\".asDynamic().unsafeCast<RequestDestination>()\n\npublic inline val
RequestDestination.Companion.OBJECT: RequestDestination get()
= \"object\".asDynamic().unsafeCast<RequestDestination>()\n\npublic inline val
RequestDestination.Companion.REPORT: RequestDestination get() =
\"report\".asDynamic().unsafeCast<RequestDestination>()\n\npublic inline val
RequestDestination.Companion.SCRIPT: RequestDestination get() =
\"script\".asDynamic().unsafeCast<RequestDestination>()\n\npublic inline val
RequestDestination.Companion.SERVICEMANAGER: RequestDestination get() =
\"serviceworker\".asDynamic().unsafeCast<RequestDestination>()\n\npublic inline val
RequestDestination.Companion.SHAREDWORKER: RequestDestination get() =
\"sharedworker\".asDynamic().unsafeCast<RequestDestination>()\n\npublic inline val
RequestDestination.Companion.STYLE: RequestDestination get() =
\"style\".asDynamic().unsafeCast<RequestDestination>()\n\npublic inline val
RequestDestination.Companion.WORKER: RequestDestination get() =
\"worker\".asDynamic().unsafeCast<RequestDestination>()\n\npublic inline val
RequestDestination.Companion.XSLT: RequestDestination
get() = \"xslt\".asDynamic().unsafeCast<RequestDestination>()\n\n/* please, don't implement this interface!
*\n\n@JsName(\"null\")\n\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\n\npublic external
interface RequestMode {\n\n    companion object\n\n}\n\npublic inline val RequestMode.Companion.NAVIGATE:
RequestMode get() = \"navigate\".asDynamic().unsafeCast<RequestMode>()\n\npublic inline val
RequestMode.Companion.SAME_ORIGIN: RequestMode get() = \"same-
origin\".asDynamic().unsafeCast<RequestMode>()\n\npublic inline val RequestMode.Companion.NO_CORS:
RequestMode get() = \"no-cors\".asDynamic().unsafeCast<RequestMode>()\n\npublic inline val
RequestMode.Companion.CORS: RequestMode get() = \"cors\".asDynamic().unsafeCast<RequestMode>()\n\n\n/*
please, don't implement this interface!
*\n\n@JsName(\"null\")\n\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\n\npublic external
interface RequestCredentials {\n\n    companion object\n\n}\n\npublic inline val RequestCredentials.Companion.OMIT:
RequestCredentials
get() = \"omit\".asDynamic().unsafeCast<RequestCredentials>()\n\npublic inline val
RequestCredentials.Companion.SAME_ORIGIN: RequestCredentials get() = \"same-
origin\".asDynamic().unsafeCast<RequestCredentials>()\n\npublic inline val
RequestCredentials.Companion.INCLUDE: RequestCredentials get() =
\"include\".asDynamic().unsafeCast<RequestCredentials>()\n\n\n/* please, don't implement this interface!
*\n\n@JsName(\"null\")\n\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\n\npublic external
interface RequestCache {\n\n    companion object\n\n}\n\npublic inline val RequestCache.Companion.DEFAULT:
RequestCache get() = \"default\".asDynamic().unsafeCast<RequestCache>()\n\npublic inline val
RequestCache.Companion.NO_STORE: RequestCache get() = \"no-
store\".asDynamic().unsafeCast<RequestCache>()\n\npublic inline val RequestCache.Companion.RELOAD:
RequestCache get() = \"reload\".asDynamic().unsafeCast<RequestCache>()\n\npublic inline val
RequestCache.Companion.NO_CACHE: RequestCache get()
= \"no-cache\".asDynamic().unsafeCast<RequestCache>()\n\npublic inline val
RequestCache.Companion.FORCE_CACHE: RequestCache get() = \"force-
cache\".asDynamic().unsafeCast<RequestCache>()\n\npublic inline val
RequestCache.Companion.ONLY_IF_CACHED: RequestCache get() = \"only-if-
cached\".asDynamic().unsafeCast<RequestCache>()\n\n\n/* please, don't implement this interface!
*\n\n@JsName(\"null\")\n\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\n\npublic external

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interface RequestRedirect {\n  companion object\n}\n\npublic inline val RequestRedirect.Companion.FOLLOW:
RequestRedirect get() = \"follow\".asDynamic().unsafeCast<RequestRedirect>()\n\npublic inline val
RequestRedirect.Companion.ERROR: RequestRedirect get() =
\"error\".asDynamic().unsafeCast<RequestRedirect>()\n\npublic inline val RequestRedirect.Companion.MANUAL:
RequestRedirect get() = \"manual\".asDynamic().unsafeCast<RequestRedirect>()\n\n/* please, don't implement this
interface! *\n\n@JsName(\"null\")\n\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\n\npublic
external interface ResponseType {\n  companion object\n}\n\npublic inline val
ResponseType.Companion.BASIC: ResponseType get() =
\"basic\".asDynamic().unsafeCast<ResponseType>()\n\npublic inline val ResponseType.Companion.CORS:
ResponseType get() = \"cors\".asDynamic().unsafeCast<ResponseType>()\n\npublic inline val
ResponseType.Companion.DEFAULT: ResponseType get() =
\"default\".asDynamic().unsafeCast<ResponseType>()\n\npublic inline val ResponseType.Companion.ERROR:
ResponseType get() = \"error\".asDynamic().unsafeCast<ResponseType>()\n\npublic inline val
ResponseType.Companion.OPAQUE: ResponseType get() =
\"opaque\".asDynamic().unsafeCast<ResponseType>()\n\npublic inline val
ResponseType.Companion.OPAQUEREDIRECT: ResponseType get() =
\"opaqueredirect\".asDynamic().unsafeCast<ResponseType>()), /*\n * Copyright 2010-2021 JetBrains s.r.o. and
Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license
that can be found in the license/LICENSE.txt file.\n *\n\n// NOTE: THIS FILE IS AUTO-GENERATED, DO
NOT EDIT!\n\n// See github.com/kotlin/dukat for details\n\npackage org.w3c.dom.mediacapture\n\nimport
kotlin.js.*\nimport org.khronos.webgl.*\nimport org.w3c.dom.*\nimport org.w3c.dom.events.*\n\n/**\n * Exposes
the JavaScript [MediaStream](https://developer.mozilla.org/en/docs/Web/API/MediaStream) to Kotlin\n *\n\npublic
external open class MediaStream() : EventTarget, MediaProvider {\n  constructor(stream: MediaStream)\n
constructor(tracks: Array<MediaStreamTrack>)\n  open val id: String\n  open val active: Boolean\n  var
onaddtrack: ((MediaStreamTrackEvent) -> dynamic)?\n  var onremovetrack: ((MediaStreamTrackEvent) ->
dynamic)?\n  fun getAudioTracks(): Array<MediaStreamTrack>\n  fun getVideoTracks():
Array<MediaStreamTrack>\n  fun getTracks(): Array<MediaStreamTrack>\n  fun getTrackById(trackId: String):
MediaStreamTrack?\n  fun addTrack(track: MediaStreamTrack)\n
fun removeTrack(track: MediaStreamTrack)\n  fun clone(): MediaStream\n}\n\n/**\n * Exposes the JavaScript
[MediaStreamTrack](https://developer.mozilla.org/en/docs/Web/API/MediaStreamTrack) to Kotlin\n *\n\npublic
external abstract class MediaStreamTrack : EventTarget {\n  open val kind: String\n  open val id: String\n  open
val label: String\n  open var enabled: Boolean\n  open val muted: Boolean\n  open var onmute: ((Event) ->
dynamic)?\n  open var onunmute: ((Event) -> dynamic)?\n  open val readyState: MediaStreamTrackState\n
open var onended: ((Event) -> dynamic)?\n  open var onoverconstrained: ((Event) -> dynamic)?\n  fun clone():
MediaStreamTrack\n  fun stop()\n  fun getCapabilities(): MediaTrackCapabilities\n  fun getConstraints():
MediaTrackConstraints\n  fun getSettings(): MediaTrackSettings\n  fun applyConstraints(constraints:
MediaTrackConstraints = definedExternally): Promise<Unit>\n}\n\n/**\n * Exposes the JavaScript
[MediaTrackSupportedConstraints](https://developer.mozilla.org/en/docs/Web/API/MediaTrackSupportedConstrain
ts)
to Kotlin\n *\n\npublic external interface MediaTrackSupportedConstraints {\n  var width: Boolean? /* = true *\n
get() = definedExternally\n  set(value) = definedExternally\n  var height: Boolean? /* = true *\n
get() =
definedExternally\n  set(value) = definedExternally\n  var aspectRatio: Boolean? /* = true *\n
get() =
definedExternally\n  set(value) = definedExternally\n  var frameRate: Boolean? /* = true *\n
get() =
definedExternally\n  set(value) = definedExternally\n  var facingMode: Boolean? /* = true *\n
get() =
definedExternally\n  set(value) = definedExternally\n  var resizeMode: Boolean? /* = true *\n
get() =
definedExternally\n  set(value) = definedExternally\n  var volume: Boolean? /* = true *\n
get() =
definedExternally\n  set(value) = definedExternally\n  var sampleRate:

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Boolean? /* = true */\n    get() = definedExternally\n    set(value) = definedExternally\n    var sampleSize:
Boolean? /* = true */\n    get() = definedExternally\n    set(value) = definedExternally\n    var
echoCancellation: Boolean? /* = true */\n    get() = definedExternally\n    set(value) = definedExternally\n
var autoGainControl: Boolean? /* = true */\n    get() = definedExternally\n    set(value) = definedExternally\n
var noiseSuppression: Boolean? /* = true */\n    get() = definedExternally\n    set(value) = definedExternally\n
var latency: Boolean? /* = true */\n    get() = definedExternally\n    set(value) = definedExternally\n    var
channelCount: Boolean? /* = true */\n    get() = definedExternally\n    set(value) = definedExternally\n    var
deviceId: Boolean? /* = true */\n    get() = definedExternally\n    set(value) = definedExternally\n    var
groupId: Boolean? /* = true */\n    get() = definedExternally\n
    set(value) = definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n\n@kotlin.internal.InlineOnly\n\npublic inline fun
MediaTrackSupportedConstraints(width: Boolean? = true, height: Boolean? = true, aspectRatio: Boolean? = true,
frameRate: Boolean? = true, facingMode: Boolean? = true, resizeMode: Boolean? = true, volume: Boolean? = true,
sampleRate: Boolean? = true, sampleSize: Boolean? = true, echoCancellation: Boolean? = true, autoGainControl:
Boolean? = true, noiseSuppression: Boolean? = true, latency: Boolean? = true, channelCount: Boolean? = true,
deviceId: Boolean? = true, groupId: Boolean? = true): MediaTrackSupportedConstraints {\n    val o = js(\"({})\")\n
o[\"width\"] = width\n    o[\"height\"] = height\n    o[\"aspectRatio\"] = aspectRatio\n    o[\"frameRate\"] =
frameRate\n    o[\"facingMode\"] = facingMode\n    o[\"resizeMode\"] = resizeMode\n    o[\"volume\"] = volume\n
o[\"sampleRate\"] = sampleRate\n    o[\"sampleSize\"]
= sampleSize\n    o[\"echoCancellation\"] = echoCancellation\n    o[\"autoGainControl\"] = autoGainControl\n
o[\"noiseSuppression\"] = noiseSuppression\n    o[\"latency\"] = latency\n    o[\"channelCount\"] = channelCount\n
o[\"deviceId\"] = deviceId\n    o[\"groupId\"] = groupId\n    return o\n}\n\npublic external interface
MediaTrackCapabilities {\n    var width: ULongRange?\n    get() = definedExternally\n    set(value) =
definedExternally\n    var height: ULongRange?\n    get() = definedExternally\n    set(value) =
definedExternally\n    var aspectRatio: DoubleRange?\n    get() = definedExternally\n    set(value) =
definedExternally\n    var frameRate: DoubleRange?\n    get() = definedExternally\n    set(value) =
definedExternally\n    var facingMode: Array<String>?\n    get() = definedExternally\n    set(value) =
definedExternally\n    var resizeMode: Array<String>?\n    get() = definedExternally\n    set(value) =
definedExternally\n
    var volume: DoubleRange?\n    get() = definedExternally\n    set(value) = definedExternally\n    var
sampleRate: ULongRange?\n    get() = definedExternally\n    set(value) = definedExternally\n    var
sampleSize: ULongRange?\n    get() = definedExternally\n    set(value) = definedExternally\n    var
echoCancellation: Array<Boolean>?\n    get() = definedExternally\n    set(value) = definedExternally\n    var
autoGainControl: Array<Boolean>?\n    get() = definedExternally\n    set(value) = definedExternally\n    var
noiseSuppression: Array<Boolean>?\n    get() = definedExternally\n    set(value) = definedExternally\n    var
latency: DoubleRange?\n    get() = definedExternally\n    set(value) = definedExternally\n    var channelCount:
ULongRange?\n    get() = definedExternally\n    set(value) = definedExternally\n    var deviceId: String?\n
get() = definedExternally\n    set(value) = definedExternally\n
    var groupId: String?\n    get() = definedExternally\n    set(value) =
definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n\n@kotlin.internal.InlineOnly\n\npublic inline fun MediaTrackCapabilities(width:
ULongRange? = undefined, height: ULongRange? = undefined, aspectRatio: DoubleRange? = undefined,
frameRate: DoubleRange? = undefined, facingMode: Array<String>? = undefined, resizeMode: Array<String>? =
undefined, volume: DoubleRange? = undefined, sampleRate: ULongRange? = undefined, sampleSize:
ULongRange? = undefined, echoCancellation: Array<Boolean>? = undefined, autoGainControl: Array<Boolean>?
= undefined, noiseSuppression: Array<Boolean>? = undefined, latency: DoubleRange? = undefined, channelCount:
ULongRange? = undefined, deviceId: String? = undefined, groupId: String? = undefined): MediaTrackCapabilities
{\n    val o = js(\"({})\")\n    o[\"width\"] = width\n    o[\"height\"] = height\n    o[\"aspectRatio\"] = aspectRatio\n

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o["frameRate"]
= frameRate\n o["facingMode"] = facingMode\n o["resizeMode"] = resizeMode\n o["volume"] =
volume\n o["sampleRate"] = sampleRate\n o["sampleSize"] = sampleSize\n o["echoCancellation"] =
echoCancellation\n o["autoGainControl"] = autoGainControl\n o["noiseSuppression"] = noiseSuppression\n
o["latency"] = latency\n o["channelCount"] = channelCount\n o["deviceId"] = deviceId\n o["groupId"] =
groupId\n return o\n}\n\n**\n * Exposes the JavaScript
[MediaTrackConstraints](https://developer.mozilla.org/en/docs/Web/API/MediaTrackConstraints) to Kotlin\n
*/\npublic external interface MediaTrackConstraints : MediaTrackConstraintSet {\n var advanced:
Array<MediaTrackConstraintSet>?\n get() = definedExternally\n set(value) =
definedExternally\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline fun MediaTrackConstraints(advanced:
Array<MediaTrackConstraintSet>?
= undefined, width: dynamic = undefined, height: dynamic = undefined, aspectRatio: dynamic = undefined,
frameRate: dynamic = undefined, facingMode: dynamic = undefined, resizeMode: dynamic = undefined, volume:
dynamic = undefined, sampleRate: dynamic = undefined, sampleSize: dynamic = undefined, echoCancellation:
dynamic = undefined, autoGainControl: dynamic = undefined, noiseSuppression: dynamic = undefined, latency:
dynamic = undefined, channelCount: dynamic = undefined, deviceId: dynamic = undefined, groupId: dynamic =
undefined): MediaTrackConstraints {\n val o = js("{}")\n o["advanced"] = advanced\n o["width"] =
width\n o["height"] = height\n o["aspectRatio"] = aspectRatio\n o["frameRate"] = frameRate\n
o["facingMode"] = facingMode\n o["resizeMode"] = resizeMode\n o["volume"] = volume\n
o["sampleRate"] = sampleRate\n o["sampleSize"] = sampleSize\n o["echoCancellation"] =
echoCancellation\n o["autoGainControl"] =
autoGainControl\n o["noiseSuppression"] = noiseSuppression\n o["latency"] = latency\n
o["channelCount"] = channelCount\n o["deviceId"] = deviceId\n o["groupId"] = groupId\n return
o\n}\n\npublic external interface MediaTrackConstraintSet {\n var width: dynamic\n get() =
definedExternally\n set(value) = definedExternally\n var height: dynamic\n get() = definedExternally\n
set(value) = definedExternally\n var aspectRatio: dynamic\n get() = definedExternally\n set(value) =
definedExternally\n var frameRate: dynamic\n get() = definedExternally\n set(value) =
definedExternally\n var facingMode: dynamic\n get() = definedExternally\n set(value) =
definedExternally\n var resizeMode: dynamic\n get() = definedExternally\n set(value) =
definedExternally\n var volume: dynamic\n get() = definedExternally\n set(value) = definedExternally\n
var sampleRate:
dynamic\n get() = definedExternally\n set(value) = definedExternally\n var sampleSize: dynamic\n
get() = definedExternally\n set(value) = definedExternally\n var echoCancellation: dynamic\n get() =
definedExternally\n set(value) = definedExternally\n var autoGainControl: dynamic\n get() =
definedExternally\n set(value) = definedExternally\n var noiseSuppression: dynamic\n get() =
definedExternally\n set(value) = definedExternally\n var latency: dynamic\n get() = definedExternally\n
set(value) = definedExternally\n var channelCount: dynamic\n get() = definedExternally\n set(value) =
definedExternally\n var deviceId: dynamic\n get() = definedExternally\n set(value) = definedExternally\n
var groupId: dynamic\n get() = definedExternally\n set(value) =
definedExternally\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic
inline fun MediaTrackConstraintSet(width: dynamic = undefined, height: dynamic = undefined, aspectRatio:
dynamic = undefined, frameRate: dynamic = undefined, facingMode: dynamic = undefined, resizeMode: dynamic =
undefined, volume: dynamic = undefined, sampleRate: dynamic = undefined, sampleSize: dynamic = undefined,
echoCancellation: dynamic = undefined, autoGainControl: dynamic = undefined, noiseSuppression: dynamic =
undefined, latency: dynamic = undefined, channelCount: dynamic = undefined, deviceId: dynamic = undefined,
groupId: dynamic = undefined): MediaTrackConstraintSet {\n val o = js("{}")\n o["width"] = width\n

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o["height"] = height\n  o["aspectRatio"] = aspectRatio\n  o["frameRate"] = frameRate\n  o["facingMode"] =
facingMode\n  o["resizeMode"] = resizeMode\n  o["volume"] = volume\n  o["sampleRate"] =
sampleRate\n  o["sampleSize"] = sampleSize\n  o["echoCancellation"] = echoCancellation\n
o["autoGainControl"]
= autoGainControl\n  o["noiseSuppression"] = noiseSuppression\n  o["latency"] = latency\n
o["channelCount"] = channelCount\n  o["deviceId"] = deviceId\n  o["groupId"] = groupId\n  return
o\n}\n\n/**\n * Exposes the JavaScript
[MediaTrackSettings](https://developer.mozilla.org/en/docs/Web/API/MediaTrackSettings) to Kotlin\n *^npublic
external interface MediaTrackSettings {\n  var width: Int?\n    get() = definedExternally\n    set(value) =
definedExternally\n  var height: Int?\n    get() = definedExternally\n    set(value) = definedExternally\n  var
aspectRatio: Double?\n    get() = definedExternally\n    set(value) = definedExternally\n  var frameRate:
Double?\n    get() = definedExternally\n    set(value) = definedExternally\n  var facingMode: String?\n
get() = definedExternally\n    set(value) = definedExternally\n  var resizeMode: String?\n    get() =
definedExternally\n    set(value)
= definedExternally\n  var volume: Double?\n    get() = definedExternally\n    set(value) =
definedExternally\n  var sampleRate: Int?\n    get() = definedExternally\n    set(value) = definedExternally\n
var sampleSize: Int?\n    get() = definedExternally\n    set(value) = definedExternally\n  var echoCancellation:
Boolean?\n    get() = definedExternally\n    set(value) = definedExternally\n  var autoGainControl: Boolean?\n
get() = definedExternally\n    set(value) = definedExternally\n  var noiseSuppression: Boolean?\n    get() =
definedExternally\n    set(value) = definedExternally\n  var latency: Double?\n    get() = definedExternally\n
set(value) = definedExternally\n  var channelCount: Int?\n    get() = definedExternally\n    set(value) =
definedExternally\n  var deviceId: String?\n    get() = definedExternally\n    set(value) = definedExternally\n
var groupId: String?\n
get() = definedExternally\n    set(value) = definedExternally\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline fun MediaTrackSettings(width: Int? =
undefined, height: Int? = undefined, aspectRatio: Double? = undefined, frameRate: Double? = undefined,
facingMode: String? = undefined, resizeMode: String? = undefined, volume: Double? = undefined, sampleRate: Int?
= undefined, sampleSize: Int? = undefined, echoCancellation: Boolean? = undefined, autoGainControl: Boolean? =
undefined, noiseSuppression: Boolean? = undefined, latency: Double? = undefined, channelCount: Int? = undefined,
deviceId: String? = undefined, groupId: String? = undefined): MediaTrackSettings {\n  val o = js("{}")\n
o["width"] = width\n  o["height"] = height\n  o["aspectRatio"] = aspectRatio\n  o["frameRate"] =
frameRate\n  o["facingMode"] = facingMode\n  o["resizeMode"] = resizeMode\n  o["volume"] = volume\n
o["sampleRate"]
= sampleRate\n  o["sampleSize"] = sampleSize\n  o["echoCancellation"] = echoCancellation\n
o["autoGainControl"] = autoGainControl\n  o["noiseSuppression"] = noiseSuppression\n  o["latency"] =
latency\n  o["channelCount"] = channelCount\n  o["deviceId"] = deviceId\n  o["groupId"] = groupId\n
return o\n}\n\n/**\n * Exposes the JavaScript
[MediaStreamTrackEvent](https://developer.mozilla.org/en/docs/Web/API/MediaStreamTrackEvent) to Kotlin\n *^npublic
external open class MediaStreamTrackEvent(type: String, eventInitDict: MediaStreamTrackEventInit) :
Event {\n  open val track: MediaStreamTrack\n\n  companion object {\n    val NONE: Short\n    val
CAPTURING_PHASE: Short\n    val AT_TARGET: Short\n    val BUBBLING_PHASE: Short\n
}\n}\n\npublic external interface MediaStreamTrackEventInit : EventInit {\n  var track:
MediaStreamTrack?\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic
inline fun MediaStreamTrackEventInit(track: MediaStreamTrack?, bubbles: Boolean? = false, cancelable: Boolean?
= false, composed: Boolean? = false): MediaStreamTrackEventInit {\n  val o = js("{}")\n  o["track"] =
track\n  o["bubbles"] = bubbles\n  o["cancelable"] = cancelable\n  o["composed"] = composed\n  return
o\n}\n\npublic external open class OverconstrainedErrorEvent(type: String, eventInitDict:

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OverconstrainedErrorEventInit) : Event {\n  open val error: dynamic\n\n  companion object {\n    val NONE:
Short\n    val CAPTURING_PHASE: Short\n    val AT_TARGET: Short\n    val BUBBLING_PHASE:
Short\n  }\n}\n\npublic external interface OverconstrainedErrorEventInit : EventInit {\n  var error: dynamic /* =
null */\n  get() = definedExternally\n  set(value) =
definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun OverconstrainedErrorEventInit(error:
dynamic = null, bubbles: Boolean? = false, cancelable: Boolean? = false, composed: Boolean? = false):
OverconstrainedErrorEventInit {\n  val o = js(\"({})\")\n  o[\"error\"] = error\n  o[\"bubbles\"] = bubbles\n
o[\"cancelable\"] = cancelable\n  o[\"composed\"] = composed\n  return o\n}\n\n/**\n * Exposes the JavaScript
[MediaDevices](https://developer.mozilla.org/en/docs/Web/API/MediaDevices) to Kotlin\n */\npublic external
abstract class MediaDevices : EventTarget {\n  open var ondevicechange: ((Event) -> dynamic)?\n  fun
enumerateDevices(): Promise<Array<MediaDeviceInfo>>\n  fun getSupportedConstraints():
MediaTrackSupportedConstraints\n  fun getUserMedia(constraints: MediaStreamConstraints = definedExternally):
Promise<MediaStream>\n}\n\n/**\n * Exposes the JavaScript
[MediaDeviceInfo](https://developer.mozilla.org/en/docs/Web/API/MediaDeviceInfo) to Kotlin\n */\npublic
external abstract class MediaDeviceInfo {\n  open val deviceId: String\n  open val kind:
MediaDeviceKind\n  open val label: String\n  open val groupId: String\n  fun toJSON(): dynamic\n}\n\npublic
external abstract class InputDeviceInfo : MediaDeviceInfo {\n  fun getCapabilities():
MediaTrackCapabilities\n}\n\n/**\n * Exposes the JavaScript
[MediaStreamConstraints](https://developer.mozilla.org/en/docs/Web/API/MediaStreamConstraints) to Kotlin\n
*/\npublic external interface MediaStreamConstraints {\n  var video: dynamic /* = false */\n  get() =
definedExternally\n  set(value) = definedExternally\n  var audio: dynamic /* = false */\n  get() =
definedExternally\n  set(value) = definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun MediaStreamConstraints(video:
dynamic = false, audio: dynamic = false): MediaStreamConstraints {\n  val o = js(\"({})\")\n  o[\"video\"] =
video\n  o[\"audio\"] = audio\n  return o\n}\n\npublic external interface ConstrainsablePattern
{\n  var onoverconstrained: ((Event) -> dynamic)?\n  get() = definedExternally\n  set(value) =
definedExternally\n  fun getCapabilities(): Capabilities\n  fun getConstraints(): Constraints\n  fun getSettings():
Settings\n  fun applyConstraints(constraints: Constraints = definedExternally): Promise<Unit>\n}\n\n/**\n *
Exposes the JavaScript [DoubleRange](https://developer.mozilla.org/en/docs/Web/API/DoubleRange) to Kotlin\n
*/\npublic external interface DoubleRange {\n  var max: Double?\n  get() = definedExternally\n  set(value)
= definedExternally\n  var min: Double?\n  get() = definedExternally\n  set(value) =
definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun DoubleRange(max: Double? =
undefined, min: Double? = undefined): DoubleRange {\n  val o = js(\"({})\")\n  o[\"max\"] = max\n  o[\"min\"] =
min\n  return o\n}\n\npublic external interface
ConstrainDoubleRange : DoubleRange {\n  var exact: Double?\n  get() = definedExternally\n  set(value) =
definedExternally\n  var ideal: Double?\n  get() = definedExternally\n  set(value) =
definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun ConstrainDoubleRange(exact: Double?
= undefined, ideal: Double? = undefined, max: Double? = undefined, min: Double? = undefined):
ConstrainDoubleRange {\n  val o = js(\"({})\")\n  o[\"exact\"] = exact\n  o[\"ideal\"] = ideal\n  o[\"max\"] =
max\n  o[\"min\"] = min\n  return o\n}\n\npublic external interface ULongRange {\n  var max: Int?\n  get() =
definedExternally\n  set(value) = definedExternally\n  var min: Int?\n  get() = definedExternally\n
set(value) = definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun ULongRange(max: Int?
= undefined, min: Int? = undefined): ULongRange {\n  val o = js(\"({})\")\n  o[\"max\"] = max\n  o[\"min\"] =
min\n  return o\n}\n\npublic external interface ConstrainULongRange : ULongRange {\n  var exact: Int?\n

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get() = definedExternally\n    set(value) = definedExternally\n    var ideal: Int?\n    get() = definedExternally\n    set(value) = definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun ConstrainULongRange(exact: Int? =
undefined, ideal: Int? = undefined, max: Int? = undefined, min: Int? = undefined): ConstrainULongRange {\n    val o
= js(\"({})\")\n    o[\"exact\"] = exact\n    o[\"ideal\"] = ideal\n    o[\"max\"] = max\n    o[\"min\"] = min\n    return
o\n}\n\n/**\n * Exposes the JavaScript
[ConstrainBooleanParameters](https://developer.mozilla.org/en/docs/Web/API/ConstrainBooleanParameters) to
Kotlin\n\n * \npublic external interface ConstrainBooleanParameters {\n    var exact:
Boolean?\n    get() = definedExternally\n    set(value) = definedExternally\n    var ideal: Boolean?\n    get()
= definedExternally\n    set(value) = definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun ConstrainBooleanParameters(exact:
Boolean? = undefined, ideal: Boolean? = undefined): ConstrainBooleanParameters {\n    val o = js(\"({})\")\n
o[\"exact\"] = exact\n    o[\"ideal\"] = ideal\n    return o\n}\n\n/**\n * Exposes the JavaScript
[ConstrainDOMStringParameters](https://developer.mozilla.org/en/docs/Web/API/ConstrainDOMStringParameters)
to Kotlin\n\n * \npublic external interface ConstrainDOMStringParameters {\n    var exact: dynamic\n    get() =
definedExternally\n    set(value) = definedExternally\n    var ideal: dynamic\n    get() = definedExternally\n
set(value) = definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic
inline fun ConstrainDOMStringParameters(exact: dynamic = undefined, ideal: dynamic = undefined):
ConstrainDOMStringParameters {\n    val o = js(\"({})\")\n    o[\"exact\"] = exact\n    o[\"ideal\"] = ideal\n    return
o\n}\n\npublic external interface Capabilities\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun Capabilities(): Capabilities {\n    val o
= js(\"({})\")\n    return o\n}\n\npublic external interface Settings\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun Settings(): Settings {\n    val o =
js(\"({})\")\n    return o\n}\n\npublic external interface ConstraintSet\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun ConstraintSet(): ConstraintSet {\n
val o = js(\"({})\")\n    return o\n}\n\npublic external interface Constraints : ConstraintSet {\n    var advanced:
Array<ConstraintSet>?\n
    get() = definedExternally\n    set(value) =
definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun Constraints(advanced:
Array<ConstraintSet>? = undefined): Constraints {\n    val o = js(\"({})\")\n    o[\"advanced\"] = advanced\n
return o\n}\n\n/* please, don't implement this interface!
*\n\n@JsName(\"null\")\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\npublic external
interface MediaStreamTrackState {\n    companion object\n}\n\npublic inline val
MediaStreamTrackState.Companion.LIVE: MediaStreamTrackState get() =
\"live\".asDynamic().unsafeCast<MediaStreamTrackState>()\n\npublic inline val
MediaStreamTrackState.Companion.ENDED: MediaStreamTrackState get() =
\"ended\".asDynamic().unsafeCast<MediaStreamTrackState>()\n\n/* please, don't implement this interface!
*\n\n@JsName(\"null\")\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\npublic external
interface VideoFacingModeEnum {\n
    companion object\n}\n\npublic inline val VideoFacingModeEnum.Companion.USER: VideoFacingModeEnum
get() = \"user\".asDynamic().unsafeCast<VideoFacingModeEnum>()\n\npublic inline val
VideoFacingModeEnum.Companion.ENVIRONMENT: VideoFacingModeEnum get() =
\"environment\".asDynamic().unsafeCast<VideoFacingModeEnum>()\n\npublic inline val
VideoFacingModeEnum.Companion.LEFT: VideoFacingModeEnum get() =
\"left\".asDynamic().unsafeCast<VideoFacingModeEnum>()\n\npublic inline val
VideoFacingModeEnum.Companion.RIGHT: VideoFacingModeEnum get() =

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\"right\".asDynamic().unsafeCast<VideoFacingModeEnum>()\n\n/* please, don't implement this interface!
*\n@JsName(\"null\")\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\n\npublic external
interface VideoResizeModeEnum {\n    companion object\n}\n\npublic inline val
VideoResizeModeEnum.Companion.NONE: VideoResizeModeEnum get() =
\"none\".asDynamic().unsafeCast<VideoResizeModeEnum>()\n\npublic inline val
VideoResizeModeEnum.Companion.CROP_AND_SCALE:
VideoResizeModeEnum get() = \"crop-and-scale\".asDynamic().unsafeCast<VideoResizeModeEnum>()\n\n/*
please, don't implement this interface!
*\n@JsName(\"null\")\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\n\npublic external
interface MediaDeviceKind {\n    companion object\n}\n\npublic inline val
MediaDeviceKind.Companion.AUDIOINPUT: MediaDeviceKind get() =
\"audioinput\".asDynamic().unsafeCast<MediaDeviceKind>()\n\npublic inline val
MediaDeviceKind.Companion.AUDIOOUTPUT: MediaDeviceKind get() =
\"audiooutput\".asDynamic().unsafeCast<MediaDeviceKind>()\n\npublic inline val
MediaDeviceKind.Companion.VIDEOINPUT: MediaDeviceKind get() =
\"videoinput\".asDynamic().unsafeCast<MediaDeviceKind>()
,\"*\n * Copyright 2010-2021 JetBrains s.r.o. and
Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that
can be found in the license/LICENSE.txt file.\n */\n\n// NOTE: THIS FILE IS AUTO-GENERATED, DO NOT
EDIT!\n\n// See github.com/kotlin/dukat
for details\n\npackage org.w3c.dom.mediasource\n\nimport kotlin.js.*\nimport org.khronos.webgl.*\nimport
org.w3c.dom.*\nimport org.w3c.dom.events.*\n\n/**\n * Exposes the JavaScript
[MediaSource](https://developer.mozilla.org/en/docs/Web/API/MediaSource) to Kotlin\n\n\npublic external open
class MediaSource : EventTarget, MediaProvider {\n    open val sourceBuffers: SourceBufferList\n    open val
activeSourceBuffers: SourceBufferList\n    open val readyState: ReadyState\n    var duration: Double\n    var
onsourceopen: ((Event) -> dynamic)?\n    var onsourceended: ((Event) -> dynamic)?\n    var onsourceclose: ((Event)
-> dynamic)?\n    fun addSourceBuffer(type: String): SourceBuffer\n    fun removeSourceBuffer(sourceBuffer:
SourceBuffer)\n    fun endOfStream(error: EndOfStreamError = definedExternally)\n    fun
setLiveSeekableRange(start: Double, end: Double)\n    fun clearLiveSeekableRange()\n\n    companion object {\n
        fun isTypeSupported(type: String): Boolean\n    }\n}\n\n/**\n
 * Exposes the JavaScript [SourceBuffer](https://developer.mozilla.org/en/docs/Web/API/SourceBuffer) to Kotlin\n
*\n\npublic external abstract class SourceBuffer : EventTarget {\n    open var mode: AppendMode\n    open val
updating: Boolean\n    open val buffered: TimeRanges\n    open var timestampOffset: Double\n    open val
audioTracks: AudioTrackList\n    open val videoTracks: VideoTrackList\n    open val textTracks: TextTrackList\n
open var appendWindowStart: Double\n    open var appendWindowEnd: Double\n    open var onupdatestart:
((Event) -> dynamic)?\n    open var onupdate: ((Event) -> dynamic)?\n    open var onupdateend: ((Event) ->
dynamic)?\n    open var onerror: ((Event) -> dynamic)?\n    open var onabort: ((Event) -> dynamic)?\n    fun
appendBuffer(data: dynamic)\n    fun abort()\n    fun remove(start: Double, end: Double)\n}\n\n/**\n * Exposes the
JavaScript [SourceBufferList](https://developer.mozilla.org/en/docs/Web/API/SourceBufferList) to Kotlin\n
*\n\npublic external
abstract class SourceBufferList : EventTarget {\n    open val length: Int\n    open var onaddsourcebuffer: ((Event) ->
dynamic)?\n    open var onremovesourcebuffer: ((Event) ->
dynamic)?\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n\n@kotlin.internal.InlineOnly\n\npublic inline operator fun SourceBufferList.get(index:
Int): SourceBuffer? = asDynamic()[index]\n\n/* please, don't implement this interface!
*\n@JsName(\"null\")\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\n\npublic external
interface ReadyState {\n    companion object\n}\n\npublic inline val ReadyState.Companion.CLOSED: ReadyState
get() = \"closed\".asDynamic().unsafeCast<ReadyState>()\n\npublic inline val ReadyState.Companion.OPEN:
ReadyState get() = \"open\".asDynamic().unsafeCast<ReadyState>()\n\npublic inline val

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ReadyState.Companion.ENDED: ReadyState get() = \"ended\".asDynamic().unsafeCast<ReadyState>()\n\n/*
please, don't implement this interface!
*/\n@JsName(\"null\")\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\npublic
external interface EndOfStreamError {\n  companion object\n}\n\npublic inline val
EndOfStreamError.Companion.NETWORK: EndOfStreamError get() =
\"network\".asDynamic().unsafeCast<EndOfStreamError>()\n\npublic inline val
EndOfStreamError.Companion.DECODE: EndOfStreamError get() =
\"decode\".asDynamic().unsafeCast<EndOfStreamError>()\n\n/* please, don't implement this interface!
*/\n@JsName(\"null\")\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\npublic external
interface AppendMode {\n  companion object\n}\n\npublic inline val AppendMode.Companion.SEGMENTS:
AppendMode get() = \"segments\".asDynamic().unsafeCast<AppendMode>()\n\npublic inline val
AppendMode.Companion.SEQUENCE: AppendMode get() =
\"sequence\".asDynamic().unsafeCast<AppendMode>()\n\n/*\n * Copyright 2010-2021 JetBrains s.r.o. and Kotlin
Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be
found in the license/LICENSE.txt
file.\n */\n\n// NOTE: THIS FILE IS AUTO-GENERATED, DO NOT EDIT!\n// See github.com/kotlin/dukat for
details\n\npackage org.w3c.dom.pointerevents\n\nimport kotlin.js.*\nimport org.khronos.webgl.*\nimport
org.w3c.dom.*\nimport org.w3c.dom.events.*\n\npublic external interface PointerEventInit : MouseEventInit {\n
var pointerId: Int? /* = 0 */\n    get() = definedExternally\n    set(value) = definedExternally\n    var width:
Double? /* = 1.0 */\n    get() = definedExternally\n    set(value) = definedExternally\n    var height: Double? /*
= 1.0 */\n    get() = definedExternally\n    set(value) = definedExternally\n    var pressure: Float? /* = 0f */\n
get() = definedExternally\n    set(value) = definedExternally\n    var tangentialPressure: Float? /* = 0f */\n
get() = definedExternally\n    set(value) = definedExternally\n    var tiltX: Int? /* = 0 */\n    get() =
definedExternally\n    set(value) = definedExternally\n    var tiltY:
Int? /* = 0 */\n    get() = definedExternally\n    set(value) = definedExternally\n    var twist: Int? /* = 0 */\n
get() = definedExternally\n    set(value) = definedExternally\n    var pointerType: String? /* = \"\" */\n    get() =
definedExternally\n    set(value) = definedExternally\n    var isPrimary: Boolean? /* = false */\n    get() =
definedExternally\n    set(value) = definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun PointerEventInit(pointerId: Int? = 0,
width: Double? = 1.0, height: Double? = 1.0, pressure: Float? = 0f, tangentialPressure: Float? = 0f, tiltX: Int? = 0,
tiltY: Int? = 0, twist: Int? = 0, pointerType: String? = \"\", isPrimary: Boolean? = false, screenX: Int? = 0, screenY:
Int? = 0, clientX: Int? = 0, clientY: Int? = 0, button: Short? = 0, buttons: Short? = 0, relatedTarget: EventTarget? =
null, region: String? = null, ctrlKey: Boolean? = false, shiftKey:
Boolean? = false, altKey: Boolean? = false, metaKey: Boolean? = false, modifierAltGraph: Boolean? = false,
modifierCapsLock: Boolean? = false, modifierFn: Boolean? = false, modifierFnLock: Boolean? = false,
modifierHyper: Boolean? = false, modifierNumLock: Boolean? = false, modifierScrollLock: Boolean? = false,
modifierSuper: Boolean? = false, modifierSymbol: Boolean? = false, modifierSymbolLock: Boolean? = false, view:
Window? = null, detail: Int? = 0, bubbles: Boolean? = false, cancelable: Boolean? = false, composed: Boolean? =
false): PointerEventInit {\n    val o = js(\"({})\")\n    o[\"pointerId\"] = pointerId\n    o[\"width\"] = width\n
o[\"height\"] = height\n    o[\"pressure\"] = pressure\n    o[\"tangentialPressure\"] = tangentialPressure\n
o[\"tiltX\"] = tiltX\n    o[\"tiltY\"] = tiltY\n    o[\"twist\"] = twist\n    o[\"pointerType\"] = pointerType\n
o[\"isPrimary\"] = isPrimary\n    o[\"screenX\"] = screenX\n    o[\"screenY\"] = screenY\n    o[\"clientX\"]
= clientX\n    o[\"clientY\"] = clientY\n    o[\"button\"] = button\n    o[\"buttons\"] = buttons\n    o[\"relatedTarget\"]
= relatedTarget\n    o[\"region\"] = region\n    o[\"ctrlKey\"] = ctrlKey\n    o[\"shiftKey\"] = shiftKey\n
o[\"altKey\"] = altKey\n    o[\"metaKey\"] = metaKey\n    o[\"modifierAltGraph\"] = modifierAltGraph\n
o[\"modifierCapsLock\"] = modifierCapsLock\n    o[\"modifierFn\"] = modifierFn\n    o[\"modifierFnLock\"] =
modifierFnLock\n    o[\"modifierHyper\"] = modifierHyper\n    o[\"modifierNumLock\"] = modifierNumLock\n
o[\"modifierScrollLock\"] = modifierScrollLock\n    o[\"modifierSuper\"] = modifierSuper\n

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o["modifierSymbol"] = modifierSymbol\n  o["modifierSymbolLock"] = modifierSymbolLock\n  o["view"] =
view\n  o["detail"] = detail\n  o["bubbles"] = bubbles\n  o["cancelable"] = cancelable\n  o["composed"] =
composed\n  return o\n}\n\n/**\n * Exposes the JavaScript
[PointerEvent](https://developer.mozilla.org/en/docs/Web/API/PointerEvent)
to Kotlin\n */\npublic external open class PointerEvent(type: String, eventInitDict: PointerEventInit =
definedExternally) : MouseEvent {\n  open val pointerId: Int\n  open val width: Double\n  open val height:
Double\n  open val pressure: Float\n  open val tangentialPressure: Float\n  open val tiltX: Int\n  open val tiltY:
Int\n  open val twist: Int\n  open val pointerType: String\n  open val isPrimary: Boolean\n\n  companion object
{\n    val NONE: Short\n    val CAPTURING_PHASE: Short\n    val AT_TARGET: Short\n    val
BUBBLING_PHASE: Short\n  }\n}", "/*\n * Copyright 2010-2021 JetBrains s.r.o. and Kotlin Programming
Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n */\n\n// NOTE: THIS FILE IS AUTO-GENERATED, DO NOT EDIT!\n// See
github.com/kotlin/dukat for details\n\npackage org.w3c.dom.svg\n\nimport kotlin.js.*\nimport
org.khronos.webgl.*\nimport
org.w3c.dom.*\nimport org.w3c.dom.css.*\n\n/**\n * Exposes the JavaScript
[SVGElement](https://developer.mozilla.org/en/docs/Web/API/SVGElement) to Kotlin\n */\npublic external
abstract class SVGElement : Element, ElementCSSInlineStyle, GlobalEventHandlers, SVGElementInstance {\n
  open val dataset: DOMStringMap\n  open val ownerSVGElement: SVGSVGElement?\n  open val
viewportElement: SVGElement?\n  open var tabIndex: Int\n  fun focus()\n  fun blur()\n\n  companion object
{\n    val ELEMENT_NODE: Short\n    val ATTRIBUTE_NODE: Short\n    val TEXT_NODE: Short\n
    val CDATA_SECTION_NODE: Short\n    val ENTITY_REFERENCE_NODE: Short\n    val
ENTITY_NODE: Short\n    val PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE:
Short\n    val DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n    val
DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n
    val DOCUMENT_POSITION_PRECEDING: Short\n    val DOCUMENT_POSITION_FOLLOWING:
Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n    val
DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n  }\n}\n\npublic external interface
SVGBoundingBoxOptions {\n  var fill: Boolean? /* = true */\n  get() = definedExternally\n  set(value) =
definedExternally\n  var stroke: Boolean? /* = false */\n  get() = definedExternally\n  set(value) =
definedExternally\n  var markers: Boolean? /* = false */\n  get() = definedExternally\n  set(value) =
definedExternally\n  var clipped: Boolean? /* = false */\n  get() = definedExternally\n  set(value) =
definedExternally\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n\n@kotlin.internal.InlineOnly\npublic inline fun SVGBoundingBoxOptions(fill:
Boolean? = true, stroke: Boolean? = false, markers: Boolean? = false, clipped: Boolean?
= false): SVGBoundingBoxOptions {\n  val o = js("{}")\n  o["fill"] = fill\n  o["stroke"] = stroke\n
o["markers"] = markers\n  o["clipped"] = clipped\n  return o\n}\n\n/**\n * Exposes the JavaScript
[SVGGraphicsElement](https://developer.mozilla.org/en/docs/Web/API/SVGGraphicsElement) to Kotlin\n
*/\npublic external abstract class SVGGraphicsElement : SVGElement, SVGTests {\n  open val transform:
SVGAnimatedTransformList\n  fun getBBox(options: SVGBoundingBoxOptions = definedExternally):
DOMRect\n  fun getCTM(): DOMMatrix?\n  fun getScreenCTM(): DOMMatrix?\n\n  companion object {\n
    val ELEMENT_NODE: Short\n    val ATTRIBUTE_NODE: Short\n    val TEXT_NODE: Short\n    val
CDATA_SECTION_NODE: Short\n    val ENTITY_REFERENCE_NODE: Short\n    val ENTITY_NODE:
Short\n    val PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE: Short\n    val
DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n    val
DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n

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    val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
    val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the JavaScript
[SVGGeometryElement](https://developer.mozilla.org/en/docs/Web/API/SVGGeometryElement) to Kotlin\n
*\n\npublic external abstract class SVGGeometryElement : SVGGraphicsElement {\n    open val pathLength:
SVGAnimatedNumber\n    fun isPointInFill(point: DOMPoint): Boolean\n    fun isPointInStroke(point: DOMPoint):
Boolean\n    fun getTotalLength(): Float\n    fun getPointAtLength(distance: Float): DOMPoint\n\n    companion
object {\n        val ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE: Short\n        val TEXT_NODE:
Short\n        val CDATA_SECTION_NODE: Short\n        val ENTITY_REFERENCE_NODE:
Short\n        val ENTITY_NODE: Short\n        val PROCESSING_INSTRUCTION_NODE: Short\n        val
COMMENT_NODE: Short\n        val DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n
        val DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
        val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
        val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the JavaScript
[SVGNumber](https://developer.mozilla.org/en/docs/Web/API/SVGNumber) to Kotlin\n
*\n\npublic external
abstract class SVGNumber {\n    open var value: Float\n}\n\n/**\n * Exposes the JavaScript
[SVGLength](https://developer.mozilla.org/en/docs/Web/API/SVGLength) to Kotlin\n
*\n\npublic external abstract
class SVGLength {\n    open val unitType: Short\n    open
var value: Float\n    open var valueInSpecifiedUnits: Float\n    open var valueAsString: String\n    fun
newValueSpecifiedUnits(unitType: Short, valueInSpecifiedUnits: Float)\n    fun convertToSpecifiedUnits(unitType:
Short)\n\n    companion object {\n        val SVG_LENGTHTYPE_UNKNOWN: Short\n        val
SVG_LENGTHTYPE_NUMBER: Short\n        val SVG_LENGTHTYPE_PERCENTAGE: Short\n        val
SVG_LENGTHTYPE_EMS: Short\n        val SVG_LENGTHTYPE_EXS: Short\n        val
SVG_LENGTHTYPE_PX: Short\n        val SVG_LENGTHTYPE_CM: Short\n        val
SVG_LENGTHTYPE_MM: Short\n        val SVG_LENGTHTYPE_IN: Short\n        val SVG_LENGTHTYPE_PT:
Short\n        val SVG_LENGTHTYPE_PC: Short\n    }\n}\n\n/**\n * Exposes the JavaScript
[SVGAngle](https://developer.mozilla.org/en/docs/Web/API/SVGAngle) to Kotlin\n
*\n\npublic external abstract
class SVGAngle {\n    open val unitType: Short\n    open var value: Float\n    open var valueInSpecifiedUnits:
Float\n    open var valueAsString: String\n    fun
newValueSpecifiedUnits(unitType: Short, valueInSpecifiedUnits: Float)\n    fun
convertToSpecifiedUnits(unitType: Short)\n\n    companion object {\n        val SVG_ANGLETYPE_UNKNOWN:
Short\n        val SVG_ANGLETYPE_UNSPECIFIED: Short\n        val SVG_ANGLETYPE_DEG: Short\n        val
SVG_ANGLETYPE_RAD: Short\n        val SVG_ANGLETYPE_GRAD: Short\n    }\n}\n\npublic external abstract
class SVGNameList {\n    open val length: Int\n    open val numberOfItems: Int\n    fun clear()\n    fun
initialize(newItem: dynamic): dynamic\n    fun insertItemBefore(newItem: dynamic, index: Int): dynamic\n    fun
replaceItem(newItem: dynamic, index: Int): dynamic\n    fun removeItem(index: Int): dynamic\n    fun
appendItem(newItem: dynamic): dynamic\n    fun getItem(index: Int):
dynamic\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n\n@kotlin.internal.InlineOnly\n\npublic inline operator fun SVGNameList.get(index: Int):
dynamic = asDynamic()[index]\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n\n@kotlin.internal.InlineOnly\n\npublic inline operator fun SVGNameList.set(index: Int,
newItem: dynamic) { asDynamic()[index] = newItem }\n\n/**\n * Exposes the JavaScript
[SVGNumberList](https://developer.mozilla.org/en/docs/Web/API/SVGNumberList) to Kotlin\n
*\n\npublic external
abstract class SVGNumberList {\n    open val length: Int\n    open val numberOfItems: Int\n    fun clear()\n    fun
initialize(newItem: SVGNumber): SVGNumber\n    fun insertItemBefore(newItem: SVGNumber, index: Int):
SVGNumber\n    fun replaceItem(newItem: SVGNumber, index: Int): SVGNumber\n    fun removeItem(index: Int):
SVGNumber\n}

```



```

SVGNumber\n fun appendItem(newItem: SVGNumber): SVGNumber\n fun getItem(index: Int):
SVGNumber\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline operator fun SVGNumberList.get(index:
Int): SVGNumber? = asDynamic()[index]\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic
inline operator fun SVGNumberList.set(index: Int, newItem: SVGNumber) { asDynamic()[index] = newItem
}\n\n/**\n * Exposes the JavaScript
[SVGLengthList](https://developer.mozilla.org/en/docs/Web/API/SVGLengthList) to Kotlin\n */\npublic external
abstract class SVGLengthList {\n open val length: Int\n open val numberOfItems: Int\n fun clear()\n fun
initialize(newItem: SVGLength): SVGLength\n fun insertItemBefore(newItem: SVGLength, index: Int):
SVGLength\n fun replaceItem(newItem: SVGLength, index: Int): SVGLength\n fun removeItem(index: Int):
SVGLength\n fun appendItem(newItem: SVGLength): SVGLength\n fun getItem(index: Int):
SVGLength\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline operator fun SVGLengthList.get(index:
Int): SVGLength? = asDynamic()[index]\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline operator fun SVGLengthList.set(index:
Int, newItem: SVGLength) { asDynamic()[index] = newItem }\n\n/**\n * Exposes the JavaScript
[SVGAnimatedBoolean](https://developer.mozilla.org/en/docs/Web/API/SVGAnimatedBoolean) to Kotlin\n */\npublic external abstract class SVGAnimatedBoolean {\n open var baseVal: Boolean\n open val animVal:
Boolean\n}\n\n/**\n * Exposes the JavaScript
[SVGAnimatedEnumeration](https://developer.mozilla.org/en/docs/Web/API/SVGAnimatedEnumeration) to
Kotlin\n */\npublic external abstract class SVGAnimatedEnumeration {\n open var baseVal: Short\n open val
animVal: Short\n}\n\n/**\n * Exposes the JavaScript
[SVGAnimatedInteger](https://developer.mozilla.org/en/docs/Web/API/SVGAnimatedInteger) to Kotlin\n */\npublic external abstract class SVGAnimatedInteger {\n open var baseVal: Int\n open val animVal:
Int\n}\n\n/**\n * Exposes the JavaScript
[SVGAnimatedNumber](https://developer.mozilla.org/en/docs/Web/API/SVGAnimatedNumber) to Kotlin\n */\npublic external abstract class SVGAnimatedNumber
{\n open var baseVal: Float\n open val animVal: Float\n}\n\n/**\n * Exposes the JavaScript
[SVGAnimatedLength](https://developer.mozilla.org/en/docs/Web/API/SVGAnimatedLength) to Kotlin\n */\npublic external abstract class SVGAnimatedLength {\n open val baseVal: SVGLength\n open val animVal:
SVGLength\n}\n\n/**\n * Exposes the JavaScript
[SVGAnimatedAngle](https://developer.mozilla.org/en/docs/Web/API/SVGAnimatedAngle) to Kotlin\n */\npublic
external abstract class SVGAnimatedAngle {\n open val baseVal: SVGAngle\n open val animVal:
SVGAngle\n}\n\n/**\n * Exposes the JavaScript
[SVGAnimatedString](https://developer.mozilla.org/en/docs/Web/API/SVGAnimatedString) to Kotlin\n */\npublic
external abstract class SVGAnimatedString {\n open var baseVal: String\n open val animVal: String\n}\n\n/**\n * Exposes the JavaScript
[SVGAnimatedRect](https://developer.mozilla.org/en/docs/Web/API/SVGAnimatedRect)
to Kotlin\n */\npublic external abstract class SVGAnimatedRect
{\n open val baseVal: DOMRect\n open val animVal: DOMRectReadOnly\n}\n\n/**\n * Exposes the
JavaScript
[SVGAnimatedNumberList](https://developer.mozilla.org/en/docs/Web/API/SVGAnimatedNumberList)
to Kotlin\n */\npublic external abstract class SVGAnimatedNumberList {\n open val baseVal: SVGNumberList\n
open val animVal: SVGNumberList\n}\n\n/**\n * Exposes the JavaScript
[SVGAnimatedLengthList](https://developer.mozilla.org/en/docs/Web/API/SVGAnimatedLengthList) to Kotlin\n */\npublic external abstract class SVGAnimatedLengthList {\n open val baseVal: SVGLengthList\n open val
animVal: SVGLengthList\n}\n\n/**\n * Exposes the JavaScript
[SVGStringList](https://developer.mozilla.org/en/docs/Web/API/SVGStringList) to Kotlin\n */\npublic external
abstract class SVGStringList {\n open val length: Int\n open val numberOfItems: Int\n fun clear()\n fun

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initialize(newItem: String): String\n fun insertItemBefore(newItem: String, index: Int): String\n fun
replaceItem(newItem:
String, index: Int): String\n fun removeItem(index: Int): String\n fun appendItem(newItem: String): String\n
fun getItem(index: Int): String\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline operator fun SVGStringList.get(index:
Int): String? = asDynamic()[index]\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline operator fun SVGStringList.set(index: Int,
newItem: String) { asDynamic()[index] = newItem }\n\n/**\n * Exposes the JavaScript
[SVGUnitTypes](https://developer.mozilla.org/en/docs/Web/API/SVGUnitTypes) to Kotlin\n
*\n@Suppress("NESTED_CLASS_IN_EXTERNAL_INTERFACE")\npublic external interface SVGUnitTypes
{\n companion object {\n val SVG_UNIT_TYPE_UNKNOWN: Short\n val
SVG_UNIT_TYPE_USERSPACEONUSE: Short\n val SVG_UNIT_TYPE_OBJECTBOUNDINGBOX:
Short\n }\n}\n\n/**\n * Exposes the JavaScript
[SVGTTests](https://developer.mozilla.org/en/docs/Web/API/SVGTTests)
to Kotlin\n *\npublic external interface SVGTTests {\n val requiredExtensions: SVGStringList\n val
systemLanguage: SVGStringList\n}\n\npublic external interface SVGFitToViewBox {\n val viewBox:
SVGAnimatedRect\n val preserveAspectRatio: SVGAnimatedPreserveAspectRatio\n}\n\n/**\n * Exposes the
JavaScript [SVGZoomAndPan](https://developer.mozilla.org/en/docs/Web/API/SVGZoomAndPan) to Kotlin\n
*\n@Suppress("NESTED_CLASS_IN_EXTERNAL_INTERFACE")\npublic external interface
SVGZoomAndPan {\n var zoomAndPan: Short\n\n companion object {\n val
SVG_ZOOMANDPAN_UNKNOWN: Short\n val SVG_ZOOMANDPAN_DISABLE: Short\n val
SVG_ZOOMANDPAN_MAGNIFY: Short\n }\n}\n\n/**\n * Exposes the JavaScript
[SVGURIReference](https://developer.mozilla.org/en/docs/Web/API/SVGURIReference) to Kotlin\n *\npublic
external interface SVGURIReference {\n val href: SVGAnimatedString\n}\n\n/**\n * Exposes the JavaScript
[SVGSVGElement](https://developer.mozilla.org/en/docs/Web/API/SVGSVGElement)
to Kotlin\n *\npublic external abstract class SVGSVGElement : SVGGraphicsElement, SVGFitToViewBox,
SVGZoomAndPan, WindowEventHandlers {\n open val x: SVGAnimatedLength\n open val y:
SVGAnimatedLength\n open val width: SVGAnimatedLength\n open val height: SVGAnimatedLength\n open
var currentScale: Float\n open val currentTranslate: DOMPointReadOnly\n fun getIntersectionList(rect:
DOMRectReadOnly, referenceElement: SVGElement?): NodeList\n fun getEnclosureList(rect:
DOMRectReadOnly, referenceElement: SVGElement?): NodeList\n fun checkIntersection(element: SVGElement,
rect: DOMRectReadOnly): Boolean\n fun checkEnclosure(element: SVGElement, rect: DOMRectReadOnly):
Boolean\n fun deselectAll()\n fun createSVGNumber(): SVGNumber\n fun createSVGLength(): SVGLength\n
fun createSVGAngle(): SVGAngle\n fun createSVGPoint(): DOMPoint\n fun createSVGMatrix():
DOMMatrix\n fun createSVGRect(): DOMRect\n
fun createSVGTransform(): SVGTransform\n fun createSVGTransformFromMatrix(matrix:
DOMMatrixReadOnly): SVGTransform\n fun getElementById(elementId: String): Element\n fun
suspendRedraw(maxWaitMilliseconds: Int): Int\n fun unsuspendRedraw(suspendHandleID: Int)\n fun
unsuspendRedrawAll()\n fun forceRedraw()\n\n companion object {\n val
SVG_ZOOMANDPAN_UNKNOWN: Short\n val SVG_ZOOMANDPAN_DISABLE: Short\n val
SVG_ZOOMANDPAN_MAGNIFY: Short\n val ELEMENT_NODE: Short\n val ATTRIBUTE_NODE:
Short\n val TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n val
ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE: Short\n val
PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val
DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val
DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING:

```

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Short\n    val DOCUMENT_POSITION_FOLLOWING: Short\n    val
DOCUMENT_POSITION_CONTAINS: Short\n    val DOCUMENT_POSITION_CONTAINED_BY: Short\n
    val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the
JavaScript [SVGGElement](https://developer.mozilla.org/en/docs/Web/API/SVGGElement) to Kotlin\n *\npublic
external abstract class SVGGElement : SVGGraphicsElement {\n    companion object {\n        val
ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val
CDATA_SECTION_NODE: Short\n        val ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE:
Short\n        val PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val
DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val
DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
        val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS:
Short\n        val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\npublic external abstract class
SVGUnknownElement : SVGGraphicsElement {\n    companion object {\n        val ELEMENT_NODE: Short\n
        val ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val CDATA_SECTION_NODE: Short\n
        val ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE: Short\n        val
PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val
DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val
DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
        val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
        val DOCUMENT_POSITION_CONTAINED_BY:
Short\n        val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes
the JavaScript [SVGDefsElement](https://developer.mozilla.org/en/docs/Web/API/SVGDefsElement) to Kotlin\n
*\npublic external abstract class SVGDefsElement : SVGGraphicsElement {\n    companion object {\n        val
ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val
CDATA_SECTION_NODE: Short\n        val ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE:
Short\n        val PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val
DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val
DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
        val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
        val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\npublic external abstract class
SVGDescElement : SVGElement {\n    companion object {\n        val ELEMENT_NODE:
Short\n        val ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val CDATA_SECTION_NODE:
Short\n        val ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE: Short\n        val
PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val
DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val
DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
        val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
        val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC:
Short\n    }\n}\n\n/**\n * Exposes the JavaScript
[SVGMetadataElement](https://developer.mozilla.org/en/docs/Web/API/SVGMetadataElement) to Kotlin\n

```

```

*\npublic external abstract class SVGMetadataElement : SVGElement {\n  companion object {\n    val
ELEMENT_NODE: Short\n    val ATTRIBUTE_NODE: Short\n    val TEXT_NODE: Short\n    val
CDATA_SECTION_NODE: Short\n    val ENTITY_REFERENCE_NODE: Short\n    val ENTITY_NODE:
Short\n    val PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE: Short\n    val
DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n    val
DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n
    val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
    val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC:
Short\n  }\n}\n\n/**\n * Exposes the JavaScript
[SVGTitleElement](https://developer.mozilla.org/en/docs/Web/API/SVGTitleElement) to Kotlin\n
*\npublic
external abstract class SVGTitleElement : SVGElement {\n  companion object {\n    val ELEMENT_NODE:
Short\n    val ATTRIBUTE_NODE: Short\n    val TEXT_NODE: Short\n    val CDATA_SECTION_NODE:
Short\n    val ENTITY_REFERENCE_NODE: Short\n    val ENTITY_NODE: Short\n    val
PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE: Short\n    val
DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n    val
DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n
    val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
    val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n  }\n}\n\n/**\n * Exposes the JavaScript
[SVGSymbolElement](https://developer.mozilla.org/en/docs/Web/API/SVGSymbolElement) to Kotlin\n
*\npublic
external abstract class SVGSymbolElement : SVGGraphicsElement, SVGFitToViewBox {\n  companion object
{\n    val ELEMENT_NODE: Short\n    val ATTRIBUTE_NODE: Short\n    val TEXT_NODE: Short\n
    val CDATA_SECTION_NODE: Short\n    val ENTITY_REFERENCE_NODE: Short\n    val
ENTITY_NODE: Short\n    val PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE:
Short\n    val DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n    val
DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n
    val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
    val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n  }\n}\n\n/**\n * Exposes the JavaScript
[SVGUseElement](https://developer.mozilla.org/en/docs/Web/API/SVGUseElement) to
Kotlin\n
*\npublic external abstract class SVGUseElement : SVGGraphicsElement, SVGURIReference {\n  open
val x: SVGAnimatedLength\n  open val y: SVGAnimatedLength\n  open val width: SVGAnimatedLength\n
open val height: SVGAnimatedLength\n  open val instanceRoot: SVGElement?\n  open val
animatedInstanceRoot: SVGElement?\n\n  companion object {\n    val ELEMENT_NODE: Short\n    val
ATTRIBUTE_NODE: Short\n    val TEXT_NODE: Short\n    val CDATA_SECTION_NODE: Short\n    val
ENTITY_REFERENCE_NODE: Short\n    val ENTITY_NODE: Short\n    val
PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE: Short\n    val
DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n    val
DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING:
Short\n    val DOCUMENT_POSITION_FOLLOWING: Short\n    val
DOCUMENT_POSITION_CONTAINS: Short\n    val DOCUMENT_POSITION_CONTAINED_BY: Short\n
    val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n  }\n}\n\npublic external open class

```

```

SVGUseElementShadowRoot : ShadowRoot {
    companion object {
        val ELEMENT_NODE: Short
        val ATTRIBUTE_NODE: Short
        val TEXT_NODE: Short
        val CDATA_SECTION_NODE: Short
        val ENTITY_REFERENCE_NODE: Short
        val ENTITY_NODE: Short
        val PROCESSING_INSTRUCTION_NODE: Short
        val COMMENT_NODE: Short
        val DOCUMENT_NODE: Short
        val DOCUMENT_TYPE_NODE: Short
        val DOCUMENT_FRAGMENT_NODE: Short
        val NOTATION_NODE: Short
        val DOCUMENT_POSITION_DISCONNECTED: Short
        val DOCUMENT_POSITION_PRECEDING: Short
        val DOCUMENT_POSITION_FOLLOWING: Short
        val DOCUMENT_POSITION_CONTAINS: Short
        val DOCUMENT_POSITION_CONTAINED_BY: Short
        val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short
    }
}

public external interface SVGElementInstance {
    val correspondingElement: SVGElement?
    get() = definedExternally
    val correspondingUseElement: SVGUseElement?
    get() = definedExternally
}

public external open class ShadowAnimation(source: dynamic, newTarget: dynamic) {
    open val sourceAnimation: dynamic
}

/**
 * Exposes the JavaScript [SVGSwitchElement](https://developer.mozilla.org/en/docs/Web/API/SVGSwitchElement) to Kotlin
 */
public external abstract class SVGSwitchElement : SVGGraphicsElement {
    companion object {
        val ELEMENT_NODE: Short
        val ATTRIBUTE_NODE: Short
        val TEXT_NODE: Short
        val CDATA_SECTION_NODE: Short
        val ENTITY_REFERENCE_NODE: Short
        val ENTITY_NODE: Short
        val PROCESSING_INSTRUCTION_NODE: Short
        val COMMENT_NODE: Short
        val DOCUMENT_NODE: Short
        val DOCUMENT_TYPE_NODE: Short
        val DOCUMENT_FRAGMENT_NODE: Short
        val NOTATION_NODE: Short
        val DOCUMENT_POSITION_DISCONNECTED: Short
        val DOCUMENT_POSITION_PRECEDING: Short
        val DOCUMENT_POSITION_FOLLOWING: Short
        val DOCUMENT_POSITION_CONTAINS: Short
        val DOCUMENT_POSITION_CONTAINED_BY: Short
        val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short
    }
}

public external interface GetSVGDocument {
    fun getSVGDocument(): Document
}

/**
 * Exposes the JavaScript [SVGStyleElement](https://developer.mozilla.org/en/docs/Web/API/SVGStyleElement) to Kotlin
 */
public external abstract class SVGStyleElement : SVGElement, LinkStyle {
    open var type: String
    open var media: String
    open var title: String
}

companion object {
    val ELEMENT_NODE: Short
    val ATTRIBUTE_NODE: Short
    val TEXT_NODE: Short
    val CDATA_SECTION_NODE: Short
    val ENTITY_REFERENCE_NODE: Short
    val ENTITY_NODE: Short
    val PROCESSING_INSTRUCTION_NODE: Short
    val COMMENT_NODE: Short
    val DOCUMENT_NODE: Short
    val DOCUMENT_TYPE_NODE: Short
    val DOCUMENT_FRAGMENT_NODE: Short
    val NOTATION_NODE: Short
    val DOCUMENT_POSITION_DISCONNECTED: Short
    val DOCUMENT_POSITION_PRECEDING: Short
    val DOCUMENT_POSITION_FOLLOWING: Short
    val DOCUMENT_POSITION_CONTAINS: Short
    val DOCUMENT_POSITION_CONTAINED_BY: Short
    val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short
}

/**
 * Exposes the JavaScript [SVGTransform](https://developer.mozilla.org/en/docs/Web/API/SVGTransform) to Kotlin
 */
public external abstract class SVGTransform {
    open val type: Short
    open val matrix: DOMMatrix
    open val angle: Float
    fun setMatrix(matrix: DOMMatrixReadOnly)
    fun setTranslate(tx: Float, ty: Float)
    fun setScale(sx: Float, sy: Float)
    fun setRotate(angle: Float, cx: Float, cy: Float)
    fun setSkewX(angle: Float)
    fun setSkewY(angle: Float)
}

companion object {
    val SVG_TRANSFORM_UNKNOWN: Short
    val SVG_TRANSFORM_MATRIX: Short
    val SVG_TRANSFORM_TRANSLATE: Short
    val SVG_TRANSFORM_SCALE: Short
    val SVG_TRANSFORM_ROTATE: Short
    val SVG_TRANSFORM_SKEWX: Short
    val SVG_TRANSFORM_SKEWY: Short
}

/**
 * Exposes the JavaScript [SVGTransformList](https://developer.mozilla.org/en/docs/Web/API/SVGTransformList) to Kotlin
 */
public external abstract class SVGTransformList {
    open val length: Int
    open val numberOfItems: Int
    fun

```

```

clear()\n fun initialize(newItem: SVGTransform): SVGTransform\n fun insertItemBefore(newItem:
SVGTransform, index: Int): SVGTransform\n fun replaceItem(newItem: SVGTransform, index: Int):
SVGTransform\n fun removeItem(index: Int): SVGTransform\n fun appendItem(newItem: SVGTransform):
SVGTransform\n fun createSVGTransformFromMatrix(matrix:
DOMMatrixReadOnly): SVGTransform\n fun consolidate(): SVGTransform?\n fun getItem(index: Int):
SVGTransform\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline operator fun SVGTransformList.get(index:
Int): SVGTransform? = asDynamic()[index]\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline operator fun SVGTransformList.set(index:
Int, newItem: SVGTransform) { asDynamic()[index] = newItem }\n\n/**\n * Exposes the JavaScript
[SVGAnimatedTransformList](https://developer.mozilla.org/en/docs/Web/API/SVGAnimatedTransformList) to
Kotlin\n */\npublic external abstract class SVGAnimatedTransformList {\n open val baseVal:
SVGTransformList\n open val animVal: SVGTransformList\n}\n\n/**\n * Exposes the JavaScript
[SVGPreserveAspectRatio](https://developer.mozilla.org/en/docs/Web/API/SVGPreserveAspectRatio) to Kotlin\n
*/\npublic external abstract class SVGPreserveAspectRatio
{\n open var align: Short\n open var meetOrSlice: Short\n\n companion object {\n val
SVG_PRESERVEASPECTRATIO_UNKNOWN: Short\n val SVG_PRESERVEASPECTRATIO_NONE:
Short\n val SVG_PRESERVEASPECTRATIO_XMINYMIN: Short\n val
SVG_PRESERVEASPECTRATIO_XMIDYMIN: Short\n val
SVG_PRESERVEASPECTRATIO_XMAXYMIN: Short\n val
SVG_PRESERVEASPECTRATIO_XMINYMID: Short\n val
SVG_PRESERVEASPECTRATIO_XMIDYMID: Short\n val
SVG_PRESERVEASPECTRATIO_XMAXYMID: Short\n val
SVG_PRESERVEASPECTRATIO_XMINYMAX: Short\n val
SVG_PRESERVEASPECTRATIO_XMIDYMAX: Short\n val
SVG_PRESERVEASPECTRATIO_XMAXYMAX: Short\n val SVG_MEETORSLICE_UNKNOWN: Short\n
val SVG_MEETORSLICE_MEET: Short\n val SVG_MEETORSLICE_SLICE: Short\n }\n}\n\n/**\n *
Exposes the JavaScript
[SVGAnimatedPreserveAspectRatio](https://developer.mozilla.org/en/docs/Web/API/SVGAnimatedPreserveAspect
Ratio) to Kotlin\n */\npublic external abstract class
SVGAnimatedPreserveAspectRatio {\n open val baseVal: SVGPreserveAspectRatio\n open val animVal:
SVGPreserveAspectRatio\n}\n\n/**\n * Exposes the JavaScript
[SVGPathElement](https://developer.mozilla.org/en/docs/Web/API/SVGPathElement) to Kotlin\n */\npublic
external abstract class SVGPathElement : SVGGeometryElement {\n companion object {\n val
ELEMENT_NODE: Short\n val ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n val
CDATA_SECTION_NODE: Short\n val ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE:
Short\n val PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val
DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val
DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n
val
DOCUMENT_POSITION_CONTAINED_BY: Short\n val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\n/**\n * Exposes the JavaScript
[SVGRectElement](https://developer.mozilla.org/en/docs/Web/API/SVGRectElement) to Kotlin\n */\npublic
external abstract class SVGRectElement : SVGGeometryElement {\n open val x: SVGAnimatedLength\n open
val y: SVGAnimatedLength\n open val width: SVGAnimatedLength\n open val height: SVGAnimatedLength\n
open val rx: SVGAnimatedLength\n open val ry: SVGAnimatedLength\n\n companion object {\n val

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ELEMENT_NODE: Short\n    val ATTRIBUTE_NODE: Short\n    val TEXT_NODE: Short\n    val
CDATA_SECTION_NODE: Short\n    val ENTITY_REFERENCE_NODE: Short\n    val ENTITY_NODE:
Short\n    val PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE: Short\n    val
DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n    val
DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n
    val DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING:
Short\n    val DOCUMENT_POSITION_FOLLOWING: Short\n    val
DOCUMENT_POSITION_CONTAINS: Short\n    val DOCUMENT_POSITION_CONTAINED_BY: Short\n
    val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the
JavaScript [SVGCircleElement](https://developer.mozilla.org/en/docs/Web/API/SVGCircleElement) to Kotlin\n
*\npublic external abstract class SVGCircleElement : SVGGeometryElement {\n    open val cx:
SVGAnimatedLength\n    open val cy: SVGAnimatedLength\n    open val r: SVGAnimatedLength\n\n    companion
object {\n        val ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE: Short\n        val TEXT_NODE:
Short\n        val CDATA_SECTION_NODE: Short\n        val ENTITY_REFERENCE_NODE: Short\n        val
ENTITY_NODE: Short\n        val PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE:
Short\n        val DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE:
Short\n        val DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
        val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
        val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the JavaScript
[SVGEllipseElement](https://developer.mozilla.org/en/docs/Web/API/SVGEllipseElement) to Kotlin\n
*\npublic external abstract class SVGEllipseElement : SVGGeometryElement {\n    open val cx: SVGAnimatedLength\n
    open val cy: SVGAnimatedLength\n    open val rx: SVGAnimatedLength\n    open val ry: SVGAnimatedLength\n\n
    companion object {\n        val ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE: Short\n        val
TEXT_NODE: Short\n        val CDATA_SECTION_NODE: Short\n        val ENTITY_REFERENCE_NODE:
Short\n        val ENTITY_NODE: Short\n
        val PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val
DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val
DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
        val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
        val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the JavaScript
[SVGLineElement](https://developer.mozilla.org/en/docs/Web/API/SVGLineElement) to Kotlin\n
*\npublic external abstract class SVGLineElement : SVGGeometryElement {\n    open val x1: SVGAnimatedLength\n
    open val y1: SVGAnimatedLength\n    open val x2: SVGAnimatedLength\n    open val y2: SVGAnimatedLength\n\n
    companion object {\n        val ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE: Short\n        val
TEXT_NODE:
Short\n        val CDATA_SECTION_NODE: Short\n        val ENTITY_REFERENCE_NODE: Short\n        val
ENTITY_NODE: Short\n        val PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE:
Short\n        val DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val
DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
        val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
        val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the JavaScript
[SVGMeshElement](https://developer.mozilla.org/en/docs/Web/API/SVGMeshElement) to Kotlin\n
*\npublic

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external abstract class SVGMeshElement : SVGGeometryElement, SVGURIReference {\n  companion object {\n    val ELEMENT_NODE: Short\n    val ATTRIBUTE_NODE: Short\n    val TEXT_NODE: Short\n    val CDATA_SECTION_NODE: Short\n    val ENTITY_REFERENCE_NODE: Short\n    val ENTITY_NODE: Short\n    val PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE: Short\n    val DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n    val DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n    val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n    val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n  }\n}\n\n/**\n * Exposes the JavaScript [SVGAnimatedPoints](https://developer.mozilla.org/en/docs/Web/API/SVGAnimatedPoints) to Kotlin\n */\n\npublic external interface SVGAnimatedPoints {\n  val points: SVGPointList\n  val animatedPoints: SVGPointList\n}\n\npublic external abstract class SVGPointList {\n  open val length: Int\n  open val numberOfItems: Int\n  fun clear()\n  fun initialize(newItem: DOMPoint): DOMPoint\n  fun insertItemBefore(newItem: DOMPoint, index: Int): DOMPoint\n  fun replaceItem(newItem: DOMPoint, index: Int): DOMPoint\n  fun removeItem(index: Int): DOMPoint\n  fun appendItem(newItem: DOMPoint): DOMPoint\n  fun getItem(index: Int): DOMPoint\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\", \"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline operator fun SVGPointList.get(index: Int): DOMPoint? = asDynamic()[index]\n\n@Suppress(\"INVISIBLE_REFERENCE\", \"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline operator fun SVGPointList.set(index: Int, newItem: DOMPoint) { asDynamic()[index] = newItem }\n\n/**\n * Exposes the JavaScript [SVGPolylineElement](https://developer.mozilla.org/en/docs/Web/API/SVGPolylineElement) to Kotlin\n */\n\npublic external abstract class SVGPolylineElement : SVGGeometryElement, SVGAnimatedPoints {\n  companion object {\n    val ELEMENT_NODE: Short\n    val ATTRIBUTE_NODE: Short\n    val TEXT_NODE: Short\n    val CDATA_SECTION_NODE: Short\n    val ENTITY_REFERENCE_NODE: Short\n    val ENTITY_NODE: Short\n    val PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE: Short\n    val DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n    val DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n    val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n    val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n  }\n}\n\n/**\n * Exposes the JavaScript [SVGPolygonElement](https://developer.mozilla.org/en/docs/Web/API/SVGPolygonElement) to Kotlin\n */\n\npublic external abstract class SVGPolygonElement : SVGGeometryElement, SVGAnimatedPoints {\n  companion object {\n    val ELEMENT_NODE: Short\n    val ATTRIBUTE_NODE: Short\n    val TEXT_NODE: Short\n    val CDATA_SECTION_NODE: Short\n    val ENTITY_REFERENCE_NODE: Short\n    val ENTITY_NODE: Short\n    val PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE: Short\n    val DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n    val DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n    val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n    val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n  }\n}\n\n/**\n * Exposes the JavaScript [SVGTextContentElement](https://developer.mozilla.org/en/docs/Web/API/SVGTextContentElement) to Kotlin\n */\n\npublic external abstract class SVGTextContentElement : SVGGraphicsElement {\n  open val textLength:

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SVGAnimatedLength\n  open val lengthAdjust: SVGAnimatedEnumeration\n  fun getNumberOfChars(): Int\n
fun getComputedTextLength(): Float\n  fun getSubStringLength(charnum: Int, nchars: Int): Float\n  fun
getStartPositionOfChar(charnum: Int): DOMPoint\n  fun getEndPositionOfChar(charnum: Int): DOMPoint\n  fun
getExtentOfChar(charnum: Int): DOMRect\n  fun getRotationOfChar(charnum: Int): Float\n  fun
getCharNumAtPosition(point: DOMPoint): Int\n  fun selectSubString(charnum: Int, nchars: Int)\n\n  companion
object {\n    val LENGTHADJUST_UNKNOWN: Short\n    val LENGTHADJUST_SPACING: Short\n
val LENGTHADJUST_SPACINGANDGLYPHS: Short\n    val ELEMENT_NODE: Short\n    val
ATTRIBUTE_NODE: Short\n    val TEXT_NODE: Short\n    val CDATA_SECTION_NODE: Short\n    val
ENTITY_REFERENCE_NODE: Short\n    val ENTITY_NODE: Short\n    val
PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE: Short\n    val
DOCUMENT_NODE: Short\n
    val DOCUMENT_TYPE_NODE: Short\n    val DOCUMENT_FRAGMENT_NODE: Short\n    val
NOTATION_NODE: Short\n    val DOCUMENT_POSITION_DISCONNECTED: Short\n    val
DOCUMENT_POSITION_PRECEDING: Short\n    val DOCUMENT_POSITION_FOLLOWING: Short\n
val DOCUMENT_POSITION_CONTAINS: Short\n    val DOCUMENT_POSITION_CONTAINED_BY:
Short\n    val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n  }\n\n  /**\n * Exposes
the JavaScript
[SVGTextPositioningElement](https://developer.mozilla.org/en/docs/Web/API/SVGTextPositioningElement) to
Kotlin\n  */\npublic external abstract class SVGTextPositioningElement : SVGTextContentElement {\n  open val x:
SVGAnimatedLengthList\n  open val y: SVGAnimatedLengthList\n  open val dx: SVGAnimatedLengthList\n
open val dy: SVGAnimatedLengthList\n  open val rotate: SVGAnimatedNumberList\n\n  companion object {\n
val LENGTHADJUST_UNKNOWN: Short\n    val LENGTHADJUST_SPACING: Short\n    val
LENGTHADJUST_SPACINGANDGLYPHS:
Short\n    val ELEMENT_NODE: Short\n    val ATTRIBUTE_NODE: Short\n    val TEXT_NODE: Short\n
val CDATA_SECTION_NODE: Short\n    val ENTITY_REFERENCE_NODE: Short\n    val
ENTITY_NODE: Short\n    val PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE:
Short\n    val DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n    val
DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n  }\n\n  /**\n * Exposes the JavaScript
[SVGTextElement](https://developer.mozilla.org/en/docs/Web/API/SVGTextElement) to Kotlin\n  */\npublic
external abstract class SVGTextElement : SVGTextPositioningElement {\n  companion
object {\n    val LENGTHADJUST_UNKNOWN: Short\n    val LENGTHADJUST_SPACING: Short\n
val LENGTHADJUST_SPACINGANDGLYPHS: Short\n    val ELEMENT_NODE: Short\n    val
ATTRIBUTE_NODE: Short\n    val TEXT_NODE: Short\n    val CDATA_SECTION_NODE: Short\n    val
ENTITY_REFERENCE_NODE: Short\n    val ENTITY_NODE: Short\n    val
PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE: Short\n    val
DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n    val
DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n  }\n\n  /**\n * Exposes the JavaScript
[SVGTSpanElement](https://developer.mozilla.org/en/docs/Web/API/SVGTSpanElement)
to Kotlin\n  */\npublic external abstract class SVGTSpanElement : SVGTextPositioningElement {\n  companion
object {\n    val LENGTHADJUST_UNKNOWN: Short\n    val LENGTHADJUST_SPACING: Short\n

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val LENGTHADJUST_SPACINGANDGLYPHS: Short\n    val ELEMENT_NODE: Short\n    val
ATTRIBUTE_NODE: Short\n    val TEXT_NODE: Short\n    val CDATA_SECTION_NODE: Short\n    val
ENTITY_REFERENCE_NODE: Short\n    val ENTITY_NODE: Short\n    val
PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE: Short\n    val
DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n    val
DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n
    val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
    val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC:
Short\n    }\n}\n\n/**\n * Exposes the JavaScript
[SVGTextPathElement](https://developer.mozilla.org/en/docs/Web/API/SVGTextPathElement) to Kotlin\n
*/\npublic external abstract class SVGTextPathElement : SVGTextContentElement, SVGURIReference {\n    open
val startOffset: SVGAnimatedLength\n    open val method: SVGAnimatedEnumeration\n    open val spacing:
SVGAnimatedEnumeration\n\n    companion object {\n        val TEXTPATH_METHODTYPE_UNKNOWN:
Short\n        val TEXTPATH_METHODTYPE_ALIGN: Short\n        val
TEXTPATH_METHODTYPE_STRETCH: Short\n        val TEXTPATH_SPACINGTYPE_UNKNOWN: Short\n
        val TEXTPATH_SPACINGTYPE_AUTO: Short\n        val TEXTPATH_SPACINGTYPE_EXACT: Short\n
        val LENGTHADJUST_UNKNOWN: Short\n        val LENGTHADJUST_SPACING: Short\n        val
LENGTHADJUST_SPACINGANDGLYPHS: Short\n        val ELEMENT_NODE: Short\n        val
ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val CDATA_SECTION_NODE: Short\n        val
ENTITY_REFERENCE_NODE:
Short\n        val ENTITY_NODE: Short\n        val PROCESSING_INSTRUCTION_NODE: Short\n        val
COMMENT_NODE: Short\n        val DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n
        val DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
        val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
        val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the JavaScript
[SVGImageElement](https://developer.mozilla.org/en/docs/Web/API/SVGImageElement) to Kotlin\n
*/\npublic external abstract class SVGImageElement : SVGGraphicsElement, SVGURIReference,
HTMLOrSVGImageElement {\n    open val x: SVGAnimatedLength\n    open val y: SVGAnimatedLength\n    open
val width: SVGAnimatedLength\n    open val height: SVGAnimatedLength\n    open val preserveAspectRatio:
SVGAnimatedPreserveAspectRatio\n    open var crossOrigin: String?\n\n    companion object {\n        val
ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val
CDATA_SECTION_NODE: Short\n        val ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE:
Short\n        val PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val
DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val
DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
        val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
        val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the JavaScript
[SVGForeignObjectElement](https://developer.mozilla.org/en/docs/Web/API/SVGForeignObjectElement)
to Kotlin\n
*/\npublic external abstract class SVGForeignObjectElement : SVGGraphicsElement {\n    open val x:
SVGAnimatedLength\n    open val y: SVGAnimatedLength\n    open val width: SVGAnimatedLength\n    open val
height: SVGAnimatedLength\n\n    companion object {\n        val ELEMENT_NODE: Short\n        val
ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val CDATA_SECTION_NODE: Short\n        val

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ENTITY_REFERENCE_NODE: Short\n    val ENTITY_NODE: Short\n    val
PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE: Short\n    val
DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n    val
DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n
    val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
    val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC:
Short\n    }\n}\n\npublic external abstract class SVGMarkerElement : SVGElement, SVGFitToViewBox {\n open
val refX: SVGAnimatedLength\n open val refY: SVGAnimatedLength\n open val markerUnits:
SVGAnimatedEnumeration\n open val markerWidth: SVGAnimatedLength\n open val markerHeight:
SVGAnimatedLength\n open val orientType: SVGAnimatedEnumeration\n open val orientAngle:
SVGAnimatedAngle\n open var orient: String\n fun setOrientToAuto()\n fun setOrientToAngle(angle:
SVGAngle)\n\n companion object {\n    val SVG_MARKERUNITS_UNKNOWN: Short\n    val
SVG_MARKERUNITS_USERSPACEONUSE: Short\n    val SVG_MARKERUNITS_STROKEWIDTH:
Short\n    val SVG_MARKER_ORIENT_UNKNOWN: Short\n    val SVG_MARKER_ORIENT_AUTO:
Short\n    val SVG_MARKER_ORIENT_ANGLE: Short\n    val ELEMENT_NODE: Short\n    val
ATTRIBUTE_NODE: Short\n    val TEXT_NODE: Short\n    val CDATA_SECTION_NODE: Short\n    val
ENTITY_REFERENCE_NODE: Short\n
        val ENTITY_NODE: Short\n    val PROCESSING_INSTRUCTION_NODE: Short\n    val
COMMENT_NODE: Short\n    val DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n
        val DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n
        val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
        val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the JavaScript
[SVGSolidcolorElement](https://developer.mozilla.org/en/docs/Web/API/SVGSolidcolorElement) to Kotlin\n
*\n\npublic external abstract class SVGSolidcolorElement : SVGElement {\n companion object {\n    val
ELEMENT_NODE: Short\n    val ATTRIBUTE_NODE: Short\n    val TEXT_NODE: Short\n    val
CDATA_SECTION_NODE: Short\n    val ENTITY_REFERENCE_NODE: Short\n
        val ENTITY_NODE: Short\n    val PROCESSING_INSTRUCTION_NODE: Short\n    val
COMMENT_NODE: Short\n    val DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n
        val DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n
        val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
        val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the JavaScript
[SVGGradientElement](https://developer.mozilla.org/en/docs/Web/API/SVGGradientElement) to Kotlin\n
*\n\npublic external abstract class SVGGradientElement : SVGElement, SVGURIReference, SVGUnitTypes {\n
open val gradientUnits: SVGAnimatedEnumeration\n open val gradientTransform: SVGAnimatedTransformList\n
open val spreadMethod: SVGAnimatedEnumeration\n\n companion object {\n
        val SVG_SPREADMETHOD_UNKNOWN: Short\n    val SVG_SPREADMETHOD_PAD: Short\n    val
SVG_SPREADMETHOD_REFLECT: Short\n    val SVG_SPREADMETHOD_REPEAT: Short\n    val
SVG_UNIT_TYPE_UNKNOWN: Short\n    val SVG_UNIT_TYPE_USERSPACEONUSE: Short\n    val
SVG_UNIT_TYPE_OBJECTBOUNDINGBOX: Short\n    val ELEMENT_NODE: Short\n    val
ATTRIBUTE_NODE: Short\n    val TEXT_NODE: Short\n    val CDATA_SECTION_NODE: Short\n    val
ENTITY_REFERENCE_NODE: Short\n    val ENTITY_NODE: Short\n    val
PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE: Short\n    val

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DOCUMENT\_NODE: Short\n val DOCUMENT\_TYPE\_NODE: Short\n val  
DOCUMENT\_FRAGMENT\_NODE: Short\n val NOTATION\_NODE: Short\n val  
DOCUMENT\_POSITION\_DISCONNECTED: Short\n val DOCUMENT\_POSITION\_PRECEDING: Short\n  
val DOCUMENT\_POSITION\_FOLLOWING: Short\n val DOCUMENT\_POSITION\_CONTAINS: Short\n  
val DOCUMENT\_POSITION\_CONTAINED\_BY: Short\n  
val DOCUMENT\_POSITION\_IMPLEMENTATION\_SPECIFIC: Short\n } \n} \n \n /\*\* \n \* Exposes the  
JavaScript  
[SVGLinearGradientElement](https://developer.mozilla.org/en/docs/Web/API/SVGLinearGradientElement) to  
Kotlin \n \* \n public external abstract class SVGLinearGradientElement : SVGGradientElement { \n open val x1:  
SVGAnimatedLength \n open val y1: SVGAnimatedLength \n open val x2: SVGAnimatedLength \n open val  
y2: SVGAnimatedLength \n \n companion object { \n val SVG\_SPREADMETHOD\_UNKNOWN: Short\n  
val SVG\_SPREADMETHOD\_PAD: Short\n val SVG\_SPREADMETHOD\_REFLECT: Short\n val  
SVG\_SPREADMETHOD\_REPEAT: Short\n val SVG\_UNIT\_TYPE\_UNKNOWN: Short\n val  
SVG\_UNIT\_TYPE\_USERSPACEONUSE: Short\n val SVG\_UNIT\_TYPE\_OBJECTBOUNDINGBOX:  
Short\n val ELEMENT\_NODE: Short\n val ATTRIBUTE\_NODE: Short\n val TEXT\_NODE: Short\n  
val CDATA\_SECTION\_NODE: Short\n val ENTITY\_REFERENCE\_NODE: Short\n val  
ENTITY\_NODE: Short\n  
val PROCESSING\_INSTRUCTION\_NODE: Short\n val COMMENT\_NODE: Short\n val  
DOCUMENT\_NODE: Short\n val DOCUMENT\_TYPE\_NODE: Short\n val  
DOCUMENT\_FRAGMENT\_NODE: Short\n val NOTATION\_NODE: Short\n val  
DOCUMENT\_POSITION\_DISCONNECTED: Short\n val DOCUMENT\_POSITION\_PRECEDING: Short\n  
val DOCUMENT\_POSITION\_FOLLOWING: Short\n val DOCUMENT\_POSITION\_CONTAINS: Short\n  
val DOCUMENT\_POSITION\_CONTAINED\_BY: Short\n val  
DOCUMENT\_POSITION\_IMPLEMENTATION\_SPECIFIC: Short\n } \n} \n \n /\*\* \n \* Exposes the JavaScript  
[SVGRadialGradientElement](https://developer.mozilla.org/en/docs/Web/API/SVGRadialGradientElement) to  
Kotlin \n \* \n public external abstract class SVGRadialGradientElement : SVGGradientElement { \n open val cx:  
SVGAnimatedLength \n open val cy: SVGAnimatedLength \n open val r: SVGAnimatedLength \n open val fx:  
SVGAnimatedLength \n open val fy: SVGAnimatedLength \n open val fr: SVGAnimatedLength \n \n companion  
object { \n val SVG\_SPREADMETHOD\_UNKNOWN: Short\n val SVG\_SPREADMETHOD\_PAD:  
Short\n val SVG\_SPREADMETHOD\_REFLECT: Short\n val SVG\_SPREADMETHOD\_REPEAT:  
Short\n val SVG\_UNIT\_TYPE\_UNKNOWN: Short\n val SVG\_UNIT\_TYPE\_USERSPACEONUSE:  
Short\n val SVG\_UNIT\_TYPE\_OBJECTBOUNDINGBOX: Short\n val ELEMENT\_NODE: Short\n  
val ATTRIBUTE\_NODE: Short\n val TEXT\_NODE: Short\n val CDATA\_SECTION\_NODE: Short\n  
val ENTITY\_REFERENCE\_NODE: Short\n val ENTITY\_NODE: Short\n val  
PROCESSING\_INSTRUCTION\_NODE: Short\n val COMMENT\_NODE: Short\n val  
DOCUMENT\_NODE: Short\n val DOCUMENT\_TYPE\_NODE: Short\n val  
DOCUMENT\_FRAGMENT\_NODE: Short\n val NOTATION\_NODE: Short\n val  
DOCUMENT\_POSITION\_DISCONNECTED: Short\n val DOCUMENT\_POSITION\_PRECEDING: Short\n  
val DOCUMENT\_POSITION\_FOLLOWING: Short\n val DOCUMENT\_POSITION\_CONTAINS: Short\n  
val DOCUMENT\_POSITION\_CONTAINED\_BY:  
Short\n val DOCUMENT\_POSITION\_IMPLEMENTATION\_SPECIFIC: Short\n } \n} \n \n public external  
abstract class SVGMeshGradientElement : SVGGradientElement { \n companion object { \n val  
SVG\_SPREADMETHOD\_UNKNOWN: Short\n val SVG\_SPREADMETHOD\_PAD: Short\n val  
SVG\_SPREADMETHOD\_REFLECT: Short\n val SVG\_SPREADMETHOD\_REPEAT: Short\n val  
SVG\_UNIT\_TYPE\_UNKNOWN: Short\n val SVG\_UNIT\_TYPE\_USERSPACEONUSE: Short\n val  
SVG\_UNIT\_TYPE\_OBJECTBOUNDINGBOX: Short\n val ELEMENT\_NODE: Short\n val  
ATTRIBUTE\_NODE: Short\n val TEXT\_NODE: Short\n val CDATA\_SECTION\_NODE: Short\n val  
ENTITY\_REFERENCE\_NODE: Short\n val ENTITY\_NODE: Short\n val

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PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE: Short\n    val
DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n    val
DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED:
Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n    val
DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\npublic external abstract class
SVGMeshrowElement : SVGElement {\n    companion object {\n    val ELEMENT_NODE: Short\n    val
ATTRIBUTE_NODE: Short\n    val TEXT_NODE: Short\n    val CDATA_SECTION_NODE: Short\n    val
ENTITY_REFERENCE_NODE: Short\n    val ENTITY_NODE: Short\n    val
PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE: Short\n    val
DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n    val
DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\npublic external abstract class
SVGMeshpatchElement : SVGElement {\n    companion object {\n    val ELEMENT_NODE: Short\n    val
ATTRIBUTE_NODE: Short\n    val TEXT_NODE: Short\n    val CDATA_SECTION_NODE: Short\n    val
ENTITY_REFERENCE_NODE: Short\n    val ENTITY_NODE: Short\n    val
PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE: Short\n    val
DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n    val
DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the JavaScript
[SVGStopElement](https://developer.mozilla.org/en/docs/Web/API/SVGStopElement) to Kotlin\n *\npublic
external abstract class SVGStopElement : SVGElement {\n    open val offset: SVGAnimatedNumber\n\n
companion object {\n    val ELEMENT_NODE: Short\n    val ATTRIBUTE_NODE: Short\n    val
TEXT_NODE: Short\n    val CDATA_SECTION_NODE: Short\n    val ENTITY_REFERENCE_NODE:
Short\n    val ENTITY_NODE: Short\n    val PROCESSING_INSTRUCTION_NODE: Short\n    val
COMMENT_NODE: Short\n    val DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n
val DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n *
Exposes the JavaScript [SVGPatternElement](https://developer.mozilla.org/en/docs/Web/API/SVGPatternElement)
to Kotlin\n *\npublic external abstract class SVGPatternElement : SVGElement, SVGFitToViewBox,
SVGURIReference, SVGUnitTypes {\n    open val patternUnits: SVGAnimatedEnumeration\n    open val
patternContentUnits: SVGAnimatedEnumeration\n    open val patternTransform: SVGAnimatedTransformList\n
open val x: SVGAnimatedLength\n    open val y: SVGAnimatedLength\n    open val width: SVGAnimatedLength\n
open val height: SVGAnimatedLength\n\n    companion object {\n    val SVG_UNIT_TYPE_UNKNOWN:
Short\n    val SVG_UNIT_TYPE_USERSPACEONUSE: Short\n    val
SVG_UNIT_TYPE_OBJECTBOUNDINGBOX: Short\n    val ELEMENT_NODE: Short\n    val
ATTRIBUTE_NODE: Short\n    val TEXT_NODE: Short\n    val CDATA_SECTION_NODE: Short\n    val

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ENTITY_REFERENCE_NODE: Short\n    val ENTITY_NODE: Short\n    val
PROCESSING_INSTRUCTION_NODE: Short\n    val COMMENT_NODE:
Short\n    val DOCUMENT_NODE: Short\n    val DOCUMENT_TYPE_NODE: Short\n    val
DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE: Short\n    val
DOCUMENT_POSITION_DISCONNECTED: Short\n    val DOCUMENT_POSITION_PRECEDING: Short\n
    val DOCUMENT_POSITION_FOLLOWING: Short\n    val DOCUMENT_POSITION_CONTAINS: Short\n
    val DOCUMENT_POSITION_CONTAINED_BY: Short\n    val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\npublic external abstract class
SVGHatchElement : SVGElement {\n    companion object {\n        val ELEMENT_NODE: Short\n        val
ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val CDATA_SECTION_NODE: Short\n        val
ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE: Short\n        val
PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val
DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val
DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE:
Short\n        val DOCUMENT_POSITION_DISCONNECTED: Short\n        val
DOCUMENT_POSITION_PRECEDING: Short\n        val DOCUMENT_POSITION_FOLLOWING: Short\n
val DOCUMENT_POSITION_CONTAINS: Short\n        val DOCUMENT_POSITION_CONTAINED_BY:
Short\n        val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n        }\n}\n\npublic external
abstract class SVGHatchpathElement : SVGElement {\n    companion object {\n        val ELEMENT_NODE:
Short\n        val ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val CDATA_SECTION_NODE:
Short\n        val ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE: Short\n        val
PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val
DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val
DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
    val DOCUMENT_POSITION_FOLLOWING:
Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n        val
DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the JavaScript
[SVGCursorElement](https://developer.mozilla.org/en/docs/Web/API/SVGCursorElement) to Kotlin\n */\n\npublic
external abstract class SVGCursorElement : SVGElement, SVGURIReference {\n    open val x:
SVGAnimatedLength\n    open val y: SVGAnimatedLength\n\n    companion object {\n        val
ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val
CDATA_SECTION_NODE: Short\n        val ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE:
Short\n        val PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val
DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val
DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING:
Short\n        val DOCUMENT_POSITION_FOLLOWING: Short\n        val
DOCUMENT_POSITION_CONTAINS: Short\n        val DOCUMENT_POSITION_CONTAINED_BY: Short\n
val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the
JavaScript [SVGScriptElement](https://developer.mozilla.org/en/docs/Web/API/SVGScriptElement) to Kotlin\n
*/\n\npublic external abstract class SVGScriptElement : SVGElement, SVGURIReference,
HTMLOrSVGScriptElement {\n    open var type: String\n    open var crossOrigin: String?\n\n    companion object
{\n        val ELEMENT_NODE: Short\n        val ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n
val CDATA_SECTION_NODE: Short\n        val ENTITY_REFERENCE_NODE: Short\n        val
ENTITY_NODE: Short\n        val PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE:
Short\n        val DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val

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DOCUMENT_FRAGMENT_NODE: Short\n    val NOTATION_NODE:
Short\n    val DOCUMENT_POSITION_DISCONNECTED: Short\n    val
DOCUMENT_POSITION_PRECEDING: Short\n    val DOCUMENT_POSITION_FOLLOWING: Short\n
val DOCUMENT_POSITION_CONTAINS: Short\n    val DOCUMENT_POSITION_CONTAINED_BY:
Short\n    val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes
the JavaScript [SVGAElement](https://developer.mozilla.org/en/docs/Web/API/SVGAElement) to Kotlin\n
*\npublic external abstract class SVGAElement : SVGGraphicsElement, SVGURIReference {\n    open val target:
SVGAnimatedString\n    open val download: SVGAnimatedString\n    open val rel: SVGAnimatedString\n    open
val relList: SVGAnimatedString\n    open val hreflang: SVGAnimatedString\n    open val type:
SVGAnimatedString\n}\n    companion object {\n        val ELEMENT_NODE: Short\n        val
ATTRIBUTE_NODE: Short\n        val TEXT_NODE: Short\n        val CDATA_SECTION_NODE: Short\n        val
ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE:
Short\n        val PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val
DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val
DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/**\n * Exposes the JavaScript
[SVGViewElement](https://developer.mozilla.org/en/docs/Web/API/SVGViewElement) to Kotlin\n
*\npublic external abstract class SVGViewElement : SVGElement, SVGFitToViewBox, SVGZoomAndPan {\n    companion
object {\n        val SVG_ZOOMANDPAN_UNKNOWN: Short\n        val SVG_ZOOMANDPAN_DISABLE:
Short\n        val SVG_ZOOMANDPAN_MAGNIFY: Short\n        val ELEMENT_NODE: Short\n        val
ATTRIBUTE_NODE:
Short\n        val TEXT_NODE: Short\n        val CDATA_SECTION_NODE: Short\n        val
ENTITY_REFERENCE_NODE: Short\n        val ENTITY_NODE: Short\n        val
PROCESSING_INSTRUCTION_NODE: Short\n        val COMMENT_NODE: Short\n        val
DOCUMENT_NODE: Short\n        val DOCUMENT_TYPE_NODE: Short\n        val
DOCUMENT_FRAGMENT_NODE: Short\n        val NOTATION_NODE: Short\n        val
DOCUMENT_POSITION_DISCONNECTED: Short\n        val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n        val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n        val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n    }\n}\n\n/*\n * Copyright 2010-2021
JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the
Apache 2.0 license that can be found in the license/LICENSE.txt file.\n * \n\n// NOTE: THIS FILE IS AUTO-
GENERATED, DO NOT EDIT!\n// See github.com/kotlin/dukat for
details\n\npackage org.w3c.files\n\nimport kotlin.js.*\nimport org.khronos.webgl.*\nimport org.w3c.dom.*\nimport
org.w3c.dom.events.*\nimport org.w3c.xhr.*\n\n/**\n * Exposes the JavaScript
[Blob](https://developer.mozilla.org/en/docs/Web/API/Blob) to Kotlin\n
*\npublic external open class
Blob(blobParts: Array<dynamic> = definedExternally, options: BlobPropertyBag = definedExternally) :
MediaProvider, ImageBitmapSource {\n    open val size: Number\n    open val type: String\n    open val isClosed:
Boolean\n    fun slice(start: Int = definedExternally, end: Int = definedExternally, contentType: String =
definedExternally): Blob\n    fun close()\n}\n\npublic external interface BlobPropertyBag {\n    var type: String? /*
= \"\" */\n    get() = definedExternally\n    set(value) =
definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun BlobPropertyBag(type: String? = \"\"):
BlobPropertyBag {\n    val o = js(\"({})\")\n}

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o["type"] = type\n    return o\n}\n\n/**\n * Exposes the JavaScript
[File](https://developer.mozilla.org/en/docs/Web/API/File) to Kotlin\n */\npublic external open class File(fileBits:
Array<dynamic>, fileName: String, options: FilePropertyBag = definedExternally) : Blob {\n    open val name:
String\n    open val lastModified: Int\n}\n\npublic external interface FilePropertyBag : BlobPropertyBag {\n    var
lastModified: Int?\n        get() = definedExternally\n        set(value) =
definedExternally\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline fun FilePropertyBag(lastModified: Int? =
undefined, type: String? = ""): FilePropertyBag {\n    val o = js("{}")\n    o["lastModified"] = lastModified\n
o["type"] = type\n    return o\n}\n\n/**\n * Exposes the JavaScript
[FileList](https://developer.mozilla.org/en/docs/Web/API/FileList) to Kotlin\n */\npublic external abstract class
FileList : ItemArrayLike<File>
{\n    override fun item(index: Int): File?\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline operator fun FileList.get(index: Int): File?
= asDynamic()[index]\n\n/**\n * Exposes the JavaScript
[FileReader](https://developer.mozilla.org/en/docs/Web/API/FileReader) to Kotlin\n */\npublic external open class
FileReader : EventTarget {\n    open val readyState: Short\n    open val result: dynamic\n    open val error:
dynamic\n    var onloadstart: ((ProgressEvent) -> dynamic)?\n    var onprogress: ((ProgressEvent) -> dynamic)?\n
var onload: ((Event) -> dynamic)?\n    var onabort: ((Event) -> dynamic)?\n    var onerror: ((Event) -> dynamic)?\n
var onloadend: ((Event) -> dynamic)?\n    fun readAsArrayBuffer(blob: Blob)\n    fun readAsBinaryString(blob:
Blob)\n    fun readAsText(blob: Blob, label: String = definedExternally)\n    fun readAsDataURL(blob: Blob)\n
fun abort()\n\n    companion object {\n        val EMPTY: Short\n        val LOADING: Short\n        val DONE: Short\n    }\n}\n\n/**\n * Exposes the JavaScript
[FileReaderSync](https://developer.mozilla.org/en/docs/Web/API/FileReaderSync) to Kotlin\n */\npublic external
open class FileReaderSync {\n    fun readAsArrayBuffer(blob: Blob): ArrayBuffer\n    fun readAsBinaryString(blob:
Blob): String\n    fun readAsText(blob: Blob, label: String = definedExternally): String\n    fun
readAsDataURL(blob: Blob): String\n}\n\n/*\n * Copyright 2010-2021 JetBrains s.r.o. and Kotlin Programming
Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n */\n\n// NOTE: THIS FILE IS AUTO-GENERATED, DO NOT EDIT!\n\n// See
github.com/kotlin/dukat for details\n\npackage org.w3c.notifications\n\nimport kotlin.js.*\nimport
org.khronos.webgl.*\nimport org.w3c.dom.events.*\nimport org.w3c.workers.*\n\n/**\n * Exposes the JavaScript
[Notification](https://developer.mozilla.org/en/docs/Web/API/Notification)
to Kotlin\n */\npublic external open class Notification(title: String, options: NotificationOptions =
definedExternally) : EventTarget {\n    var onclick: ((MouseEvent) -> dynamic)?\n    var onerror: ((Event) ->
dynamic)?\n    open val title: String\n    open val dir: NotificationDirection\n    open val lang: String\n    open val
body: String\n    open val tag: String\n    open val image: String\n    open val icon: String\n    open val badge:
String\n    open val sound: String\n    open val vibrate: Array<out Int>\n    open val timestamp: Number\n    open val
renotify: Boolean\n    open val silent: Boolean\n    open val noscreen: Boolean\n    open val requireInteraction:
Boolean\n    open val sticky: Boolean\n    open val data: Any?\n    open val actions: Array<out
NotificationAction>\n    fun close()\n\n    companion object {\n        val permission: NotificationPermission\n
val maxActions: Int\n        fun requestPermission(deprecatedCallback: (NotificationPermission)
-> Unit = definedExternally): Promise<NotificationPermission>\n    }\n}\n\npublic external interface
NotificationOptions {\n    var dir: NotificationDirection? /* = NotificationDirection.AUTO */\n        get() =
definedExternally\n        set(value) = definedExternally\n    var lang: String? /* = "" */\n        get() =
definedExternally\n        set(value) = definedExternally\n    var body: String? /* = "" */\n        get() =
definedExternally\n        set(value) = definedExternally\n    var tag: String? /* = "" */\n        get() =
definedExternally\n        set(value) = definedExternally\n    var image: String?\n        get() = definedExternally\n
set(value) = definedExternally\n    var icon: String?\n        get() = definedExternally\n        set(value) =
definedExternally\n    var badge: String?\n        get() = definedExternally\n        set(value) = definedExternally\n
}

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var sound: String? \n    get() = definedExternally \n    set(value) = definedExternally \n
    var vibrate: dynamic \n    get() = definedExternally \n    set(value) = definedExternally \n    var timestamp:
Number? \n    get() = definedExternally \n    set(value) = definedExternally \n    var renotify: Boolean? /* = false
*/ \n    get() = definedExternally \n    set(value) = definedExternally \n    var silent: Boolean? /* = false */ \n
get() = definedExternally \n    set(value) = definedExternally \n    var noscreen: Boolean? /* = false */ \n    get() =
definedExternally \n    set(value) = definedExternally \n    var requireInteraction: Boolean? /* = false */ \n    get()
= definedExternally \n    set(value) = definedExternally \n    var sticky: Boolean? /* = false */ \n    get() =
definedExternally \n    set(value) = definedExternally \n    var data: Any? /* = null */ \n    get() =
definedExternally \n    set(value) = definedExternally \n    var actions: Array<NotificationAction>? /* = arrayOf()
*/ \n    get() = definedExternally \n
    set(value) = definedExternally \n} \n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER") \n\n@kotlin.internal.InlineOnly \n\npublic inline fun NotificationOptions(dir:
NotificationDirection? = NotificationDirection.AUTO, lang: String? = "", body: String? = "", tag: String? = "",
image: String? = undefined, icon: String? = undefined, badge: String? = undefined, sound: String? = undefined,
vibrate: dynamic = undefined, timestamp: Number? = undefined, renotify: Boolean? = false, silent: Boolean? =
false, noscreen: Boolean? = false, requireInteraction: Boolean? = false, sticky: Boolean? = false, data: Any? = null,
actions: Array<NotificationAction>? = arrayOf()): NotificationOptions {\n    val o = js("({})") \n    o["dir"] = dir \n
    o["lang"] = lang \n    o["body"] = body \n    o["tag"] = tag \n    o["image"] = image \n    o["icon"] = icon \n
    o["badge"] = badge \n    o["sound"] = sound \n    o["vibrate"] = vibrate \n    o["timestamp"] = timestamp \n
    o["renotify"] = renotify \n    o["silent"] = silent \n    o["noscreen"] = noscreen \n    o["requireInteraction"] =
requireInteraction \n    o["sticky"] = sticky \n    o["data"] = data \n    o["actions"] = actions \n    return
o \n} \n\npublic external interface NotificationAction {\n    var action: String? \n    var title: String? \n    var icon:
String? \n    get() = definedExternally \n    set(value) =
definedExternally \n} \n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER") \n\n@kotlin.internal.InlineOnly \n\npublic inline fun NotificationAction(action: String?,
title: String?, icon: String? = undefined): NotificationAction {\n    val o = js("({})") \n    o["action"] = action \n
    o["title"] = title \n    o["icon"] = icon \n    return o \n} \n\npublic external interface GetNotificationOptions {\n    var
tag: String? /* = "" */ \n    get() = definedExternally \n    set(value) =
definedExternally \n} \n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER") \n\n@kotlin.internal.InlineOnly \n\npublic
inline fun GetNotificationOptions(tag: String? = ""): GetNotificationOptions {\n    val o = js("({})") \n
    o["tag"] = tag \n    return o \n} \n\n/** \n * Exposes the JavaScript
[NotificationEvent](https://developer.mozilla.org/en/docs/Web/API/NotificationEvent) to Kotlin \n */ \n\npublic
external open class NotificationEvent(type: String, eventInitDict: NotificationEventInit) : ExtendableEvent {\n
    open val notification: Notification \n    open val action: String \n\n    companion object {\n        val NONE: Short \n
        val CAPTURING_PHASE: Short \n        val AT_TARGET: Short \n        val BUBBLING_PHASE: Short \n
    } \n} \n\npublic external interface NotificationEventInit : ExtendableEventInit {\n    var notification: Notification? \n
    var action: String? /* = "" */ \n    get() = definedExternally \n    set(value) =
definedExternally \n} \n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER") \n\n@kotlin.internal.InlineOnly \n\npublic inline fun
NotificationEventInit(notification: Notification?, action: String? = "", bubbles: Boolean? = false, cancelable:
Boolean? = false, composed: Boolean? = false): NotificationEventInit {\n    val o = js("({})") \n    o["notification"]
= notification \n    o["action"] = action \n    o["bubbles"] = bubbles \n    o["cancelable"] = cancelable \n
    o["composed"] = composed \n    return o \n} \n\n/* please, don't implement this interface!
*/ \n\n@JsName("null") \n\n@Suppress("NESTED_CLASS_IN_EXTERNAL_INTERFACE") \n\npublic external
interface NotificationPermission {\n    companion object \n} \n\npublic inline val
NotificationPermission.Companion.DEFAULT: NotificationPermission get() =
"default".asDynamic().unsafeCast<NotificationPermission>() \n\npublic inline val

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NotificationPermission.Companion.DENIED: NotificationPermission get() =
    \"denied\".asDynamic().unsafeCast<NotificationPermission>()\n\npublic inline val
NotificationPermission.Companion.GRANTED: NotificationPermission get() =
    \"granted\".asDynamic().unsafeCast<NotificationPermission>()\n\n/*
    please, don't implement this interface!
*/\n\n@JsName(\"null\")\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\n\npublic external
interface NotificationDirection {\n    companion object\n}\n\npublic inline val
NotificationDirection.Companion.AUTO: NotificationDirection get() =
    \"auto\".asDynamic().unsafeCast<NotificationDirection>()\n\npublic inline val
NotificationDirection.Companion.LTR: NotificationDirection get() =
    \"ltr\".asDynamic().unsafeCast<NotificationDirection>()\n\npublic inline val
NotificationDirection.Companion.RTL: NotificationDirection get() =
    \"rtl\".asDynamic().unsafeCast<NotificationDirection>()\"/*\n * Copyright 2010-2021 JetBrains s.r.o. and Kotlin
Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be
found in the license/LICENSE.txt file.\n */\n\n// NOTE: THIS FILE IS AUTO-GENERATED, DO NOT EDIT!\n//
See github.com/kotlin/dukat for details\n\npackage
org.w3c.workers\n\nimport kotlin.js.*\nimport org.khronos.webgl.*\nimport org.w3c.dom.*\nimport
org.w3c.dom.events.*\nimport org.w3c.fetch.*\nimport org.w3c.notifications.*\n\n/**\n * Exposes the JavaScript
[ServiceWorker](https://developer.mozilla.org/en/docs/Web/API/ServiceWorker) to Kotlin\n */\n\npublic external
abstract class ServiceWorker : EventTarget, AbstractWorker, UnionMessagePortOrServiceWorker,
UnionClientOrMessagePortOrServiceWorker {\n    open val scriptURL: String\n    open val state:
ServiceWorkerState\n    open var onstatechange: ((Event) -> dynamic)?\n    fun postMessage(message: Any?,
transfer: Array<dynamic> = definedExternally)\n}\n\n/**\n * Exposes the JavaScript
[ServiceWorkerRegistration](https://developer.mozilla.org/en/docs/Web/API/ServiceWorkerRegistration) to
Kotlin\n */\n\npublic external abstract class ServiceWorkerRegistration : EventTarget {\n    open val installing:
ServiceWorker?\n    open val waiting: ServiceWorker?\n    open val active: ServiceWorker?\n
    open val scope: String\n    open var onupdatefound: ((Event) -> dynamic)?\n    open val APISpace: dynamic\n
fun update(): Promise<Unit>\n    fun unregister(): Promise<Boolean>\n    fun showNotification(title: String,
options: NotificationOptions = definedExternally): Promise<Unit>\n    fun getNotifications(filter:
GetNotificationOptions = definedExternally): Promise<Array<Notification>>\n    fun methodName():
Promise<dynamic>\n}\n\n/**\n * Exposes the JavaScript
[ServiceWorkerContainer](https://developer.mozilla.org/en/docs/Web/API/ServiceWorkerContainer) to Kotlin\n
*/\n\npublic external abstract class ServiceWorkerContainer : EventTarget {\n    open val controller:
ServiceWorker?\n    open val ready: Promise<ServiceWorkerRegistration>\n    open var oncontrollerchange:
((Event) -> dynamic)?\n    open var onmessage: ((MessageEvent) -> dynamic)?\n    fun register(scriptURL: String,
options: RegistrationOptions = definedExternally): Promise<ServiceWorkerRegistration>\n    fun
getRegistration(clientURL: String = definedExternally): Promise<Any?>\n    fun getRegistrations():
Promise<Array<ServiceWorkerRegistration>>\n    fun startMessages()\n}\n\npublic external interface
RegistrationOptions {\n    var scope: String?\n    get() = definedExternally\n    set(value) = definedExternally\n
var type: WorkerType? /* = WorkerType.CLASSIC */\n    get() = definedExternally\n    set(value) =
definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n\n@kotlin.internal.InlineOnly\n\npublic inline fun RegistrationOptions(scope: String? =
undefined, type: WorkerType? = WorkerType.CLASSIC): RegistrationOptions {\n    val o = js(\"{\}\")\n
o[\"scope\"] = scope\n    o[\"type\"] = type\n    return o\n}\n\n/**\n * Exposes the JavaScript
[ServiceWorkerMessageEvent](https://developer.mozilla.org/en/docs/Web/API/ServiceWorkerMessageEvent) to
Kotlin\n */\n\npublic external open class ServiceWorkerMessageEvent(type: String, eventInitDict:
ServiceWorkerMessageEventInit

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= definedExternally) : Event {\n  open val data: Any?\n  open val origin: String\n  open val lastEventId: String\n  open val source: UnionMessagePortOrServiceWorker?\n  open val ports: Array<out MessagePort>?\n\ncompanion object {\n  val NONE: Short\n  val CAPTURING_PHASE: Short\n  val AT_TARGET: Short\n  val BUBBLING_PHASE: Short\n  }\n}\n\npublic external interface ServiceWorkerMessageEventInit : EventInit {\n  var data: Any?\n  get() = definedExternally\n  set(value) = definedExternally\n  var origin: String?\n  get() = definedExternally\n  set(value) = definedExternally\n  var lastEventId: String?\n  get() = definedExternally\n  set(value) = definedExternally\n  var source: UnionMessagePortOrServiceWorker?\n  get() = definedExternally\n  set(value) = definedExternally\n  var ports: Array<MessagePort>?\n  get() = definedExternally\n  set(value) = definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\", \"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun ServiceWorkerMessageEventInit(data: Any? = undefined, origin: String? = undefined, lastEventId: String? = undefined, source: UnionMessagePortOrServiceWorker? = undefined, ports: Array<MessagePort>? = undefined, bubbles: Boolean? = false, cancelable: Boolean? = false, composed: Boolean? = false): ServiceWorkerMessageEventInit {\n  val o = js(\"({})\")\n  o[\"data\"] = data\n  o[\"origin\"] = origin\n  o[\"lastEventId\"] = lastEventId\n  o[\"source\"] = source\n  o[\"ports\"] = ports\n  o[\"bubbles\"] = bubbles\n  o[\"cancelable\"] = cancelable\n  o[\"composed\"] = composed\n  return o\n}\n\n/**\n * Exposes the JavaScript [ServiceWorkerGlobalScope](https://developer.mozilla.org/en/docs/Web/API/ServiceWorkerGlobalScope) to Kotlin\n *\npublic external abstract class ServiceWorkerGlobalScope : WorkerGlobalScope {\n  open val clients: Clients\n\n  open val registration: ServiceWorkerRegistration\n  open var oninstall: ((Event) -> dynamic)?\n  open var onactivate: ((Event) -> dynamic)?\n  open var onfetch: ((FetchEvent) -> dynamic)?\n  open var onforeignfetch: ((Event) -> dynamic)?\n  open var onmessage: ((MessageEvent) -> dynamic)?\n  open var onnotificationclick: ((NotificationEvent) -> dynamic)?\n  open var onnotificationclose: ((NotificationEvent) -> dynamic)?\n  open var onfunctionalevent: ((Event) -> dynamic)?\n  fun skipWaiting(): Promise<Unit>\n}\n\n/**\n * Exposes the JavaScript [Client](https://developer.mozilla.org/en/docs/Web/API/Client) to Kotlin\n *\npublic external abstract class Client : UnionClientOrMessagePortOrServiceWorker {\n  open val url: String\n  open val frameType: FrameType\n  open val id: String\n  fun postMessage(message: Any?, transfer: Array<dynamic> = definedExternally)\n}\n\n/**\n * Exposes the JavaScript [WindowClient](https://developer.mozilla.org/en/docs/Web/API/WindowClient) to Kotlin\n *\npublic external abstract class WindowClient : Client {\n  open val visibilityState: dynamic\n  open val focused: Boolean\n  fun focus(): Promise<WindowClient>\n  fun navigate(url: String): Promise<WindowClient>\n}\n\n/**\n * Exposes the JavaScript [Clients](https://developer.mozilla.org/en/docs/Web/API/Clients) to Kotlin\n *\npublic external abstract class Clients {\n  fun get(id: String): Promise<Any?>\n  fun matchAll(options: ClientQueryOptions = definedExternally): Promise<Array<Client>>\n  fun openWindow(url: String): Promise<WindowClient?>\n  fun claim(): Promise<Unit>\n}\n\npublic external interface ClientQueryOptions {\n  var includeUncontrolled: Boolean? /* = false */\n  get() = definedExternally\n  set(value) = definedExternally\n  var type: ClientType? /* = ClientType.WINDOW */\n  get() = definedExternally\n  set(value) = definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\", \"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun ClientQueryOptions(includeUncontrolled: Boolean? = false, type: ClientType? = ClientType.WINDOW): ClientQueryOptions {\n  val o = js(\"({})\")\n  o[\"includeUncontrolled\"] = includeUncontrolled\n  o[\"type\"] = type\n  return o\n}\n\n/**\n * Exposes the JavaScript [ExtendableEvent](https://developer.mozilla.org/en/docs/Web/API/ExtendableEvent) to Kotlin\n *\npublic external open class ExtendableEvent(type: String, eventInitDict: ExtendableEventInit = definedExternally) : Event {\n  fun waitUntil(f: Promise<Any?>)\n\ncompanion object {\n  val NONE: Short\n  val CAPTURING_PHASE: Short\n  val AT_TARGET: Short\n  val BUBBLING_PHASE: Short\n  }\n}\n\npublic external interface ExtendableEventInit : EventInit\n\n@Suppress(\"INVISIBLE_REFERENCE\",

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\invisible_member\)\n@kotlin.internal.InlineOnly\npublic inline fun ExtendableEventInit(bubbles: Boolean? = false, cancelable: Boolean? = false, composed: Boolean? = false): ExtendableEventInit {\n val o = js("{}")\n o["bubbles"] = bubbles\n o["cancelable"] = cancelable\n o["composed"] = composed\n return o\n}\n\n/**\n * Exposes the JavaScript [InstallEvent](https://developer.mozilla.org/en/docs/Web/API/InstallEvent) to Kotlin\n */\npublic external open class InstallEvent(type: String, eventInitDict: ExtendableEventInit = definedExternally) : ExtendableEvent {\n fun registerForeignFetch(options: ForeignFetchOptions)\n\n companion object {\n val NONE: Short\n val CAPTURING_PHASE: Short\n val AT_TARGET: Short\n val BUBBLING_PHASE: Short\n }\n\npublic external interface ForeignFetchOptions {\n var scopes: Array<String>?\n var origins: Array<String>?\n}\n\n@Suppress("INVISIBLE_REFERENCE", "INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline fun ForeignFetchOptions(scopes: Array<String>?, origins: Array<String>?): ForeignFetchOptions {\n val o = js("{}")\n o["scopes"] = scopes\n o["origins"] = origins\n return o\n}\n\n/**\n * Exposes the JavaScript [FetchEvent](https://developer.mozilla.org/en/docs/Web/API/FetchEvent) to Kotlin\n */\npublic external open class FetchEvent(type: String, eventInitDict: FetchEventInit) : ExtendableEvent {\n open val request: Request\n open val clientId: String?\n open val isReload: Boolean\n fun respondWith(r: Promise<Response>)\n\n companion object {\n val NONE: Short\n val CAPTURING_PHASE: Short\n val AT_TARGET: Short\n val BUBBLING_PHASE: Short\n }\n\npublic external interface FetchEventInit : ExtendableEventInit {\n var request: Request?\n var clientId: String? /* = null */\n get() = definedExternally\n set(value) = definedExternally\n var isReload: Boolean? /* = false */\n get() = definedExternally\n set(value) = definedExternally\n}\n\n@Suppress("INVISIBLE_REFERENCE", "INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline fun FetchEventInit(request: Request?, clientId: String? = null, isReload: Boolean? = false, bubbles: Boolean? = false, cancelable: Boolean? = false, composed: Boolean? = false): FetchEventInit {\n val o = js("{}")\n o["request"] = request\n o["clientId"] = clientId\n o["isReload"] = isReload\n o["bubbles"] = bubbles\n o["cancelable"] = cancelable\n o["composed"] = composed\n return o\n}\n\npublic external open class ForeignFetchEvent(type: String, eventInitDict: ForeignFetchEventInit) : ExtendableEvent {\n open val request: Request\n open val origin: String\n fun respondWith(r: Promise<ForeignFetchResponse>)\n\n companion object {\n val NONE: Short\n val CAPTURING_PHASE: Short\n val AT_TARGET: Short\n val BUBBLING_PHASE: Short\n }\n\npublic external interface ForeignFetchEventInit : ExtendableEventInit {\n var request: Request?\n var origin: String? /* = \"null\" */\n /*\n get() = definedExternally\n set(value) = definedExternally\n */\n}\n\n@Suppress("INVISIBLE_REFERENCE", "INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline fun ForeignFetchEventInit(request: Request?, origin: String? = \"null\", bubbles: Boolean? = false, cancelable: Boolean? = false, composed: Boolean? = false): ForeignFetchEventInit {\n val o = js("{}")\n o["request"] = request\n o["origin"] = origin\n o["bubbles"] = bubbles\n o["cancelable"] = cancelable\n o["composed"] = composed\n return o\n}\n\npublic external interface ForeignFetchResponse {\n var response: Response?\n var origin: String?\n get() = definedExternally\n set(value) = definedExternally\n var headers: Array<String>?\n get() = definedExternally\n set(value) = definedExternally\n}\n\n@Suppress("INVISIBLE_REFERENCE", "INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline fun ForeignFetchResponse(response: Response?, origin: String? = undefined, headers: Array<String>? = undefined): ForeignFetchResponse {\n val o = js("{}")\n o["response"] = response\n o["origin"] = origin\n o["headers"] = headers\n return o\n}\n\n/**\n * Exposes the JavaScript [ExtendableMessageEvent](https://developer.mozilla.org/en/docs/Web/API/ExtendableMessageEvent) to Kotlin\n */\npublic external open class ExtendableMessageEvent(type: String, eventInitDict: ExtendableMessageEventInit = definedExternally) : ExtendableEvent {\n open val data: Any?\n open val origin: String\n open val lastEventId:

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String\n    open val source: UnionClientOrMessagePortOrServiceWorker?\n    open val ports: Array<out
MessagePort>?\n\n    companion object {\n        val NONE: Short\n        val CAPTURING_PHASE: Short\n        val
AT_TARGET: Short\n        val BUBBLING_PHASE: Short\n    }\n\n\npublic external interface
ExtendableMessageEventInit : ExtendableEventInit {\n    var data: Any?\n        get() =
definedExternally\n        set(value) = definedExternally\n        var origin: String?\n        get() = definedExternally\n
set(value) = definedExternally\n        var lastEventId: String?\n        get() = definedExternally\n        set(value) =
definedExternally\n        var source: UnionClientOrMessagePortOrServiceWorker?\n        get() = definedExternally\n
        set(value) = definedExternally\n        var ports: Array<MessagePort>?\n        get() = definedExternally\n
set(value) = definedExternally\n}\n\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\n\npublic inline fun ExtendableMessageEventInit(data:
Any? = undefined, origin: String? = undefined, lastEventId: String? = undefined, source:
UnionClientOrMessagePortOrServiceWorker? = undefined, ports: Array<MessagePort>? = undefined, bubbles:
Boolean? = false, cancelable: Boolean? = false, composed: Boolean? = false): ExtendableMessageEventInit {\n
    val o = js(\"({})\")\n    o[\"data\"] = data\n
        o[\"origin\"] = origin\n        o[\"lastEventId\"] = lastEventId\n        o[\"source\"] = source\n        o[\"ports\"] = ports\n
        o[\"bubbles\"] = bubbles\n        o[\"cancelable\"] = cancelable\n        o[\"composed\"] = composed\n    return
o\n}\n\n\n/**\n * Exposes the JavaScript [Cache](https://developer.mozilla.org/en/docs/Web/API/Cache) to Kotlin\n
*/\n\npublic external abstract class Cache {\n    fun match(request: dynamic, options: CacheQueryOptions =
definedExternally): Promise<Any?>\n    fun matchAll(request: dynamic = definedExternally, options:
CacheQueryOptions = definedExternally): Promise<Array<Response>>\n    fun add(request: dynamic):
Promise<Unit>\n    fun addAll(requests: Array<dynamic>): Promise<Unit>\n    fun put(request: dynamic, response:
Response): Promise<Unit>\n    fun delete(request: dynamic, options: CacheQueryOptions = definedExternally):
Promise<Boolean>\n    fun keys(request: dynamic = definedExternally, options: CacheQueryOptions =
definedExternally): Promise<Array<Request>>\n}\n\n\npublic
external interface CacheQueryOptions {\n    var ignoreSearch: Boolean? /* = false */\n        get() =
definedExternally\n        set(value) = definedExternally\n        var ignoreMethod: Boolean? /* = false */\n        get() =
definedExternally\n        set(value) = definedExternally\n        var ignoreVary: Boolean? /* = false */\n        get() =
definedExternally\n        set(value) = definedExternally\n        var cacheName: String?\n        get() =
definedExternally\n        set(value) = definedExternally\n}\n\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\n\npublic inline fun CacheQueryOptions(ignoreSearch:
Boolean? = false, ignoreMethod: Boolean? = false, ignoreVary: Boolean? = false, cacheName: String? = undefined):
CacheQueryOptions {\n    val o = js(\"({})\")\n    o[\"ignoreSearch\"] = ignoreSearch\n    o[\"ignoreMethod\"] =
ignoreMethod\n    o[\"ignoreVary\"] = ignoreVary\n    o[\"cacheName\"] = cacheName\n    return o\n}\n\n\npublic
external
interface CacheBatchOperation {\n    var type: String?\n        get() = definedExternally\n        set(value) =
definedExternally\n        var request: Request?\n        get() = definedExternally\n        set(value) = definedExternally\n
var response: Response?\n        get() = definedExternally\n        set(value) = definedExternally\n        var options:
CacheQueryOptions?\n        get() = definedExternally\n        set(value) =
definedExternally\n}\n\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\n\npublic inline fun CacheBatchOperation(type: String? =
undefined, request: Request? = undefined, response: Response? = undefined, options: CacheQueryOptions? =
undefined): CacheBatchOperation {\n    val o = js(\"({})\")\n    o[\"type\"] = type\n    o[\"request\"] = request\n
o[\"response\"] = response\n    o[\"options\"] = options\n    return o\n}\n\n\n\n/**\n * Exposes the JavaScript
[CacheStorage](https://developer.mozilla.org/en/docs/Web/API/CacheStorage)
to Kotlin\n */\n\npublic external abstract class CacheStorage {\n    fun match(request: dynamic, options:
CacheQueryOptions = definedExternally): Promise<Any?>\n    fun has(cacheName: String): Promise<Boolean>\n
fun open(cacheName: String): Promise<Cache>\n    fun delete(cacheName: String): Promise<Boolean>\n    fun
keys(): Promise<Array<String>>\n}\n\n\npublic external open class FunctionalEvent : ExtendableEvent {\n

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companion object {
    val NONE: Short
    val CAPTURING_PHASE: Short
    val AT_TARGET: Short
    val BUBBLING_PHASE: Short
}

public external interface
UnionMessagePortOrServiceWorker

public external interface
UnionClientOrMessagePortOrServiceWorker

/* please, don't implement this interface!
*/
@JsName("null")
@Suppress("NESTED_CLASS_IN_EXTERNAL_INTERFACE")
public external
interface ServiceWorkerState {
    companion object

    public inline val
ServiceWorkerState.Companion.INSTALLING: ServiceWorkerState
get() =
    "installing".asDynamic().unsafeCast<ServiceWorkerState>()

    public inline val
ServiceWorkerState.Companion.INSTALLED: ServiceWorkerState
get() =
    "installed".asDynamic().unsafeCast<ServiceWorkerState>()

    public inline val
ServiceWorkerState.Companion.ACTIVATING: ServiceWorkerState
get() =
    "activating".asDynamic().unsafeCast<ServiceWorkerState>()

    public inline val
ServiceWorkerState.Companion.ACTIVATED: ServiceWorkerState
get() =
    "activated".asDynamic().unsafeCast<ServiceWorkerState>()

    public inline val
ServiceWorkerState.Companion.REDUNDANT: ServiceWorkerState
get() =
    "redundant".asDynamic().unsafeCast<ServiceWorkerState>()

    /* please, don't implement this interface!
    */
    @JsName("null")
    @Suppress("NESTED_CLASS_IN_EXTERNAL_INTERFACE")
    public external
    interface FrameType {
        companion object

        public inline val
FrameType.Companion.AUXILIARY:
FrameType
get() = "auxiliary".asDynamic().unsafeCast<FrameType>()

        public inline val
FrameType.Companion.TOP_LEVEL:
FrameType
get() = "top-level".asDynamic().unsafeCast<FrameType>()

        public inline val
FrameType.Companion.NESTED: FrameType
get() = "nested".asDynamic().unsafeCast<FrameType>()

        public inline val
FrameType.Companion.NONE: FrameType
get() =
        "none".asDynamic().unsafeCast<FrameType>()

        /* please, don't implement this interface!
        */
        @JsName("null")
        @Suppress("NESTED_CLASS_IN_EXTERNAL_INTERFACE")
        public external
        interface ClientType {
            companion object

            public inline val
ClientType.Companion.WINDOW: ClientType
get() = "window".asDynamic().unsafeCast<ClientType>()

            public inline val
ClientType.Companion.WORKER:
ClientType
get() = "worker".asDynamic().unsafeCast<ClientType>()

            public inline val
ClientType.Companion.SHAREDWORKER: ClientType
get() =
            "sharedworker".asDynamic().unsafeCast<ClientType>()

            public inline val
ClientType.Companion.ALL:
ClientType
get() = "all".asDynamic().unsafeCast<ClientType>()
}

/* Copyright 2010-2021 JetBrains s.r.o.
and Kotlin Programming Language contributors.
Use of this source code is governed by the Apache 2.0 license
that can be found in the license/LICENSE.txt file.
*/
// NOTE: THIS FILE IS AUTO-GENERATED, DO NOT
EDIT!
// See github.com/kotlin/dukat for details
package org.w3c.xhr

import kotlin.js.*
import org.khronos.webgl.*
import org.w3c.dom.*
import org.w3c.dom.events.*
import org.w3c.files.*

/* Exposes the JavaScript
[XMLHttpRequestEventTarget](https://developer.mozilla.org/en/docs/Web/API/XMLHttpRequestEventTarget) to
Kotlin
*/
public external abstract class XMLHttpRequestEventTarget : EventTarget {
    open var onloadstart:
((ProgressEvent) -> dynamic)?

    open var onprogress: ((ProgressEvent) -> dynamic)?

    open var onabort:
((Event) -> dynamic)?

    open var onerror: ((Event) -> dynamic)?

    open var onload: ((Event) -> dynamic)?

    open var ontimeout: ((Event) -> dynamic)?

    open var onloadend: ((Event) -> dynamic)?
}

public external
abstract class XMLHttpRequestUpload : XMLHttpRequestEventTarget

/* Exposes the JavaScript
[XMLHttpRequest](https://developer.mozilla.org/en/docs/Web/API/XMLHttpRequest) to Kotlin
*/
public
external open class XMLHttpRequest : XMLHttpRequestEventTarget {
    var onreadystatechange: ((Event) ->
dynamic)?

    open val readyState: Short

    var timeout: Int

    var withCredentials: Boolean

    open val upload:
XMLHttpRequestUpload

    open val responseURL: String

    open val status: Short

    open val statusText:
String

    var responseType: XMLHttpRequestResponseType

    open val response: Any?

    open val
responseText: String

    open val responseXML: Document?

    fun open(method: String, url: String)

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open(method: String, url: String, async: Boolean, username: String? = definedExternally, password: String? =
definedExternally)\n fun setRequestHeader(name: String, value: String)\n fun send(body: dynamic =
definedExternally)\n fun abort()\n
fun getResponseHeader(name: String): String?\n fun getAllResponseHeaders(): String\n fun
overrideMimeType(mime: String)\n\n companion object {\n    val UNSENT: Short\n    val OPENED: Short\n
    val HEADERS_RECEIVED: Short\n    val LOADING: Short\n    val DONE: Short\n } \n\n\n *
Exposes the JavaScript [FormData](https://developer.mozilla.org/en/docs/Web/API/FormData) to Kotlin\n
*\n\npublic external open class FormData(form: HTMLFormElement = definedExternally) {\n fun append(name:
String, value: String)\n fun append(name: String, value: Blob, filename: String = definedExternally)\n fun
delete(name: String)\n fun get(name: String): dynamic\n fun getAll(name: String): Array<dynamic>\n fun
has(name: String): Boolean\n fun set(name: String, value: String)\n fun set(name: String, value: Blob, filename:
String = definedExternally)\n } \n\n\n * Exposes the JavaScript
[ProgressEvent](https://developer.mozilla.org/en/docs/Web/API/ProgressEvent)
to Kotlin\n * \n\npublic external open class ProgressEvent(type: String, eventInitDict: ProgressEventInit =
definedExternally) : Event {\n open val lengthComputable: Boolean\n open val loaded: Number\n open val
total: Number\n\n companion object {\n    val NONE: Short\n    val CAPTURING_PHASE: Short\n    val
AT_TARGET: Short\n    val BUBBLING_PHASE: Short\n } \n\n\npublic external interface ProgressEventInit
: EventInit {\n var lengthComputable: Boolean? /* = false */\n get() = definedExternally\n set(value) =
definedExternally\n var loaded: Number? /* = 0 */\n get() = definedExternally\n set(value) =
definedExternally\n var total: Number? /* = 0 */\n get() = definedExternally\n set(value) =
definedExternally\n } \n\n\n@Suppress("\INVISIBLE_REFERENCE",
\INVISIBLE_MEMBER")\n\n@kotlin.internal.InlineOnly\n\npublic inline fun ProgressEventInit(lengthComputable:
Boolean? = false, loaded: Number? = 0, total:
Number? = 0, bubbles: Boolean? = false, cancelable: Boolean? = false, composed: Boolean? = false):
ProgressEventInit {\n val o = js("{}")\n o["lengthComputable"] = lengthComputable\n o["loaded"] =
loaded\n o["total"] = total\n o["bubbles"] = bubbles\n o["cancelable"] = cancelable\n o["composed"] =
composed\n return o\n } \n\n\n * please, don't implement this interface!
*\n\n@JsName("null")\n\n@Suppress("\NESTED_CLASS_IN_EXTERNAL_INTERFACE")\n\npublic external
interface XMLHttpRequestResponseType {\n companion object\n } \n\n\npublic inline val
XMLHttpRequestResponseType.Companion.EMPTY: XMLHttpRequestResponseType get() =
\`\`.asDynamic().unsafeCast<XMLHttpRequestResponseType>()\n\npublic inline val
XMLHttpRequestResponseType.Companion.ARRAYBUFFER: XMLHttpRequestResponseType get() =
\`arraybuffer\`.asDynamic().unsafeCast<XMLHttpRequestResponseType>()\n\npublic inline val
XMLHttpRequestResponseType.Companion.BLOB: XMLHttpRequestResponseType get() =
\`blob\`.asDynamic().unsafeCast<XMLHttpRequestResponseType>()\n\npublic
inline val XMLHttpRequestResponseType.Companion.DOCUMENT: XMLHttpRequestResponseType get() =
\`document\`.asDynamic().unsafeCast<XMLHttpRequestResponseType>()\n\npublic inline val
XMLHttpRequestResponseType.Companion.JSON: XMLHttpRequestResponseType get() =
\`json\`.asDynamic().unsafeCast<XMLHttpRequestResponseType>()\n\npublic inline val
XMLHttpRequestResponseType.Companion.TEXT: XMLHttpRequestResponseType get() =
\`text\`.asDynamic().unsafeCast<XMLHttpRequestResponseType>()\n\npackage kotlin\n\nimport
kotlin.annotation.AnnotationTarget.*\n\n\n * This annotation marks the standard library API that is considered
experimental and is not subject to the\n * [general compatibility
guarantees](https://kotlinlang.org/docs/reference/evolution/components-stability.html) given for the standard
library:\n * the behavior of such API may be changed or the API may be removed completely in any further
release.\n * \n * > Beware
using the annotated API especially if you're developing a library, since your library might become binary
incompatible\n * with the future versions of the standard library.\n * \n * Any usage of a declaration annotated with

```

`@ExperimentalStdlibApi` must be accepted either by `@OptIn` annotation, e.g. `@OptIn(ExperimentalStdlibApi::class)`, or by using the compiler argument `-opt-in=kotlin.ExperimentalStdlibApi`.

`@RequiresOptIn(level = RequiresOptIn.Level.ERROR)` `@Retention(AnnotationRetention.BINARY)` `@Target(CLASS, ANNOTATION_CLASS, PROPERTY, FIELD, LOCAL_VARIABLE, VALUE_PARAMETER, CONSTRUCTOR, FUNCTION, PROPERTY_GETTER, PROPERTY_SETTER, TYPEALIAS)` `@MustBeDocumented` `@SinceKotlin("1.3")` `public annotation class ExperimentalStdlibApi`

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`@nimport kotlin.annotation.AnnotationTarget` `nimport kotlin.experimental.ExperimentalTypeInference`

`Allows to infer generic type arguments of a function from the calls in the annotated function parameter of that function.` When this annotation is placed on a generic function parameter of a function, it enables to infer the type arguments of that generic function from the lambda body passed to that parameter. The calls that affect inference are either members of the receiver type of an annotated function parameter or extensions for that type. The extensions must be themselves annotated with `@BuilderInference`.

Example: we declare `fun <T> sequence(@BuilderInference block: suspend SequenceScope<T>().-> Unit): Sequence<T>` and use it like `val result = sequence { yield("result") }` Here the type argument of the resulting sequence is inferred to `String` from the argument of the `[SequenceScope.yield]` function, that is called inside the lambda passed to `[sequence]`.

Note: this annotation is experimental, see `[ExperimentalTypeInference]` on how to opt-in for it.

`@Target(VALUE_PARAMETER, FUNCTION, PROPERTY)` `@Retention(AnnotationRetention.BINARY)` `@SinceKotlin("1.3")` `@ExperimentalTypeInference` `public annotation class BuilderInference`

`Enables overload selection based on the type of the value returned from lambda argument.` When two or more function overloads have otherwise the same parameter lists that differ only in the return type of a functional parameter, this annotation enables overload selection by the type of the value returned from the lambda function passed to this functional parameter.

Example:

```

@OverloadResolutionByLambdaReturnType
fun create(intProducer: () -> Int): Int
fun create(doubleProducer: () -> Double): Double

val newValue = create { 3.14 }

```

The annotation being applied to one of overloads allows to resolve this ambiguity by analyzing what value is returned from the lambda function. This annotation is also used to discriminate the annotated overloads in case if overload selection still cannot choose one of them even taking in account the result of lambda parameter analysis. In that case a warning is reported.

Note: this annotation is experimental, see `[ExperimentalTypeInference]` on how to opt-in for it.

`@Target(FUNCTION)` `@Retention(AnnotationRetention.BINARY)` `@SinceKotlin("1.4")` `@ExperimentalTypeInference` `public annotation class OverloadResolutionByLambdaReturnType`

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`nimport kotlin.annotation.AnnotationTarget` `nimport kotlin.internal.RequireKotlin` `nimport kotlin.internal.RequireKotlinVersionKind`

The experimental multiplatform support API marker. Any usage of a declaration annotated with `@ExperimentalMultiplatform` must be accepted either by `@OptIn` annotation, e.g. `@OptIn(ExperimentalMultiplatform::class)`, or by using the compiler argument `-opt-in=kotlin.ExperimentalMultiplatform`.

`@RequiresOptIn` `@MustBeDocumented` `@Target(CLASS, ANNOTATION_CLASS, PROPERTY, FIELD, LOCAL_VARIABLE, VALUE_PARAMETER, CONSTRUCTOR, FUNCTION, PROPERTY_GETTER, PROPERTY_SETTER, TYPEALIAS)` `@Retention(AnnotationRetention.BINARY)` `public annotation class ExperimentalMultiplatform`

Marks an expected annotation class that it isn't required to have actual counterparts in all platforms. This annotation is only applicable to `expect` annotation classes in multi-



platform projects

and marks that class as `optional`. Optional expected class is allowed to have no corresponding actual class on the platform. Optional annotations can only be used to annotate something, not as types in signatures. If an optional annotation has no corresponding actual class on a platform, the annotation entries where it's used are simply erased when compiling code on that platform. Note: this annotation is experimental, see [ExperimentalMultiplatform] on how to opt-in for it.

```
/*\n@Target(ANNOTATION_CLASS)\n@Retention(AnnotationRetention.BINARY)\n@ExperimentalMultiplatform\npublic annotation class OptionalExpectation\n"/*\n * Copyright 2010-2022 JetBrains s.r.o. and Kotlin\nProgramming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be\nfound in the license/LICENSE.txt file.\n *\npackage kotlin\nimport\nkotlin.annotation.AnnotationRetention.\nimport kotlin.annotation.AnnotationTarget.\nimport\nkotlin.reflect.KClass\n/****\n
```

\* Signals that the annotated annotation class is a marker of an API that requires an explicit opt-in. Call sites of any declaration that is either annotated with such a marker or mentions in its signature any other declaration that requires opt-in should opt in to the API either by using `[OptIn]`, or by being annotated with that marker themselves, effectively causing further propagation of the opt-in requirement. The intended uses of opt-in markers include, but are not limited to the following:

- Experimental API for public preview that might change its semantics or affect binary compatibility.
- Internal declarations that should not be used outside the declaring library, but are `public` for technical reasons.
- Fragile or delicate API that needs a lot of expertise to use and thus require an explicit opt-in.

### Contagiousness

\* When a declaration is marked with an opt-in requirement, it is considered to be contagious,

meaning that all its uses or mentions in other declarations will require an explicit opt-in. A rule of thumb for propagating is the following: if the marked declaration ceases to exist, only the places with explicit opt-in (or the corresponding warning) will break. This rule does not imply transitivity, e.g. the propagation does not propagate opt-in through inlining, making it the responsibility of `inline` function author to mark it properly.

### Type scopes

\* A type is considered requiring opt-in if it is marked with an opt-in marker, or the outer declaration (class or interface) requires opt-in. Any use of any declaration that mentions such type in its signature will require an explicit opt-in, even if it is not used directly on the call site, and even if such declarations do not require opt-in directly.

\* For example, consider the following declarations that are marked with non-propagating opt-in:

```
Unstable\n * @OptIn(UnstableApi::class)\n * fun foo(): Unstable = Unstable()\n *\n@OptIn(UnstableApi::class)\n * fun bar(arg: Unstable = Unstable()) {\n * }\n *\n@OptIn(UnstableApi::class)\n * fun\nUnstable?.baz() {\n * }\n *\n * and their respective call sites:\n *\n * fun outerFun() {\n *     val s = foo()\n *     bar()\n *     null.baz()\n * }\n *\n * Even though call sites do not mention `Unstable` type directly, the
```

corresponding opt-in warning or error will be triggered in each call site due to propagation contagiousness. Note that the propagation is not transitive, i.e. calls to `outerFun` itself would not trigger any further opt-in requirements.

### Lexical scopes

\* If a type requires an opt-in, such requirement is propagated to its lexical scope and all its nested declarations. For example, for the following scope:

```
class Unstable {\n *     fun memberFun() = ...\n *\n *     class NestedClass {\n *         fun nestedFun()\n *     }\n *\n * }\n *\n * Any use of `Unstable`, `NestedClass`, or their member functions will require an
```

explicit opt-in. Opt-in markers are also propagated through the inheritance and interface implementation. If the base declaration requires an opt-in, overriding it requires either an explicit opt-in or propagating the opt-in requirement.

\* See also [Kotlin language documentation](https://kotlinlang.org/docs/opt-in-requirements.html) for more information.

\* @property message message to be reported on usages of API without an explicit opt-in, or empty string for the default message.

\* The default message is: `"This declaration is experimental and its usage should be marked with 'Marker' or '@OptIn(Marker::class)'"`, where `Marker` is the opt-in requirement marker.

\* @property level specifies how usages of API without an explicit opt-in are reported in code.

```

*/\n@Target(ANNOTATION_CLASS)\n@Retention(BINARY)\n@SinceKotlin("1.3")\npublic annotation class
RequiresOptIn(\n    val message: String = "",\n    val level: Level = Level.ERROR)\n {\n    /**\n     * Severity of
the diagnostic that should be reported on usages which did not explicitly opt into
     * the API either by using
[OptIn] or by being annotated with the corresponding marker annotation.\n     */\n    public enum class Level {\n
/** Specifies that a warning should be reported on incorrect usages of this API. */\n        WARNING,\n
/** Specifies that a compilation error should be reported on incorrect usages of this API. */\n        ERROR,\n
}\n}\n\n/**\n * Allows to use the API denoted by the given markers in the annotated file, declaration, or
expression.\n * If a declaration is annotated with [OptIn], its usages are not required to opt in to that API.\n *
* [markerClass] specifies marker annotations that require explicit opt-in. The marker annotation
is\n * not required to be itself marked with [RequiresOptIn] to enable gradual migration of API from requiring opt-
in to the regular one,\n * yet declaring such `OptIn` yields a compilation warning.\n *
* See also [Kotlin language documentation](https://kotlinlang.org/docs/opt-in-requirements.html) for more information.\n *
* @property
markerClass specifies marker annotations that require explicit opt-in.\n * @see RequiresOptIn for a detailed
description of opt-in semantics and propagation rules.\n */\n@Target(\n    CLASS, PROPERTY,
LOCAL_VARIABLE, VALUE_PARAMETER, CONSTRUCTOR, FUNCTION, PROPERTY_GETTER,
PROPERTY_SETTER, EXPRESSION, FILE,
TYPEALIAS)\n\n@Retention(SOURCE)\n@SinceKotlin("1.3")\npublic annotation class OptIn(\n    vararg val
markerClass: KClass<out Annotation>)\n\n/**\n * This annotation marks the experimental preview of the
language feature [SubclassOptInRequired].\n *
* > Note that this API is in a preview state and has a chance of
being changed in the
future.\n * Do not use it if you develop a library since your library can become source incompatible\n * with the
future versions of Kotlin.\n */\n@Target(CLASS)\n@Retention(BINARY)\n@SinceKotlin("1.8")\npublic
annotation class ExperimentalSubclassOptIn\n\n/**\n * Annotation that marks open for subclassing classes and
interfaces, and makes implementation\n * and extension of such declarations as requiring an explicit opt-in.\n *
\n * When applied, any attempt to subclass the target declaration will trigger an opt-in\n * with the corresponding level
and message.\n *
\n * The intended uses of subclass opt-in markers include, but are not limited to the following
API:\n * - Stable to use, but unstable to implement due to its further evolution.\n * - Stable to use, but closed for
3rd-part implementations due to internal or technical reasons.\n * - Stable to use, but delicate or fragile to
implement.\n * - Stable to use, but with a contract that may be weakened in the future in a backwards-
incompatible\n
* manner for external implementations.\n *
\n * Contrary to regular [RequiresOptIn], there are three ways to opt-in
into the subclassing requirement:\n * - Annotate declaration with the marker annotation, making it propagating.\n * -
Annotate declaration with [OptIn] in order to opt in into the provided guarantees in a non-propagating manner.\n * -
Annotate declaration with [SubclassOptInRequired] with the same marker class, making it further propagating only
for subclassing.\n *
\n * Uses of this annotation are limited to open and abstract classes, and non-`fun` interfaces.\n *
\n * Any other uses allowed by `CLASS` annotation target yield a compilation error.\n *
\n * @property markerClass
specifies marker annotation that require explicit opt-in.\n * @see RequiresOptIn for a detailed description of opt-in
semantics and propagation rules.\n
*/\n@Target(CLASS)\n@Retention(BINARY)\n@SinceKotlin("1.8")\n@ExperimentalSubclassOptIn\npublic
annotation class SubclassOptInRequired(\n
    val markerClass: KClass<out Annotation>)\n\n"/*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin
Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be
found in the license/LICENSE.txt file.\n */\n\npackage kotlin\n\nimport
kotlin.annotation.AnnotationRetention.BINARY\nimport kotlin.annotation.AnnotationTarget.*\nimport
kotlin.reflect.KClass\n\n\n@Target(CLASS, PROPERTY, CONSTRUCTOR, FUNCTION,
TYPEALIAS)\n@Retention(BINARY)\ninternal annotation class WasExperimental(\n    vararg val markerClass:
KClass<out Annotation>)\n\n"/*\n * Copyright 2010-2020 JetBrains s.r.o. and Kotlin Programming Language
contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the

```

```

license/LICENSE.txt file.\n */\npackage kotlin.collections\n\nimport kotlin.js.JsName\n\n/**\n * Provides a skeletal implementation of the read-only [Collection] interface.\n */\n * @param E the type of elements contained in the collection. The collection is covariant in its element type.\n */\n@SinceKotlin("1.1")\npublic abstract class AbstractCollection<out E> protected constructor() : Collection<E> {\n    abstract override val size: Int\n    abstract override fun iterator(): Iterator<E>\n\n    override fun contains(element: @UnsafeVariance E): Boolean = any { it == element }\n\n    override fun containsAll(elements: Collection<@UnsafeVariance E>): Boolean =\n        elements.all { contains(it) } // use when js will support bound refs: elements.all(this::contains)\n\n    override fun isEmpty(): Boolean = size == 0\n\n    override fun toString(): String = joinToString(", ", "[", "]")\n\n    if (it === this) \"(this Collection)\" else it.toString()\n }\n\n /**\n * Returns new array of type `Array<Any?>` with the elements of this collection.\n */\n @JsName(\"toArray\")\n protected open fun toArray(): Array<Any?> = copyToArrayImpl(this)\n\n /**\n * Fills the provided [array] or creates new array of the same type\n * and fills it with the elements of this collection.\n */\n\n protected open fun <T> toArray(array: Array<T>): Array<T> = copyToArrayImpl(this, array)\n}\n\n\", \"/*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\npackage\nkotlin.collections\n\nprivate enum class State {\n    Ready,\n    NotReady,\n    Done,\n    Failed\n}\n\n/**\n * A base class to simplify implementing iterators so that implementations only have to implement [computeNext]\n * to implement the iterator, calling [done] when the iteration is complete.\n */\n\npublic abstract class AbstractIterator<T> : Iterator<T> {\n    private var state = State.NotReady\n    private var nextValue: T? = null\n\n    override fun hasNext(): Boolean {\n        require(state != State.Failed)\n        return when (state) {\n            State.Done -> false\n            State.Ready -> true\n            else -> tryToComputeNext()\n        }\n    }\n\n    override fun next(): T {\n        if (!hasNext()) throw NoSuchElementException()\n        state = State.NotReady\n        @Suppress(\"UNCHECKED_CAST\")\n        return nextValue as T\n    }\n\n    private fun tryToComputeNext(): Boolean {\n        state = State.Failed\n        computeNext()\n        return state == State.Ready\n    }\n\n    /**\n * Computes the next item in the iterator.\n */\n * This callback method should call one of these two methods:\n * * [setNext] with the next value of the iteration\n * * [done] to indicate there are no more elements\n * * Failure to call either method will result in the iteration terminating with a failed state\n */\n\n abstract\n protected fun computeNext(): Unit\n\n /**\n * Sets the next value in the iteration, called from the [computeNext] function\n */\n\n protected\n fun setNext(value: T): Unit {\n    nextValue = value\n    state = State.Ready\n }\n\n /**\n * Sets the state to done so that the iteration terminates.\n */\n\n protected fun done() {\n    state = State.Done\n }\n}\n\n\", \"/*\n * Copyright 2010-2020 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\n/**\n * Based on GWT AbstractList\n * Copyright 2007 Google Inc.\n */\n\npackage kotlin.collections\n\n/**\n * Provides a skeletal implementation of the read-only [List] interface.\n */\n * This class is intended to help implementing read-only lists so it doesn't support concurrent modification tracking.\n */\n * @param E the type of elements contained in the list. The list is covariant in its element type.\n */\n@SinceKotlin("1.1")\npublic abstract class AbstractList<out E> protected constructor() : AbstractCollection<E>(),\n    List<E> {\n    abstract override val size: Int\n    abstract override fun get(index: Int): E\n\n    override fun iterator(): Iterator<E> = IteratorImpl()\n\n    override fun indexOf(element: @UnsafeVariance E): Int = indexOfFirst { it == element }\n\n    override fun lastIndexOf(element: @UnsafeVariance E): Int = indexOfLast { it == element }\n\n    override fun listIterator(): ListIterator<E> = ListIteratorImpl(0)\n\n    override fun listIterator(index: Int): ListIterator<E> = ListIteratorImpl(index)\n\n    override fun subList(fromIndex: Int, toIndex: Int): List<E> = SubList(this, fromIndex, toIndex)\n\n    private class SubList<out E>(private val list: AbstractList<E>, private val fromIndex: Int, toIndex: Int) : AbstractList<E>(), RandomAccess {\n        private var _size: Int = 0\n        init {\n            checkRangeIndexes(fromIndex, toIndex, list.size)\n            this._size = toIndex - fromIndex\n        }\n\n        override fun get(index: Int): E {\n            checkElementIndex(index,\n
```

```

_size)\n\n    return list[fromIndex + index]\n    }\n\n    override val size: Int get() = _size\n    }\n\n    /**\n     * Compares this list with other list instance with the ordered structural equality.\n     * @return true, if [other] instance is a [List] of the same size, which contains the same elements in the same order.\n     */\n    override fun equals(other: Any?): Boolean {\n        if (other === this) return true\n        if (other !is List<*>) return false\n        return orderedEquals(this, other)\n    }\n\n    /**\n     * Returns the hash code value for this list.\n     */\n    override fun hashCode(): Int = orderedHashCode(this)\n\n    private open inner class IteratorImpl : Iterator<E> {\n        /**\n         the index of the item that will be returned on the next call to [next]()\n         */\n        protected var index = 0\n\n        override fun hasNext(): Boolean = index < size\n\n        override fun next(): E {\n            if (!hasNext())\n                throw NoSuchElementException()\n            return get(index++)\n        }\n    }\n\n    /**\n     * Implementation of [ListIterator] for abstract lists.\n     */\n    private open inner class ListIteratorImpl(index: Int) : IteratorImpl(),\n        ListIterator<E> {\n        init {\n            checkPositionIndex(index, this@AbstractList.size)\n            this.index = index\n        }\n\n        override fun hasPrevious(): Boolean = index > 0\n\n        override fun nextIndex(): Int = index\n\n        override fun previous(): E {\n            if (!hasPrevious()) throw NoSuchElementException()\n            return get(--index)\n        }\n\n        override fun previousIndex(): Int = index - 1\n    }\n\n    internal companion object {\n        internal fun checkElementIndex(index: Int, size: Int) {\n            if (index < 0 || index >= size) {\n                throw IndexOutOfBoundsException("index: $index, size: $size")\n            }\n        }\n\n        internal fun checkPositionIndex(index:\n        Int, size: Int) {\n            if (index < 0 || index > size) {\n                throw IndexOutOfBoundsException("index: $index, size: $size")\n            }\n        }\n\n        internal fun checkRangeIndexes(fromIndex: Int, toIndex: Int, size: Int) {\n            if (fromIndex < 0 || toIndex > size) {\n                throw IndexOutOfBoundsException("fromIndex: $fromIndex, toIndex: $toIndex, size: $size")\n            }\n            if (fromIndex > toIndex) {\n                throw\n                IllegalArgumentException("fromIndex: $fromIndex > toIndex: $toIndex")\n            }\n        }\n\n        internal fun checkBoundsIndexes(startIndex: Int, endIndex: Int, size: Int) {\n            if (startIndex < 0 || endIndex > size) {\n                throw IndexOutOfBoundsException("startIndex: $startIndex, endIndex: $endIndex, size: $size")\n            }\n            if (startIndex > endIndex) {\n                throw IllegalArgumentException("startIndex: $startIndex > endIndex: $endIndex")\n            }\n        }\n\n        internal fun orderedHashCode(c: Collection<*>): Int {\n            var hashCode = 1\n            for (e in c) {\n                hashCode = 31 * hashCode + (e?.hashCode() ?: 0)\n            }\n            return hashCode\n        }\n\n        internal fun orderedEquals(c: Collection<*>, other: Collection<*>): Boolean {\n            if (c.size != other.size) return false\n            val otherIterator = other.iterator()\n            for (elem in c) {\n                val elemOther = otherIterator.next()\n                if (elem != elemOther) {\n                    return false\n                }\n            }\n            return true\n        }\n    }\n}\n\n"/>\n * Copyright 2010-2020 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n * Based on GWT AbstractMap\n * Copyright 2007 Google Inc.\n */\n\npackage\n\nkotlin.collections\n\n/**\n * Provides a skeletal implementation of the read-only [Map] interface.\n */\n * The implementor is required to implement [entries] property, which should return read-only set of map entries.\n */\n * @param K the type of map keys. The map is invariant in its key type.\n * @param V the type of map values. The map is covariant in its value type.\n */\n * @SinceKotlin("1.1")\n\npublic abstract class AbstractMap<K, out V>\n    protected constructor() : Map<K, V> {\n\n    override fun containsKey(key: K): Boolean {\n        return implFindEntry(key) != null\n    }\n\n    override fun containsValue(value: @UnsafeVariance V): Boolean = entries.any { it.value == value }\n\n    internal fun containsEntry(entry: Map.Entry<*, *>): Boolean {\n        // since entry comes from @UnsafeVariance parameters it can be virtually anything\n        if (entry !is Map.Entry<*, *>)\n            return false\n        val key = entry.key\n        val value = entry.value\n        val ourValue = get(key)\n\n        if (value != ourValue) {\n            return false\n        }\n        // Perhaps it was null and we don't contain the key?\n        if (ourValue == null && !containsKey(key)) {\n            return false\n        }\n        return true\n    }\n\n    /**\n     * Compares this map with other instance with the ordered structural equality.\n     * @return true, if [other] instance is a [Map] of the same size, all entries of which are contained in the [entries] set of this

```

```

map.\n    */\n    override fun equals(other: Any?): Boolean {\n        if (other === this) return true\n        if (other !is\n        Map<*, *>) return false\n        if (size != other.size) return false\n        return other.entries.all { containsEntry(it)\n        }\n    }\n\n    override operator fun get(key: K): V? = implFindEntry(key)?.value\n\n    /**\n     * Returns the hash\n     code value for this map.\n     *\n     * It is the same as the hashCode of [entries] set.\n     */\n    override fun\n    hashCode():\n\n    Int = entries.hashCode()\n\n    override fun isEmpty(): Boolean = size == 0\n\n    override val size: Int get() =\n    entries.size\n\n    /**\n     * Returns a read-only [Set] of all keys in this map.\n     *\n     * Accessing this property\n     first time creates a keys view from [entries].\n     *\n     * All subsequent accesses just return the created instance.\n     */\n    override val keys: Set<K>\n\n    get() {\n        if (_keys == null) {\n            _keys = object : AbstractSet<K>()\n            {\n                override operator fun contains(element: K): Boolean = containsKey(element)\n            }\n        }\n\n        override operator fun iterator(): Iterator<K> {\n            val entryIterator = entries.iterator()\n            return object : Iterator<K> {\n                override fun hasNext(): Boolean = entryIterator.hasNext()\n                override fun next(): K = entryIterator.next().key\n            }\n        }\n\n        override val size: Int get() = this@AbstractMap.size\n    }\n\n    @kotlin.jvm.Volatile\n    private var _keys: Set<K>? = null\n\n    override fun toString(): String =\n    entries.joinToString(", ", "\n", "\n") { toString(it) }\n\n    private fun toString(entry: Map.Entry<K, V>): String =\n    toString(entry.key) + "=" + toString(entry.value)\n\n    private fun toString(o: Any?): String = if (o === this) \"(this\n    Map)\" else o.toString()\n\n    /**\n     * Returns a read-only [Collection] of all values in this map.\n     *\n     * Accessing this property\n     first time creates a values view from [entries].\n     *\n     * All subsequent accesses just return the\n     created instance.\n     */\n    override val values: Collection<V>\n\n    get() {\n        if (_values == null) {\n            _values = object : AbstractCollection<V>()\n            {\n                override operator fun contains(element:\n                @UnsafeVariance\n                V): Boolean = containsValue(element)\n            }\n        }\n\n        override operator fun iterator(): Iterator<V> {\n            val entryIterator = entries.iterator()\n            return object : Iterator<V> {\n                override fun\n                hasNext(): Boolean = entryIterator.hasNext()\n                override fun\n                next(): V = entryIterator.next().value\n            }\n        }\n\n        override val size: Int get() = this@AbstractMap.size\n    }\n\n    @kotlin.jvm.Volatile\n    private var _values: Collection<V>? = null\n\n    private fun implFindEntry(key: K): Map.Entry<K, V>? = entries.firstOrNull { it.key == key }\n\n    internal\n    companion object {\n        internal fun entryHashCode(e: Map.Entry<*, *>): Int = with(e) { (key?.hashCode() ?:\n        0) xor (value?.hashCode() ?: 0) }\n\n        internal fun entryToString(e: Map.Entry<*, *>): String\n        = with(e) { \"$key=$value\" }\n\n        internal fun entryEquals(e: Map.Entry<*, *>, other: Any?): Boolean {\n            if (other !is Map.Entry<*, *>) return false\n            return e.key == other.key && e.value == other.value\n        }\n    }\n\n    \"\"/>\n    /**\n     * Copyright 2010-2020 JetBrains s.r.o. and Kotlin Programming Language contributors.\n     * Use of\n     this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n     */\n\n    /**\n     * Provides a skeletal implementation of the read-only [Set] interface.\n     *\n     * This class is intended to help implementing read-only sets so it doesn't support concurrent modification tracking.\n     */\n\n    /**\n     * @param E the type of elements contained in the set. The set is covariant in its element type.\n     */\n\n    /**\n     * @since Kotlin(1.1)\n     */\n    public abstract class AbstractSet<out E> protected constructor() :\n    AbstractCollection<E>(), Set<E> {\n        /**\n         * Compares this set with other set instance with the\n         unordered structural equality.\n         *\n         * @return true, if [other] instance is a [Set] of the same size, all elements\n         of which are contained in this set.\n         */\n        override fun equals(other: Any?): Boolean {\n            if (other === this)\n            return true\n            if (other !is Set<*>) return false\n            return setEquals(this, other)\n        }\n\n        /**\n         * Returns\n         the hash code value for this set.\n         */\n        override fun hashCode(): Int = unorderedHashCode(this)\n\n        internal\n        companion object {\n            internal fun unorderedHashCode(c: Collection<*>): Int {\n                var hashCode = 0\n                for (element in c) {\n                    hashCode += (element?.hashCode() ?: 0)\n                }\n                return hashCode\n            }\n\n            internal fun setEquals(c: Set<*>, other: Set<*>): Boolean {\n                if (c.size != other.size) return false\n                return c.containsAll(other)\n            }\n        }\n    }\n\n    \"\"/>\n    /**\n     * Copyright 2010-2019 JetBrains s.r.o. and Kotlin

```

Programming Language contributors.\n \* Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n \*^\\n\\npackage kotlin.collections\\n/\*\*\\n \* Resizable-array implementation of the deque data structure.\n \*\\n \* The name deque is short for \"double ended queue\" and is usually pronounced \"deck\".\n \*\\n \* The collection provide methods for convenient access to the both ends.\n \* It also implements [MutableList] interface and supports efficient get/set operations by index.\n

```

*^\\n@SinceKotlin("1.4")\\n@WasExperimental(ExperimentalStdlibApi::class)\\npublic class ArrayDeque<E> :
AbstractMutableList<E> {\\n    private var head: Int = 0\\n    private var elementData: Array<Any?>\\n\\n    override
var size: Int = 0\\n        private set\\n\\n    /**\\n     * Constructs an empty deque with specified [initialCapacity], or
throws [IllegalArgumentException] if [initialCapacity] is negative.\\n     *^\\n     public constructor(initialCapacity:
Int) {\\n
        elementData = when {\\n            initialCapacity == 0 -> emptyElementData\\n            initialCapacity > 0 ->
arrayOfNulls(initialCapacity)\\n            else -> throw IllegalArgumentException("\\Illegal Capacity:
$initialCapacity")\\n        }\\n    }\\n\\n    /**\\n     * Constructs an empty deque.\\n     *^\\n     public constructor() {\\n
elementData = emptyElementData\\n    }\\n\\n    /**\\n     * Constructs a deque that contains the same elements as the
specified [elements] collection in the same order.\\n     *^\\n     public constructor(elements: Collection<E>) {\\n
elementData = elements.toArray()\\n        size = elementData.size\\n        if (elementData.isEmpty())
elementData = emptyElementData\\n    }\\n\\n    /**\\n     * Ensures that the capacity of this deque is at least equal to
the specified [minCapacity].\\n     *\\n     * If the current capacity is less than the [minCapacity], a new backing
storage is allocated with greater capacity.\\n     * Otherwise, this method takes
no action and simply returns.\\n     *^\\n     private fun ensureCapacity(minCapacity: Int) {\\n         if (minCapacity < 0)
throw IllegalStateException("Deque is too big.") // overflow\\n         if (minCapacity <= elementData.size) return\\n
         if (elementData === emptyElementData) {\\n             elementData =
arrayOfNulls(minCapacity.coerceAtLeast(defaultMinCapacity))\\n             return\\n         }\\n         val newCapacity =
newCapacity(elementData.size, minCapacity)\\n         copyElements(newCapacity)\\n     }\\n\\n     /**\\n     * Creates a
new array with the specified [newCapacity] size and copies elements in the [elementData] array to it.\\n     *^\\n
private fun copyElements(newCapacity: Int) {\\n         val newElements = arrayOfNulls<Any?>(newCapacity)\\n
elementData.copyInto(newElements, 0, head, elementData.size)\\n         elementData.copyInto(newElements,
elementData.size - head, 0, head)\\n         head = 0\\n         elementData = newElements\\n     }\\n\\n
@kotlin.internal.InlineOnly\\n
private inline fun internalGet(internalIndex: Int): E {\\n     @Suppress("UNCHECKED_CAST")\\n     return
elementData[internalIndex] as E\\n }\\n\\n private fun positiveMod(index: Int): Int = if (index >=
elementData.size) index - elementData.size else index\\n\\n private fun negativeMod(index: Int): Int = if (index < 0)
index + elementData.size else index\\n\\n @kotlin.internal.InlineOnly\\n private inline fun internalIndex(index:
Int): Int = positiveMod(head + index)\\n\\n private fun incremented(index: Int): Int = if (index ==
elementData.lastIndex) 0 else index + 1\\n\\n private fun decremented(index: Int): Int = if (index == 0)
elementData.lastIndex else index - 1\\n\\n override fun isEmpty(): Boolean = size == 0\\n\\n /**\\n     * Returns the
first element, or throws [NoSuchElementException] if this deque is empty.\\n     *^\\n     public fun first(): E = if
(isEmpty()) throw NoSuchElementException("\\ArrayDeque is empty.") else internalGet(head)\\n\\n
/**\\n     * Returns the first element, or `null` if this deque is empty.\\n     *^\\n     public fun firstOrNull(): E? = if
(isEmpty()) null else internalGet(head)\\n\\n /**\\n     * Returns the last element, or throws
[NoSuchElementException] if this deque is empty.\\n     *^\\n     public fun last(): E = if (isEmpty()) throw
NoSuchElementException("\\ArrayDeque is empty.") else internalGet(internalIndex(lastIndex))\\n\\n /**\\n     *
Returns the last element, or `null` if this deque is empty.\\n     *^\\n     public fun lastOrNull(): E? = if (isEmpty()) null
else internalGet(internalIndex(lastIndex))\\n\\n /**\\n     * Prepends the specified [element] to this deque.\\n     *^\\n
public fun addFirst(element: E) {\\n         ensureCapacity(size + 1)\\n         head = decremented(head)\\n
elementData[head] = element\\n         size += 1\\n     }\\n\\n /**\\n     * Appends the specified [element] to this deque.\\n
*^\\n     public fun addLast(element: E) {\\n         ensureCapacity(size +

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1)\n\n    elementData[internalIndex(size)] = element\n    size += 1\n    }\n\n    /**\n     * Removes the first
element from this deque and returns that removed element, or throws [NoSuchElementException] if this deque is
empty.\n     */\n    public fun removeFirst(): E {\n        if (isEmpty()) throw NoSuchElementException("ArrayDeque
is empty.")\n        val element = internalGet(head)\n        elementData[head] = null\n        head =
incremented(head)\n        size -= 1\n        return element\n    }\n\n    /**\n     * Removes the first element from this
deque and returns that removed element, or returns `null` if this deque is empty.\n     */\n    public fun
removeFirstOrNull(): E? = if (isEmpty()) null else removeFirst()\n\n    /**\n     * Removes the last element from this
deque and returns that removed element, or throws [NoSuchElementException] if this deque is empty.\n     */\n
public fun removeLast(): E {\n        if (isEmpty()) throw NoSuchElementException("ArrayDeque
is empty.")\n        val internalLastIndex = internalIndex(lastIndex)\n        val element =
internalGet(internalLastIndex)\n        elementData[internalLastIndex] = null\n        size -= 1\n        return element\n
}\n\n    /**\n     * Removes the last element from this deque and returns that removed element, or returns `null` if
this deque is empty.\n     */\n    public fun removeLastOrNull(): E? = if (isEmpty()) null else removeLast()\n\n    //
MutableList, MutableCollection\n    public override fun add(element: E): Boolean {\n        addLast(element)\n
return true\n    }\n\n    public override fun add(index: Int, element: E) {\n
AbstractList.checkPositionIndex(index, size)\n        if (index == size) {\n            addLast(element)\n
return\n        } else if (index == 0) {\n            addFirst(element)\n            return\n        }\n        ensureCapacity(size
+ 1)\n        // Elements in circular array lay in 2 ways:\n        //
1. `head` is less than `tail`: [#, #, e1, e2, e3, #]\n        // 2. `head` is greater than `tail`: [e3, #, #, #, e1, e2]\n
// where head is the index of the first element in the circular array,\n        // and tail is the index following the last
element.\n        //\n        // At this point the insertion index is not equal to head or tail.\n        // Also the circular array
can store at least one more element.\n        //\n        // Depending on where the given element must be inserted the
preceding or the succeeding\n        // elements will be shifted to make room for the element to be inserted.\n        //\n
// In case the preceding elements are shifted:\n        // * if the insertion index is greater than the head (regardless
of circular array form)\n        // -> shift the preceding elements\n        // * otherwise, the circular array has (2)
form and the insertion index is less than tail\n        // -> shift all elements in the back of
the array\n        // -> shift preceding elements in the front of the array\n        // In case the succeeding elements
are shifted:\n        // * if the insertion index is less than the tail (regardless of circular array form)\n        // ->
shift the succeeding elements\n        // * otherwise, the circular array has (2) form and the insertion index is greater
than head\n        // -> shift all elements in the front of the array\n        // -> shift succeeding elements in the
back of the array\n        val internalIndex = internalIndex(index)\n        if (index < (size + 1) shr 1) {\n            //
closer to the first element -> shift preceding elements\n            val decrementedInternalIndex =
decremented(internalIndex)\n            val decrementedHead = decremented(head)\n            if
(decrementedInternalIndex >= head) {\n                elementData[decrementedHead] = elementData[head] // head can
be zero\n                elementData.copyInto(elementData,
head, head + 1, decrementedInternalIndex + 1)\n            } else { // head > tail\n
elementData.copyInto(elementData, head - 1, head, elementData.size) // head can't be zero\n
elementData[elementData.size - 1] = elementData[0]\n                elementData.copyInto(elementData, 0, 1,
decrementedInternalIndex + 1)\n            }\n            elementData[decrementedInternalIndex] = element\n
head = decrementedHead\n        } else {\n            // closer to the last element -> shift succeeding elements\n
val tail = internalIndex(size)\n            if (internalIndex < tail) {\n                elementData.copyInto(elementData,
internalIndex + 1, internalIndex, tail)\n            } else { // head > tail\n                elementData.copyInto(elementData,
1, 0, tail)\n                elementData[0] = elementData[elementData.size - 1]\n
elementData.copyInto(elementData, internalIndex + 1, internalIndex, elementData.size
- 1)\n            }\n            elementData[internalIndex] = element\n        }\n        size += 1\n    }\n\n    private fun
copyCollectionElements(internalIndex: Int, elements: Collection<E>) {\n        val iterator = elements.iterator()\n
for (index in internalIndex until elementData.size) {\n            if (!iterator.hasNext()) break\n
elementData[index] = iterator.next()\n        }\n        for (index in 0 until head) {\n            if (!iterator.hasNext())

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break\n        elementData[index] = iterator.next()\n        }\n\n        size += elements.size\n    }\n\n    public override
fun addAll(elements: Collection<E>): Boolean {\n        if (elements.isEmpty()) return false\n
ensureCapacity(this.size + elements.size)\n        copyCollectionElements(internalIndex(size), elements)\n        return
true\n    }\n\n    public override fun addAll(index: Int, elements: Collection<E>): Boolean {\n
AbstractList.checkPositionIndex(index, size)\n
        if (elements.isEmpty()) {\n            return false\n        } else if (index == size) {\n            return
addAll(elements)\n        }\n\n        ensureCapacity(this.size + elements.size)\n\n        val tail = internalIndex(size)\n
        val internalIndex = internalIndex(index)\n        val elementsSize = elements.size\n\n        if (index < (size + 1) shr
1) {\n            // closer to the first element -> shift preceding elements\n\n            var shiftedHead = head -
elementsSize\n\n            if (internalIndex >= head) {\n                if (shiftedHead >= 0) {\n
elementData.copyInto(elementData, shiftedHead, head, internalIndex)\n                } else { // head < tail, insertion
leads to head >= tail\n                    shiftedHead += elementData.size\n                    val elementsToShift =
internalIndex - head\n                    val shiftToBack = elementData.size - shiftedHead\n\n                    if (shiftToBack
>= elementsToShift) {\n
                        elementData.copyInto(elementData, shiftedHead, head, internalIndex)\n                    } else {\n
                        elementData.copyInto(elementData, shiftedHead, head, head + shiftToBack)\n
                        elementData.copyInto(elementData, 0, head + shiftToBack, internalIndex)\n                    }\n                }\n
            } else {\n                // head > tail, internalIndex < tail\n                elementData.copyInto(elementData, shiftedHead, head,
elementData.size)\n                if (elementsSize >= internalIndex) {\n                    elementData.copyInto(elementData,
elementData.size - elementsSize, 0, internalIndex)\n                } else {\n
                    elementData.copyInto(elementData, elementData.size - elementsSize, 0, elementsSize)\n
                    elementData.copyInto(elementData, 0, elementsSize, internalIndex)\n                }\n            }\n
            head =
shiftedHead\n            copyCollectionElements(negativeMod(internalIndex
- elementsSize), elements)\n        } else {\n            // closer to the last element -> shift succeeding elements\n\n
            val shiftedInternalIndex = internalIndex + elementsSize\n\n            if (internalIndex < tail) {\n                if (tail +
elementsSize <= elementData.size) {\n                    elementData.copyInto(elementData, shiftedInternalIndex,
internalIndex, tail)\n                } else { // head < tail, insertion leads to head >= tail\n                    if
(shiftedInternalIndex >= elementData.size) {\n                        elementData.copyInto(elementData,
shiftedInternalIndex - elementData.size, internalIndex, tail)\n                    } else {\n                        val shiftToFront =
tail + elementsSize - elementData.size\n                        elementData.copyInto(elementData, 0, tail - shiftToFront,
tail)\n                        elementData.copyInto(elementData, shiftedInternalIndex, internalIndex, tail - shiftToFront)\n
                    }\n                }\n            } else {\n                // head > tail, internalIndex > head\n
                elementData.copyInto(elementData, elementsSize, 0, tail)\n                if (shiftedInternalIndex >= elementData.size)
{\n                    elementData.copyInto(elementData, shiftedInternalIndex - elementData.size, internalIndex,
elementData.size)\n                } else {\n                    elementData.copyInto(elementData, 0, elementData.size -
elementsSize, elementData.size)\n                    elementData.copyInto(elementData, shiftedInternalIndex,
internalIndex, elementData.size - elementsSize)\n                }\n            }\n
        }\n\n        copyCollectionElements(internalIndex, elements)\n    }\n\n    return true\n }\n\n    public override fun
get(index: Int): E {\n        AbstractList.checkElementIndex(index, size)\n\n        return
internalGet(internalIndex(index))\n    }\n\n    public override fun set(index: Int, element: E): E {\n
AbstractList.checkElementIndex(index,
size)\n\n        val internalIndex = internalIndex(index)\n        val oldElement = internalGet(internalIndex)\n
        elementData[internalIndex] = element\n\n        return oldElement\n    }\n\n    public override fun contains(element:
E): Boolean = indexOf(element) != -1\n\n    public override fun indexOf(element: E): Int {\n        val tail =
internalIndex(size)\n\n        if (head < tail) {\n            for (index in head until tail) {\n                if (element ==
elementData[index]) return index - head\n            }\n        } else if (head >= tail) {\n            for (index in head until
elementData.size) {\n                if (element == elementData[index]) return index - head\n            }\n        } for

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(index in 0 until tail) {\n        if (element == elementData[index]) return index + elementData.size - head\n
}\n    }\n\n    return -1\n }\n\n    public override fun lastIndexOf(element: E): Int {\n        val tail =
internalIndex(size)\n\n        if (head < tail) {\n            for (index in tail - 1 downTo head) {\n                if (element == elementData[index])
return index - head\n            }\n        } else if (head > tail) {\n            for (index in tail - 1 downTo 0) {\n                if
(element == elementData[index]) return index + elementData.size - head\n            }\n        } for (index in
elementData.lastIndex downTo head) {\n            if (element == elementData[index]) return index - head\n
}\n    }\n\n    return -1\n }\n\n    public override fun remove(element: E): Boolean {\n        val index =
indexOf(element)\n        if (index == -1) return false\n        removeAt(index)\n        return true\n }\n\n    public
override fun removeAt(index: Int): E {\n        AbstractList.checkNotNull(index, size)\n        if (index ==
lastIndex) {\n            return removeLast()\n        } else if (index == 0) {\n            return removeFirst()\n
}\n\n        val internalIndex = internalIndex(index)\n        val element = internalGet(internalIndex)\n\n        if
(index < size shr 1) {\n            // closer to the first element -> shift preceding elements\n            if (internalIndex >=
head) {\n                elementData.copyInto(elementData, head + 1, head, internalIndex)\n            } else { // head >
tail, internalIndex < head\n                elementData.copyInto(elementData, 1, 0, internalIndex)\n
elementData[0] = elementData[elementData.size - 1]\n                elementData.copyInto(elementData, head + 1,
head, elementData.size - 1)\n            }\n            elementData[head] = null\n            head = incremented(head)\n
} else {\n            // closer to the last element -> shift succeeding elements\n            val internalLastIndex =
internalIndex(lastIndex)\n            if (internalIndex <= internalLastIndex) {\n                elementData.copyInto(elementData, internalIndex, internalIndex
+ 1, internalLastIndex + 1)\n            } else { // head > tail, internalIndex > head\n                elementData.copyInto(elementData, internalIndex, internalIndex + 1, elementData.size)\n
elementData[elementData.size - 1] = elementData[0]\n                elementData.copyInto(elementData, 0, 1,
internalLastIndex + 1)\n            }\n            elementData[internalLastIndex] = null\n        }\n        size -= 1\n\n    return element\n }\n\n    public override fun removeAll(elements: Collection<E>): Boolean = filterInPlace {
!elements.contains(it) }\n\n    public override fun retainAll(elements: Collection<E>): Boolean = filterInPlace {
elements.contains(it) }\n\n    private inline fun filterInPlace(predicate: (E) -> Boolean): Boolean {\n        if
(this.isEmpty() || elementData.isEmpty())\n            return false\n\n        val tail = internalIndex(size)\n        var
newTail = head\n        var modified = false\n\n        if (head < tail) {\n            for (index in head until tail) {\n                val element = elementData[index]\n
\n                @Suppress("UNCHECKED_CAST")\n                if (predicate(element as E))\n                    elementData[newTail++] = element\n                else\n                    modified = true\n            }\n\n            elementData.fill(null, newTail, tail)\n        } else {\n            for (index in head until elementData.size) {\n                val element = elementData[index]\n
\n                @Suppress("UNCHECKED_CAST")\n                if (predicate(element as E))\n                    elementData[newTail++] = element\n                else\n                    modified = true\n            }\n\n            newTail =
positiveMod(newTail)\n\n            for (index in 0 until tail) {\n                val element = elementData[index]\n
\n                @Suppress("UNCHECKED_CAST")\n                if (predicate(element as E)) {\n                    elementData[newTail] = element\n                    newTail =
incremented(newTail)\n                } else {\n                    modified = true\n                }\n            }\n\n            if
(modified)\n                size = negativeMod(newTail - head)\n            return modified\n        }\n\n    public override fun
clear() {\n        val tail = internalIndex(size)\n        if (head < tail) {\n            elementData.fill(null, head, tail)\n        }
else if (isEmpty()) {\n            elementData.fill(null, head, elementData.size)\n            elementData.fill(null, 0,
tail)\n        }\n        head = 0\n        size = 0\n    }\n\n    @Suppress("NOTHING_TO_OVERRIDE")\n    override
fun <T> toArray(array: Array<T>): Array<T> {\n        @Suppress("UNCHECKED_CAST")\n        val dest = (if
(array.size >= size) array else arrayOfNulls(array, size)) as Array<Any?>\n        val tail = internalIndex(size)\n        if (head

```

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< tail) {\n        elementData.copyInto(dest, startIndex = head, endIndex = tail)\n    } else if (isEmpty()) {\n        elementData.copyInto(dest, destinationOffset = 0, startIndex = head, endIndex = elementData.size)\n    }\n    elementData.copyInto(dest, destinationOffset = elementData.size - head, startIndex = 0, endIndex = tail)\n    }\n    if (dest.size > size) {\n        dest[size] = null // null-terminate\n    }\n\n    @Suppress("UNCHECKED_CAST")\n    return dest as Array<T>\n }\n\n @Suppress("NOTHING_TO_OVERRIDE")\n override fun toArray(): Array<Any?> {\n    return\n    toArray(arrayOfNulls<Any?>(size))\n }\n\n // for testing\n internal fun <T> testToArray(array: Array<T>):\n Array<T> = toArray(array)\n internal fun testToArray(): Array<Any?> = toArray()\n\n internal companion\n object {\n    private val emptyElementData = emptyArray<Any?>()\n    private const val maxArraySize =\n    Int.MAX_VALUE - 8\n\n    private const val defaultMinCapacity = 10\n\n    internal fun newCapacity(oldCapacity: Int, minCapacity: Int):\n    Int {\n        // overflow-conscious\n        var newCapacity = oldCapacity + (oldCapacity shr 1)\n        if\n        (newCapacity - minCapacity < 0)\n            newCapacity = minCapacity\n        if (newCapacity - maxArraySize\n        > 0)\n            newCapacity = if (minCapacity > maxArraySize) Int.MAX_VALUE else maxArraySize\n    }\n\n    return newCapacity\n }\n\n // For testing only\n internal fun internalStructure(structure: (head: Int,\n elements: Array<Any?>) -> Unit) {\n    val tail = internalIndex(size)\n    val head = if (isEmpty() || head < tail)\n    head else head - elementData.size\n    structure(head, toArray())\n }\n\n } /*\n * Copyright 2010-2018 JetBrains\n s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0\n license that can be found in the license/LICENSE.txt\n\n file.\n */\n @file:kotlin.jvm.JvmMultifileClass\n @file:kotlin.jvm.JvmName("ArraysKt")\n\n\n package\n kotlin.collections\n\n\n import kotlin.contracts.*\n\n\n /**\n * Returns a single list of all elements from all arrays in the\n given array.\n * @sample samples.collections.Arrays.Transformations.flattenArray\n */\n\n public fun <T> Array<out\n Array<out T>>.flatten(): List<T> {\n    val result = ArrayList<T>(sumOf { it.size })\n    for (element in this) {\n    result.addAll(element)\n    }\n    return result\n }\n\n\n /**\n * Returns a pair of lists, where\n * *first* list is built from\n the first values of each pair from this array,\n * *second* list is built from the second values of each pair from this\n array.\n * @sample samples.collections.Arrays.Transformations.unzipArray\n */\n\n public fun <T, R> Array<out\n Pair<T, R>>.unzip(): Pair<List<T>, List<R>> {\n    val listT = ArrayList<T>(size)\n    val listR =\n    ArrayList<R>(size)\n    for (pair in this) {\n    listT.add(pair.first)\n    listR.add(pair.second)\n    }\n    return listT to listR\n }\n\n\n /**\n * Returns `true` if this nullable array is either null or empty.\n * @sample\n samples.collections.Arrays.Usage.arrayOrNullOrEmpty\n\n */\n\n @SinceKotlin("1.3")\n @kotlin.internal.InlineOnly\n public inline fun Array<*>.isNullOrEmpty(): Boolean\n {\n    contract {\n    returns(false) implies (this@isNullOrEmpty != null)\n    }\n\n    return this == null ||\n    this.isEmpty()\n }\n\n\n /**\n * Returns this array if it's not empty\n * or the result of calling [defaultValue] function if\n the array is empty.\n * @sample samples.collections.Arrays.Usage.arrayIfEmpty\n\n */\n\n @SinceKotlin("1.3")\n @kotlin.internal.InlineOnly\n @Suppress("UPPER_BOUND_CANNOT_BE_ARRAY")\n\n public inline fun <C, R> C.ifEmpty(defaultValue: () -> R): R where C : Array<*>, C : R =\n if (isEmpty())\n defaultValue() else\n this\n\n\n @OptIn(ExperimentalUnsignedTypes::class)\n @SinceKotlin("1.3")\n @PublishedApi\n @kotlin.jvm.Jvm\n Name("contentDeepEquals")\n @kotlin.js.JsName("contentDeepEqualsImpl")\n\n internal\n fun <T> Array<out T>?.contentDeepEqualsImpl(other: Array<out T>?): Boolean {\n    if (this === other) return\n    true\n    if (this == null || other == null || this.size != other.size) return false\n\n    for (i in indices) {\n    val v1 =\n    this[i]\n    val v2 = other[i]\n\n    if (v1 === v2) {\n    continue\n    }\n    else if (v1 == null || v2 == null) {\n    return false\n    }\n\n    when {\n    v1 is Array<*> && v2 is Array<*> -> if\n    (!v1.contentDeepEquals(v2)) return false\n    v1 is ByteArray && v2 is ByteArray -> if\n    (!v1.contentEquals(v2)) return false\n    v1 is ShortArray && v2 is ShortArray -> if (!v1.contentEquals(v2))\n    return false\n    v1 is IntArray && v2 is IntArray -> if (!v1.contentEquals(v2)) return false\n    v1 is\n    LongArray && v2 is LongArray -> if (!v1.contentEquals(v2)) return false\n    v1 is FloatArray && v2 is

```

```

FloatArray -> if (!v1.contentEquals(v2)) return false\n      v1 is DoubleArray && v2 is DoubleArray -> if
(!v1.contentEquals(v2)) return false\n      v1 is CharArray && v2 is CharArray -> if (!v1.contentEquals(v2))
return false\n      v1 is BooleanArray && v2 is BooleanArray -> if (!v1.contentEquals(v2)) return false\n\n
v1 is UByteArray && v2 is UByteArray -> if (!v1.contentEquals(v2)) return false\n      v1 is UShortArray
&& v2 is UShortArray -> if (!v1.contentEquals(v2)) return false\n      v1 is UIntArray && v2 is UIntArray -
> if (!v1.contentEquals(v2)) return false\n      v1 is ULongArray && v2 is ULongArray -> if
(!v1.contentEquals(v2)) return false\n\n      else -> if (v1 != v2) return false\n      }\n\n      }\n      return
true\n}\n\n@SinceKotlin("1.3")\n@PublishedApi\n@kotlin.jvm.JvmName("contentDeepToString")\n@kotlin.js.
JsName("contentDeepToStringImpl")\ninternal fun <T> Array<out T>?.contentDeepToStringImpl():
String {\n      if (this == null) return "null"\n      val length = size.coerceAtMost((Int.MAX_VALUE - 2) / 5) * 5 + 2
// in order not to overflow Int.MAX_VALUE\n      return buildString(length) {\n
contentDeepToStringInternal(this, mutableListOf())\n
}\n}\n\n@OptIn(ExperimentalUnsignedTypes::class)\nprivate fun <T> Array<out
T>.contentDeepToStringInternal(result: StringBuilder, processed: MutableList<Array<*>>) {\n      if (this in
processed) {\n          result.append("[...]")\n          return\n      }\n      processed.add(this)\n      result.append("[")\n      for (i
in indices) {\n          if (i != 0) {\n              result.append(", ")\n          }\n          val element = this[i]\n          when
(element) {\n              null -> result.append("null")\n              is Array<*> ->
element.contentDeepToStringInternal(result, processed)\n              is ByteArray ->
result.append(element.contentToString())\n              is ShortArray -> result.append(element.contentToString())\n
              is IntArray -> result.append(element.contentToString())\n              is LongArray ->
result.append(element.contentToString())\n              is FloatArray -> result.append(element.contentToString())\n
              is DoubleArray -> result.append(element.contentToString())\n              is CharArray ->
result.append(element.contentToString())\n              is BooleanArray -> result.append(element.contentToString())\n\n
              is UByteArray -> result.append(element.contentToString())\n              is UShortArray ->
result.append(element.contentToString())\n              is UIntArray -> result.append(element.contentToString())\n
              is ULongArray -> result.append(element.contentToString())\n              else ->
result.append(element.toString())\n          }\n      }\n      result.append("]")\n
processed.removeAt(processed.lastIndex)\n}"/\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming
Language contributors.\n
* Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*/\n\npackage kotlin.collections\n\n/**\n * Data class representing a value from a collection or sequence, along with
its index in that collection or sequence.\n * @property value the underlying value.\n * @property index the
index of the value in the collection or sequence.\n */\n\npublic data class IndexedValue<out T>(public val index: Int,
public val value: T)\n"/\n * Copyright 2010-2020 JetBrains s.r.o. and Kotlin Programming Language
contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n */\n\n@file:kotlin.jvm.JvmName("MapAccessorsKt")\n\npackage
kotlin.collections\n\nimport kotlin.reflect.KProperty\nimport kotlin.internal.Exact\n\n/**\n * Returns the value of
the property for the given object from this read-only map.\n * @param thisRef the object for which the value is
requested\n
(not used).\n * @param property the metadata for the property, used to get the name of property and lookup the
value corresponding to this name in the map.\n * @return the property value.\n */\n * @throws
NoSuchElementException when the map doesn't contain value for the property name and doesn't provide an implicit
default (see [withDefault]).\n */\n\n@kotlin.internal.InlineOnly\npublic inline operator fun <V, V1 : V> Map<in
String, @Exact V>.getValue(thisRef: Any?, property: KProperty<*>): V1 =\n
@Suppress("UNCHECKED_CAST") (getOrNull(property.name) as V1)\n\n/**\n * Returns the value
of the property for the given object from this mutable map.\n * @param thisRef the object for which the value is
requested (not used).\n * @param property the metadata for the property, used to get the name of property and
lookup the value corresponding to this name in the map.\n * @return the property value.\n */\n * @throws

```

NoSuchElementException when the map doesn't contain value

for the property name and doesn't provide an implicit default (see [withDefault]).

```
*\n@kotlin.jvm.JvmName("getVar")\n@kotlin.internal.InlineOnly\npublic inline operator fun <V, V1 : V>\nMutableMap<in String, out @Exact V>.getValue(thisRef: Any?, property: KProperty<*>): V1 =\n@Suppress("UNCHECKED_CAST") (getOrNullImplicitDefault(property.name) as V1)\n\n/*\n * Stores the value of\n the property for the given object in this mutable map.\n * @param thisRef the object for which the value is\n requested (not used).\n * @param property the metadata for the property, used to get the name of property and store\n the value associated with that name in the map.\n * @param value the value to set.\n
```

```
*\n@kotlin.internal.InlineOnly\npublic inline operator fun <V> MutableMap<in String, in V>.setValue(thisRef:\nAny?, property: KProperty<*>, value: V) {\n this.put(property.name, value)\n}\n\n"/*\n * Copyright 2010-2018\n JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this
```

source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.

```
*\n\n@file:kotlin.jvm.JvmMultifileClass\n@file:kotlin.jvm.JvmName("MapsKt")\n\npackage\nkotlin.collections\n\n/*\n * Returns the value for the given key, or the implicit default value for this map.\n * By\n default no implicit value is provided for maps and a [NoSuchElementException] is thrown.\n * To create a map with\n implicit default value use [withDefault] method.\n * @throws NoSuchElementException when the map doesn't\n contain a value for the specified key and no implicit default was provided for that map.\n
```

```
*\n@kotlin.jvm.JvmName("getOrNullImplicitDefaultNullable")\n@PublishedApi\ninternal fun <K, V> Map<K,\nV>.getOrNullImplicitDefault(key: K): V {\n if (this is MapWithDefault)\n return\n this.getOrNullImplicitDefault(key)\n return getOrElseNullable(key, { throw NoSuchElementException("Key $key\n is missing in the map.") })\n}\n\n/*\n * Returns a wrapper of this read-only\n map, having the implicit default value provided with the specified function [defaultValue].\n * This implicit\n default value is used when the original map doesn't contain a value for the key specified\n * and a value is obtained\n with [Map.getValue] function, for example when properties are delegated to the map.\n * When this map already\n has an implicit default value provided with a former call to [withDefault], it is being replaced by this call.\n
```

```
*\npublic fun <K, V> Map<K, V>.withDefault(defaultValue: (key: K) -> V): Map<K, V> =\n when (this) {\n is MapWithDefault -> this.map.withDefault(defaultValue)\n else -> MapWithDefaultImpl(this, defaultValue)\n }\n\n/*\n * Returns a wrapper of this mutable map, having the implicit default value provided with the specified\n function [defaultValue].\n * This implicit default value is used when the original map doesn't contain a value for\n the key specified\n * and a value is obtained with [Map.getValue] function,
```

for example when properties are delegated to the map. When this map already has an implicit default value provided with a former call to [withDefault], it is being replaced by this call.

```
*\n@kotlin.jvm.JvmName("withDefaultMutable")\npublic fun <K, V> MutableMap<K,\nV>.withDefault(defaultValue: (key: K) -> V): MutableMap<K, V> =\n when (this) {\n is\n MutableMapWithDefault -> this.map.withDefault(defaultValue)\n else -> MutableMapWithDefaultImpl(this,\n defaultValue)\n }\n\nprivate interface MapWithDefault<K, out V> : Map<K, V> {\n public val map: Map<K,\nV>\n public fun getOrNullImplicitDefault(key: K): V\n}\n\nprivate interface MutableMapWithDefault<K, V> :\nMutableMap<K, V>, MapWithDefault<K, V> {\n public override val map: MutableMap<K, V>\n}\n\nprivate class MapWithDefaultImpl<K, out V>(public override val map: Map<K, V>, private val default: (key: K) -> V) :\nMapWithDefault<K, V> {\n override fun equals(other: Any?): Boolean = map.equals(other)\n
```

```
 override fun hashCode(): Int = map.hashCode()\n override fun toString(): String = map.toString()\n override\n val size: Int get() = map.size\n override fun isEmpty(): Boolean = map.isEmpty()\n override fun\n containsKey(key: K): Boolean = map.containsKey(key)\n override fun containsValue(value: @UnsafeVariance\nV): Boolean = map.containsValue(value)\n override fun get(key: K): V? = map.get(key)\n override val keys:\nSet<K> get() = map.keys\n override val values: Collection<V> get() = map.values\n override val entries:\nSet<Map.Entry<K, V>> get() = map.entries\n\n override fun getOrNullImplicitDefault(key: K): V =\n map.getOrElseNullable(key, { default(key) })\n}\n\nprivate class MutableMapWithDefaultImpl<K, V>(public\noverride val map: MutableMap<K, V>, private val default: (key: K) -> V) : MutableMapWithDefault<K, V> {\n
```

```

override fun equals(other: Any?): Boolean = map.equals(other)\n  override fun hashCode(): Int =
map.hashCode()\n  override fun toString():
String = map.toString()\n  override val size: Int get() = map.size\n  override fun isEmpty(): Boolean =
map.isEmpty()\n  override fun containsKey(key: K): Boolean = map.containsKey(key)\n  override fun
containsValue(value: @UnsafeVariance V): Boolean = map.containsValue(value)\n  override fun get(key: K): V?
= map.get(key)\n  override val keys: MutableSet<K> get() = map.keys\n  override val values:
MutableCollection<V> get() = map.values\n  override val entries: MutableSet<MutableMap.MutableEntry<K,
V>> get() = map.entries\n\n  override fun put(key: K, value: V): V? = map.put(key, value)\n  override fun
remove(key: K): V? = map.remove(key)\n  override fun putAll(from: Map<out K, V>) = map.putAll(from)\n
override fun clear() = map.clear()\n\n  override fun getOrDefault(key: K): V = map.getOrNull(key,
{ default(key) })\n}\n\n", "/*\n * Copyright 2010-2020 JetBrains s.r.o. and Kotlin Programming Language
contributors.\n * Use of this source code
is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*\n\n@file:kotlin.jvm.JvmMultifileClass\n@file:kotlin.jvm.JvmName("CollectionsKt")\n\npackage
kotlin.collections\n\n**\n * Removes a single instance of the specified element from this\n * collection, if it is
present.\n * \n * Allows to overcome type-safety restriction of `remove` that requires to pass an element of type
`E`.\n * \n * @return `true` if the element has been successfully removed; `false` if it was not present in the
collection.\n * \n @kotlin.internal.InlineOnly\n\npublic inline fun <@kotlin.internal.OnlyInputTypes T>
MutableCollection<out T>.remove(element: T): Boolean =\n  @Suppress("UNCHECKED_CAST") (this as
MutableCollection<T>).remove(element)\n\n**\n * Removes all of this collection's elements that are also
contained in the specified collection.\n * \n * Allows to overcome type-safety restriction of `removeAll` that requires
to pass a collection of type `Collection<E>`.\n * \n
* @return `true` if any of the specified elements was removed from the collection, `false` if the collection was not
modified.\n * \n @kotlin.internal.InlineOnly\n\npublic inline fun <@kotlin.internal.OnlyInputTypes T>
MutableCollection<out T>.removeAll(elements: Collection<T>): Boolean =\n
@Suppress("UNCHECKED_CAST") (this as MutableCollection<T>).removeAll(elements)\n\n**\n * Retains
only the elements in this collection that are contained in the specified collection.\n * \n * Allows to overcome type-
safety restriction of `retainAll` that requires to pass a collection of type `Collection<E>`.\n * \n * @return `true` if
any element was removed from the collection, `false` if the collection was not modified.\n
*\n @kotlin.internal.InlineOnly\n\npublic inline fun <@kotlin.internal.OnlyInputTypes T> MutableCollection<out
T>.retainAll(elements: Collection<T>): Boolean =\n  @Suppress("UNCHECKED_CAST") (this as
MutableCollection<T>).retainAll(elements)\n\n**\n * Adds the specified [element]
to this mutable collection.\n * \n @kotlin.internal.InlineOnly\n\npublic inline operator fun <T> MutableCollection<in
T>.plusAssign(element: T) {\n  this.add(element)\n}\n\n**\n * Adds all elements of the given [elements]
collection to this mutable collection.\n * \n @kotlin.internal.InlineOnly\n\npublic inline operator fun <T>
MutableCollection<in T>.plusAssign(elements: Iterable<T>) {\n  this.addAll(elements)\n}\n\n**\n * Adds all
elements of the given [elements] array to this mutable collection.\n * \n @kotlin.internal.InlineOnly\n\npublic inline
operator fun <T> MutableCollection<in T>.plusAssign(elements: Array<T>) {\n
this.addAll(elements)\n}\n\n**\n * Adds all elements of the given [elements] sequence to this mutable collection.\n
*\n @kotlin.internal.InlineOnly\n\npublic inline operator fun <T> MutableCollection<in T>.plusAssign(elements:
Sequence<T>) {\n  this.addAll(elements)\n}\n\n**\n * Removes a single instance of the specified [element] from
this mutable collection.\n
*\n @kotlin.internal.InlineOnly\n\npublic inline operator fun <T> MutableCollection<in T>.minusAssign(element:
T) {\n  this.remove(element)\n}\n\n**\n * Removes all elements contained in the given [elements] collection from
this mutable collection.\n * \n @kotlin.internal.InlineOnly\n\npublic inline operator fun <T> MutableCollection<in
T>.minusAssign(elements: Iterable<T>) {\n  this.removeAll(elements)\n}\n\n**\n * Removes all elements
contained in the given [elements] array from this mutable collection.\n * \n @kotlin.internal.InlineOnly\n\npublic
inline operator fun <T> MutableCollection<in T>.minusAssign(elements: Array<T>) {\n

```

```

this.removeAll(elements)\n\n/**\n * Removes all elements contained in the given [elements] sequence from this
mutable collection.\n */\n@kotlin.internal.InlineOnly\npublic inline operator fun <T> MutableCollection<in
T>.minusAssign(elements: Sequence<T>) {\n    this.removeAll(elements)\n}\n\n/**\n * Adds all elements of the
given [elements] collection
to this [MutableCollection].\n */\npublic fun <T> MutableCollection<in T>.addAll(elements: Iterable<T>):
Boolean {\n    when (elements) {\n        is Collection -> return addAll(elements)\n        else -> {\n            var result:
Boolean = false\n            for (item in elements)\n                if (add(item)) result = true\n            return result\n        }\n    }\n}\n\n/**\n * Adds all elements of the given [elements] sequence to this [MutableCollection].\n */\npublic fun
<T> MutableCollection<in T>.addAll(elements: Sequence<T>): Boolean {\n    var result: Boolean = false\n    for
(item in elements) {\n        if (add(item)) result = true\n    }\n    return result\n}\n\n/**\n * Adds all elements of the
given [elements] array to this [MutableCollection].\n */\npublic fun <T> MutableCollection<in T>.addAll(elements:
Array<out T>): Boolean {\n    return addAll(elements.asList())\n}\n\n/**\n * Converts this [Iterable] to a list if it is
not a [Collection].\n */\n * Otherwise, returns
this.\n */\ninternal fun <T> Iterable<T>.convertToListIfNotCollection(): Collection<T> =\n    if (this is Collection)
this else toList()\n\n/**\n * Removes all elements from this [MutableCollection] that are also contained in the given
[elements] collection.\n */\npublic fun <T> MutableCollection<in T>.removeAll(elements: Iterable<T>): Boolean
{\n    return removeAll(elements.convertToListIfNotCollection())\n}\n\n/**\n * Removes all elements from this
[MutableCollection] that are also contained in the given [elements] sequence.\n */\npublic fun <T>
MutableCollection<in T>.removeAll(elements: Sequence<T>): Boolean {\n    val list = elements.toList()\n    return
list.isNotEmpty() && removeAll(list)\n}\n\n/**\n * Removes all elements from this [MutableCollection] that are
also contained in the given [elements] array.\n */\npublic fun <T> MutableCollection<in T>.removeAll(elements:
Array<out T>): Boolean {\n    return elements.isNotEmpty() && removeAll(elements.asList())\n}\n\nRetains
only elements of this [MutableCollection] that are contained in the given [elements] collection.\n */\npublic fun
<T> MutableCollection<in T>.retainAll(elements: Iterable<T>): Boolean {\n    return
retainAll(elements.convertToListIfNotCollection())\n}\n\n/**\n * Retains only elements of this [MutableCollection]
that are contained in the given [elements] array.\n */\npublic fun <T> MutableCollection<in T>.retainAll(elements:
Array<out T>): Boolean {\n    if (elements.isNotEmpty())\n        return retainAll(elements.asList())\n    else\n        return retainNothing()\n}\n\n/**\n * Retains only elements of this [MutableCollection] that are contained in the
given [elements] sequence.\n */\npublic fun <T> MutableCollection<in T>.retainAll(elements: Sequence<T>):
Boolean {\n    val list = elements.toList()\n    if (list.isNotEmpty())\n        return retainAll(list)\n    else\n        return
retainNothing()\n}\n\nprivate fun MutableCollection<*>.retainNothing(): Boolean {\n    val result
= isEmpty()\n    clear()\n    return result\n}\n\n/**\n * Removes all elements from this [MutableIterable] that
match the given [predicate].\n */\n * @return `true` if any element was removed from this collection, or `false` when
no elements were removed and collection was not modified.\n */\npublic fun <T>
MutableIterable<T>.removeAll(predicate: (T) -> Boolean): Boolean = filterInPlace(predicate, true)\n\n/**\n * Retains only elements of this [MutableIterable] that match the given [predicate].\n */\n * @return `true` if any
element was removed from this collection, or `false` when all elements were retained and collection was not
modified.\n */\npublic fun <T> MutableIterable<T>.retainAll(predicate: (T) -> Boolean): Boolean =
filterInPlace(predicate, false)\n\nprivate fun <T> MutableIterable<T>.filterInPlace(predicate: (T) -> Boolean,
predicateResultToRemove: Boolean): Boolean {\n    var result = false\n    with(iterator()) {\n        while
(hasNext())\n            if (predicate(next())
== predicateResultToRemove) {\n                remove()\n                result = true\n            }\n    }\n    return
result\n}\n\n/**\n * Removes the element at the specified [index] from this list.\n */\n * In Kotlin one should use the
[MutableList.removeAt] function instead.\n */\n * @Deprecated("Use removeAt(index) instead.")\nReplaceWith("removeAt(index)"), level = DeprecationLevel.ERROR)\n@kotlin.internal.InlineOnly\npublic inline
fun <T> MutableList<T>.remove(index: Int): T = removeAt(index)\n\n/**\n * Removes the first element from this
mutable list and returns that removed element, or throws [NoSuchElementException] if this list is empty.\n

```

```

*^@SinceKotlin("1.4")^@WasExperimental(ExperimentalStdlibApi::class)^public fun <T>
MutableList<T>.removeFirst(): T = if (isEmpty()) throw NoSuchElementException("List is empty.") else
removeAt(0)^n/^n/**^n * Removes the first element from this mutable list and returns that removed element, or
returns `null` if this list is
empty.^n *^@SinceKotlin("1.4")^@WasExperimental(ExperimentalStdlibApi::class)^public fun <T>
MutableList<T>.removeFirstOrNull(): T? = if (isEmpty()) null else removeAt(0)^n/^n/**^n * Removes the last
element from this mutable list and returns that removed element, or throws [NoSuchElementException] if this list is
empty.^n *^@SinceKotlin("1.4")^@WasExperimental(ExperimentalStdlibApi::class)^public fun <T>
MutableList<T>.removeLast(): T = if (isEmpty()) throw NoSuchElementException("List is empty.") else
removeAt(lastIndex)^n/^n/**^n * Removes the last element from this mutable list and returns that removed element,
or returns `null` if this list is empty.^n
*^@SinceKotlin("1.4")^@WasExperimental(ExperimentalStdlibApi::class)^public fun <T>
MutableList<T>.removeLastOrNull(): T? = if (isEmpty()) null else removeAt(lastIndex)^n/^n/**^n * Removes all
elements from this [MutableList] that match the given [predicate].^n *^n * @return `true` if any element was
removed from this
collection, or `false` when no elements were removed and collection was not modified.^n *^npublic fun <T>
MutableList<T>.removeAll(predicate: (T) -> Boolean): Boolean = filterInPlace(predicate, true)^n/^n/**^n * Retains
only elements of this [MutableList] that match the given [predicate].^n *^n * @return `true` if any element was
removed from this collection, or `false` when all elements were retained and collection was not modified.^n
*^npublic fun <T> MutableList<T>.retainAll(predicate: (T) -> Boolean): Boolean = filterInPlace(predicate,
false)^n^nprivate fun <T> MutableList<T>.filterInPlace(predicate: (T) -> Boolean, predicateResultToRemove:
Boolean): Boolean {^n if (this !is RandomAccess)^n return (this as
MutableIterable<T>).filterInPlace(predicate, predicateResultToRemove)^n^n var writeIndex: Int = 0^n for
(readIndex in 0..lastIndex) {^n val element = this[readIndex]^n if (predicate(element) ==
predicateResultToRemove)^n continue^n
if (writeIndex != readIndex)^n this[writeIndex] = element^n writeIndex++^n }^n if (writeIndex
< size) {^n for (removeIndex in lastIndex downTo writeIndex)^n removeAt(removeIndex)^n return
true^n } else {^n return false^n }^n}^n",/*^n * Copyright 2010-2022 JetBrains s.r.o. and Kotlin Programming
Language contributors.^n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.^n *^n// Auto-generated file. DO NOT EDIT!^n^package kotlin.collections^n/^n/** An
iterator over a sequence of values of type `Byte`.^npublic abstract class ByteIterator : Iterator<Byte> {^n
override final fun next() = nextByte()^n^n /** Returns the next value in the sequence without boxing. *^n public
abstract fun nextByte(): Byte^n}^n/^n/** An iterator over a sequence of values of type `Char`.^npublic abstract
class CharIterator : Iterator<Char> {^n override final
fun next() = nextChar()^n^n /** Returns the next value in the sequence without boxing. *^n public abstract fun
nextChar(): Char^n}^n/^n/** An iterator over a sequence of values of type `Short`.^npublic abstract class
ShortIterator : Iterator<Short> {^n override final fun next() = nextShort()^n^n /** Returns the next value in the
sequence without boxing. *^n public abstract fun nextShort(): Short^n}^n/^n/** An iterator over a sequence of
values of type `Int`.^npublic abstract class IntIterator : Iterator<Int> {^n override final fun next() = nextInt()^n^n
/** Returns the next value in the sequence without boxing. *^n public abstract fun nextInt(): Int^n}^n/^n/** An
iterator over a sequence of values of type `Long`.^npublic abstract class LongIterator : Iterator<Long> {^n
override final fun next() = nextLong()^n^n /** Returns the next value in the sequence without boxing. *^n public
abstract fun nextLong(): Long^n}^n/^n/** An iterator over a sequence
of values of type `Float`.^npublic abstract class FloatIterator : Iterator<Float> {^n override final fun next() =
nextFloat()^n^n /** Returns the next value in the sequence without boxing. *^n public abstract fun nextFloat():
Float^n}^n/^n/** An iterator over a sequence of values of type `Double`.^npublic abstract class DoubleIterator :
Iterator<Double> {^n override final fun next() = nextDouble()^n^n /** Returns the next value in the sequence
without boxing. *^n public abstract fun nextDouble(): Double^n}^n/^n/** An iterator over a sequence of values of

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type `Boolean`. */
public abstract class BooleanIterator : Iterator<Boolean> {
    override final fun next() =
nextBoolean()
}
/** Returns the next value in the sequence without boxing. */
public abstract fun
nextBoolean(): Boolean
}
"
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contributors.
* Use of this source code is governed by the Apache 2.0 license that
can be found in the license/LICENSE.txt file.
*/
@file:kotlin.jvm.JvmMultifileClass
@file:kotlin.jvm.JvmName("CollectionsKt")
package
kotlin.collections
private open class ReversedListReadOnly<out T>(private val delegate: List<T>) :
AbstractList<T>() {
    override val size: Int get() = delegate.size
    override fun get(index: Int): T =
delegate[reverseElementIndex(index)]
}
private class ReversedList<T>(private val delegate: MutableList<T>) :
AbstractMutableList<T>() {
    override val size: Int get() = delegate.size
    override fun get(index: Int): T =
delegate[reverseElementIndex(index)]
    override fun clear() = delegate.clear()
    override fun removeAt(index:
Int): T = delegate.removeAt(reverseElementIndex(index))
    override fun set(index: Int, element: T): T =
delegate.set(reverseElementIndex(index), element)
    override fun add(index: Int, element: T) {
delegate.add(reversePositionIndex(index), element)
}
}
private fun List<*>.reverseElementIndex(index:
Int) =
if (index in 0..lastIndex) lastIndex - index else throw IndexOutOfBoundsException("Element index
$index must be in range [0..lastIndex].")
private fun List<*>.reversePositionIndex(index: Int) =
if (index
in 0..size) size - index else throw IndexOutOfBoundsException("Position index $index must be in range
[0..size].")
}
/* Returns a reversed read-only view of the original List.
* All changes made in the
original list will be reflected in the reversed one.
* @sample samples.collections.ReversedViews.asReversedList
*/
public fun <T> List<T>.asReversed(): List<T> = ReversedListReadOnly(this)
/* Returns a reversed
mutable view of the original mutable List.
* All changes made in the original list will be reflected in the reversed
one and vice versa.
* @sample samples.collections.ReversedViews.asReversedMutableList
*/
@kotlin.jvm.JvmName("asReversedMutable")
public fun <T> MutableList<T>.asReversed():
MutableList<T> = ReversedList(this)
"
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Language contributors.
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license/LICENSE.txt file.
*/
@file:kotlin.jvm.JvmMultifileClass
@file:kotlin.jvm.JvmName("SequencesKt")
@file:OptIn(ExperimentalTypeInference::class)
package kotlin.sequences
import kotlin.coroutines.*
import
kotlin.coroutines.intrinsics.*
import kotlin.experimental.ExperimentalTypeInference
}
}
/* Builds a
[Sequence] lazily yielding values one by one.
* @see kotlin.sequences.generateSequence
* @sample
samples.collections.Sequences.Building.buildSequenceYieldAll
* @sample
samples.collections.Sequences.Building.buildFibonacciSequence
*/
@SinceKotlin("1.3")
@Suppress("DEPRECATION")
public fun <T> sequence(@BuilderInference block:
suspend SequenceScope<T>().->Unit): Sequence<T> = Sequence { iterator(block) }
}
/* Builds
an [Iterator] lazily yielding values one by one.
* @sample
samples.collections.Sequences.Building.buildIterator
* @sample samples.collections.Iterables.Building.iterable
*/
@SinceKotlin("1.3")
@Suppress("DEPRECATION")
public fun <T> iterator(@BuilderInference block:
suspend SequenceScope<T>().->Unit): Iterator<T> {
    val iterator = SequenceBuilderIterator<T>()
    iterator.nextStep = block.createCoroutineUnintercepted(receiver = iterator, completion = iterator)
    return
iterator
}
}
/* The scope for yielding values of a [Sequence] or an [Iterator], provides [yield] and [yieldAll]
suspension functions.
* @see sequence
* @see iterator
* @sample
samples.collections.Sequences.Building.buildSequenceYieldAll
* @sample
samples.collections.Sequences.Building.buildFibonacciSequence
*/
@RestrictsSuspension
@SinceKotlin("1.3")
public abstract class SequenceScope<in T> internal
constructor() {
    /**
    * Yields a value to the [Iterator]
being built and suspends
    * until the next value is requested.
    * @sample
samples.collections.Sequences.Building.buildSequenceYieldAll
    * @sample
samples.collections.Sequences.Building.buildFibonacciSequence
    */
    public abstract suspend fun yield(value:

```



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T)\n\n /**\n * Yields all values from the `iterator` to the [Iterator] being built\n * and suspends until all these values are iterated and the next one is requested.\n *\n * The sequence of values returned by the given iterator can be potentially infinite.\n *\n * @sample samples.collections.Sequences.Building.buildSequenceYieldAll\n */\n public abstract suspend fun yieldAll(iterator: Iterator<T>)\n\n /**\n * Yields a collections of values to the [Iterator] being built\n * and suspends until all these values are iterated and the next one is requested.\n *\n * @sample samples.collections.Sequences.Building.buildSequenceYieldAll\n */\n public suspend fun yieldAll(elements: Iterable<T>) {\n     if (elements is Collection && elements.isEmpty()) return\n     return yieldAll(elements.iterator())\n }\n\n /**\n * Yields potentially infinite sequence of values to the [Iterator] being built\n * and suspends until all these values are iterated and the next one is requested.\n *\n * The sequence can be potentially infinite.\n *\n * @sample samples.collections.Sequences.Building.buildSequenceYieldAll\n */\n public suspend fun yieldAll(sequence: Sequence<T>) = yieldAll(sequence.iterator())\n}\n\nprivate typealias State = Int\nprivate const val State_NotReady: State = 0\nprivate const val State_ManyNotReady: State = 1\nprivate const val State_ManyReady: State = 2\nprivate const val State_Ready: State = 3\nprivate const val State_Done: State = 4\nprivate const val State_Failed: State = 5\nprivate class SequenceBuilderIterator<T> : SequenceScope<T>(), Iterator<T>, Continuation<Unit> {\n    private var state = State_NotReady\n    private var nextValue: T? = null\n    private var nextIterator: Iterator<T>? = null\n    var nextStep: Continuation<Unit>? = null\n\n    override fun hasNext(): Boolean {\n        while (true) {\n            when (state) {\n                State_NotReady -> {}\n                State_ManyNotReady -> {}\n                if (nextIterator!!.hasNext()) {\n                    state = State_ManyReady\n                    return true\n                }\n            else {\n                nextIterator = null\n                State_Done -> return false\n                State_Ready, State_ManyReady -> return true\n                else -> throw exceptionalState()\n            }\n            state = State_Failed\n            val step = nextStep!!\n            nextStep = null\n            step.resume(Unit)\n        }\n    }\n\n    override fun next(): T {\n        when (state) {\n            State_NotReady, State_ManyNotReady -> return nextNotReady()\n            State_ManyReady -> {\n                state = State_ManyNotReady\n                return nextIterator!!.next()\n            }\n            State_Ready -> {\n                state = State_NotReady\n                @Suppress("UNCHECKED_CAST")\n                val result = nextValue as T\n                nextValue = null\n                return result\n            }\n            else -> throw exceptionalState()\n        }\n    }\n\n    private fun nextNotReady(): T {\n        if (!hasNext()) throw NoSuchElementException() else return next()\n    }\n\n    private fun exceptionalState(): Throwable = when (state) {\n        State_Done -> NoSuchElementException()\n        State_Failed -> IllegalStateException("Iterator has failed.")\n        else -> IllegalStateException("Unexpected state of the iterator: $state")\n    }\n\n    override suspend fun yield(value: T) {\n        nextValue = value\n        state = State_Ready\n        return suspendCoroutineUninterceptedOrReturn {\n            c -> {\n                nextStep = c\n                COROUTINE_SUSPENDED\n            }\n        }\n    }\n\n    override suspend fun yieldAll(iterator: Iterator<T>) {\n        if (!iterator.hasNext()) return\n        nextIterator = iterator\n        state = State_ManyReady\n        return suspendCoroutineUninterceptedOrReturn {\n            c -> {\n                nextStep = c\n                COROUTINE_SUSPENDED\n            }\n        }\n    }\n\n    // Completion continuation implementation\n    override fun resumeWith(result: Result<Unit>) {\n        result.getOrNull() // just rethrow exception if it is there\n        state = State_Done\n    }\n\n    override val context: CoroutineContext\n        get() = EmptyCoroutineContext\n}\n\n"/*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\npackage kotlin.collections\n\ninternal fun checkWindowSizeStep(size: Int, step: Int) {\n    require(size > 0 && step > 0) {\n        if (size != step)\n            "Both size $size and step $step must be greater than zero.\n        }\n        else\n            "size $size must be greater than zero.\n    }\n}\n\ninternal fun <T> Sequence<T>.windowedSequence(size: Int, step: Int, partialWindows: Boolean, reuseBuffer: Boolean): Sequence<List<T>> {\n    checkWindowSizeStep(size, step)\n    return Sequence { windowedIterator(iterator(), size, step, partialWindows, reuseBuffer) }\n}\n\ninternal fun <T> windowedIterator(iterator: Iterator<T>, size: Int, step: Int, partialWindows: Boolean, reuseBuffer: Boolean): Iterator<List<T>> {\n    if (!iterator.hasNext()) return

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EmptyIterator\n    return iterator<List<T>> {\n        val bufferInitialCapacity = size.coerceAtMost(1024)\n        val gap = step - size\n        if (gap >= 0) {\n            var buffer = ArrayList<T>(bufferInitialCapacity)\n            var skip = 0\n            for (e in iterator) {\n                if (skip > 0) { skip -= 1; continue }\n                buffer.add(e)\n                if (buffer.size == size) {\n                    yield(buffer)\n                    if (reuseBuffer) buffer.clear() else buffer = ArrayList(size)\n                    skip = gap\n                }\n            }\n            if (buffer.isNotEmpty()) {\n                if (partialWindows || buffer.size == size)\n                    yield(buffer)\n            } else {\n                var buffer = RingBuffer<T>(bufferInitialCapacity)\n                for (e in iterator) {\n                    buffer.add(e)\n                    if (buffer.isFull()) {\n                        if (buffer.size < size) {\n                            buffer =\n                                buffer.expanded(maxCapacity = size); continue\n                        }\n                        yield(if (reuseBuffer) buffer else\n                            ArrayList(buffer))\n                        buffer.removeFirst(step)\n                    }\n                    if (partialWindows) {\n                        while (buffer.size > step) {\n                            yield(if (reuseBuffer)\n                                buffer else ArrayList(buffer))\n                            buffer.removeFirst(step)\n                        }\n                        if\n                            (buffer.isNotEmpty()) yield(buffer)\n                    }\n                }\n            }\n        }\n    }\n\ninternal class MovingSubList<out E>(private val list: List<E>): AbstractList<E>(), RandomAccess {\n    private var fromIndex: Int = 0\n    private var _size: Int = 0\n\n    fun move(fromIndex: Int, toIndex: Int) {\n        checkRangeIndexes(fromIndex, toIndex, list.size)\n        this.fromIndex = fromIndex\n        this._size = toIndex - fromIndex\n    }\n\n    override fun get(index: Int): E {\n        checkElementIndex(index, _size)\n        return list[fromIndex + index]\n    }\n\n    override val size: Int get() = _size\n}\n\n/**\n * Provides ring buffer implementation.\n * Buffer overflow is not allowed so [add] doesn't\n * overwrite tail but raises an exception.\n */\nprivate class RingBuffer<T>(private val buffer: Array<Any?>, filledSize: Int): AbstractList<T>(), RandomAccess {\n    init {\n        require(filledSize >= 0) { \"ring buffer filled size should not be negative but it is $filledSize\" }\n        require(filledSize <= buffer.size) { \"ring buffer filled size: $filledSize cannot be larger than the buffer size: ${buffer.size}\" }\n    }\n\n    constructor(capacity: Int): this(arrayOfNulls<Any?>(capacity), 0)\n\n    private val capacity = buffer.size\n    private var startIndex: Int = 0\n    override var size: Int = filledSize\n    private set\n\n    override fun get(index: Int): T {\n        checkElementIndex(index, size)\n        @Suppress(\"UNCHECKED_CAST\")\n        return buffer[startIndex.forward(index)] as T\n    }\n\n    fun isFull() = size == capacity\n\n    override fun iterator(): Iterator<T> = object : AbstractIterator<T>() {\n        private var count = size\n        private var index = startIndex\n\n        override fun computeNext() {\n            if (count == 0) {\n                done()\n            } else {\n                @Suppress(\"UNCHECKED_CAST\")\n                setNext(buffer[index] as T)\n                index = index.forward(1)\n                count--\n            }\n        }\n    }\n\n    @Suppress(\"UNCHECKED_CAST\")\n    override fun <T> toArray(array: Array<T>): Array<T> {\n        val result: Array<T?> =\n            if (array.size < this.size) array.copyOf(this.size) else array as Array<T?>\n        val size = this.size\n        var widx = 0\n        var idx = startIndex\n        while (widx < size && idx < capacity) {\n            result[widx] = buffer[idx] as T\n            widx++\n            idx++\n        }\n        idx = 0\n        while (widx < size) {\n            result[widx] = buffer[idx] as T\n            widx++\n            idx++\n        }\n        if (result.size > this.size) result[this.size] = null\n        return result as Array<T>\n    }\n\n    override fun toArray(): Array<Any?> {\n        return toArray(arrayOfNulls(size))\n    }\n\n    /**\n     * Creates a new ring buffer with the capacity equal to the minimum of [maxCapacity] and 1.5 * [capacity].\n     * The returned ring buffer contains the same elements as this ring buffer.\n     */\n    fun expanded(maxCapacity: Int): RingBuffer<T> {\n        val newCapacity = (capacity + (capacity shr 1) + 1).coerceAtMost(maxCapacity)\n        val newBuffer = if (startIndex == 0) buffer.copyOf(newCapacity) else toArray(arrayOfNulls(newCapacity))\n        return RingBuffer(newBuffer, size)\n    }\n\n    /**\n     * Add [element] to the buffer or fail with [IllegalStateException] if no free space available in the buffer.\n     */\n    fun add(element: T) {\n        if (isFull()) {\n            throw\n                IllegalStateException(\"ring buffer is full\")\n        }\n        buffer[startIndex.forward(size)] = element\n        size++\n    }\n\n    /**\n     * Removes [n] first elements from the buffer or fails with [IllegalArgumentException] if not enough elements in the buffer to remove.\n     */\n    fun removeFirst(n: Int) {\n        require(n >= 0) { \"n shouldn't be negative but it is $n\" }\n        require(n <= size) { \"n shouldn't be greater than the buffer size: n = $n, size = $size\" }\n        if (n > 0) {\n            val start = startIndex\n            val

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end = start.forward(n)\n\n        if (start > end) {\n            buffer.fill(null, start, capacity)\n        } else {\n            buffer.fill(null, start, end)\n        }\n\n        startIndex =\n        end\n        size -= n\n    }\n}\n\n    @Suppress("NOTHING_TO_INLINE")\n    private inline fun\n    Int.forward(n: Int): Int = (this + n) % capacity\n}\n\n/*\n * Copyright 2010-2019 JetBrains s.r.o. and Kotlin\n    Programming Language contributors.\n    * Use of this source code is governed by the Apache 2.0 license that can be\n    found in the license/LICENSE.txt file.\n */\n\npackage kotlin.collections\n// UByteArray\n\n=====\n\n@Exp\n    erimentalUnsignedTypes\nprivate\n    fun partition(\n        array: UByteArray, left: Int, right: Int): Int {\n        var i = left\n        var j = right\n        val pivot =\n        array[(left + right) / 2]\n        while (i <= j) {\n            while (array[i] < pivot)\n                i++\n            while (array[j] >\n                pivot)\n                j--\n            if (i <= j) {\n                val tmp = array[i]\n                array[i] = array[j]\n                array[j] = tmp\n                i++\n                j--\n            }\n        }\n        return i\n    }\n\n@ExperimentalUnsignedTypes\nprivate fun quickSort(\n    array: UByteArray, left: Int, right: Int) {\n    val index = partition(array, left, right)\n    if (left < index - 1)\n        quickSort(array, left, index - 1)\n    if (index < right)\n        quickSort(array, index, right)\n}\n\n// UShortArray\n\n=====\n\n@Exp\n    erimentalUnsignedTypes\nprivate fun partition(\n    array: UShortArray, left: Int,\n    right: Int): Int {\n    var i = left\n    var j = right\n    val pivot = array[(left + right) / 2]\n    while (i <= j) {\n        while (array[i] < pivot)\n            i++\n        while (array[j] > pivot)\n            j--\n        if (i <= j) {\n            val tmp =\n            array[i]\n            array[i] = array[j]\n            array[j] = tmp\n            i++\n            j--\n        }\n    }\n    return\n    i\n}\n\n@ExperimentalUnsignedTypes\nprivate fun quickSort(\n    array: UShortArray, left: Int, right: Int) {\n    val\n    index = partition(array, left, right)\n    if (left < index - 1)\n        quickSort(array, left, index - 1)\n    if (index <\n        right)\n        quickSort(array, index, right)\n}\n\n// UIntArray\n\n=====\n\n@Exp\n    erimentalUnsignedTypes\nprivate fun partition(\n    array: UIntArray, left: Int, right: Int): Int {\n    var i = left\n    var j = right\n    val pivot = array[(left + right) / 2]\n    while (i <= j)\n    {\n        while (array[i] < pivot)\n            i++\n        while (array[j] > pivot)\n            j--\n        if (i <= j) {\n            val tmp = array[i]\n            array[i] = array[j]\n            array[j] = tmp\n            i++\n            j--\n        }\n    }\n    return i\n}\n\n@ExperimentalUnsignedTypes\nprivate fun quickSort(\n    array: UIntArray, left: Int, right: Int) {\n    val\n    index = partition(array, left, right)\n    if (left < index - 1)\n        quickSort(array, left, index - 1)\n    if (index <\n        right)\n        quickSort(array, index, right)\n}\n\n// ULongArray\n\n=====\n\n@Exp\n    erimentalUnsignedTypes\nprivate fun partition(\n    array: ULongArray, left: Int, right: Int): Int {\n    var i = left\n    var j = right\n    val pivot = array[(left + right) / 2]\n    while (i <= j) {\n        while (array[i] < pivot)\n            i++\n        while (array[j] > pivot)\n            j--\n        if (i <=\n            j) {\n                val tmp = array[i]\n                array[i] = array[j]\n                array[j] = tmp\n                i++\n                j--\n            }\n        }\n        return i\n    }\n\n@ExperimentalUnsignedTypes\nprivate fun quickSort(\n    array: ULongArray, left: Int, right:\n    Int) {\n    val index = partition(array, left, right)\n    if (left < index - 1)\n        quickSort(array, left, index - 1)\n    if\n        (index < right)\n        quickSort(array, index, right)\n}\n\n// Interfaces\n\n=====\n\n/*\n * Sorts the given array using qsort algorithm.\n */\n\n@ExperimentalUnsignedTypes\ninternal fun sortArray(array:\n    UByteArray, fromIndex: Int, toIndex: Int) = quickSort(array, fromIndex, toIndex -\n    1)\n\n@ExperimentalUnsignedTypes\ninternal fun sortArray(array: UShortArray, fromIndex: Int, toIndex: Int) =\n    quickSort(array, fromIndex, toIndex - 1)\n\n@ExperimentalUnsignedTypes\ninternal fun sortArray(array: UIntArray,\n    fromIndex: Int, toIndex:\n    Int) = quickSort(array, fromIndex, toIndex - 1)\n\n@ExperimentalUnsignedTypes\ninternal fun sortArray(array:\n    ULongArray, fromIndex: Int, toIndex: Int) = quickSort(array, fromIndex, toIndex - 1)\n\n/*\n * Copyright 2010-\n    2021 JetBrains s.r.o. and Kotlin Programming Language contributors.\n    * Use of this source code is governed by the\n    Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\npackage kotlin\n\nimport

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kotlin.internal.InlineOnly\n\n/**\n * Compares this object with the specified object for order. Returns zero if this
object is equal\n * to the specified [other] object, a negative number if it's less than [other], or a positive number\n *
if it's greater than [other].\n *\n * This function delegates to [Comparable.compareTo] and allows to call it in infix
form.\n */\n@InlineOnly\n@SinceKotlin("1.6")\npublic inline infix fun <T> Comparable<T>.compareTo(other:
T): Int =\n    this.compareTo(other)\n", "/*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin
Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be
found in the license/LICENSE.txt file.\n */\n\npackage kotlin.contracts\n\nimport
kotlin.internal.ContractsDsl\nimport kotlin.internal.InlineOnly\n\n/**\n * This marker distinguishes the
experimental contract declaration API and is used to opt-in for that feature\n * when declaring contracts of user
functions.\n *\n * Any usage of a declaration annotated with `@ExperimentalContracts` must be accepted either
by\n * annotating that usage with the [OptIn] annotation, e.g. `@OptIn(ExperimentalContracts::class)`,\n * or by
using the compiler argument `-opt-in=kotlin.contracts.ExperimentalContracts`.\n
*/\n@Retention(AnnotationRetention.BINARY)\n@SinceKotlin("1.3")\n@RequiresOptIn\n@MustBeDocumente
d\npublic annotation class ExperimentalContracts\n\n/**\n * Provides a scope, where the functions of the contract
DSL, such as [returns], [callsInPlace], etc.,\n * can be used to
describe the contract of a function.\n *\n * This type is used as a receiver type of the lambda function passed to the
[contract] function.\n *\n * @see contract\n
*/\n@ContractsDsl\n@ExperimentalContracts\n@SinceKotlin("1.3")\npublic interface ContractBuilder {\n    /**\n
* Describes a situation when a function returns normally, without any exceptions thrown.\n    *\n    * Use
[SimpleEffect.implies] function to describe a conditional effect that happens in such case.\n    *\n    */\n    //
@sample samples.contracts.returnsContract\n    @ContractsDsl public fun returns(): Returns\n\n    /**\n
* Describes a situation when a function returns normally with the specified return [value].\n    *\n    * The possible
values of [value] are limited to `true`, `false` or `null`.\n    *\n    * Use [SimpleEffect.implies] function to describe a
conditional effect that happens in such case.\n    *\n    */\n    // @sample samples.contracts.returnsTrueContract\n
// @sample samples.contracts.returnsFalseContract\n
// @sample samples.contracts.returnsNullContract\n    @ContractsDsl public fun returns(value: Any?):
Returns\n\n    /**\n
* Describes a situation when a function returns normally with any value that is not `null`.\n    *\n
* Use [SimpleEffect.implies] function to describe a conditional effect that happens in such case.\n    *\n
*/\n    // @sample samples.contracts.returnsNotNullContract\n    @ContractsDsl public fun returnsNotNull():
ReturnsNotNull\n\n    /**\n
* Specifies that the function parameter [lambda] is invoked in place.\n    *\n    * This
contract specifies that:\n    * 1. the function [lambda] can only be invoked during the call of the owner function,\n
* and it won't be invoked after that owner function call is completed;\n    * 2. _(optionally)_ the function [lambda]
is invoked the amount of times specified by the [kind] parameter,\n    * see the [InvocationKind] enum for possible
values.\n    *\n    * A
function declaring the `callsInPlace` effect must be _inline_.\n    *\n    */\n    /* @sample
samples.contracts.callsInPlaceAtMostOnceContract\n    * @sample
samples.contracts.callsInPlaceAtLeastOnceContract\n    * @sample
samples.contracts.callsInPlaceExactlyOnceContract\n    * @sample
samples.contracts.callsInPlaceUnknownContract\n    */\n    @ContractsDsl public fun <R> callsInPlace(lambda:
Function<R>, kind: InvocationKind = InvocationKind.UNKNOWN): CallsInPlace\n}\n\n/**\n * Specifies how
many times a function invokes its function parameter in place.\n *\n * See [ContractBuilder.callsInPlace] for the
details of the call-in-place function contract.\n
*/\n@ContractsDsl\n@ExperimentalContracts\n@SinceKotlin("1.3")\npublic enum class InvocationKind {\n
/**\n * A function parameter will be invoked one time or not invoked at all.\n    */\n    // @sample
samples.contracts.callsInPlaceAtMostOnceContract\n    @ContractsDsl AT_MOST_ONCE,\n\n    /**\n * A
function parameter
will be invoked one or more times.\n    *\n    */\n    // @sample
samples.contracts.callsInPlaceAtLeastOnceContract\n    @ContractsDsl AT_LEAST_ONCE,\n\n    /**\n * A

```

function parameter will be invoked exactly one time.

```

    *
    *^
    // @sample
samples.contracts.callsInPlaceExactlyOnceContract
    @ContractsDsl EXACTLY_ONCE,
    /**
    * A
function parameter is called in place, but it's unknown how many times it can be called.
    *
    *^
    // @sample
samples.contracts.callsInPlaceUnknownContract
    @ContractsDsl UNKNOWN
}
}
/**
* Specifies the
contract of a function.
*
* The contract description must be at the beginning of a function and have at least one
effect.
*
* Only the top-level functions can have a contract for now.
*
* @param builder the lambda where
the contract of a function is described with the help of the [ContractBuilder] members.
*
*^
*/
@sample
samples.contracts.returnsContract
* @sample samples.contracts.returnsTrueContract
*
@sample samples.contracts.returnsFalseContract
* @sample samples.contracts.returnsNullContract
* @sample
samples.contracts.returnsNotNullContract
* @sample samples.contracts.callsInPlaceAtMostOnceContract
*
@sample samples.contracts.callsInPlaceAtLeastOnceContract
* @sample
samples.contracts.callsInPlaceExactlyOnceContract
* @sample
samples.contracts.callsInPlaceUnknownContract
*^
@ContractsDsl
@ExperimentalContracts
@InlineOnly
@
SinceKotlin("1.3")
@Suppress("UNUSED_PARAMETER")
public inline fun contract(builder:
ContractBuilder.() -> Unit) { }
}
"/
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contributors.
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license/LICENSE.txt file.
*^
package kotlin.coroutines
}
/**
* Marks coroutine context element that
intercepts coroutine continuations.
*
* The coroutines framework uses [ContinuationInterceptor.Key] to retrieve the
interceptor
and
* intercepts all coroutine continuations with [interceptContinuation] invocations.
*
* [ContinuationInterceptor] behaves like a [polymorphic element][AbstractCoroutineContextKey], meaning that
* its implementation delegates [get][CoroutineContext.Element.get] and
[minusKey][CoroutineContext.Element.minusKey]
* to [getPolymorphicElement] and [minusPolymorphicKey]
respectively.
*
* [ContinuationInterceptor] subtypes can be extracted from the coroutine context using either
[ContinuationInterceptor.Key]
* or subtype key if it extends [AbstractCoroutineContextKey].
}
}
*^
@SinceKotlin("1.3")
public interface ContinuationInterceptor : CoroutineContext.Element {
}
*
The key that defines *the* context interceptor.
*
*^
companion object Key :
CoroutineContext.Key<ContinuationInterceptor>
}
}
/**
* Returns continuation that wraps the original
[continuation], thus intercepting all resumptions.
*
* This function is invoked by coroutines framework
when needed and the resulting continuations are
* cached internally per each instance of the original
[continuation].
*
* This function may simply return original [continuation] if it does not want to intercept
this particular continuation.
*
* When the original [continuation] completes, coroutine framework invokes
[releaseInterceptedContinuation]
* with the resulting continuation if it was intercepted, that is if
`interceptContinuation` had previously
* returned a different continuation instance.
*
*^
public fun <T>
interceptContinuation(continuation: Continuation<T>): Continuation<T>
}
}
/**
* Invoked for the
continuation instance returned by [interceptContinuation] when the original
* continuation completes and will
not be used anymore. This function is invoked only if [interceptContinuation]
* had returned a different
continuation instance from the one it was invoked with.
*
* Default implementation
does nothing.
*
* @param continuation Continuation instance returned by this interceptor's
[interceptContinuation] invocation.
*
*^
public fun releaseInterceptedContinuation(continuation:
Continuation<*>) {
}
}
/* do nothing by default
*^
}
}
public override operator fun <E :
CoroutineContext.Element> get(key: CoroutineContext.Key<E>): E? {
}
}
// getPolymorphicKey specialized for
ContinuationInterceptor key
* @OptIn(ExperimentalStdlibApi::class)
if (key is
AbstractCoroutineContextKey<*, *>) {
}
}
@Suppress("UNCHECKED_CAST")
return if
(key.isSubKey(this.key)) key.tryCast(this) as? E else null
}
}
@Suppress("UNCHECKED_CAST")
return if (ContinuationInterceptor === key) this as E else null
}
}
}
}
public override fun minusKey(key:
CoroutineContext.Key<*>): CoroutineContext {
}
}
// minusPolymorphicKey specialized for
ContinuationInterceptor key
* @OptIn(ExperimentalStdlibApi::class)
}
}

```

```

        if (key is AbstractCoroutineContextKey<*, *>) {
            return if (key.isSubKey(this.key) &&
                key.tryCast(this) != null) EmptyCoroutineContext else this
        }
        return if (ContinuationInterceptor === key) EmptyCoroutineContext else this
    }
}

/**
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 */
package kotlin.coroutines
/**
 * Persistent context for the coroutine. It is an indexed set of [Element] instances.
 * An indexed set is a mix between a set and a map.
 * Every element in this set has a unique [Key].
 */
@SinceKotlin("1.3")
public interface CoroutineContext {
    /**
     * Returns the element with the given [key] from this context or `null`.
     */
    public operator fun <E> : Element? get(key: Key<E>): E?

    /**
     * Accumulates entries of this context starting with [initial] value and applying [operation]
     * from left to right to current accumulator value and each element of this context.
     */
    public fun <R> fold(initial: R, operation: (R, Element) -> R): R

    /**
     * Returns a context containing elements from this context and elements from other [context].
     * The elements from this context with the same key as in the other one are dropped.
     */
    public operator fun plus(context: CoroutineContext): CoroutineContext =
        if (context === EmptyCoroutineContext) this else // fast path -- avoid lambda creation
            context.fold(this) { acc, element ->
                val removed = acc.minusKey(element.key)
                if (removed === EmptyCoroutineContext) element else {
                    // make sure interceptor is always last in the context (and thus is fast to get when present)
                    val interceptor = removed[ContinuationInterceptor]
                    if (interceptor == null) CombinedContext(removed, element) else {
                        val left = removed.minusKey(ContinuationInterceptor)
                        if (left === EmptyCoroutineContext) CombinedContext(element, interceptor) else
                            CombinedContext(CombinedContext(left, element), interceptor)
                    }
                }
            }

    /**
     * Returns a context containing elements from this context, but without an element with
     * the specified [key].
     */
    public fun minusKey(key: Key<*>): CoroutineContext

    /**
     * Key for the elements of [CoroutineContext]. [E] is a type of element with this key.
     */
    public interface Key<E> : Element

    /**
     * An element of the [CoroutineContext]. An element of the coroutine context is a singleton context by itself.
     */
    public interface Element : CoroutineContext {
        /**
         * A key of this coroutine context element.
         */
        public val key: Key<*>

        public override operator fun <E> : Element? get(key: Key<E>): E? =
            @Suppress("UNCHECKED_CAST") if (this.key == key) this as E else null

        public override fun <R> fold(initial: R, operation: (R, Element) -> R): R =
            operation(initial, this)

        public override fun minusKey(key: Key<*>): CoroutineContext =
            if (this.key == key) EmptyCoroutineContext else this
    }
}

/**
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 */
import kotlin.coroutines.CoroutineContext
import kotlin.coroutines.Element
import kotlin.coroutines.CoroutineContext.Key

/**
 * Base class for [CoroutineContext.Element] implementations.
 */
@SinceKotlin("1.3")
public abstract class AbstractCoroutineContextElement(public override val key: Key<*>) : Element {
    /**
     * Base class for [CoroutineContext.Key] associated with polymorphic [CoroutineContext.Element] implementation.
     * Polymorphic element implementation implies delegating its [get][Element.get] and [minusKey][Element.minusKey]
     * to [getPolymorphicElement] and [minusPolymorphicKey] respectively.
     * Polymorphic elements can be extracted from the coroutine context using both element key and its supertype key.
     * Example of polymorphic elements:
     * ```
     * open class BaseElement : CoroutineContext.Element {
     *     companion object Key : CoroutineContext.Key<BaseElement>
     *     override val key: CoroutineContext.Key<*> get() = Key
     *     // It is important to use getPolymorphicKey and minusPolymorphicKey
     *     override fun <E> : CoroutineContext.Element? get(key: CoroutineContext.Key<E>): E? =
         getPolymorphicElement(key)
     *     override fun minusKey(key: CoroutineContext.Key<*>): CoroutineContext =
         minusPolymorphicKey(key)
     * }
     * class DerivedElement : BaseElement() {
     *     companion object Key :
         AbstractCoroutineContextKey<BaseElement, DerivedElement>(BaseElement, { it as? DerivedElement })
     * }
     * ```
     */
}

```

```

// Now it is possible to query both `BaseElement` and `DerivedElement`
 * someContext[BaseElement] // Returns BaseElement?, non-null both for BaseElement and DerivedElement instances
 * someContext[DerivedElement] // Returns DerivedElement?, non-null only for DerivedElement instance
 * ````
 * @param B base class of a polymorphic element
 * @param baseKey an instance of base key
 * @param E element type associated with the current key
 * @param safeCast a function that can safely cast abstract [CoroutineContext.Element] to the concrete [E] type
 * and return the element if it is a subtype of [E] or `null` otherwise.
 *
 * \n @SinceKotlin("1.3") \n @ExperimentalStdlibApi \n public abstract class AbstractCoroutineContextKey<B : Element, E : B>(\n     baseKey: Key<B>,\n     private val safeCast: (element: Element) -> E?\n) : Key<E> {\n     private val topmostKey: Key<*> = if (baseKey is AbstractCoroutineContextKey<*, *>) baseKey.topmostKey else baseKey\n\n     internal fun tryCast(element: Element): E? = safeCast(element)\n     internal fun isSubKey(key: Key<*>): Boolean = key === this || topmostKey === key\n}\n\n /** \n * Returns the current element if it is associated with the given [key] in a polymorphic manner or `null` otherwise. \n * This method returns non-null value if either [Element.key] is equal to the given [key] or if the [key] is associated \n * with [Element.key] via [AbstractCoroutineContextKey]. \n * See [AbstractCoroutineContextKey] for the example of usage. \n
 *
 * \n @SinceKotlin("1.3") \n @ExperimentalStdlibApi \n public fun <E : Element> Element.getPolymorphicElement(key: Key<E>): E? {\n     if (key is AbstractCoroutineContextKey<*, *>) {\n         @Suppress("UNCHECKED_CAST")\n         return if (key.isSubKey(this.key)) key.tryCast(this) as? E else null\n     }\n     @Suppress("UNCHECKED_CAST")\n     return if (this.key === key) this as E else null\n}\n\n /** \n * Returns empty coroutine context if the element is associated with the given [key] in a polymorphic manner \n * or `null` otherwise. \n * This method returns empty context if either [Element.key] is equal to the given [key] or if the [key] is associated \n * with [Element.key] via [AbstractCoroutineContextKey]. \n * See [AbstractCoroutineContextKey] for the example of usage. \n
 *
 * \n @SinceKotlin("1.3") \n @ExperimentalStdlibApi \n public fun Element.minusPolymorphicKey(key: Key<*>): CoroutineContext {\n     if (key is AbstractCoroutineContextKey<*, *>) {\n         return if (key.isSubKey(this.key) && key.tryCast(this) != null) EmptyCoroutineContext else this\n     }\n     return if (this.key === key) EmptyCoroutineContext else this\n}\n\n /** \n * An empty coroutine context. \n
 *
 * \n @SinceKotlin("1.3") \n public object EmptyCoroutineContext : CoroutineContext, Serializable {\n     private const val serialVersionUID: Long = 0\n     private fun readResolve(): Any = EmptyCoroutineContext\n\n     public override fun <E : Element> get(key: Key<E>): E? = null\n     public override fun <R> fold(initial: R, operation: (R, Element) -> R): R = initial\n     public override fun plus(context: CoroutineContext): CoroutineContext = context\n     public override fun minusKey(key: Key<*>): CoroutineContext = this\n     public override fun hashCode(): Int = 0\n     public override fun toString(): String = "EmptyCoroutineContext"\n}\n\n //----- internal impl ----- \n\n // this class is not exposed, but is hidden inside implementations \n // this is a left-biased list, so that `plus` works naturally \n @SinceKotlin("1.3") \n internal class CombinedContext(\n     private val left: CoroutineContext,\n     private val element: Element\n) : CoroutineContext, Serializable {\n     override fun <E : Element> get(key: Key<E>): E? {\n         var cur = this\n         while (true) {\n             cur.element[key]?.let { return it }\n             val next = cur.left\n             if (next is CombinedContext) {\n                 cur = next\n             } else {\n                 return next[key]\n             }\n         }\n     }\n     public override fun <R> fold(initial: R, operation: (R, Element) -> R): R =\n         operation(left.fold(initial, operation), element)\n     public override fun minusKey(key: Key<*>): CoroutineContext {\n         element[key]?.let { return left }\n         val newLeft = left.minusKey(key)\n         return when {\n             newLeft === left -> this\n             newLeft === EmptyCoroutineContext -> element\n             else -> CombinedContext(newLeft, element)\n         }\n     }\n     private fun size(): Int {\n         var cur = this\n         var size = 2\n         while (true) {\n             cur = cur.left as? CombinedContext ?: return size\n             size++\n         }\n     }\n     private fun contains(element: Element): Boolean =\n         get(element.key) == element\n     private fun containsAll(context: CombinedContext): Boolean {\n         var cur = context\n         while (true) {\n             if (!contains(cur.element)) return false\n             val next = cur.left\n             if (next is

```

```

CombinedContext) {\n        cur = next\n    } else {\n        return contains(next as Element)\n    }\n }\n }\n\n override fun equals(other: Any?): Boolean =\n    this === other || other is CombinedContext\n    && other.size() == size() && other.containsAll(this)\n\n override fun hashCode(): Int = left.hashCode() +\n    element.hashCode()\n\n override fun toString(): String =\n    "[" + fold("") { acc, element ->\n        if\n    (acc.isEmpty()) element.toString() else "$acc, $element"\n    } + "]" \n\n private fun writeReplace(): Any {\n    val n = size()\n    val elements = arrayOfNulls<CoroutineContext>(n)\n    var index = 0\n    fold(Unit) { _,\n    element -> elements[index++]\n    = element }\n    check(index == n)\n    @Suppress("UNCHECKED_CAST")\n    return\n    Serialized(elements as Array<CoroutineContext>)\n }\n\n private class Serialized(val elements:\n    Array<CoroutineContext>) : Serializable {\n    companion object {\n        private const val serialVersionUID:\n    Long = 0L\n    }\n    private fun readResolve(): Any = elements.fold(EmptyCoroutineContext,\n    CoroutineContext::plus)\n }\n\n"/*\n * Copyright 2010-2020 JetBrains s.r.o. and Kotlin Programming\n    Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the\n    license/LICENSE.txt file.\n\n*/\n@file:kotlin.jvm.JvmName("IntrinsicsKt")\n@file:kotlin.jvm.JvmMultifileClass\n\npackage\n    kotlin.coroutines.intrinsics\n\nimport kotlin.contracts.*\nimport kotlin.coroutines.*\nimport\n    kotlin.internal.InlineOnly\n\n/**\n * Obtains the current continuation instance inside suspend functions and either\n    suspends\n * currently running\n    coroutine or returns result immediately without suspension.\n * If the [block] returns the special\n    [COROUTINE_SUSPENDED] value, it means that suspend function did suspend the execution and will\n * not\n    return any result immediately. In this case, the [Continuation] provided to the [block] shall be\n * resumed by\n    invoking [Continuation.resumeWith] at some moment in the\n * future when the result becomes available to resume\n    the computation.\n * Otherwise, the return value of the [block] must have a type assignable to [T] and represents\n    the result of this suspend function.\n * It means that the execution was not suspended and the [Continuation]\n    provided to the [block] shall not be invoked.\n * As the result type of the [block] is declared as `Any?` and cannot be\n    correctly type-checked,\n * its proper return type remains on the conscience of the suspend function's author.\n * Invocation of [Continuation.resumeWith] resumes coroutine directly in the invoker's thread without\n    going through the\n * [ContinuationInterceptor] that might be present in the coroutine's [CoroutineContext].\n * It\n    is the invoker's responsibility to ensure that a proper invocation context is established.\n * [Continuation.intercepted]\n    can be used to acquire the intercepted continuation.\n\n * Note that it is not recommended to call either\n    [Continuation.resume] nor [Continuation.resumeWithException] functions synchronously\n * in the same\n    stackframe where suspension function is run. Use [suspendCoroutine] as a safer way to obtain current\n * continuation instance.\n\n*/\n@SinceKotlin("1.3")\n@InlineOnly\n@Suppress("UNUSED_PARAMETER",\n    "RedundantSuspendModifier")\npublic suspend inline fun <T>\n    suspendCoroutineUninterceptedOrReturn(crossinline block: (Continuation<T>) -> Any?): T {\n    contract {\n    callsInPlace(block, InvocationKind.EXACTLY_ONCE) }\n    throw NotImplementedError("Implementation of\n    suspendCoroutineUninterceptedOrReturn is intrinsic")\n }\n\n/**\n * This value is\n    used as a return value of [suspendCoroutineUninterceptedOrReturn] `block` argument to state that\n * the execution\n    was suspended and will not return any result immediately.\n * Note: this value should not be used in general\n    code. Using it outside of the context of\n * `suspendCoroutineUninterceptedOrReturn` function return value\n    (including, but not limited to,\n * storing this value in other properties, returning it from other functions, etc)\n * can\n    lead to unspecified behavior of the code.\n\n*/\n// It is implemented as property with getter to avoid ProGuard\n<clinit> problem with multifile IntrinsicsKt class\n@SinceKotlin("1.3")\npublic val COROUTINE_SUSPENDED:\n    Any get() = CoroutineSingletons.COROUTINE_SUSPENDED\n\n// Using enum here ensures two important\n    properties:\n // 1. It makes SafeContinuation serializable with all kinds of serialization frameworks (since all of them\n    natively support enums)\n // 2. It improves debugging experience, since you clearly see toString() value\n    of those objects and what package they come from\n\n@SinceKotlin("1.3")\n@PublishedApi // This class is\n    Published API via serialized representation of SafeContinuation, don't rename/move\n\ninternal enum class

```



CoroutineSingletons { COROUTINE\_SUSPENDED, UNDECIDED, RESUMED }  
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Apache 2.0 license that can be found in the license/LICENSE.txt file.  
A specialized immutable implementation of [List] interface that contains all enum entries of the specified enum type [E]. [EnumEntries] contains all enum entries in the order they are declared in the source code, consistently with the corresponding [Enum.ordinal] values. An instance of this interface can only be obtained from `EnumClass.entries` property.

```
@ExperimentalStdlibApi @SinceKotlin("1.8") public sealed  
interface EnumEntries<E : Enum<E>> :  
List<E> @PublishedApi @ExperimentalStdlibApi @SinceKotlin("1.8") // Used by JVM compiler  
internal fun <E : Enum<E>> enumEntries(entriesProvider: () -> Array<E>): EnumEntries<E> =  
EnumEntriesList(entriesProvider) @PublishedApi @ExperimentalStdlibApi @SinceKotlin("1.8") // Used by  
Native/JS compilers and Java serialization  
internal fun <E : Enum<E>> enumEntries(entries: Array<E>):  
EnumEntries<E> = EnumEntriesList { entries }.also {  
    // Here we are enforcing initialization of _entries  
    // property. It is required because of two reasons.  
    // 1. In old Native mm the object will be frozen after  
    // creation, so it must be immutable  
    // 2. Native doesn't support @Volatile for now, so this initialization is not  
    // generally safe, if done after object is published.  
    // This is very implementation-dependent hack,  
    // and it should be removed when/if both reasons above are gone.  
    it.size  
    // For enum class E, this class is instantiated in the following manner (NB it's pseudocode that does not  
    // reflect code generation strategy precisely):  
    // class E extends Enum<E> {  
    //     private static final E[] $VALUES  
    //     private static final EnumEntries[] $ENTRIES  
    //     static {  
    //         $VALUES = $values();  
    //         val  
    //         supplier = #invokedynamic ..args.. values;  
    //         $ENTRIES = new EnumEntriesList(supplier);  
    //     }  
    //     public static EnumEntries<MyEnum> getEntries() {  
    //         return $ENTRIES;  
    //     }  
    //     private synthetic  
    //     static E[] $values() {  
    //         return new E[] { ... };  
    //     }  
    //     This machinery is required as a  
    //     workaround for a long-standing issue when people do reflectively change `VALUES` of  
    //     enums in order to  
    //     workaround project-specific issues. We allow racy initialization (e.g. entriesProvider can be invoked multiple  
    //     times), but the resulting array is safely published, preventing  
    //     any read races after the initialization.  
    // @SinceKotlin("1.8") @ExperimentalStdlibApi private class  
    EnumEntriesList<T : Enum<T>>(private val entriesProvider: () -> Array<T>) : EnumEntries<T>,  
    AbstractList<T>(), Serializable {  
    // WA for JS IR bug:  
    // class type parameter MUST be different form E  
    // (AbstractList<E> type parameter),  
    // otherwise the bridge names for contains() and indexOf() will be clashed with  
    // the original method names,  
    // and produced JS code will not contain type checks and will not work correctly.  
    @Volatile // Volatile is required for safe publication of the array. It doesn't incur any real-world penalties  
    private  
    var _entries: Array<T>? = null  
    private val entries: Array<T> get() {  
        var e = _entries  
        if (e  
        != null) return e  
        e = entriesProvider()  
        _entries = e  
        return e  
    }  
    override val size:  
    Int get() = entries.size  
    override fun get(index:  
    Int): T {  
        val entries = entries  
        checkElementIndex(index, entries.size)  
        return entries[index]  
    }  
    // By definition, EnumEntries contains **all** enums in declaration order,  
    // thus we are able to short-  
    // circuit the implementation here  
    override fun contains(element: T): Boolean {  
        @Suppress("SENSELESS_COMPARISON")  
        if (element === null) return false // WA for JS IR bug  
        //  
        Check identity due to UnsafeVariance  
        val target = entries.getOrNull(element.ordinal)  
        return target ===  
        element  
    }  
    override fun indexOf(element: T): Int {  
        @Suppress("SENSELESS_COMPARISON")  
        if (element === null) return -1 // WA for JS IR bug  
        // Check identity due to UnsafeVariance  
        val  
        ordinal = element.ordinal  
        val target = entries.getOrNull(ordinal)  
        return if (target === element) ordinal  
        else -1  
    }  
    override fun lastIndexOf(element: T): Int = indexOf(element)  
    @Suppress("unused") // Used for Java serialization  
    private fun writeReplace(): Any {  
        return  
        EnumEntriesSerializationProxy(entries)  
    }  
    internal expect class EnumEntriesSerializationProxy<E :  
    Enum<E>>(entries: Array<E>)  
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```

contributors.\n \* Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n \*/\n\npackage kotlin.experimental\n\n/\*\*\n \* This annotation marks the experimental [ObjCName][kotlin.native.ObjCName] annotation.\n \*/\n\n@RequiresOptIn\n@Target(AnnotationTarget.ANNOTATION\_CLASS)\n@Retention(AnnotationRetention.BINARY)\n@MustBeDocumented\npublic annotation class ExperimentalObjCName\n", "/\*\n \* Copyright 2010-2022 JetBrains s.r.o. and Kotlin Programming Language contributors.\n \* Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n \*/\n\npackage kotlin.experimental\n\n/\*\*\n \* This annotation marks the experimental Objective-C export refinement annotations.\n \*/\n\n@RequiresOptIn\n@Target(AnnotationTarget.ANNOTATION\_CLASS)\n@Retention(AnnotationRetention.BINARY)\n@MustBeDocumented\npublic annotation class ExperimentalObjCRefinement\n", "/\*\n \* Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n \* Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n \*/\n\npackage kotlin.experimental\n\n/\*\*\n \* Performs a bitwise AND operation between the two values.\n \*/\n\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic inline infix fun Byte.and(other: Byte): Byte = (this.toInt() and other.toInt()).toByte()\n\n/\*\*\n \* Performs a bitwise OR operation between the two values.\n \*/\n\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic inline infix fun Byte.or(other: Byte): Byte = (this.toInt() or other.toInt()).toByte()\n\n/\*\*\n \* Performs a bitwise XOR operation between the two values.\n \*/\n\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic inline infix fun Byte.xor(other: Byte): Byte = (this.toInt() xor other.toInt()).toByte()\n\n/\*\*\n \* Inverts the bits in this value.\n \*/\n\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic inline fun Byte.inv(): Byte = (this.toInt().inv()).toByte()\n\n/\*\*\n \* Performs a bitwise AND operation between the two values.\n \*/\n\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic inline infix fun Short.and(other: Short): Short = (this.toInt() and other.toInt()).toShort()\n\n/\*\*\n \* Performs a bitwise OR operation between the two values.\n \*/\n\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic inline infix fun Short.or(other: Short): Short = (this.toInt() or other.toInt()).toShort()\n\n/\*\*\n \* Performs a bitwise XOR operation between the two values.\n \*/\n\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic inline infix fun Short.xor(other: Short): Short = (this.toInt() xor other.toInt()).toShort()\n\n/\*\*\n \* Inverts the bits in this value.\n \*/\n\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic inline fun Short.inv(): Short = (this.toInt().inv()).toShort()\n\n", "/\*\n \* Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n \* Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n \*/\n\npackage kotlin.experimental\n\n/\*\*\n \* The experimental marker for type inference augmenting annotations.\n \* Any usage of a declaration annotated with `@ExperimentalTypeInference` must be accepted either by\n \* annotating that usage with the [OptIn] annotation, e.g. `@OptIn(ExperimentalTypeInference::class)`,\n \* or by using the compiler argument `-opt-in=kotlin.experimental.ExperimentalTypeInference`.\n \*/\n\n@RequiresOptIn(level = RequiresOptIn.Level.ERROR)\n@MustBeDocumented\n@Retention(AnnotationRetention.BINARY)\n@Target(AnnotationTarget.ANNOTATION\_CLASS)\n@SinceKotlin("1.3")\npublic annotation class ExperimentalTypeInference\n", "/\*\n \* Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n \* Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n \*/\n\npackage kotlin.internal\n\n/\*\*\n \* Specifies that the corresponding type should be ignored during type inference.\n \*/\n\n@Target(AnnotationTarget.TYPE)\n@Retention(AnnotationRetention.BINARY)\ninternal annotation class NoInfer\n\n/\*\*\n \* Specifies that the constraint built for the type during type inference should be an equality one.\n \*/\n\n@Target(AnnotationTarget.TYPE)\n@Retention(AnnotationRetention.BINARY)\ninternal annotation class Exact\n\n/\*\*\n \* Specifies that a corresponding member has the lowest priority in overload resolution.\n \*/\n\n@Target(AnnotationTarget.FUNCTION, AnnotationTarget.PROPERTY, AnnotationTarget.CONSTRUCTOR)\n@Retention(AnnotationRetention.BINARY)\ninternal annotation class

LowPriorityInOverloadResolution\n\n/\*\*\n

\* Specifies that the corresponding member has the highest priority in overload resolution. Effectively this means that\n \* an extension annotated with this annotation will win in overload resolution over a member with the same signature.\n \*/\n@Target(AnnotationTarget.FUNCTION,

AnnotationTarget.PROPERTY)\n@Retention(AnnotationRetention.BINARY)\ninternal annotation class

HidesMembers\n\n/\*\*\n \* The value of this type parameter should be mentioned in input types (argument types, receiver type or expected type).\n

\*/\n@Target(AnnotationTarget.TYPE\_PARAMETER)\n@Retention(AnnotationRetention.BINARY)\ninternal annotation class OnlyInputTypes\n\n/\*\*\n \* Specifies that this function should not be called directly without inlining\n \*/\n@Target(AnnotationTarget.FUNCTION, AnnotationTarget.PROPERTY,

AnnotationTarget.PROPERTY\_GETTER,

AnnotationTarget.PROPERTY\_SETTER)\n@Retention(AnnotationRetention.BINARY)\ninternal annotation class

InlineOnly\n\n/\*\*\n \* Specifies that this declaration can have dynamic receiver type.\n \*/\n@Target(AnnotationTarget.FUNCTION,

AnnotationTarget.PROPERTY)\n@Retention(AnnotationRetention.BINARY)\ninternal annotation class

DynamicExtension\n\n/\*\*\n \* The value of this parameter should be a property reference expression (`this::foo`), referencing a `lateinit` property,\n \* the backing field of which is accessible at the point where the corresponding argument is passed.\n

\*/\n@Target(AnnotationTarget.VALUE\_PARAMETER)\n@Retention(AnnotationRetention.BINARY)\n@SinceKotlin("1.2")\ninternal annotation class AccessibleLateinitPropertyLiteral\n\n/\*\*\n \* Specifies that this declaration is only completely supported since the specified version.\n \* The Kotlin compiler of an earlier version is going to report a diagnostic on usages of this declaration.\n \* The diagnostic message can be specified with [message], or via [errorCode] (takes less space, but might not be immediately clear\n \* to the user). The diagnostic severity can be specified with [level]: WARNING/ERROR

mean that either a warning or an error\n \* is going to be reported, HIDDEN means that the declaration is going to be removed from resolution completely.\n \* [versionKind] specifies which version should be compared with the [version] value, when compiling the usage of the annotated declaration.\n \* Note that prior to 1.2, only [RequireKotlinVersionKind.LANGUAGE\_VERSION] was supported, so the Kotlin compiler before 1.2 is going to\n \* treat any [RequireKotlin] as if it requires the language version. Since 1.2, the Kotlin compiler supports\n \* [RequireKotlinVersionKind.LANGUAGE\_VERSION], [RequireKotlinVersionKind.COMPILER\_VERSION] and [RequireKotlinVersionKind.API\_VERSION].\n \* If the actual value of [versionKind] is something different (e.g. a new version kind, added in future versions of Kotlin),\n \* Kotlin 1.2 is going to ignore this [RequireKotlin] altogether, where as Kotlin before 1.2 is going to treat this as a requirement\n \* on the language version.\n \* This

annotation is erased at compile time; its arguments are stored in a more compact form in the Kotlin metadata.\n

\*/\n@Target(AnnotationTarget.CLASS, AnnotationTarget.FUNCTION, AnnotationTarget.PROPERTY,

AnnotationTarget.CONSTRUCTOR,

AnnotationTarget.TYPEALIAS)\n@Retention(AnnotationRetention.SOURCE)\n@Repeatable\n@SinceKotlin("1.

2")\ninternal annotation class RequireKotlin(\n val version: String,\n val message: String = "",\n val level: DeprecationLevel = DeprecationLevel.ERROR,\n val versionKind: RequireKotlinVersionKind =

RequireKotlinVersionKind.LANGUAGE\_VERSION,\n val errorCode: Int = -1)\n\n/\*\*\n \* The kind of the version that is required by [RequireKotlin].\n \*/\n@SinceKotlin("1.2")\ninternal enum class

RequireKotlinVersionKind {\n LANGUAGE\_VERSION,\n COMPILER\_VERSION,\n

API\_VERSION,\n}\n\n/\*\*\n \* Specifies that this declaration is a part of special DSL, used for constructing function's contract.\n \*/\n@Retention(AnnotationRetention.BINARY)\n@SinceKotlin("1.2")\ninternal

annotation class ContractsDsl\n\n/\*\n \* Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n \* Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n \*/\n\npackage kotlin.internal\n\n// a mod b (in arithmetical sense)\nprivate fun mod(a:

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Int, b: Int): Int {\n    val mod = a % b\n    return if (mod >= 0) mod else mod + b\n}\n\nprivate fun mod(a: Long, b:
Long): Long {\n    val mod = a % b\n    return if (mod >= 0) mod else mod + b\n}\n\n// (a - b) mod c\nprivate fun
differenceModulo(a: Int, b: Int, c: Int): Int {\n    return mod(mod(a, c) - mod(b, c), c)\n}\n\nprivate fun
differenceModulo(a: Long, b: Long, c: Long): Long {\n    return mod(mod(a, c) - mod(b, c), c)\n}\n\n/**\n *
Calculates the final element of a bounded arithmetic progression, i.e. the last element of the progression which is in
the range\n * from [start] to [end] in case of a positive [step], or from [end]
to [start] in case of a negative\n * [step].\n * No validation on passed parameters is performed. The given
parameters should satisfy the condition:\n * - either `step > 0` and `start <= end`,\n * - or `step < 0` and `start >=
end`.\n * @param start first element of the progression\n * @param end ending bound for the progression\n *
@param step increment, or difference of successive elements in the progression\n * @return the final element of the
progression\n * @suppress\n */\n\n@PublishedApi\ninternal fun getProgressionLastElement(start: Int, end: Int, step:
Int): Int = when {\n    step > 0 -> if (start >= end) end else end - differenceModulo(end, start, step)\n    step < 0 -> if
(start <= end) end else end + differenceModulo(start, end, -step)\n    else -> throw
kotlin.IllegalArgumentException("Step is zero.")\n}\n\n/**\n * Calculates the final element of a bounded
arithmetic progression, i.e. the last element of the progression which is in the range\n * from [start]
to [end] in case of a positive [step], or from [end] to [start] in case of a negative\n * [step].\n * No validation on
passed parameters is performed. The given parameters should satisfy the condition:\n * - either `step > 0` and
`start <= end`,\n * - or `step < 0` and `start >= end`.\n * @param start first element of the progression\n *
@param end ending bound for the progression\n * @param step increment, or difference of successive elements in
the progression\n * @return the final element of the progression\n * @suppress\n */\n\n@PublishedApi\ninternal fun
getProgressionLastElement(start: Long, end: Long, step: Long): Long = when {\n    step > 0 -> if (start >= end) end
else end - differenceModulo(end, start, step)\n    step < 0 -> if (start <= end) end else end + differenceModulo(start,
end, -step)\n    else -> throw kotlin.IllegalArgumentException("Step is zero.")\n}\n\n"/**\n * Copyright 2010-2018
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this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*/\n\npackage kotlin.properties\nimport kotlin.reflect.KProperty\n\n/**\n * Standard property delegates.\n
*/\n\npublic object Delegates {\n    /**\n     * Returns a property delegate for a read/write property with a non-`null`
value that is initialized not during\n     * object construction time but at a later time. Trying to read the property
before the initial value has been\n     * assigned results in an exception.\n     *\n     * @sample
samples.properties.Delegates.notNullDelegate\n     */\n    public fun <T : Any> notNull():
ReadWriteProperty<Any?, T> = NotNullVar()\n\n    /**\n     * Returns a property delegate for a read/write property
that calls a specified callback function when changed.\n     * @param initialValue the initial value of the property.\n
     * @param onChange the callback which is called after the change of the property is made. The value of the
property\n     *\n     * has already been changed when this callback is invoked.\n     *\n     * @sample
samples.properties.Delegates.observableDelegate\n     */\n    public inline fun <T> observable(initialValue: T,
crossinline onChange: (property: KProperty<*>, oldValue: T, newValue: T) -> Unit):\n
ReadWriteProperty<Any?, T> =\n        object : ObservableProperty<T>(initialValue) {\n            override fun
afterChange(property: KProperty<*>, oldValue: T, newValue: T) = onChange(property, oldValue, newValue)\n
        }\n\n    /**\n     * Returns a property delegate for a read/write property that calls a specified callback function when
changed,\n     * allowing the callback to veto the modification.\n     * @param initialValue the initial value of the
property.\n     * @param onChange the callback which is called before a change to the property value is attempted.\n
     * The value of the property hasn't been changed yet, when this callback is invoked.\n     * If the callback returns
`true` the value of the property is being set to the new value,\n     * and if the callback returns `false` the new value
is discarded and the property remains its old value.\n     *\n     * @sample
samples.properties.Delegates.vetoableDelegate\n     */\n    @sample
samples.properties.Delegates.throwVetoableDelegate\n     */\n    public inline fun <T> vetoable(initialValue: T,
crossinline onChange: (property: KProperty<*>, oldValue: T, newValue: T) -> Boolean):\n

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ReadWriteProperty<Any?, T> = {
    object : ObservableProperty<T>(initialValue) {
        override fun
beforeChange(property: KProperty<*>, oldValue: T, newValue: T): Boolean = onChange(property, oldValue,
newValue)
    }
}

private class NotNullVar<T : Any>(): ReadWriteProperty<Any?, T> {
    private var
value: T? = null
    public override fun getValue(thisRef: Any?, property: KProperty<*>): T {
        return value
        ?: throw IllegalStateException("Property \${property.name} should be initialized
before get.")
    }
    public override fun setValue(thisRef: Any?, property: KProperty<*>, value: T) {
this.value = value
    }
}

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license/LICENSE.txt file.
*/
package kotlin.properties
import kotlin.reflect.KProperty

/* Base
interface that can be used for implementing property delegates of read-only properties.
* This is provided only
for convenience; you don't have to extend this interface
* as long as your property delegate has methods with the
same signatures.
* @param T the type of object which owns the delegated property.
* @param V the type of
the property value.
*/
public interface ReadOnlyProperty<in T, out V> {
    /**
     * Returns the value of
the property for the given object.
     * @param thisRef the object for which the value
is requested.
     * @param property the metadata for the property.
     * @return the property value.
     */
    public operator fun getValue(thisRef: T, property: KProperty<*>): V
}

/* Base interface that can be used
for implementing property delegates of read-write properties.
* This is provided only for convenience; you
don't have to extend this interface
* as long as your property delegate has methods with the same signatures.
* @param T the type of object which owns the delegated property.
* @param V the type of the property value.
*/
public interface ReadWriteProperty<in T, V> : ReadOnlyProperty<T, V> {
    /**
     * Returns the value of
the property for the given object.
     * @param thisRef the object for which the value is requested.
     * @param
property the metadata for the property.
     * @return the property value.
     */
    public override operator fun
getValue(thisRef: T, property: KProperty<*>): V
    /**
     * Sets
the value of the property for the given object.
     * @param thisRef the object for which the value is requested.
     * @param
property the metadata for the property.
     * @param value the value to set.
     */
    public operator
fun setValue(thisRef: T, property: KProperty<*>, value: V)
}

/* Base interface that can be used for
implementing property delegate providers.
* This is provided only for convenience; you don't have to extend
this interface
* as long as your delegate provider has a method with the same signature.
* @param T the type
of object which owns the delegated property.
* @param D the type of property delegates this provider provides.
*/
@SinceKotlin("1.4")
public interface PropertyDelegateProvider<in T, out D> {
    /**
     * Returns the
delegate of the property for the given object.
     * This function can be used to extend the logic of creating
the object (e.g. perform validation checks)
     * to which the
property implementation is delegated.
     * @param thisRef the object for which property delegate is
requested.
     * @param property the metadata for the property.
     * @return the property delegate.
     */
    public operator fun provideDelegate(thisRef: T, property: KProperty<*>): D
}

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Apache 2.0 license that can be found in the license/LICENSE.txt file.
*/
package kotlin.properties
import
kotlin.reflect.KProperty

/* Implements the core logic of a property delegate for a read/write property that
calls callback functions when changed.
* @param initialValue the initial value of the property.
*/
public abstract class ObservableProperty<V>(initialValue: V) : ReadWriteProperty<Any?, V> {
    private var value =
initialValue
    /**
     * The callback which is called before a change to the property value
is attempted.
     * The value of the property hasn't been changed yet, when this callback is invoked.
     * If the
callback returns `true` the value of the property is being set to the new value,
     * and if the callback returns
`false` the new value is discarded and the property remains its old value.
     */
    protected open fun
beforeChange(property: KProperty<*>, oldValue: V, newValue: V): Boolean = true
    /**
     * The callback
which is called after the change of the property is made. The value of the property
     * has already been changed
when this callback is invoked.
     */
    protected open fun afterChange(property: KProperty<*>, oldValue: V,
newValue: V): Unit {}
    public override fun getValue(thisRef: Any?, property: KProperty<*>): V {
}
}

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```

return value\n    }\n    public override fun setValue(thisRef: Any?, property: KProperty<*>, value: V) {\n        val
oldValue = this.value\n        if (!beforeChange(property, oldValue, value)) {\n
            return\n        }\n        this.value = value\n        afterChange(property, oldValue, value)\n    }\n}"/**\n *
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governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*/\n\n@file:Suppress("PackageDirectoryMismatch")\npackage kotlin\n\nimport kotlin.reflect.*\n\n/**\n * An
extension operator that allows delegating a read-only property of type [V]\n * to a property reference to a property
of type [V] or its subtype.\n * @receiver A property reference to a read-only or mutable property of type [V] or
its subtype.\n * The reference is without a receiver, i.e. it either references a top-level property or\n * has the
receiver bound to it.\n * Example:\n * ```\n * class Login(val username: String)\n * val defaultLogin =
Login("Admin")\n * val defaultUsername by defaultLogin::username\n * // equivalent to\n * val defaultUserName
get() = defaultLogin.username\n * ```\n */\n\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline
operator fun <V> KProperty0<V>.getValue(thisRef: Any?, property: KProperty<*>): V {\n    return
get()\n}\n\n/**\n * An extension operator that allows delegating a mutable property of type [V]\n * to a property
reference to a mutable property of the same type [V].\n * @receiver A property reference to a mutable property
of type [V].\n * The reference is without a receiver, i.e. it either references a top-level property or\n * has the
receiver bound to it.\n * Example:\n * ```\n * class Login(val username: String, var
incorrectAttemptCounter: Int = 0)\n * val defaultLogin = Login("Admin")\n * var defaultLoginAttempts by
defaultLogin::incorrectAttemptCounter\n * // equivalent to\n * var defaultLoginAttempts: Int\n * get() =
defaultLogin.incorrectAttemptCounter\n * set(value) { defaultLogin.incorrectAttemptCounter = value }\n * ```\n
*/\n\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic
inline operator fun <V> KMutableProperty0<V>.setValue(thisRef: Any?, property: KProperty<*>, value: V) {\n
    set(value)\n}\n\n/**\n * An extension operator that allows delegating a read-only member or extension property of
type [V]\n * to a property reference to a member or extension property of type [V] or its subtype.\n * @receiver
A property reference to a read-only or mutable property of type [V] or its subtype.\n * The reference has an unbound
receiver of type [T].\n * Example:\n * ```\n * class Login(val username: String)\n * val Login.user by
Login::username\n * // equivalent to\n * val Login.user get() = this.username\n * ```\n
*/\n\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline operator fun <T, V> KProperty1<T,
V>.getValue(thisRef: T, property: KProperty<*>): V {\n    return get(thisRef)\n}\n\n/**\n * An extension operator
that allows delegating a mutable member or extension property of type [V]\n *
to a property reference to a member or extension mutable property of the same type [V].\n * @receiver A
property reference to a read-only or mutable property of type [V] or its subtype.\n * The reference has an unbound
receiver of type [T].\n * Example:\n * ```\n * class Login(val username: String, var
incorrectAttemptCounter: Int)\n * var Login.attempts by Login::incorrectAttemptCounter\n * // equivalent to\n * var
Login.attempts: Int\n * get() = this.incorrectAttemptCounter\n * set(value) { this.incorrectAttemptCounter =
value }\n * ```\n */\n\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline operator fun <T, V>
KMutableProperty1<T, V>.setValue(thisRef: T, property: KProperty<*>, value: V) {\n    set(thisRef,
value)\n}"/**\n * Copyright 2010-2021 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of
this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*/\n\npackage kotlin.random\n\nimport
kotlin.math.nextDown\n\n/**\n * An abstract class that is implemented by random number generator algorithms.\n
*\n * The companion object [Random.Default] is the default instance of [Random].\n * To get a seeded instance
of random generator use [Random] function.\n * @sample samples.random.Randoms.defaultRandom\n
*/\n\n@SinceKotlin("1.3")\npublic abstract class Random {\n\n    /**\n     * Gets the next random [bitCount] number
of bits.\n     * Generates an `Int` whose lower [bitCount] bits are filled with random values and the remaining
upper bits are zero.\n     * @param bitCount number of bits to generate, must be in range 0..32, otherwise the
behavior is unspecified.\n     * @sample samples.random.Randoms.nextBits\n     */\n    public abstract fun
nextBits(bitCount: Int): Int\n\n    /**\n     * Gets the next random `Int` from the random number generator.\n     */
}

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* Generates an `Int` random value uniformly distributed between `Int.MIN_VALUE`
and `Int.MAX_VALUE` (inclusive).\n * \n * @sample samples.random.Randoms.nextInt\n * \n public
open fun nextInt(): Int = nextBits(32)\n\n /** \n * Gets the next random non-negative `Int` from the random
number generator less than the specified [until] bound.\n * \n * Generates an `Int` random value uniformly
distributed between `0` (inclusive) and the specified [until] bound (exclusive).\n * \n * @param until must be
positive.\n * \n * @throws IllegalArgumentException if [until] is negative or zero.\n * \n * @sample
samples.random.Randoms.nextIntFromUntil\n * \n public open fun nextInt(until: Int): Int = nextInt(0, until)\n\n
/** \n * Gets the next random `Int` from the random number generator in the specified range.\n * \n *
Generates an `Int` random value uniformly distributed between the specified [from] (inclusive) and [until]
(exclusive) bounds.\n * \n * @throws IllegalArgumentException if [from]
is greater than or equal to [until].\n * \n * @sample samples.random.Randoms.nextIntFromUntil\n * \n
public open fun nextInt(from: Int, until: Int): Int {\n    checkRangeBounds(from, until)\n    val n = until -
from\n    if (n > 0 || n == Int.MIN_VALUE) {\n        val rnd = if (n and -n == n) {\n            val bitCount =
fastLog2(n)\n            nextBits(bitCount)\n        } else {\n            var v: Int\n            do {\n                val
bits = nextInt().ushr(1)\n                v = bits % n\n            } while (bits - v + (n - 1) < 0)\n            v\n        }\n        return from + rnd\n    } else {\n        while (true) {\n            val rnd = nextInt()\n            if (rnd in
from until until) return rnd\n        }\n    }\n}\n\n /** \n * Gets the next random `Long` from the random
number generator.\n * \n * Generates a `Long` random value uniformly distributed
between `Long.MIN_VALUE` and `Long.MAX_VALUE` (inclusive).\n * \n * @sample
samples.random.Randoms.nextLong\n * \n public open fun nextLong(): Long = nextInt().toLong().shl(32) +
nextInt()\n\n /** \n * Gets the next random non-negative `Long` from the random number generator less than the
specified [until] bound.\n * \n * Generates a `Long` random value uniformly distributed between `0` (inclusive)
and the specified [until] bound (exclusive).\n * \n * @param until must be positive.\n * \n * @throws
IllegalArgumentException if [until] is negative or zero.\n * \n * @sample
samples.random.Randoms.nextLongFromUntil\n * \n public open fun nextLong(until: Long): Long =
nextLong(0, until)\n\n /** \n * Gets the next random `Long` from the random number generator in the specified
range.\n * \n * Generates a `Long` random value uniformly distributed between the specified [from] (inclusive)
and [until] (exclusive) bounds.\n
\n * \n * @throws IllegalArgumentException if [from] is greater than or equal to [until].\n * \n * @sample
samples.random.Randoms.nextLongFromUntil\n * \n public open fun nextLong(from: Long, until: Long): Long
{\n    checkRangeBounds(from, until)\n    val n = until - from\n    if (n > 0) {\n        val rnd: Long\n        if (n and -n == n) {\n            val nLow = n.toInt()\n            val nHigh = (n ushr 32).toInt()\n            rnd =
when {\n                nLow != 0 -> {\n                    val bitCount = fastLog2(nLow)\n                    //
toUInt().toLong()\n                    nextBits(bitCount).toLong() and 0xFFFF_FFFF\n                }\n                nHigh == 1 ->{\n                    // toUInt().toLong()\n                    nextInt().toLong() and 0xFFFF_FFFF\n                }\n                else -> {\n                    val bitCount = fastLog2(nHigh)\n                    nextBits(bitCount).toLong().shl(32)
+ (nextInt().toLong() and 0xFFFF_FFFF)\n                }\n            } else {\n                var v: Long\n                do {\n                    val bits = nextLong().ushr(1)\n                    v = bits % n\n                } while (bits - v + (n - 1)
< 0)\n                rnd = v\n            }\n            return from + rnd\n        } else {\n            while (true) {\n                val
rnd = nextLong()\n                if (rnd in from until until) return rnd\n            }\n        }\n    }\n}\n\n /** \n * Gets the
next random [Boolean] value.\n * \n * @sample samples.random.Randoms.nextBoolean\n * \n public open
fun nextBoolean(): Boolean = nextBits(1) != 0\n\n /** \n * Gets the next random [Double] value uniformly
distributed between 0 (inclusive) and 1 (exclusive).\n * \n * @sample samples.random.Randoms.nextDouble\n
\n * \n public open fun nextDouble(): Double = doubleFromParts(nextBits(26), nextBits(27))\n\n
/** \n * Gets the next random non-negative `Double` from the random number generator less than the specified
[until] bound.\n * \n * Generates a `Double` random value uniformly distributed between 0 (inclusive) and
[until] (exclusive).\n * \n * @throws IllegalArgumentException if [until] is negative or zero.\n * \n *
@sample samples.random.Randoms.nextDoubleFromUntil\n * \n public open fun nextDouble(until: Double):

```

```

Double = nextDouble(0.0, until)\n\n /**\n * Gets the next random `Double` from the random number generator
in the specified range.\n *\n * Generates a `Double` random value uniformly distributed between the specified
[from] (inclusive) and [until] (exclusive) bounds.\n *\n * [from] and [until] must be finite otherwise the
behavior is unspecified.\n *\n * @throws IllegalArgumentException if [from] is greater than or equal to
[until].\n *\n * @sample samples.random.Randoms.nextDoubleFromUntil\n
*\n public open fun nextDouble(from: Double, until: Double): Double {\n    checkRangeBounds(from,
until)\n    val size = until - from\n    val r = if (size.isInfinite() && from.isFinite() && until.isFinite()) {\n
val r1 = nextDouble() * (until / 2 - from / 2)\n    from + r1 + r1\n    } else {\n    from + nextDouble() *
size\n    }\n    return if (r >= until) until.nextDown() else r\n }\n\n /**\n * Gets the next random [Float]
value uniformly distributed between 0 (inclusive) and 1 (exclusive).\n *\n * @sample
samples.random.Randoms.nextFloat\n
*\n public open fun nextFloat(): Float = nextBits(24) / (1 shl
24).toFloat()\n\n /**\n * Fills a subrange of the specified byte [array] starting from [fromIndex] inclusive and
ending [toIndex] exclusive\n * with random bytes.\n *\n * @return [array] with the subrange filled with
random bytes.\n *\n * @sample samples.random.Randoms.nextBytes\n
*\n public open fun nextBytes(array: ByteArray, fromIndex: Int = 0, toIndex: Int = array.size): ByteArray {\n
require(fromIndex in 0..array.size && toIndex in 0..array.size) { \"fromIndex ($fromIndex) or toIndex ($toIndex)
are out of range: 0..${array.size}.\" }\n    require(fromIndex <= toIndex) { \"fromIndex ($fromIndex) must be not
greater than toIndex ($toIndex).\" }\n    val steps = (toIndex - fromIndex) / 4\n    var position = fromIndex\n
repeat(steps) {\n    val v = nextInt()\n    array[position] = v.toByte()\n    array[position + 1] =
v.ushr(8).toByte()\n    array[position + 2] = v.ushr(16).toByte()\n    array[position + 3] =
v.ushr(24).toByte()\n    position += 4\n }\n    val remainder = toIndex - position\n    val vr =
nextBits(remainder * 8)\n    for (i in 0 until remainder) {\n    array[position + i] = vr.ushr(i * 8).toByte()\n
}\n    return
array\n }\n\n /**\n * Fills the specified byte [array] with random bytes and returns it.\n *\n * @return
[array] filled with random bytes.\n *\n * @sample samples.random.Randoms.nextBytes\n
*\n public open
fun nextBytes(array: ByteArray): ByteArray = nextBytes(array, 0, array.size)\n\n /**\n * Creates a byte array of
the specified [size], filled with random bytes.\n *\n * @sample samples.random.Randoms.nextBytes\n
*\n public open
fun nextBytes(size: Int): ByteArray = nextBytes(ByteArray(size))\n\n /**\n * The default random
number generator.\n *\n * On JVM this generator is thread-safe, its methods can be invoked from multiple
threads.\n *\n * @sample samples.random.Randoms.defaultRandom\n
*\n companion object Default :
Random(), Serializable {\n    private val defaultRandom: Random = defaultPlatformRandom()\n    private
object Serialized : Serializable {\n    private const
val serialVersionUID = 0L\n    private fun readResolve(): Any = Random\n    }\n    private fun
writeReplace(): Any = Serialized\n    override fun nextBits(bitCount: Int): Int =
defaultRandom.nextBits(bitCount)\n    override fun nextInt(): Int = defaultRandom.nextInt()\n    override fun
nextInt(until: Int): Int = defaultRandom.nextInt(until)\n    override fun nextInt(from: Int, until: Int): Int =
defaultRandom.nextInt(from, until)\n    override fun nextLong(): Long = defaultRandom.nextLong()\n
override fun nextLong(until: Long): Long = defaultRandom.nextLong(until)\n    override fun nextLong(from:
Long, until: Long): Long = defaultRandom.nextLong(from, until)\n    override fun nextBoolean(): Boolean =
defaultRandom.nextBoolean()\n    override fun nextDouble(): Double = defaultRandom.nextDouble()\n
override fun
nextDouble(until: Double): Double = defaultRandom.nextDouble(until)\n    override fun
nextDouble(from:
Double, until: Double): Double = defaultRandom.nextDouble(from, until)\n    override fun nextFloat(): Float =
defaultRandom.nextFloat()\n    override fun nextBytes(array: ByteArray): ByteArray =
defaultRandom.nextBytes(array)\n    override fun nextBytes(size: Int): ByteArray =
defaultRandom.nextBytes(size)\n    override fun nextBytes(array: ByteArray, fromIndex: Int, toIndex: Int):
ByteArray =\n    defaultRandom.nextBytes(array, fromIndex, toIndex)\n }\n\n /**\n * Returns a repeatable
random number generator seeded with the given [seed] `Int` value.\n *\n * Two generators with the same seed

```



produce the same sequence of values within the same version of Kotlin runtime.\n \* \n \* \*Note:\* Future versions of Kotlin may change the algorithm of this seeded number generator so that it will return\n \* a sequence of values different from the current one for a given seed.\n \* \n \* On JVM the returned generator is NOT thread-safe. Do not invoke it from multiple threads

```
without proper synchronization.\n * \n * @sample samples.random.Randoms.seededRandom\n *\n@SinceKotlin("1.3")\npublic fun Random(seed: Int): Random = XorWowRandom(seed, seed.shr(31))\n\n/**\n * Returns a repeatable random number generator seeded with the given [seed] `Long` value.\n * \n * Two generators with the same seed produce the same sequence of values within the same version of Kotlin runtime.\n * \n * *Note:* Future versions of Kotlin may change the algorithm of this seeded number generator so that it will return\n * a sequence of values different from the current one for a given seed.\n * \n * On JVM the returned generator is NOT thread-safe. Do not invoke it from multiple threads without proper synchronization.\n * \n * @sample samples.random.Randoms.seededRandom\n *\n@SinceKotlin("1.3")\npublic fun Random(seed: Long): Random = XorWowRandom(seed.toInt(), seed.shr(32).toInt())\n\n\n/**\n * Gets the next random `Int` from the random number generator in the specified [range].\n
```

```
\n * Generates an `Int` random value uniformly distributed in the specified [range]:\n * from `range.start` inclusive to `range.endInclusive` inclusive.\n * \n * @throws IllegalArgumentException if [range] is empty.\n
```

```
\n@SinceKotlin("1.3")\npublic fun Random.nextInt(range: IntRange): Int = when {\n    range.isEmpty() -> throw IllegalArgumentException("Cannot get random in empty range: $range")\n    range.last < Int.MAX_VALUE -> nextInt(range.first, range.last + 1)\n    range.first > Int.MIN_VALUE -> nextInt(range.first - 1, range.last) + 1\n    else -> nextInt()\n}\n\n/**\n * Gets the next random `Long` from the random number generator in the specified [range].\n * \n * Generates a `Long` random value uniformly distributed in the specified [range]:\n * from `range.start` inclusive to `range.endInclusive` inclusive.\n * \n * @throws IllegalArgumentException if [range] is empty.\n *\n@SinceKotlin("1.3")\npublic fun Random.nextLong(range: LongRange): Long = when {\n    range.isEmpty()\n
```

```
-> throw IllegalArgumentException("Cannot get random in empty range: $range")\n    range.last < Long.MAX_VALUE -> nextLong(range.first, range.last + 1)\n    range.first > Long.MIN_VALUE -> nextLong(range.first - 1, range.last) + 1\n    else -> nextLong()\n}\n\n\ninternal expect fun defaultPlatformRandom(): Random\n\ninternal expect fun doubleFromParts(hi26: Int, low27: Int): Double\n\ninternal fun fastLog2(value: Int): Int = 31 - value.countLeadingZeroBits()\n\n/**\n * Takes upper [bitCount] bits (0..32) from this number.\n *\ninternal fun Int.takeUpperBits(bitCount: Int): Int =\n    this.ushr(32 - bitCount) and (-bitCount).shr(31)\n\ninternal fun checkRangeBounds(from: Int, until: Int) = require(until > from) {\n    boundsErrorMessage(from, until) }\n\ninternal fun checkRangeBounds(from: Long, until: Long) = require(until > from) {\n    boundsErrorMessage(from, until) }\n\ninternal fun checkRangeBounds(from: Double, until: Double) = require(until > from) {\n    boundsErrorMessage(from, until) }\n\ninternal\n
```

```
fun boundsErrorMessage(from: Any, until: Any) = "Random range is empty: [$from, $until]."\n\n\nCopyright 2010-2021 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n *\n\npackage\n
```

```
kotlin.random\n\n\n/**\n * Gets the next random [UInt] from the random number generator.\n * \n * Generates a [UInt] random value uniformly distributed between [UInt.MIN_VALUE] and [UInt.MAX_VALUE] (inclusive).\n
```

```
\n *\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun Random.nextUInt(): UInt = nextInt().toUInt()\n\n\n/**\n * Gets the next random [UInt] from the random number generator less than the specified [until] bound.\n * \n * Generates a [UInt] random value uniformly distributed between `0` (inclusive) and the specified [until] bound (exclusive).\n * \n * @throws IllegalArgumentException if [until] is zero.\n *\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun Random.nextUInt(until: UInt): UInt = nextUInt(0u, until)\n\n\n/**\n * Gets the next random [UInt] from the random number generator in the specified range.\n * \n * Generates a [UInt] random value uniformly distributed between the specified [from] (inclusive) and [until] (exclusive) bounds.\n * \n * @throws IllegalArgumentException if [from] is greater than or equal to [until].\n
```

```

*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun
Random.nextIntUInt(from: UInt, until: UInt): UInt {\n    checkUIntRangeBounds(from, until)\n\n    val signedFrom =
from.toInt() xor Int.MIN_VALUE\n    val signedUntil = until.toInt() xor Int.MIN_VALUE\n\n    val signedResult =
nextInt(signedFrom, signedUntil) xor Int.MIN_VALUE\n    return signedResult.toUInt()\n}\n\n/**\n * Gets the next
random [UInt] from the random number generator in the specified [range].\n * Generates a [UInt] random value
uniformly distributed
in the specified [range]:\n * from `range.start` inclusive to `range.endInclusive` inclusive.\n * @throws
IllegalArgumentException if [range] is empty.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun
Random.nextIntUInt(range: UIntRange): UInt = when {\n    range.isEmpty() -> throw
IllegalArgumentException("Cannot get random in empty range: $range")\n    range.last < UInt.MAX_VALUE ->
nextIntUInt(range.first, range.last + 1u)\n    range.first > UInt.MIN_VALUE -> nextUInt(range.first - 1u, range.last) +
1u\n    else -> nextUInt()\n}\n\n/**\n * Gets the next random [ULong] from the random number generator.\n * Generates a [ULong] random value uniformly distributed between [ULong.MIN_VALUE] and
[ULong.MAX_VALUE] (inclusive).\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun
Random.nextULong(): ULong = nextLong().toULong()\n\n/**\n * Gets the next random [ULong] from the random
number generator
less than the specified [until] bound.\n * Generates a [ULong] random value uniformly distributed between `0`
(inclusive) and the specified [until] bound (exclusive).\n * @throws IllegalArgumentException if [until] is
zero.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun
Random.nextULong(until: ULong): ULong = nextULong(0uL, until)\n\n/**\n * Gets the next random [ULong] from
the random number generator in the specified range.\n * Generates a [ULong] random value uniformly
distributed between the specified [from] (inclusive) and [until] (exclusive) bounds.\n * @throws
IllegalArgumentException if [from] is greater than or equal to [until].\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun
Random.nextULong(from: ULong, until: ULong): ULong {\n    checkULongRangeBounds(from, until)\n\n    val
signedFrom = from.toLong() xor Long.MIN_VALUE\n    val signedUntil = until.toLong() xor
Long.MIN_VALUE\n\n    val signedResult = nextLong(signedFrom, signedUntil) xor Long.MIN_VALUE\n    return
signedResult.toULong()\n}\n\n/**\n * Gets the next random [ULong] from the random number generator in the
specified [range].\n * Generates a [ULong] random value uniformly distributed in the specified [range]:\n * from
`range.start` inclusive to `range.endInclusive` inclusive.\n * @throws IllegalArgumentException if [range] is
empty.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun
Random.nextULong(range: ULongRange): ULong = when {\n    range.isEmpty() -> throw
IllegalArgumentException("Cannot get random in empty range: $range")\n    range.last < ULong.MAX_VALUE -
> nextULong(range.first, range.last + 1u)\n    range.first > ULong.MIN_VALUE -> nextULong(range.first - 1u,
range.last) + 1u\n    else -> nextULong()\n}\n\n/**\n * Fills the specified unsigned byte [array] with random bytes
and returns it.\n * @return [array] filled with
random bytes.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun
Random.nextUBytes(array: UByteArray): UByteArray {\n    nextBytes(array.asByteArray())\n    return
array\n}\n\n/**\n * Creates an unsigned byte array of the specified [size], filled with random bytes.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun Random.nextUBytes(size: Int): UByteArray
= nextBytes(size).asUByteArray()\n\n/**\n * Fills a subrange of the specified `UByte` [array] starting from
[fromIndex] inclusive and ending [toIndex] exclusive with random UBytes.\n * @return [array] with the
subrange filled with random bytes.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun
Random.nextUBytes(array: UByteArray, fromIndex: Int = 0, toIndex: Int = array.size): UByteArray {\n
    nextBytes(array.asByteArray(), fromIndex, toIndex)\n    return array\n}\n\ninternal fun

```

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checkUIntRangeBounds(from: UInt, until: UInt) = require(until > from) { boundsErrorMessage(from,
until) }\ninternal fun checkULongRangeBounds(from: ULong, until: ULong) = require(until > from) {
boundsErrorMessage(from, until) }\n", "/*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming
Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n */\n\npackage kotlin.random\n\n/**\n * Random number generator, using Marsaglia's
\"xorwow\" algorithm\n */\n * Cycles after 2^192 - 2^32 repetitions.\n */\n * For more details, see Marsaglia, George
(July 2003). \"Xorshift RNGs\". Journal of Statistical Software. 8 (14). doi:10.18637/jss.v008.i14\n */\n * Available
at https://www.jstatsoft.org/v08/i14/paper\n */\n\ninternal class XorWowRandom internal constructor(\n private
var x: Int,\n private var y: Int,\n private var z: Int,\n private var w: Int,\n private var v: Int,\n private var
addend: Int\n) : Random(), Serializable {\n\n internal constructor(seed1: Int, seed2: Int) :\n
this(seed1, seed2, 0, 0, seed1.inv(), (seed1 shl 10) xor (seed2 ushr 4))\n\n init {\n require((x or y or z
or w or v) != 0) { \"Initial state must have at least one non-zero element.\" }\n\n // some trivial seeds can
produce several values with zeroes in upper bits, so we discard first 64\n repeat(64) { nextInt() }\n }\n\n
override fun nextInt(): Int {\n // Equivalent to the xorwow algorithm\n // From Marsaglia, G. 2003. Xorshift
RNGs. J. Statis. Soft. 8, 14, p. 5\n var t = x\n t = t xor (t ushr 2)\n x = y\n y = z\n z = w\n
val v0 = v\n w = v0\n t = (t xor (t shl 1)) xor v0 xor (v0 shl 4)\n v = t\n addend += 362437\n
return t + addend\n }\n\n override fun nextBits(bitCount: Int): Int =\n nextInt().takeUpperBits(bitCount)\n\n
private companion object {\n private const val serialVersionUID: Long = 0L\n }\n}\n", "/*\n * Copyright
2010-2022

```

```

JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the
Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\n// Auto-generated file. DO NOT
EDIT!\n\npackage kotlin.ranges\n\n/**\n * An iterator over a progression of values of type `Char`.\n * @property
step the number by which the value is incremented on each step.\n */\n\ninternal class CharProgressionIterator(first:
Char, last: Char, val step: Int) : CharIterator() {\n private val finalElement: Int = last.code\n private var
hasNext: Boolean = if (step > 0) first <= last else first >= last\n private var next: Int = if (hasNext) first.code
else finalElement\n\n override fun hasNext(): Boolean = hasNext\n\n override fun nextChar(): Char {\n val value
= next\n if (value == finalElement) {\n if (!hasNext) throw kotlin.NoSuchElementException()\n
hasNext = false\n }\n else {\n next
+= step\n }\n return value.toChar()\n }\n}\n\n/**\n * An iterator over a progression of values of type
`Int`.\n * @property step the number by which the value is incremented on each step.\n */\n\ninternal class
IntProgressionIterator(first: Int, last: Int, val step: Int) : IntIterator() {\n private val finalElement: Int = last\n
private var hasNext: Boolean = if (step > 0) first <= last else first >= last\n private var next: Int = if (hasNext) first
else finalElement\n\n override fun hasNext(): Boolean = hasNext\n\n override fun nextInt(): Int {\n val
value = next\n if (value == finalElement) {\n if (!hasNext) throw kotlin.NoSuchElementException()\n
hasNext = false\n }\n else {\n next
+= step\n }\n return value\n }\n}\n\n/**\n * An
iterator over a progression of values of type `Long`.\n * @property step the number by which the value is
incremented on each step.\n */\n\ninternal class

```

```

LongProgressionIterator(first: Long, last: Long, val step: Long) : LongIterator() {\n private val finalElement:
Long = last\n private var hasNext: Boolean = if (step > 0) first <= last else first >= last\n private var next: Long
= if (hasNext) first else finalElement\n\n override fun hasNext(): Boolean = hasNext\n\n override fun
nextLong(): Long {\n val value = next\n if (value == finalElement) {\n if (!hasNext) throw
kotlin.NoSuchElementException()\n hasNext = false\n }\n else {\n next
+= step\n }\n return value\n }\n}\n\n", "/*\n * Copyright 2010-2022 JetBrains s.r.o. and Kotlin Programming Language
contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n */\n\n// Auto-generated file. DO NOT EDIT!\n\npackage kotlin.ranges\n\nimport
kotlin.internal.getProgressionLastElement\n\n/**\n * A progression of values of type
`Char`.\n */\n\npublic open class CharProgression\n internal constructor(\n start: Char,\n
endInclusive: Char,\n step: Int\n) : Iterable<Char> {\n init {\n if (step == 0) throw

```

```

kotlin.IllegalArgumentException("Step must be non-zero.")\n    if (step == Int.MIN_VALUE) throw
kotlin.IllegalArgumentException("Step must be greater than Int.MIN_VALUE to avoid overflow on negation.")\n
}\n\n /**\n * The first element in the progression.\n */\n public val first: Char = start\n\n /**\n * The
last element in the progression.\n */\n public val last: Char = getProgressionLastElement(start.code,
endInclusive.code, step).toChar()\n\n /**\n * The step of the progression.\n */\n public val step: Int =
step\n\n override fun iterator(): CharIterator = CharProgressionIterator(first, last, step)\n\n /**\n * Checks if
the progression is empty.\n */\n * Progression with a positive step
is empty if its first element is greater than the last element.\n * Progression with a negative step is empty if its
first element is less than the last element.\n */\n public open fun isEmpty(): Boolean = if (step > 0) first > last
else first < last\n\n override fun equals(other: Any?): Boolean =\n    other is CharProgression && (isEmpty()
&& other.isEmpty()) ||\n    first == other.first && last == other.last && step == other.step)\n\n override fun
hashCode(): Int =\n    if (isEmpty()) -1 else (31 * (31 * first.code + last.code) + step)\n\n override fun toString():
String = if (step > 0) "$first..$last step $step" else "$first downTo $last step ${-step}"\n\n companion object {\n
/**\n * Creates CharProgression within the specified bounds of a closed range.\n */\n * The
progression starts with the [rangeStart] value and goes toward the [rangeEnd] value not excluding it, with the
specified [step].\n * In order
to go backwards the [step] must be negative.\n */\n * [step] must be greater than `Int.MIN_VALUE` and
not equal to zero.\n */\n public fun fromClosedRange(rangeStart: Char, rangeEnd: Char, step: Int):
CharProgression = CharProgression(rangeStart, rangeEnd, step)\n } }\n\n /**\n * A progression of values of type
`Int`.\n */\n public open class IntProgression\n    internal constructor\n    (\n        start: Int,\n        endInclusive:
Int,\n        step: Int\n    ): Iterable<Int> {\n    init {\n        if (step == 0) throw
kotlin.IllegalArgumentException("Step must be non-zero.")\n        if (step == Int.MIN_VALUE) throw
kotlin.IllegalArgumentException("Step must be greater than Int.MIN_VALUE to avoid overflow on negation.")\n
}\n\n /**\n * The first element in the progression.\n */\n public val first: Int = start\n\n /**\n * The last
element in the progression.\n */\n public val last: Int = getProgressionLastElement(start,
endInclusive, step)\n\n /**\n * The step of the progression.\n */\n public val step: Int = step\n\n override
fun iterator(): IntIterator = IntProgressionIterator(first, last, step)\n\n /**\n * Checks if the progression is
empty.\n */\n * Progression with a positive step is empty if its first element is greater than the last element.\n
* Progression with a negative step is empty if its first element is less than the last element.\n */\n public open
fun isEmpty(): Boolean = if (step > 0) first > last else first < last\n\n override fun equals(other: Any?): Boolean =\n
    other is IntProgression && (isEmpty() && other.isEmpty()) ||\n    first == other.first && last == other.last &&
step == other.step)\n\n override fun hashCode(): Int =\n    if (isEmpty()) -1 else (31 * (31 * first + last) +
step)\n\n override fun toString(): String = if (step > 0) "$first..$last step $step" else "$first downTo $last step ${-
step}"\n\n
companion object {\n    /**\n * Creates IntProgression within the specified bounds of a closed range.\n
*/\n * The progression starts with the [rangeStart] value and goes toward the [rangeEnd] value not excluding it,
with the specified [step].\n * In order to go backwards the [step] must be negative.\n */\n * [step] must
be greater than `Int.MIN_VALUE` and not equal to zero.\n */\n public fun fromClosedRange(rangeStart:
Int, rangeEnd: Int, step: Int): IntProgression = IntProgression(rangeStart, rangeEnd, step)\n } }\n\n /**\n * A
progression of values of type `Long`.\n */\n public open class LongProgression\n    internal constructor\n    (\n
start: Long,\n        endInclusive: Long,\n        step: Long\n    ): Iterable<Long> {\n    init {\n        if (step ==
0L) throw kotlin.IllegalArgumentException("Step must be non-zero.")\n        if (step == Long.MIN_VALUE)
throw kotlin.IllegalArgumentException("Step
must be greater than Long.MIN_VALUE to avoid overflow on negation.")\n    }\n\n /**\n * The first element
in the progression.\n */\n public val first: Long = start\n\n /**\n * The last element in the progression.\n
*/\n */\n public val last: Long = getProgressionLastElement(start, endInclusive, step)\n\n /**\n * The step of the
progression.\n */\n public val step: Long = step\n\n override fun iterator(): LongIterator =
LongProgressionIterator(first, last, step)\n\n /**\n * Checks if the progression is empty.\n */\n *

```

```
Progression with a positive step is empty if its first element is greater than the last element.\n * Progression with a
negative step is empty if its first element is less than the last element.\n *^ public open fun isEmpty(): Boolean
= if (step > 0) first > last else first < last\n\n override fun equals(other: Any?): Boolean =\n other is
LongProgression && (isEmpty() && other.isEmpty())
|\n first == other.first && last == other.last && step == other.step)\n\n override fun hashCode(): Int =\n if (isEmpty()) -1 else (31 * (31 * (first xor (first ushr 32)) + (last xor (last ushr 32))) + (step xor (step ushr
32))).toInt()\n\n override fun toString(): String = if (step > 0) \"$first..$last step $step\" else \"$first downTo $last
step ${-step}\"|\n\n companion object {\n /**\n * Creates LongProgression within the specified bounds of
a closed range.\n *^ The progression starts with the [rangeStart] value and goes toward the [rangeEnd]
value not excluding it, with the specified [step].\n * In order to go backwards the [step] must be negative.\n
*^ [step] must be greater than `Long.MIN_VALUE` and not equal to zero.\n *^ public fun
fromClosedRange(rangeStart: Long, rangeEnd: Long, step: Long): LongProgression = LongProgression(rangeStart,
rangeEnd, step)\n }|\n\n", "/*\n
 * Copyright 2010-2019 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code
is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\n package
kotlin.ranges\n\n /**\n * Represents a range of values (for example, numbers or characters) where both the lower and
upper bounds are included in the range.\n * See the [Kotlin language
documentation](https://kotlinlang.org/docs/reference/ranges.html) for more information.\n */\n public interface
ClosedRange<T : Comparable<T>> {\n /**\n * The minimum value in the range.\n */\n public val start:
T\n\n /**\n * The maximum value in the range (inclusive).\n */\n public val endInclusive: T\n\n /**\n *
Checks whether the specified [value] belongs to the range.\n */\n * A value belongs to the closed range if it is
greater than or equal to the [start] bound and less than or equal to the [endInclusive] bound.\n */\n public
operator
fun contains(value: T): Boolean = value >= start && value <= endInclusive\n\n /**\n * Checks whether the
range is empty.\n */\n * The range is empty if its start value is greater than the end value.\n */\n public fun
isEmpty(): Boolean = start > endInclusive\n}\n\n /**\n * Represents a range of values (for example, numbers or
characters) where the upper bound is not included in the range.\n * See the [Kotlin language
documentation](https://kotlinlang.org/docs/reference/ranges.html) for more information.\n
*/\n\n @SinceKotlin("1.7")\n @ExperimentalStdlibApi\n public interface OpenEndRange<T : Comparable<T>> {\n
/**\n * The minimum value in the range.\n */\n public val start: T\n\n /**\n * The maximum value in the
range (exclusive).\n */\n * @throws IllegalStateException can be thrown if the exclusive end bound cannot be
represented\n * with a value of type [T].\n */\n public val endExclusive: T\n\n /**\n * Checks whether
the specified [value] belongs to the range.\n */\n * A value belongs to the open-ended range if it is greater than
or equal to the [start] bound and strictly less than the [endExclusive] bound.\n */\n public operator fun
contains(value: T): Boolean = value >= start && value < endExclusive\n\n /**\n * Checks whether the range is
empty.\n */\n * The open-ended range is empty if its start value is greater than or equal to the end value.\n
*/\n public fun isEmpty(): Boolean = start >= endExclusive\n}\n", "/*\n * Copyright 2010-2018 JetBrains s.r.o. and
Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that
can be found in the license/LICENSE.txt file.\n
*/\n\n @file:kotlin.jvm.JvmMultifileClass\n @file:kotlin.jvm.JvmName("RangesKt")\n\n package
kotlin.ranges\n\n /**\n * Represents a range of [Comparable] values.\n */\n\n private open class ComparableRange<T :
Comparable<T>>(\n override val start: T,\n
override val endInclusive: T\n) : ClosedRange<T> {\n\n override fun equals(other: Any?): Boolean {\n
return other is ComparableRange<* > && (isEmpty() && other.isEmpty()) |\n start == other.start &&
endInclusive == other.endInclusive\n }\n\n override fun hashCode(): Int {\n return if (isEmpty()) -1 else 31
* start.hashCode() + endInclusive.hashCode()\n }\n\n override fun toString(): String =
\"$start..$endInclusive\"|\n\n /**\n * Creates a range from this [Comparable] value to the specified [that] value.\n
*/\n * This value needs to be smaller than or equal to [that] value, otherwise the returned range will be empty.\n
*/\n
}
```

```

@sample samples.ranges.Ranges.rangeFromComparable\n *\npublic operator fun <T : Comparable<T>>
T.rangeTo(that: T): ClosedRange<T> = ComparableRange(this, that)\n\n/**\n * Represents a range of [Comparable]
values.\n *\n@OptIn(ExperimentalStdlibApi::class)\nprivate open class ComparableOpenEndRange<T :
Comparable<T>>(\n
    override val start: T,\n    override val endExclusive: T)\n) : OpenEndRange<T> {\n\n    override fun equals(other:
Any?): Boolean {\n        return other is ComparableOpenEndRange<*> && (isEmpty() && other.isEmpty() ||\n            start == other.start && endExclusive == other.endExclusive)\n    }\n\n    override fun hashCode(): Int {\n
return if (isEmpty()) -1 else 31 * start.hashCode() + endExclusive.hashCode()\n    }\n\n    override fun toString():
String = \"$start..$endExclusive\"\n}\n\n/**\n * Creates an open-ended range from this [Comparable] value to the
specified [that] value.\n *\n * This value needs to be smaller than [that] value, otherwise the returned range will be
empty.\n *\n@sample samples.ranges.Ranges.rangeFromComparable\n
*\n@SinceKotlin("1.7")\n@ExperimentalStdlibApi\npublic operator fun <T : Comparable<T>>
T.rangeUntil(that: T): OpenEndRange<T> = ComparableOpenEndRange(this, that)\n\n/**\n * Represents a range
of floating point numbers.\n *\n * Extends
[ClosedRange] interface providing custom operation [lessThanOrEquals] for comparing values of range domain
type.\n *\n * This interface is implemented by floating point ranges returned by [Float.rangeTo] and
[Double.rangeTo] operators to\n * achieve IEEE-754 comparison order instead of total order of floating point
numbers.\n *\n@SinceKotlin("1.1")\npublic interface ClosedFloatingPointRange<T : Comparable<T>> :
ClosedRange<T> {\n    override fun contains(value: T): Boolean = lessThanOrEquals(start, value) &&
lessThanOrEquals(value, endInclusive)\n    override fun isEmpty(): Boolean = !lessThanOrEquals(start,
endInclusive)\n\n    /**\n     * Compares two values of range domain type and returns true if first is less than or
equal to second.\n     *\n     * fun lessThanOrEquals(a: T, b: T): Boolean\n    }\n\n/**\n * A closed range of values of
type `Double`.\n *\n * Numbers are compared with the ends of this range according to IEEE-754.\n *\nprivate class
ClosedDoubleRange(\n    start:
    Double,\n    endInclusive: Double)\n) : ClosedFloatingPointRange<Double> {\n    private val _start = start\n
private val _endInclusive = endInclusive\n    override val start: Double get() = _start\n    override val endInclusive:
Double get() = _endInclusive\n\n    override fun lessThanOrEquals(a: Double, b: Double): Boolean = a <= b\n\n
override fun contains(value: Double): Boolean = value >= _start && value <= _endInclusive\n    override fun
isEmpty(): Boolean = !(_start <= _endInclusive)\n\n    override fun equals(other: Any?): Boolean {\n        return
other is ClosedDoubleRange && (isEmpty() && other.isEmpty() ||\n            _start == other._start &&
_endInclusive == other._endInclusive)\n    }\n\n    override fun hashCode(): Int {\n        return if (isEmpty()) -1 else
31 * _start.hashCode() + _endInclusive.hashCode()\n    }\n\n    override fun toString(): String =
\"$_start..$_endInclusive\"\n}\n\n/**\n * Creates a range from this [Double] value to the specified [that]
value.\n *\n * Numbers are compared with the ends of this range according to IEEE-754.\n *\n@sample
samples.ranges.Ranges.rangeFromDouble\n *\n@SinceKotlin("1.1")\npublic operator fun Double.rangeTo(that:
Double): ClosedFloatingPointRange<Double> = ClosedDoubleRange(this, that)\n\n/**\n * An open-ended range of
values of type `Double`.\n *\n * Numbers are compared with the ends of this range according to IEEE-754.\n
*\n@OptIn(ExperimentalStdlibApi::class)\nprivate class OpenEndDoubleRange(\n    start: Double,\n    endExclusive: Double)\n) : OpenEndRange<Double> {\n    private val _start = start\n    private val _endExclusive =
endExclusive\n    override val start: Double get() = _start\n    override val endExclusive: Double get() =
_endExclusive\n\n    private fun lessThanOrEquals(a: Double, b: Double): Boolean = a <= b\n\n    override fun
contains(value: Double): Boolean = value >= _start && value < _endExclusive\n    override fun isEmpty(): Boolean
= !(_start < _endExclusive)\n\n
    override fun equals(other: Any?): Boolean {\n        return other is OpenEndDoubleRange && (isEmpty() &&
other.isEmpty() ||\n            _start == other._start && _endExclusive == other._endExclusive)\n    }\n\n    override
fun hashCode(): Int {\n        return if (isEmpty()) -1 else 31 * _start.hashCode() + _endExclusive.hashCode()\n    }\n\n
    override fun toString(): String = \"$start..$_endExclusive\"\n}\n\n/**\n * Creates an open-ended range
from this [Double] value to the specified [that] value.\n *\n * Numbers are compared with the ends of this range

```

according to IEEE-754.

```

@SinceKotlin("1.7")
@ExperimentalStdlibApi
public operator fun
Double.rangeUntil(that: Double): OpenEndRange<Double> = OpenEndDoubleRange(this, that)

```

A closed range of values of type `Float`. Numbers are compared with the ends of this range according to IEEE-754.

```

private class ClosedFloatRange(
    start: Float,
    endInclusive: Float
) :
    ClosedFloatingPointRange<Float>
{
    private val _start = start
    private val _endInclusive = endInclusive
    override val start: Float get() =
        _start
    override val endInclusive: Float get() = _endInclusive
    override fun lessThanOrEquals(a: Float, b:
        Float): Boolean = a <= b
    override fun contains(value: Float): Boolean = value >= _start && value <=
        _endInclusive
    override fun isEmpty(): Boolean = !(_start <= _endInclusive)
    override fun equals(other:
        Any?): Boolean {
        return other is ClosedFloatRange && (isEmpty() && other.isEmpty() ||
            _start
            == other._start && _endInclusive == other._endInclusive)
    }
    override fun hashCode(): Int {
        return if
            (isEmpty()) -1 else 31 * _start.hashCode() + _endInclusive.hashCode()
    }
    override fun toString(): String =
        "\$_start..$_endInclusive"
}

```

Creates a range from this [Float] value to the specified [that] value. Numbers are compared with the ends of this range according to IEEE-754.

```

@sample samples.ranges.Ranges.rangeFromFloat
@SinceKotlin("1.1")
public operator
fun Float.rangeTo(that: Float): ClosedFloatingPointRange<Float> = ClosedFloatRange(this, that)

```

An open-ended range of values of type `Float`. Numbers are compared with the ends of this range according to IEEE-754.

```

@OptIn(ExperimentalStdlibApi::class)
private class OpenEndFloatRange(
    start: Float,
    endExclusive: Float
) : OpenEndRange<Float> {
    private val _start = start
    private val _endExclusive =
        endExclusive
    override val start: Float get() = _start
    override val endExclusive: Float get() =
        _endExclusive
    private fun lessThanOrEquals(a: Float, b: Float): Boolean = a <= b
    override fun
        contains(value: Float): Boolean = value >= _start && value < _endExclusive
    override fun isEmpty(): Boolean =
        !(_start < _endExclusive)
    override fun equals(other: Any?): Boolean {
        return other is
            OpenEndFloatRange
            && (isEmpty() && other.isEmpty() ||
                _start == other._start && _endExclusive ==
                other._endExclusive)
    }
    override fun hashCode(): Int {
        return if (isEmpty()) -1 else 31 *
            _start.hashCode() + _endExclusive.hashCode()
    }
    override fun toString(): String =
        "\$_start..<$_endExclusive"
}

```

Creates an open-ended range from this [Float] value to the specified [that] value. Numbers are compared with the ends of this range according to IEEE-754.

```

@SinceKotlin("1.7")
@ExperimentalStdlibApi
public operator fun Float.rangeUntil(that: Float):
    OpenEndRange<Float> = OpenEndFloatRange(this, that)

```

Returns `true` if this iterable range contains the specified [element]. Always returns `false` if the [element] is `null`.

```

@SinceKotlin("1.3")
@kotlin.internal.InlineOnly
public inline operator fun <T, R> R.contains(element: T?):
    Boolean where T : Any, R : ClosedRange<T>, R : Iterable<T> =
        element
        != null && contains(element)

```

Returns `true` if this iterable range contains the specified [element]. Always returns `false` if the [element] is `null`.

```

@SinceKotlin("1.7")
@ExperimentalStdlibApi
@kotlin.internal.InlineOnly
public inline operator fun <T,
    R> R.contains(element: T?): Boolean where T : Any, R : OpenEndRange<T>, R : Iterable<T> =
        element != null
        && contains(element)

```

internal fun checkStepIsPositive(isPositive: Boolean, step: Number) { if (!isPositive) throw IllegalArgumentException("Step must be positive, was: \$step.") }

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```

@file:kotlin.jvm.JvmName("KClasses")
@file:Suppress("UNCHECKED_CAST")
package
kotlin.reflect
import kotlin.internal.LowPriorityInOverloadResolution

```

Casts the given [value] to the class represented by this [KClass] object. Throws an exception if the value is `null` or if it is not an instance of this class. This is an experimental function that behaves as a similar function from `kotlin.reflect.full` on JVM.

```

@see [KClass.isInstance]
@see [KClass.safeCast]

```

```

@SinceKotlin("1.4")
@WasExperimental(ExperimentalStdlibApi::class)
@LowPriorityInOverloadResoluti

```

on fun <T : Any> KClass<T>.cast(value: Any?): T {  
 if (!isInstance(value)) throw ClassCastException("Value cannot be cast to \$qualifiedOrSimpleName")  
 return value as T  
}  
// TODO: replace with qualifiedName when it is fully supported in K/JS  
internal expect val KClass<\*>.qualifiedOrSimpleName: String?  
Casts the given [value] to the class represented by this [KClass] object.  
Returns `null` if the value is `null` or if it is not an instance of this class.  
This is an experimental function that behaves as a similar function from `kotlin.reflect.full`

on JVM.  
@see [KClass.isInstance]  
@see [KClass.cast]  
@SinceKotlin("1.4")  
@WasExperimental(ExperimentalStdlibApi::class)  
@LowPriorityInOverloadResolution  
on fun <T : Any> KClass<T>.safeCast(value: Any?): T? {  
 return if (isInstance(value)) value as T else null  
}  
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Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.  
package kotlin.reflect  
import kotlin.jvm.JvmField  
import kotlin.jvm.JvmStatic  
Represents a type projection. Type projection is usually the argument to another type in a type usage.  
For example, in the type `Array<out Number>`, `out Number` is the covariant projection of the type represented by the class `Number`.  
Type projection is either the star projection, or an entity consisting of a specific type plus optional variance.  
See the [Kotlin

language documentation](https://kotlinlang.org/docs/reference/generics.html#type-projections) for more information.  
@SinceKotlin("1.1")  
public data class KTypeProjection constructor(  
 /\*\*  
 \* The use-site variance specified in the projection, or `null` if this is a star projection.  
 \*/  
 public val variance: KVariance?,  
 /\*\*  
 \* The type specified in the projection, or `null` if this is a star projection.  
 \*/  
 public val type: KType?) {  
 init {  
 require((variance == null) == (type == null)) {  
 if (variance == null)  
 "Star projection must have no type specified."  
 else  
 "The projection variance \$variance requires type to be specified."  
 }  
 }  
 override fun toString(): String = when (variance) {  
 null -> "\*/"  
 KVariance.INVARIANT -> type.toString() + " " + KVariance.IN -> "in \$type"  
 KVariance.OUT -> "out \$type"  
 }  
}

public companion object {  
 // provided for compiler access  
 @JvmField  
 @PublishedApi  
 internal val star: KTypeProjection = KTypeProjection(null, null)  
 /\*\*  
 \* Star projection, denoted by the `\*` character.  
 \* For example, in the type `KClass<\*>`, `\*` is the star projection.  
 \* See the [Kotlin language documentation](https://kotlinlang.org/docs/reference/generics.html#star-projections) for more information.  
 \*/  
 public val STAR: KTypeProjection get() = star  
 /\*\*  
 \* Creates an invariant projection of a given type. Invariant projection is just the type itself,  
 \* without any use-site variance modifiers applied to it.  
 \* For example, in the type `Set<String>`, `String` is an invariant projection of the type represented by the class `String`.  
 \*/  
 @JvmStatic  
 public fun invariant(type: KType):

KTypeProjection =  
 KTypeProjection(KVariance.INVARIANT, type)  
 /\*\*  
 \* Creates a contravariant projection of a given type, denoted by the `in` modifier applied to a type.  
 \* For example, in the type `MutableList<in Number>`, `in Number` is a contravariant projection of the type of class `Number`.  
 \*/  
 @JvmStatic  
 public fun contravariant(type: KType):

KTypeProjection =  
 KTypeProjection(KVariance.IN, type)  
 /\*\*  
 \* Creates a covariant projection of a given type, denoted by the `out` modifier applied to a type.  
 \* For example, in the type `Array<out Number>`, `out Number` is a covariant projection of the type of class `Number`.  
 \*/  
 @JvmStatic  
 public fun covariant(type: KType): KTypeProjection =

KTypeProjection(KVariance.OUT, type)  
}  
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package kotlin.reflect  
Represents variance applied to a type parameter on the declaration site (\*declaration-site variance\*), or to a type in a projection (\*use-site variance\*).  
See the [Kotlin language

documentation](https://kotlinlang.org/docs/reference/generics.html#variance) for more information.  
@see [KTypeParameter.variance]  
@see [KTypeProjection]  
@SinceKotlin("1.1")  
enum class KVariance



{\n /\*\*\n \* The affected type parameter or type is \*invariant\*, which means it has no variance applied to it.\n \*\n INVARIANT,\n\n /\*\*\n \* The affected type parameter or type is \*contravariant\*. Denoted by the `in` modifier in the source code.\n \*\n IN,\n\n /\*\*\n \* The affected type parameter or type is \*covariant\*. Denoted by the `out` modifier in the source code.\n \*\n OUT,\n}"/\*\*\n \* Copyright 2010-2019 JetBrains s.r.o. and Kotlin

Programming Language contributors.\n \* Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n \*\n\npackage kotlin.reflect\n\n/\*\*\n \* Returns a runtime representation of the given reified type [T] as an instance of [KType].\n \*\n \* Note that on JVM, the created type has no annotations ([KType.annotations] returns an empty list)\n \* even if the type in the source code is annotated. Support for type annotations might be added in a future version.\n

```
*\n@SinceKotlin("1.6")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic inline fun <reified T> typeOf(): KType =\n    throw UnsupportedOperationException("This function is implemented as an intrinsic on all supported platforms.")\n"/**\n * Copyright 2010-2019 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
```

```
*\n\n@file:kotlin.jvm.JvmMultifileClass\n@file:kotlin.jvm.JvmName("StringsKt")\n\npackage kotlin.text\n\n/**\n * An object to which char sequences and values can be appended.\n *\nexpect interface Appendable {\n /**\n * Appends the specified character [value] to this Appendable and returns this instance.\n *\n * @param value the character to append.\n *\n fun append(value: Char): Appendable\n\n /**\n * Appends the specified character sequence [value] to this Appendable and returns this instance.\n *\n * @param value the character sequence to append. If [value] is `null`, then the four characters `"\n\n\n\n"` are appended to this Appendable.\n *\n fun append(value: CharSequence?): Appendable\n\n /**\n * Appends a subsequence of the specified character sequence [value] to this Appendable and returns this instance.\n *\n * @param value the character sequence from which a subsequence is appended. If [value] is `null`,\n * then characters are appended as if [value] contained the four characters `"\n\n\n\n"`. \n *\n * @param startIndex the beginning (inclusive) of the subsequence to append.\n * @param endIndex the end (exclusive) of the subsequence to append.\n *\n * @throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of range of the [value] character sequence indices or when `startIndex > endIndex`. \n *\n fun append(value: CharSequence?, startIndex: Int, endIndex: Int): Appendable\n}\n\n/**\n * Appends a subsequence of the specified character sequence [value] to this Appendable and returns this instance.\n *\n * @param value the character sequence from which a subsequence is appended.\n * @param startIndex the beginning (inclusive) of the subsequence to append.\n * @param endIndex the end (exclusive) of the subsequence to append.\n *\n * @throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of range of the [value] character
```

```
sequence indices or when `startIndex > endIndex`. \n\n*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic fun <T : Appendable> T.appendRange(value: CharSequence, startIndex: Int, endIndex: Int): T {\n\n @Suppress("UNCHECKED_CAST")\n    return append(value, startIndex, endIndex) as T\n}\n\n/**\n * Appends all arguments to the given [Appendable].\n *\npublic fun <T : Appendable> T.append(vararg value: CharSequence?): T {\n    for (item in value)\n        append(item)\n    return this\n}\n\n/**\n * Appends a line feed character (`\n`) to this Appendable.\n *\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun Appendable.appendLine(): Appendable = append("\n")\n\n/**\n * Appends value to the given Appendable and a line feed character (`\n`) after it.\n *\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun Appendable.appendLine(value: CharSequence?): Appendable = append(value).appendLine()\n\n/**\n * Appends value to the given
```

```
Appendable and a line feed character (`\n`) after it.\n\n*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun Appendable.appendLine(value: Char):
```

```

Appendable = append(value).appendLine()\n\n\ninternal fun <T> Appendable.appendElement(element: T,
transform: ((T) -> CharSequence)?) {\n    when {\n        transform != null -> append(transform(element))\n        element is CharSequence? -> append(element)\n        element is Char -> append(element)\n        else ->
append(element.toString())\n    }\n}\n"/*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming
Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n
*/\n\n@file:kotlin.jvm.JvmMultifileClass\n@file:kotlin.jvm.JvmName("StringsKt")\n\npackage
kotlin.text\n/**\n * Trims leading whitespace characters followed by [marginPrefix] from every line of a source
string and removes\n * the first and the last lines if they
are blank (notice difference blank vs empty).\n *\n * Doesn't affect a line if it doesn't contain [marginPrefix] except
the first and the last blank lines.\n *\n * Doesn't preserve the original line endings.\n *\n * @param marginPrefix
non-blank string, which is used as a margin delimiter. Default is `|` (pipe character).\n *\n * @sample
samples.text.Strings.trimMargin\n * @see trimIndent\n * @see kotlin.text.isWhitespace\n
*/\n\n@kotlin.internal.IntrinsicConstEvaluation\n\npublic fun String.trimMargin(marginPrefix: String = "|"): String
=\n    replaceIndentByMargin("|", marginPrefix)\n\n/**\n * Detects indent by [marginPrefix] as it does
[trimMargin] and replace it with [newIndent].\n *\n * @param marginPrefix non-blank string, which is used as a
margin delimiter. Default is `|` (pipe character).\n *\n */\n\npublic fun String.replaceIndentByMargin(newIndent: String =
"|", marginPrefix: String = "|"): String {\n    require(marginPrefix.isNotBlank()) { `|`marginPrefix must be non-
blank string.`\n
}\n    val lines = lines()\n    return lines.reindent(length + newIndent.length * lines.size,
getIndentFunction(newIndent), { line ->\n        val firstNonWhitespaceIndex = line.indexOfFirst { !it.isWhitespace()
}\n\n        when {\n            firstNonWhitespaceIndex == -1 -> null\n            line.startsWith(marginPrefix,
firstNonWhitespaceIndex) -> line.substring(firstNonWhitespaceIndex + marginPrefix.length)\n            else -> null\n
}\n    })\n}\n\n/**\n * Detects a common minimal indent of all the input lines, removes it from every line and
also removes the first and the last\n * lines if they are blank (notice difference blank vs empty).\n *\n * Note that
blank lines do not affect the detected indent level.\n *\n * In case if there are non-blank lines with no leading
whitespace characters (no indent at all) then the\n * common indent is 0, and therefore this function doesn't change
the indentation.\n *\n * Doesn't preserve the original line endings.\n *\n * @sample
samples.text.Strings.trimIndent\n * @see trimMargin\n * @see kotlin.text.isBlank\n
*/\n\n@kotlin.internal.IntrinsicConstEvaluation\n\npublic fun String.trimIndent(): String = replaceIndent("\\")\n\n/**\n * Detects a common minimal indent like it does [trimIndent] and replaces it with the specified [newIndent].\n
*/\n\npublic fun String.replaceIndent(newIndent: String = "\\"): String {\n    val lines = lines()\n    val
minCommonIndent = lines\n        .filter(String::isNotBlank)\n        .map(String::indentWidth)\n        .minOrNull() ?:
0\n    return lines.reindent(length + newIndent.length * lines.size, getIndentFunction(newIndent), { line ->
line.drop(minCommonIndent) })\n}\n\n/**\n * Prepends [indent] to every line of the original string.\n *\n * Doesn't
preserve the original line endings.\n *\n */\n\npublic fun String.prependIndent(indent: String = " "): String =\n    lineSequence()\n        .map {\n            when {\n                it.isBlank() -> {\n                    when {\n
                        it.length < indent.length -> indent\n                        else -> it\n                    }\n                }\n            else -> indent + it\n        }\n    }.joinToString("\\n")\n\nprivate fun String.indentWidth(): Int =
indexOfFirst { !it.isWhitespace() }.let { if (it == -1) length else it }\n\nprivate fun getIndentFunction(indent: String)
= when {\n    indent.isEmpty() -> { line: String -> line }\n    else -> { line: String -> indent + line }\n}\n\nprivate
inline fun List<String>.reindent(\n    resultSizeEstimate: Int,\n    indentAddFunction: (String) -> String,\n    indentCutFunction: (String) -> String?): String {\n    val lastIndex = lastIndex\n    return mapIndexedNotNull {
index, value ->\n        if ((index == 0 || index == lastIndex) && value.isBlank())\n            null\n        else\n            indentCutFunction(value)?.let(indentAddFunction)?: value\n    }\n    .joinTo(StringBuilder(resultSizeEstimate),
"\n")\n
.toString()\n}\n"/*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language
contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the

```

```

license/LICENSE.txt file.\n */\n\npackage kotlin.text\n\n/**\n * Defines names for Unicode symbols used in proper
Typography.\n */\npublic object Typography {\n    /** The character &#x22; \u2013 quotation mark */\n    public
const val quote: Char = "\u0022\n    /** The character &#x24; \u2013 dollar sign */\n    public const val dollar:
Char = "\u0024\n    /** The character &#x26; \u2013 ampersand */\n    public const val amp: Char = "\u0026\n
    /** The character &#x3C; \u2013 less-than sign */\n    public const val less: Char = "\u003C\n    /** The character
&#x3E; \u2013 greater-than sign */\n    public const val greater: Char = "\u003E\n    /** The non-breaking space
character */\n    public const val nbsp: Char = "\u00A0\n    /** The character &#xD7; */\n    public
const val times: Char = "\u00D7\n    /** The character &#xA2; */\n    public const val cent: Char = "\u00A2\n
    /** The character &#xA3; */\n    public const val pound: Char = "\u00A3\n    /** The character &#xA7; */\n
    public const val section: Char = "\u00A7\n    /** The character &#xA9; */\n    public const val copyright: Char =
\u00A9\n    /** The character &#xAB; */\n    @SinceKotlin("1.6")\n    public const val leftGuillemet: Char =
\u00AB\n    /** The character &#xBB; */\n    @SinceKotlin("1.6")\n    public const val rightGuillemet: Char =
\u00BB\n    /** The character &#xAE; */\n    public const val registered: Char = "\u00AE\n    /** The character
&#xB0; */\n    public const val degree: Char = "\u00B0\n    /** The character &#xB1; */\n    public const val
plusMinus: Char = "\u00B1\n    /** The character &#xB6; */\n    public const val paragraph: Char = "\u00B6\n
    /** The character &#xB7; */\n    public const val middleDot: Char = "\u00B7\n
    /** The character &#xBD; */\n    public const val half: Char = "\u00BD\n    /** The character &#x2013; */\n
    public const val ndash: Char = "\u2013\n    /** The character &#x2014; */\n    public const val mdash: Char =
\u2014\n    /** The character &#x2018; */\n    public const val leftSingleQuote: Char = "\u2018\n    /** The
character &#x2019; */\n    public const val rightSingleQuote: Char = "\u2019\n    /** The character &#x201A; */\n
    public const val lowSingleQuote: Char = "\u201A\n    /** The character &#x201C; */\n    public const val
leftDoubleQuote: Char = "\u201C\n    /** The character &#x201D; */\n    public const val rightDoubleQuote: Char
= "\u201D\n    /** The character &#x201E; */\n    public const val lowDoubleQuote: Char = "\u201E\n    /** The
character &#x2020; */\n    public const val dagger: Char = "\u2020\n    /** The character &#x2021; */\n    public
const val doubleDagger: Char = "\u2021\n    /** The character &#x2022; */\n    public
const val bullet: Char = "\u2022\n    /** The character &#x2026; */\n    public const val ellipsis: Char = "\u2026\n
    /** The character &#x2032; */\n    public const val prime: Char = "\u2032\n    /** The character &#x2033; */\n
    public const val doublePrime: Char = "\u2033\n    /** The character &#x20AC; */\n    public const val euro: Char =
\u20AC\n    /** The character &#x2122; */\n    public const val tm: Char = "\u2122\n    /** The character
&#x2248; */\n    public const val almostEqual: Char = "\u2248\n    /** The character &#x2260; */\n    public const
val notEqual: Char = "\u2260\n    /** The character &#x2264; */\n    public const val lessOrEqual: Char =
\u2264\n    /** The character &#x2265; */\n    public const val greaterOrEqual: Char = "\u2265\n\n    /** The
character &#xAB; */\n    @Deprecated("This constant has a typo in the name. Use leftGuillemet instead.",
ReplaceWith("Typography.leftGuillemet"))\n    @DeprecatedSinceKotlin("1.6")\n
    public const val leftGuillemete: Char = "\u00AB\n\n    /** The character &#xBB; */\n    @Deprecated("This
constant has a typo in the name. Use rightGuillemet instead.", ReplaceWith("Typography.rightGuillemet"))\n
    @DeprecatedSinceKotlin("1.6")\n    public const val rightGuillemete: Char = "\u00BB\n"}\n\n    /** * Copyright
2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n    * Use of this source code is governed
by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n    */\n\n    /** * Represents a collection of captured groups in a single match of a regular expression.\n    */\n    /** * This collection has size
of `groupCount + 1` where `groupCount` is the count of groups in the regular expression.\n    */\n    /** * Groups are indexed
from 1 to `groupCount` and group with the index 0 corresponds to the entire match.\n    */\n    /** * An element of the
collection at the particular index can be `null`.\n    */\n    /** * if the corresponding group in the regular
expression is optional and\n    */\n    /** * there was no match captured by that group.\n    */\n\n    /** * public interface
MatchGroupCollection : Collection<MatchGroup?> {\n    /** * Returns a group with the specified [index].\n    */\n
    /** * @return An instance of [MatchGroup] if the group with the specified [index] was matched or `null` otherwise.\n
    */\n    /** * Groups are indexed from 1 to the count of groups in the regular expression. A group with the index 0\n
    */\n    /** * corresponds to the entire match.\n    */\n    /** * public operator fun get(index: Int): MatchGroup?\n    */\n\n    /** * Extends

```

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[MatchGroupCollection] by introducing a way to get matched groups by name, when regex supports it.\n
*\n@SinceKotlin("1.1")\npublic interface MatchNamedGroupCollection : MatchGroupCollection {\n /**\n *
Returns a named group with the specified [name].\n * @return An instance of [MatchGroup] if the group with the
specified [name] was matched or `null` otherwise.\n * @throws IllegalArgumentException if there is
no group with the specified [name] defined in the regex pattern.\n * @throws UnsupportedOperationException if
this match group collection doesn't support getting match groups by name.\n * for example, when it's not
supported by the current platform.\n */\n public operator fun get(name: String): MatchGroup?\n}\n/>\n *
Represents the results from a single regular expression match.\n */\npublic interface MatchResult {\n /** The
range of indices in the original string where match was captured. */\n public val range: IntRange\n /** The
substring from the input string captured by this match. */\n public val value: String\n /**\n * A collection of
groups matched by the regular expression.\n * This collection has size of `groupCount + 1` where
`groupCount` is the count of groups in the regular expression.\n * Groups are indexed from 1 to `groupCount` and
group with the index 0 corresponds to the entire match.\n */\n public val groups:
MatchGroupCollection\n /**\n * A list of matched indexed group values.\n * This list has size of
`groupCount + 1` where `groupCount` is the count of groups in the regular expression.\n * Groups are indexed
from 1 to `groupCount` and group with the index 0 corresponds to the entire match.\n * If the group in the
regular expression is optional and there were no match captured by that group,\n * corresponding item in
[groupValues] is an empty string.\n * \n * @sample
samples.text.Regexps.matchDestructuringToGroupValues\n */\n public val groupValues: List<String>\n}\n
/**\n * An instance of [MatchResult.Destructured] wrapper providing components for destructuring assignment
of group values.\n * \n * component1 corresponds to the value of the first group, component2 \u2014 of the
second, and so on.\n * \n * @sample samples.text.Regexps.matchDestructuringToGroupValues\n */\n
public val destructured: Destructured
get() = Destructured(this)\n\n /** Returns a new [MatchResult] with the results for the next match, starting at the
position\n * at which the last match ended (at the character after the last matched character).\n */\n public fun
next(): MatchResult?\n\n /**\n * Provides components for destructuring assignment of group values.\n * \n
* [component1] corresponds to the value of the first group, [component2] \u2014 of the second, and so on.\n * \n
* If the group in the regular expression is optional and there were no match captured by that group,\n *
corresponding component value is an empty string.\n * \n * @sample
samples.text.Regexps.matchDestructuringToGroupValues\n */\n public class Destructured internal
constructor(public val match: MatchResult) {\n @kotlin.internal.InlineOnly\n public operator inline fun
component1(): String = match.groupValues[1]\n @kotlin.internal.InlineOnly\n public operator inline
fun component2(): String = match.groupValues[2]\n @kotlin.internal.InlineOnly\n public operator inline
fun component3(): String = match.groupValues[3]\n @kotlin.internal.InlineOnly\n public operator inline
fun component4(): String = match.groupValues[4]\n @kotlin.internal.InlineOnly\n public operator inline
fun component5(): String = match.groupValues[5]\n @kotlin.internal.InlineOnly\n public operator inline
fun component6(): String = match.groupValues[6]\n @kotlin.internal.InlineOnly\n public operator inline
fun component7(): String = match.groupValues[7]\n @kotlin.internal.InlineOnly\n public operator inline
fun component8(): String = match.groupValues[8]\n @kotlin.internal.InlineOnly\n public operator inline
fun component9(): String = match.groupValues[9]\n @kotlin.internal.InlineOnly\n public operator inline
fun component10(): String = match.groupValues[10]\n\n /**\n * Returns destructured group values as a list of strings.\n * First value in the returned list
corresponds to the value of the first group, and so on.\n * \n * @sample
samples.text.Regexps.matchDestructuringToGroupValues\n */\n public fun toList(): List<String> =
match.groupValues.subList(1, match.groupValues.size)\n } }\n",/>\n * Copyright 2010-2021 JetBrains s.r.o. and
Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that
can be found in the license/LICENSE.txt file.\n
*\n\n@file:kotlin.jvm.JvmMultifileClass()\n@file:kotlin.jvm.JvmName("DurationUnitKt")\n\npackage

```

```

kotlin.time\n\n\n/**\n * The list of possible time measurement units, in which a duration can be expressed.\n *\n *
The smallest time unit is [NANOSECONDS] and the largest is [DAYS], which corresponds to exactly 24
[HOURLS].\n *\n@SinceKotlin("1.6")\n@WasExperimental(ExperimentalTime::class)\npublic
expect enum class DurationUnit {\n    /**\n     * Time unit representing one nanosecond, which is 1/1000 of a
microsecond.\n     *\n     * NANOSECONDS,\n     */\n     * Time unit representing one microsecond, which is 1/1000
of a millisecond.\n     *\n     * MICROSECONDS,\n     */\n     * Time unit representing one millisecond, which is
1/1000 of a second.\n     *\n     * MILLISECONDS,\n     */\n     * Time unit representing one second.\n     *\n
SECONDS,\n     */\n     * Time unit representing one minute.\n     *\n     * MINUTES,\n     */\n     * Time unit
representing one hour.\n     *\n     * HOURS,\n     */\n     * Time unit representing one day, which is always equal to
24 hours.\n     *\n     * DAYS;\n }\n\n\n/** Converts the given time duration [value] expressed in the specified
[sourceUnit] into the specified [targetUnit]. *\n@\n@SinceKotlin("1.3")\n\ninternal expect fun
convertDurationUnit(value: Double, sourceUnit: DurationUnit, targetUnit: DurationUnit): Double\n\n// overflown
result
is unspecified\n@\n@SinceKotlin("1.5")\n\ninternal expect fun convertDurationUnitOverflow(value: Long, sourceUnit:
DurationUnit, targetUnit: DurationUnit): Long\n\n// overflown result is coerced in the Long range
boundaries\n@\n@SinceKotlin("1.5")\n\ninternal expect fun convertDurationUnit(value: Long, sourceUnit:
DurationUnit, targetUnit: DurationUnit):
Long\n\n\n\n@\n@SinceKotlin("1.3")\n\n@\n@Suppress("REDUNDANT_ELSE_IN_WHEN")\n\ninternal fun
DurationUnit.shortName(): String = when (this) {\n    DurationUnit.NANOSECONDS -> "\ns"\n
DurationUnit.MICROSECONDS -> "\nus"\n
DurationUnit.MILLISECONDS -> "\ms"\n
DurationUnit.SECONDS -> "\s"\n
DurationUnit.MINUTES -> "\m"\n
DurationUnit.HOURS -> "\h"\n
DurationUnit.DAYS -> "\d"\n
    else -> error("Unknown unit: $this")\n }\n\n\n@\n@SinceKotlin("1.5")\n\ninternal fun
durationUnitByShortName(shortName: String): DurationUnit = when (shortName) {\n    "\ns" ->
DurationUnit.NANOSECONDS\n    "\us" -> DurationUnit.MICROSECONDS\n    "\ms"
-> DurationUnit.MILLISECONDS\n    "\s" -> DurationUnit.SECONDS\n    "\m" -> DurationUnit.MINUTES\n
"\h" -> DurationUnit.HOURS\n    "\d" -> DurationUnit.DAYS\n    else -> throw
IllegalArgumentException("Unknown duration unit short name:
$shortName")\n }\n\n\n@\n@SinceKotlin("1.5")\n\ninternal fun durationUnitByIsoChar(isoChar: Char,
isTimeComponent: Boolean): DurationUnit =\n    when {\n        !isTimeComponent -> {\n            when (isoChar)
{\n                'D' -> DurationUnit.DAYS\n                else -> throw IllegalArgumentException("Invalid or
unsupported duration ISO non-time unit: $isoChar")\n            }\n        }\n        else -> {\n            when (isoChar) {\n
                'H' -> DurationUnit.HOURS\n                'M' -> DurationUnit.MINUTES\n                'S' ->
DurationUnit.SECONDS\n                else -> throw IllegalArgumentException("Invalid duration ISO time unit:
$isoChar")\n            }\n        }\n    }"/**\n * Copyright 2010-2019 JetBrains s.r.o.
and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license
that can be found in the license/LICENSE.txt file.\n */\n\npackage kotlin.time\n\nimport
kotlin.annotation.AnnotationTarget.\n\n/**\n *\n *\n * This annotation marks the experimental preview of the standard
library API for measuring time and working with durations.\n *\n * > Note that this API is in a preview state and has
a very high chance of being changed in the future.\n *\n * Do not use it if you develop a library since your library will
become binary incompatible\n *\n * with the future versions of the standard library.\n *\n * Any usage of a declaration
annotated with `@ExperimentalTime` must be accepted either by\n *\n * annotating that usage with the [OptIn]
annotation, e.g. `@OptIn(ExperimentalTime::class)`,\n *\n * or by using the compiler argument `-opt-in=kotlin.time.ExperimentalTime`. \n *\n\n\n@\n@RequiresOptIn(level =
RequiresOptIn.Level.ERROR)\n@\n@MustBeDocumented\n@\n@Retention(AnnotationRetention.BINARY)\n@\n@Target(\n
CLASS,\n ANNOTATION_CLASS,\n PROPERTY,\n FIELD,\n LOCAL_VARIABLE,\n
VALUE_PARAMETER,\n CONSTRUCTOR,\n FUNCTION,\n PROPERTY_GETTER,\n
PROPERTY_SETTER,\n TYPEALIAS)\n\n\n@\n@SinceKotlin("1.3")\n\npublic annotation class
ExperimentalTime"/**\n * Copyright 2010-2022 JetBrains s.r.o. and Kotlin Programming Language

```

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contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n */\n\npackage kotlin.time\n\nimport kotlin.jvm.JvmInline\n\n/**\n * A source of time
for measuring time intervals.\n *\n * The only operation provided by the time source is [markNow]. It returns a
[TimeMark], which can be used to query the elapsed time later.\n *\n * @see [measureTime]\n *\n * @see
[measureTimedValue]\n *\n * @SinceKotlin("1.3")\n * @ExperimentalTime\n * public interface TimeSource {\n */\n
 * Marks a point in time on this time source.\n *\n * The returned [TimeMark]
instance encapsulates the captured time point and allows querying\n *\n * the duration of time interval
[elapsed][TimeMark.elapsedNow] from that point.\n *\n * public fun markNow(): TimeMark\n\n */\n
 * A
[TimeSource] that returns [time marks][ComparableTimeMark] that can be compared for difference with each
other.\n *\n * @SinceKotlin("1.8")\n * @ExperimentalTime\n * public interface WithComparableMarks :
TimeSource {\n
    override fun markNow(): ComparableTimeMark\n
}\n\n /**\n
 * The most precise time
source available in the platform.\n *\n * This time source returns its readings from a source of monotonic time
when it is available in a target platform,\n *\n * and resorts to a non-monotonic time source otherwise.\n *\n *
The function [markNow] of this time source returns the specialized [ValueTimeMark] that is an inline value class\n
 * wrapping a platform-dependent time reading value.\n *\n * public object Monotonic :
TimeSource.WithComparableMarks
{\n
    override fun markNow(): ValueTimeMark = MonotonicTimeSource.markNow()\n
    override fun
toString(): String = MonotonicTimeSource.toString()\n\n */\n
 * A specialized [kotlin.time.TimeMark]
returned by [TimeSource.Monotonic] time source.\n *\n * This time mark is implemented as an inline
value class wrapping a platform-dependent\n *\n * time reading value of the default monotonic time source, thus
allowing to avoid additional boxing\n *\n * of that value.\n *\n * The operations [plus] and [minus] are
also specialized to return [ValueTimeMark] type.\n *\n * This time mark implements
[ComparableTimeMark] and therefore is comparable with other time marks\n *\n * obtained from the same
[TimeSource.Monotonic] time source.\n *\n * @ExperimentalTime\n * @SinceKotlin("1.7")\n
@JvmInline\n
    public value class ValueTimeMark internal constructor(internal
        val reading: ValueTimeMarkReading) : ComparableTimeMark {\n
        override fun elapsedNow(): Duration =
MonotonicTimeSource.elapsedFrom(this)\n
        override fun plus(duration: Duration): ValueTimeMark =
MonotonicTimeSource.adjustReading(this, duration)\n
        override fun minus(duration: Duration):
ValueTimeMark = MonotonicTimeSource.adjustReading(this, -duration)\n
        override fun hasPassedNow():
Boolean = !elapsedNow().isNegative()\n
        override fun hasNotPassedNow(): Boolean =
elapsedNow().isNegative()\n
        override fun minus(other: ComparableTimeMark): Duration {\n
            if
(other !is ValueTimeMark)\n
                throw IllegalArgumentException("Subtracting or comparing time marks
from different time sources is not possible: $this and $other")\n
            return this.minus(other)\n
        }\n\n
        /**\n
         * Returns the duration elapsed between the [other] time mark obtained from the same
[TimeSource.Monotonic] time source and `this` time mark.\n
         *\n
         * The returned duration can be
infinite if the time marks are far away from each other and\n
         *\n
         * the result doesn't fit into [Duration] type,\n
         *\n
         * or if one time mark is infinitely distant, or if both `this` and [other] time marks\n
         *\n
         * lie infinitely distant
on the opposite sides of the time scale.\n
         *\n
         * Two infinitely distant time marks on the same side of
the time scale are considered equal and\n
         *\n
         * the duration between them is [Duration.ZERO].\n
         *\n
         *\n
         * public operator fun minus(other: ValueTimeMark): Duration = MonotonicTimeSource.differenceBetween(this,
other)\n\n
         */\n
         * Compares this time mark with the [other] time mark for order.\n
         *\n
         *\n
         * - Returns zero if this time mark represents *the same moment* of time as the [other] time mark.\n
         *\n
         * -
Returns
         *\n
         * a negative number if this time mark is *earlier* than the [other] time mark.\n
         *\n
         * - Returns a positive number
if this time mark is *later* than the [other] time mark.\n
         *\n
         *\n
         * public operator fun compareTo(other:
ValueTimeMark): Int =\n
            (this - other).compareTo(Duration.ZERO)\n
        }\n
    }\n\n
    public companion
object {\n
        }\n\n
    } \n\n
    /**\n
     * A platform-specific reading type that is wrapped by
[TimeSource.Monotonic.ValueTimeMark] inline class. *\n
     *\n
     * internal expect class ValueTimeMarkReading\n
     *\n
     *\n
     */\n
}

```

\* Represents a time point notched on a particular [TimeSource]. Remains bound to the time source it was taken from and allows querying for the duration of time elapsed from that point (see the function [elapsedNow]).

\* Returns the amount of time passed from this mark measured with the time source from which this mark was taken. Note that the value returned by this function can change on subsequent invocations.

@throws IllegalArgumentException an implementation may throw if calculating the elapsed time involves adding a positive infinite duration to an infinitely distant past time mark or a negative infinite duration to an infinitely distant future time mark.

public abstract fun elapsedNow(): Duration

Returns a time mark on the same time source that is ahead of this time mark by the specified [duration]. The returned time mark is more `_late_` when the [duration] is positive, and more `_early_` when the [duration] is negative. If the time mark is adjusted too far in the past or in the future, it may saturate to an infinitely distant time mark. In that case, [elapsedNow] will return an infinite duration elapsed from such infinitely distant mark.

@throws IllegalArgumentException an implementation may throw if a positive infinite duration is added to an infinitely distant past time mark or a negative infinite duration is added to an infinitely distant future time mark.

public operator fun plus(duration: Duration): TimeMark = AdjustedTimeMark(this, duration)

Returns a time mark on the same time source that is behind this time mark by the specified [duration]. The returned time mark is more `_early_` when the [duration] is positive, and more `_late_` when the [duration] is negative. If the time mark is adjusted too far in the past or in the future, it may saturate to an infinitely distant time mark. In that case, [elapsedNow] will return an infinite duration elapsed from such infinitely distant mark.

@throws IllegalArgumentException an implementation may throw if a positive infinite duration is subtracted from an infinitely distant future time mark or a negative infinite duration is subtracted from an infinitely distant past time mark.

public open operator fun minus(duration: Duration): TimeMark = plus(-duration)

Returns true if this time mark has passed according to the time source from which this mark was taken. Note that the value returned by this function can change on subsequent invocations. If the time source is monotonic, it can change only from `false` to `true`, namely, when the time mark becomes behind the current point of the time source.

public fun hasPassedNow(): Boolean = !elapsedNow().isNegative()

Returns false if this time mark has not passed according to the time source from which this mark was taken. Note that the value returned by this function can change on subsequent invocations. If the time source is monotonic, it can change only from `true` to `false`, namely, when the time mark becomes behind the current point of the time source.

public fun hasNotPassedNow(): Boolean = elapsedNow().isNegative()

A [TimeMark] that can be compared for difference with other time marks obtained from the same [TimeSource.WithComparableMarks] time source.

@SinceKotlin("1.8")@ExperimentalTime\npublic interface ComparableTimeMark : TimeMark, Comparable<ComparableTimeMark> {\n public abstract override operator fun plus(duration: Duration): ComparableTimeMark\n public open override operator fun minus(duration: Duration): ComparableTimeMark = plus(-duration)\n /\*\*\n \* Returns the duration elapsed between the [other] time mark and `this` time mark.\n \* The returned duration can be infinite if the time marks are far away from each other and\n \* the result doesn't fit into [Duration] type,\n \* or if one time mark is infinitely distant, or if both `this` and [other] time marks\n \* lie infinitely distant on the opposite sides of the time scale.\n \* Two infinitely distant time marks on the same side of the time scale are considered equal and\n \* the duration between them is [Duration.ZERO].\n \* Note that the other time mark must be obtained from the same time source as this one.\n \* @throws IllegalArgumentException if time marks were obtained from different time sources.\n \*/\n public operator fun minus(other: ComparableTimeMark): Duration\n /\*\*\n \* Compares this time mark with the [other] time mark for order.\n \* - Returns zero if this time mark represents *the same moment* of time as the [other] time mark.\n \* - Returns a negative number if this time mark is *earlier* than the [other] time mark.\n \* - Returns a positive number if this time mark is *later* than the [other] time mark.\n \* Note

```

that the other time mark must be obtained from the same time source as this one.\n * \n * @throws
IllegalArgumentExpection if time marks were obtained from different
time sources.\n * \n public override operator fun compareTo(other: ComparableTimeMark): Int = \n (this -
other).compareTo(Duration.ZERO)\n\n /** \n * Returns `true` if two time marks from the same time source
represent the same moment of time, and `false` otherwise, \n * including the situation when the time marks were
obtained from different time sources.\n * \n override fun equals(other: Any?): Boolean \n override fun
hashCode(): Int \n} \n\n @ExperimentalTime \n private class AdjustedTimeMark(val mark: TimeMark, val
adjustment: Duration) : TimeMark { \n override fun elapsedNow(): Duration = mark.elapsedNow() -
adjustment \n\n override fun plus(duration: Duration): TimeMark = AdjustedTimeMark(mark, adjustment +
duration) \n} \n\n /** \n * Copyright 2010-2022 JetBrains s.r.o. and Kotlin Programming Language contributors. \n *
Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file. \n
*/ \n\n package kotlin.time \n\n import
kotlin.time.Duration.Companion.milliseconds \n\n import kotlin.time.Duration.Companion.nanoseconds \n\n import
kotlin.time.Duration.Companion.seconds \n\n\n @SinceKotlin("1.3") \n\n @ExperimentalTime \n\n internal expect object
MonotonicTimeSource : TimeSource.WithComparableMarks { \n override fun markNow():
TimeSource.Monotonic.ValueTimeMark \n fun elapsedFrom(timeMark:
TimeSource.Monotonic.ValueTimeMark): Duration \n fun differenceBetween(one:
TimeSource.Monotonic.ValueTimeMark, another: TimeSource.Monotonic.ValueTimeMark): Duration \n fun
adjustReading(timeMark: TimeSource.Monotonic.ValueTimeMark, duration: Duration):
TimeSource.Monotonic.ValueTimeMark \n} \n\n /** \n * An abstract class used to implement time sources that return
their readings as [Long] values in the specified [unit]. \n * \n * @property unit The unit in which this time source's
readings are expressed. \n * \n @SinceKotlin("1.3") \n\n @ExperimentalTime \n\n public abstract class
AbstractLongTimeSource(protected val unit:
DurationUnit) : TimeSource.WithComparableMarks { \n /** \n * This protected method should be overridden to
return the current reading of the time source expressed as a [Long] number \n * in the unit specified by the [unit]
property. \n * \n protected abstract fun read(): Long \n\n private class LongTimeMark(private val startedAt:
Long, private val timeSource: AbstractLongTimeSource, private val offset: Duration) : ComparableTimeMark { \n
override fun elapsedNow(): Duration = if (offset.isInfinite()) -offset else (timeSource.read() -
startedAt).toDuration(timeSource.unit) - offset \n override fun plus(duration: Duration): ComparableTimeMark
= LongTimeMark(startedAt, timeSource, offset + duration) \n override fun minus(other:
ComparableTimeMark): Duration { \n if (other !is LongTimeMark || this.timeSource != other.timeSource) \n
throw IllegalArgumentExpection("\Subtracting or comparing time marks from different time sources is
not possible: $this and $other") \n\n // val thisValue = this.effectiveDuration() \n\n // val otherValue =
other.effectiveDuration() \n\n // if (thisValue == otherValue && thisValue.isInfinite()) return
Duration.ZERO \n\n // return thisValue - otherValue \n\n // if (this.offset == other.offset &&
this.offset.isInfinite()) return Duration.ZERO \n\n // val offsetDiff = this.offset - other.offset \n\n // val
startedAtDiff = (this.startedAt - other.startedAt).toDuration(timeSource.unit) \n\n // println("\$startedAtDiff,
$offsetDiff") \n\n // return if (startedAtDiff == -offsetDiff) Duration.ZERO else startedAtDiff + offsetDiff \n
} \n\n override fun equals(other: Any?): Boolean = \n other is LongTimeMark && this.timeSource ==
other.timeSource && (this - other) == Duration.ZERO \n\n internal fun effectiveDuration(): Duration { \n
if (offset.isInfinite()) return offset \n val unit = timeSource.unit \n\n if (unit >= DurationUnit.MILLISECONDS) { \n
return startedAt.toDuration(unit) + offset \n } \n\n val scale = convertDurationUnit(1L, DurationUnit.MILLISECONDS, unit) \n\n val startedAtMillis =
startedAt / scale \n\n val startedAtRem = startedAt % scale \n\n return offset.toComponents {
offsetSeconds, offsetNanoseconds -> \n val offsetMillis = offsetNanoseconds / NANOS_IN_MILLIS \n\n val offsetRemNanos = offsetNanoseconds % NANOS_IN_MILLIS \n\n // add component-wise \n\n (startedAtRem.toDuration(unit) + offsetRemNanos.nanoseconds) + \n\n (startedAtMillis +
offsetMillis).milliseconds + \n\n offsetSeconds.seconds \n\n } \n\n } \n\n override fun

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hashCode(): Int = effectiveDuration().hashCode()\n\n    override fun toString(): String =
    \"LongTimeMark($startedAt${timeSource.unit.shortName()} + $offset
    (=${effectiveDuration()}), $timeSource)\" \n\n    override fun markNow(): ComparableTimeMark =
    LongTimeMark(read(), this, Duration.ZERO)\n\n    /**\n     * An abstract class used to implement time sources that
    return their readings as [Double] values in the specified [unit].\n     * @property unit The unit in which this time
    source's readings are expressed.\n     */\n    @SinceKotlin(\"1.3\")\n    @ExperimentalTime\n    @Deprecated(\"Using
    AbstractDoubleTimeSource is no longer recommended, use AbstractLongTimeSource instead.\")\n    public abstract
    class AbstractDoubleTimeSource(protected val unit: DurationUnit) : TimeSource.WithComparableMarks {\n
    /**\n     * This protected method should be overridden to return the current reading of the time source expressed as a
    [Double] number\n     * in the unit specified by the [unit] property.\n     */\n     protected abstract fun read():
    Double\n\n     @Suppress(\"DEPRECATION\")\n     private class DoubleTimeMark(private val startedAt: Double,
    private val timeSource:
    AbstractDoubleTimeSource, private val offset: Duration) : ComparableTimeMark {\n\n     override fun
    elapsedNow(): Duration = (timeSource.read() - startedAt).toDuration(timeSource.unit) - offset\n\n     override fun
    plus(duration: Duration): ComparableTimeMark = DoubleTimeMark(startedAt, timeSource, offset + duration)\n\n     override fun
    minus(other: ComparableTimeMark): Duration {\n\n     if (other !is DoubleTimeMark ||
    this.timeSource != other.timeSource)\n\n     throw IllegalArgumentException(\"Subtracting or comparing time
    marks from different time sources is not possible: $this and $other\")\n\n     if (this.offset == other.offset &&
    this.offset.isInfinite()) return Duration.ZERO\n\n     val offsetDiff = this.offset - other.offset\n     val
    startedAtDiff = (this.startedAt - other.startedAt).toDuration(timeSource.unit)\n     return if (startedAtDiff == -
    offsetDiff) Duration.ZERO else startedAtDiff + offsetDiff\n\n     }\n\n     override fun equals(other: Any?): Boolean {\n
    return other is DoubleTimeMark && this.timeSource ==
    other.timeSource && (this - other) == Duration.ZERO\n\n     }\n\n     override fun hashCode(): Int {\n
    return (startedAt.toDuration(timeSource.unit) + offset).hashCode()\n\n     }\n\n     override fun toString(): String =
    \"DoubleTimeMark($startedAt${timeSource.unit.shortName()} + $offset, $timeSource)\" \n\n     override fun
    markNow(): ComparableTimeMark = DoubleTimeMark(read(), this, Duration.ZERO)\n\n     /**\n     * A time source
    that has programmatically updatable readings. It is useful as a predictable source of time in tests.\n     * The current
    reading value can be advanced by the specified duration amount with the operator [plusAssign]:\n     * val
    timeSource = TestTimeSource()\n     * timeSource += 10.seconds\n     * Implementation note: the current
    reading value is stored as a [Long] number of nanoseconds,\n     * thus it's capable to
    represent a time range of approximately \u00b1292 years.\n     * Should the reading value overflow as the result of
    [plusAssign] operation, an [IllegalStateException] is thrown.\n     */\n     @SinceKotlin(\"1.3\")\n     @ExperimentalTime\n     public class TestTimeSource : AbstractLongTimeSource(unit =
    DurationUnit.NANOSECONDS) {\n\n     private var reading: Long = 0L\n\n     override fun read(): Long = reading\n\n     /**\n     * Advances the current reading value of this time source by the specified [duration].\n     * [duration]
    value is rounded down towards zero when converting it to a [Long] number of nanoseconds.\n     * For example, if
    the duration being added is `0.6.nanoseconds`, the reading doesn't advance because\n     * the duration value is
    rounded to zero nanoseconds.\n     * @throws IllegalStateException when the reading value overflows as the
    result of this operation.\n     */\n     public operator fun plusAssign(duration: Duration) {\n\n     val longDelta =
    duration.toLong(unit)\n\n     reading = if (longDelta != Long.MIN_VALUE && longDelta != Long.MAX_VALUE) {\n\n     // when delta
    fits in long, add it as long\n     val newReading = reading + longDelta\n     if (reading xor longDelta >= 0
    && reading xor newReading < 0) overflow(duration)\n     newReading\n     } else {\n\n     val delta =
    duration.toDouble(unit)\n     // when delta is greater than long, add it as double\n     val newReading =
    reading + delta\n     if (newReading > Long.MAX_VALUE || newReading < Long.MIN_VALUE)\n     overflow(duration)\n     newReading.toLong()\n     }\n\n     private fun overflow(duration: Duration) {\n
    throw IllegalStateException(\"TestTimeSource will overflow if its reading ${reading}${unit.shortName()} is
    advanced by $duration.\")\n     }\n\n     }\n\n     /**\n     * Copyright 2010-2022 JetBrains s.r.o. and Kotlin Programming

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Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that
can be found in the license/LICENSE.txt file.\n */\n\npackage kotlin.time\n\nimport
kotlin.time.Duration.Companion.milliseconds\nimport kotlin.time.Duration.Companion.nanoseconds\n\n// Long
time reading saturation math, shared between JVM and Native\n\ninternal fun saturatingAdd(longNs: Long,
duration: Duration): Long {\n    val durationNs = duration.inWholeNanoseconds\n    if (longNs.isSaturated()) { //
MIN_VALUE or MAX_VALUE - the reading is infinite\n        return checkInfiniteSumDefined(longNs, duration,
durationNs)\n    }\n    if (durationNs.isSaturated()) { // duration doesn't fit in Long nanos\n        return
saturatingAddInHalves(longNs, duration)\n    }\n    val result = longNs + durationNs\n    if (((longNs xor result)
and (durationNs xor result)) < 0) {\n        return if (longNs < 0) Long.MIN_VALUE else Long.MAX_VALUE\n    }\n    return result\n}\n\nprivate fun checkInfiniteSumDefined(longNs: Long, duration: Duration, durationNs:
Long): Long {\n    if (duration.isInfinite()
&& (longNs xor durationNs < 0)) throw IllegalArgumentException("Summing infinities of different signs")\n    return longNs\n}\n\nprivate fun saturatingAddInHalves(longNs: Long, duration: Duration): Long {\n    val half =
duration / 2\n    if (half.inWholeNanoseconds.isSaturated()) {\n        // this will definitely saturate\n        return
(longNs + duration.toDouble(DurationUnit.NANOSECONDS)).toLong()\n    } else {\n        return
saturatingAdd(saturatingAdd(longNs, half), duration - half)\n    }\n}\n\ninternal fun saturatingDiff(valueNs: Long,
originNs: Long): Duration {\n    if (originNs.isSaturated()) { // MIN_VALUE or MAX_VALUE\n        return -
(originNs.toDuration(DurationUnit.DAYS)) // saturate to infinity\n    }\n    return saturatingFiniteDiff(valueNs,
originNs)\n}\n\ninternal fun saturatingOriginsDiff(origin1Ns: Long, origin2Ns: Long): Duration {\n    if
(origin2Ns.isSaturated()) { // MIN_VALUE or MAX_VALUE\n        if (origin1Ns == origin2Ns) return
Duration.ZERO //
saturated values of the same sign are considered equal\n        return -(origin2Ns.toDuration(DurationUnit.DAYS)) //
saturate to infinity\n    }\n    if (origin1Ns.isSaturated()) {\n        return origin1Ns.toDuration(DurationUnit.DAYS)\n    }\n    return saturatingFiniteDiff(origin1Ns, origin2Ns)\n}\n\nprivate fun saturatingFiniteDiff(value1Ns: Long,
value2Ns: Long): Duration {\n    val result = value1Ns - value2Ns\n    if ((result xor value1Ns) and (result xor
value2Ns).inv() < 0) {\n        val resultMs = value1Ns / NANOS_IN_MILLIS - value2Ns / NANOS_IN_MILLIS\n        val resultNs = value1Ns % NANOS_IN_MILLIS - value2Ns % NANOS_IN_MILLIS\n        return
resultMs.milliseconds + resultNs.nanoseconds\n    }\n    return
result.nanoseconds\n}\n\n@Suppress("NOTHING_TO_INLINE")\nprivate inline fun Long.isSaturated(): Boolean
= (this - 1) or 1 == Long.MAX_VALUE // == either MAX_VALUE or MIN_VALUE\n", "/*\n * Copyright
2010-2022 JetBrains s.r.o. and Kotlin Programming Language contributors.\n
* Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*/\n\npackage kotlin.time\n\nimport kotlin.contracts.*\n\n/**\n * Executes the given function [block] and returns the
duration of elapsed time interval.\n * The elapsed time is measured with [TimeSource.Monotonic].\n
*/\n\n@SinceKotlin("1.3")\n@ExperimentalTime\npublic inline fun measureTime(block: () -> Unit): Duration {\n    contract {\n        callsInPlace(block, InvocationKind.EXACTLY_ONCE)\n    }\n    return
TimeSource.Monotonic.measureTime(block)\n}\n\n/**\n * Executes the given function [block] and returns the
duration of elapsed time interval.\n * The elapsed time is measured with the specified `this` [TimeSource]
instance.\n */\n\n@SinceKotlin("1.3")\n@ExperimentalTime\npublic inline fun TimeSource.measureTime(block: ()
-> Unit): Duration {\n    contract {\n        callsInPlace(block, InvocationKind.EXACTLY_ONCE)\n    }\n    val
mark = markNow()\n    block()\n    return mark.elapsedNow()\n}\n\n/**\n * Executes the given function [block] and returns the duration
of elapsed time interval.\n * The elapsed time is measured with the specified `this` [TimeSource.Monotonic]
instance.\n */\n\n@SinceKotlin("1.7")\n@ExperimentalTime\npublic inline fun
TimeSource.Monotonic.measureTime(block: () -> Unit): Duration {\n    contract {\n        callsInPlace(block,
InvocationKind.EXACTLY_ONCE)\n    }\n    val mark = markNow()\n    block()\n    return
mark.elapsedNow()\n}\n\n/**\n * Data class representing a result of executing an action, along with the duration
of elapsed time interval.\n * @property value the result of the action.\n * @property duration the time elapsed to

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execute the action.\n */\n@SinceKotlin("1.3")\n@ExperimentalTime\npublic data class TimedValue<T>(val
value: T, val duration: Duration)\n\n/**\n * Executes the given function [block] and returns an instance of
[TimedValue] class, containing both\n * the result
of the function execution and the duration of elapsed time interval.\n */\n * The elapsed time is measured with
[TimeSource.Monotonic].\n */\n@SinceKotlin("1.3")\n@ExperimentalTime\npublic inline fun <T>
measureTimedValue(block: () -> T): TimedValue<T> {\n    contract {\n        callsInPlace(block,
InvocationKind.EXACTLY_ONCE)\n    }\n\n    return
TimeSource.Monotonic.measureTimedValue(block)\n}\n\n/**\n * Executes the given [block] and returns an
instance of [TimedValue] class, containing both\n * the result of function execution and the duration of elapsed time
interval.\n */\n * The elapsed time is measured with the specified `this` [TimeSource] instance.\n
*/\n@SinceKotlin("1.3")\n@ExperimentalTime\npublic inline fun <T> TimeSource.measureTimedValue(block: ()
-> T): TimedValue<T> {\n    contract {\n        callsInPlace(block, InvocationKind.EXACTLY_ONCE)\n    }\n\n    val mark = markNow()\n    val result = block()\n    return TimedValue(result, mark.elapsedNow())\n}\n\n/**\n * Executes the given [block] and returns an instance of [TimedValue] class, containing both\n * the result of
function execution and the duration of elapsed time interval.\n */\n * The elapsed time is measured with the specified
`this` [TimeSource.Monotonic] instance.\n */\n@SinceKotlin("1.7")\n@ExperimentalTime\npublic inline fun <T>
TimeSource.Monotonic.measureTimedValue(block: () -> T): TimedValue<T> {\n    contract {\n        callsInPlace(block, InvocationKind.EXACTLY_ONCE)\n    }\n\n    val mark = markNow()\n    val result =
block()\n    return TimedValue(result, mark.elapsedNow())\n}\n\n", /*\n * Copyright 2010-2020 JetBrains s.r.o. and
Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that
can be found in the license/LICENSE.txt file.\n */\n\npackage kotlin\n\nimport kotlin.coroutines.*\nimport
kotlin.coroutines.intrinsics.*\nimport kotlin.native.concurrent.SharedImmutable\n\n/**\n * Defines deep recursive
function that
keeps its stack on the heap,\n * which allows very deep recursive computations that do not use the actual call
stack.\n * To initiate a call to this deep recursive function use its [invoke] function.\n * As a rule of thumb, it should
be used if recursion goes deeper than a thousand calls.\n */\n * The [DeepRecursiveFunction] takes one parameter of
type [T] and returns a result of type [R].\n * The [block] of code defines the body of a recursive function. In this
block\n * [callRecursive][DeepRecursiveScope.callRecursive] function can be used to make a recursive call\n * to
the declared function. Other instances of [DeepRecursiveFunction] can be called\n * in this scope with
`callRecursive` extension, too.\n */\n * For example, take a look at the following recursive tree class and a deeply\n *
recursive instance of this tree with 100K nodes:\n */\n * ```\n * class Tree(val left: Tree? = null, val right: Tree? =
null)\n * val deepTree = generateSequence(Tree()) { Tree(it) }.take(100_000).last()\n * ```\n */\n * A regular recursive function can be defined to compute a depth of a tree:\n */\n * ```\n * fun depth(t:
Tree?): Int =\n *     if (t == null) 0 else max(depth(t.left), depth(t.right)) + 1\n * println(depth(deepTree)) //
StackOverflowError\n * ```\n */\n * If this `depth` function is called for a `deepTree` it produces
`StackOverflowError` because of deep recursion.\n * However, the `depth` function can be rewritten using
`DeepRecursiveFunction` in the following way, and then\n * it successfully computes
[depth(deepTree)][DeepRecursiveFunction.invoke] expression:\n */\n * ```\n * val depth =
DeepRecursiveFunction<Tree?, Int> { t ->\n *     if (t == null) 0 else max(callRecursive(t.left),
callRecursive(t.right)) + 1\n * }\n * println(depth(deepTree)) // Ok\n * ```\n */\n * Deep recursive functions can also
mutually call each other using a heap for the stack via\n * [callRecursive][DeepRecursiveScope.callRecursive]
extension. For example, the\n * following pair of mutually
recursive functions computes the number of tree nodes at even depth in the tree.\n */\n * ```\n * val mutualRecursion
= object {\n *     val even: DeepRecursiveFunction<Tree?, Int> = DeepRecursiveFunction { t ->\n *         if (t ==
null) 0 else odd.callRecursive(t.left) + odd.callRecursive(t.right) + 1\n *     }\n *     val odd:
DeepRecursiveFunction<Tree?, Int> = DeepRecursiveFunction { t ->\n *         if (t == null) 0 else
even.callRecursive(t.left) + even.callRecursive(t.right)\n *     }\n * }\n * }\n * ```\n */\n * @param [T] the function
parameter type.\n * @param [R] the function result type.\n * @param block the function body.\n

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*\n@SinceKotlin("1.7")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic class
DeepRecursiveFunction<T, R>(\n    internal val block: suspend DeepRecursiveScope<T, R>.(T) -> R)\n\n/**\n *
Initiates a call to this deep recursive function, forming a root of the call tree.\n * This operator should not be
used from inside of [DeepRecursiveScope] as
it uses the call stack slot for\n * initial recursive invocation. From inside of [DeepRecursiveScope] use\n *
[callRecursive][DeepRecursiveScope.callRecursive].\n
*\n@SinceKotlin("1.7")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic operator fun <T, R>
DeepRecursiveFunction<T, R>.invoke(value: T): R =\n    DeepRecursiveScopeImpl<T, R>(block,
value).runCallLoop()\n\n/**\n * A scope class for [DeepRecursiveFunction] function declaration that defines
[callRecursive] methods to\n * recursively call this function or another [DeepRecursiveFunction] putting the call
activation frame on the heap.\n * @param [T] function parameter type.\n * @param [R] function result type.\n
*\n@RestrictsSuspension\n@SinceKotlin("1.7")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic
sealed class DeepRecursiveScope<T, R> {\n    /**\n     * Makes recursive call to this [DeepRecursiveFunction]
function putting the call activation frame on the heap,\n     * as opposed to the actual call
stack that is used by a regular recursive call.\n     *\n     * public abstract suspend fun callRecursive(value: T): R\n\n
/**\n     * Makes call to the specified [DeepRecursiveFunction] function putting the call activation frame on the
heap,\n     * as opposed to the actual call stack that is used by a regular call.\n     *\n     * public abstract suspend fun
<U, S> DeepRecursiveFunction<U, S>.callRecursive(value: U): S\n\n     @Deprecated(\n         level =
DeprecationLevel.ERROR,\n         message =\n             "'invoke' should not be called from DeepRecursiveScope. '\n
+
'\n         '\n         Use 'callRecursive' to do recursion in the heap instead of the call stack.',\n         replaceWith =
ReplaceWith("this.callRecursive(value)")\n     )\n     @Suppress("UNUSED_PARAMETER")\n     public operator
fun DeepRecursiveFunction<*, *>.invoke(value: Any?): Nothing =\n         throw
UnsupportedOperationException("Should not be called from DeepRecursiveScope")\n\n\n//
===== Implementation
=====
\nprivate typealias DeepRecursiveFunctionBlock = suspend DeepRecursiveScope<*,
*>.(Any?) -> Any?\n\n@SharedImmutable\nprivate val UNDEFINED_RESULT =
Result.success(COROUTINE_SUSPENDED)\n\n@Suppress("UNCHECKED_CAST")\nprivate class
DeepRecursiveScopeImpl<T, R>(\n    block: suspend DeepRecursiveScope<T, R>.(T) -> R,\n    value: T)\n :
DeepRecursiveScope<T, R>(), Continuation<R> {\n    // Active function block\n    private var function:
DeepRecursiveFunctionBlock = block as DeepRecursiveFunctionBlock\n\n    // Value to call function with\n
private var value: Any? = value\n\n    // Continuation of the current call\n    private var cont: Continuation<Any?>?
= this as Continuation<Any?>\n\n    // Completion result (completion of the whole call stack)\n    private var result:
Result<Any?> = UNDEFINED_RESULT\n\n    override val context: CoroutineContext\n        get() =
EmptyCoroutineContext\n\n    override fun resumeWith(result: Result<R>) {\n        this.cont =
null\n        this.result = result\n    }\n\n    override suspend fun callRecursive(value: T): R =
suspendCoroutineUninterceptedOrReturn { cont ->\n        // calling the same function that is currently active\n
this.cont = cont as Continuation<Any?>\n        this.value = value\n        COROUTINE_SUSPENDED\n    }\n\n    override suspend fun <U, S> DeepRecursiveFunction<U, S>.callRecursive(value: U): S =
suspendCoroutineUninterceptedOrReturn { cont ->\n        // calling another recursive function\n        val function =
block as DeepRecursiveFunctionBlock\n        with(this@DeepRecursiveScopeImpl) {\n            val currentFunction
= this.function\n            if (function !== currentFunction) {\n                // calling a different function -- create a
trampoline to restore function ref\n                this.function = function\n                this.cont =
crossFunctionCompletion(currentFunction, cont as Continuation<Any?>)\n            } else {\n                // calling the
same function -- direct\n                this.cont = cont as Continuation<Any?>\n            }\n            this.value = value\n
        }\n        COROUTINE_SUSPENDED\n    }\n\n    private fun crossFunctionCompletion(\n        currentFunction:
DeepRecursiveFunctionBlock,\n        cont: Continuation<Any?>\n    ): Continuation<Any?> =
Continuation(EmptyCoroutineContext) {\n        this.function = currentFunction\n        // When going back from a
trampoline we cannot just call cont.resume (stack usage!)\n        // We delegate the cont.resumeWith(it) call to

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runCallLoop\n    this.cont = cont\n    this.result = it\n    }\n\n    @Suppress(\"UNCHECKED_CAST\")\n    fun
runCallLoop(): R {\n    while (true) {\n        // Note: cont is set to null in DeepRecursiveScopeImpl.resumeWith
when the whole computation completes\n        val result = this.result\n        val cont = this.cont\n        ?:
return (result as Result<R>).getOrThrow() // done -- final result\n
        // The order of comparison is important here for that case of rogue class with broken equals\n        if
(UNDEFINED_RESULT == result) {\n        // call \"function\" with \"value\" using \"cont\" as completion\n
        val r = try {\n            // This is block.startCoroutine(this, value, cont)\n
function.startCoroutineUninterceptedOrReturn(this, value, cont)\n        } catch (e: Throwable) {\n
cont.resumeWithException(e)\n            continue\n        }\n        // If the function returns without
suspension -- calls its continuation immediately\n        if (r != COROUTINE_SUSPENDED)\n
cont.resume(r as R)\n        } else {\n            // we returned from a crossFunctionCompletion trampoline -- call
resume here\n            this.result = UNDEFINED_RESULT // reset result back\n
cont.resumeWith(result)\n        }\n
    }\n    }\n}\n\n\", \"/*\n * Copyright 2010-2022 JetBrains s.r.o. and Kotlin Programming Language contributors.\n *
Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*\n\n// Auto-generated file. DO NOT
EDIT!\n\n@file:kotlin.jvm.JvmName(\"NumbersKt\")\n@file:kotlin.jvm.JvmMultifileClass\npackage
kotlin\n\nimport kotlin.math.sign\n\n/** Divides this value by the other value, flooring the result to an integer that is
closer to negative infinity.
*\n\n@SinceKotlin(\"1.5\")\n@kotlin.internal.InlineOnly\n@kotlin.internal.IntrinsicConstEvaluation\npublic inline
fun Byte.floorDiv(other: Byte): Int = \n    this.toInt().floorDiv(other.toInt())\n\n/**\n * Calculates the remainder of
flooring division of this value by the other value.\n * \n * The result is either zero or has the same sign as the
_divisor_ and has the absolute value less than the absolute value of the divisor.\n
*\n\n@SinceKotlin(\"1.5\")\n@kotlin.internal.InlineOnly\n@kotlin.internal.IntrinsicConstEvaluation\npublic
inline fun Byte.mod(other: Byte): Byte = \n    this.toInt().mod(other.toInt()).toByte()\n\n/**\n * Divides this value by
the other value, flooring the result to an integer that is closer to negative infinity.
*\n\n@SinceKotlin(\"1.5\")\n@kotlin.internal.InlineOnly\n@kotlin.internal.IntrinsicConstEvaluation\npublic inline
fun Byte.floorDiv(other: Short): Int = \n    this.toInt().floorDiv(other.toInt())\n\n/**\n * Calculates the remainder of
flooring division of this value by the other value.\n * \n * The result is either zero or has the same sign as the
_divisor_ and has the absolute value less than the absolute value of the divisor.\n
*\n\n@SinceKotlin(\"1.5\")\n@kotlin.internal.InlineOnly\n@kotlin.internal.IntrinsicConstEvaluation\npublic inline
fun Byte.mod(other: Short): Short = \n    this.toInt().mod(other.toInt()).toShort()\n\n/**\n * Divides this value by the
other value, flooring the result to an integer that is closer to negative infinity.
*\n\n@SinceKotlin(\"1.5\")\n@kotlin.internal.InlineOnly\n@kotlin.internal.IntrinsicConstEvaluation\npublic
inline fun Byte.floorDiv(other: Int): Int = \n    this.toInt().floorDiv(other)\n\n/**\n * Calculates the remainder of
flooring division of this value by the other value.\n * \n * The result is either zero or has the same sign as the
_divisor_ and has the absolute value less than the absolute value of the divisor.\n
*\n\n@SinceKotlin(\"1.5\")\n@kotlin.internal.InlineOnly\n@kotlin.internal.IntrinsicConstEvaluation\npublic inline
fun Byte.mod(other: Int): Int = \n    this.toInt().mod(other)\n\n/**\n * Divides this value by the other value, flooring the
result to an integer that is closer to negative infinity.
*\n\n@SinceKotlin(\"1.5\")\n@kotlin.internal.InlineOnly\n@kotlin.internal.IntrinsicConstEvaluation\npublic inline
fun Byte.floorDiv(other: Long): Long = \n    this.toLong().floorDiv(other)\n\n/**\n * Calculates the remainder of
flooring division of this value by the other value.\n * \n *
* The result is either zero or has the same sign as the _divisor_ and has the absolute value less than the absolute
value of the divisor.\n
*\n\n@SinceKotlin(\"1.5\")\n@kotlin.internal.InlineOnly\n@kotlin.internal.IntrinsicConstEvaluation\npublic inline
fun Byte.mod(other: Long): Long = \n    this.toLong().mod(other)\n\n/**\n * Divides this value by the other value,
flooring the result to an integer that is closer to negative infinity.

```

```

*\n@SinceKotlin("1.5")\n@kotlin.internal.InlineOnly\n@kotlin.internal.IntrinsicConstEvaluation\npublic inline
fun Short.floorDiv(other: Byte): Int = \n    this.toInt().floorDiv(other.toInt())\n\n/**\n * Calculates the remainder of
flooring division of this value by the other value.\n * \n * The result is either zero or has the same sign as the
_divisor_ and has the absolute value less than the absolute value of the divisor.\n
*\n@SinceKotlin("1.5")\n@kotlin.internal.InlineOnly\n@kotlin.internal.IntrinsicConstEvaluation\npublic inline
fun Short.mod(other:
Byte): Byte = \n    this.toInt().mod(other.toInt()).toByte()\n\n/** Divides this value by the other value, flooring the
result to an integer that is closer to negative infinity.
*\n@SinceKotlin("1.5")\n@kotlin.internal.InlineOnly\n@kotlin.internal.IntrinsicConstEvaluation\npublic inline
fun Short.floorDiv(other: Short): Int = \n    this.toInt().floorDiv(other.toInt())\n\n/**\n * Calculates the remainder of
flooring division of this value by the other value.\n * \n * The result is either zero or has the same sign as the
_divisor_ and has the absolute value less than the absolute value of the divisor.\n
*\n@SinceKotlin("1.5")\n@kotlin.internal.InlineOnly\n@kotlin.internal.IntrinsicConstEvaluation\npublic inline
fun Short.mod(other: Short): Short = \n    this.toInt().mod(other.toInt()).toShort()\n\n/** Divides this value by the
other value, flooring the result to an integer that is closer to negative infinity.
*\n@SinceKotlin("1.5")\n@kotlin.internal.InlineOnly\n@kotlin.internal.IntrinsicConstEvaluation\npublic
inline fun Short.floorDiv(other: Int): Int = \n    this.toInt().floorDiv(other)\n\n/**\n * Calculates the remainder of
flooring division of this value by the other value.\n * \n * The result is either zero or has the same sign as the
_divisor_ and has the absolute value less than the absolute value of the divisor.\n
*\n@SinceKotlin("1.5")\n@kotlin.internal.InlineOnly\n@kotlin.internal.IntrinsicConstEvaluation\npublic inline
fun Short.mod(other: Int): Int = \n    this.toInt().mod(other)\n\n/** Divides this value by the other value, flooring the
result to an integer that is closer to negative infinity.
*\n@SinceKotlin("1.5")\n@kotlin.internal.InlineOnly\n@kotlin.internal.IntrinsicConstEvaluation\npublic inline
fun Short.floorDiv(other: Long): Long = \n    this.toLong().floorDiv(other)\n\n/**\n * Calculates the remainder of
flooring division of this value by the other value.\n * \n * The result is either zero or has the same sign as the
_divisor_ and
has the absolute value less than the absolute value of the divisor.\n
*\n@SinceKotlin("1.5")\n@kotlin.internal.InlineOnly\n@kotlin.internal.IntrinsicConstEvaluation\npublic inline
fun Short.mod(other: Long): Long = \n    this.toLong().mod(other)\n\n/** Divides this value by the other value,
flooring the result to an integer that is closer to negative infinity.
*\n@SinceKotlin("1.5")\n@kotlin.internal.InlineOnly\n@kotlin.internal.IntrinsicConstEvaluation\npublic inline
fun Int.floorDiv(other: Byte): Int = \n    this.floorDiv(other.toInt())\n\n/**\n * Calculates the remainder of flooring
division of this value by the other value.\n * \n * The result is either zero or has the same sign as the _divisor_ and
has the absolute value less than the absolute value of the divisor.\n
*\n@SinceKotlin("1.5")\n@kotlin.internal.InlineOnly\n@kotlin.internal.IntrinsicConstEvaluation\npublic inline
fun Int.mod(other: Byte): Byte = \n    this.mod(other.toInt()).toByte()\n\n/** Divides this value
by the other value, flooring the result to an integer that is closer to negative infinity.
*\n@SinceKotlin("1.5")\n@kotlin.internal.InlineOnly\n@kotlin.internal.IntrinsicConstEvaluation\npublic inline
fun Int.floorDiv(other: Short): Int = \n    this.floorDiv(other.toInt())\n\n/**\n * Calculates the remainder of flooring
division of this value by the other value.\n * \n * The result is either zero or has the same sign as the _divisor_ and
has the absolute value less than the absolute value of the divisor.\n
*\n@SinceKotlin("1.5")\n@kotlin.internal.InlineOnly\n@kotlin.internal.IntrinsicConstEvaluation\npublic inline
fun Int.mod(other: Short): Short = \n    this.mod(other.toInt()).toShort()\n\n/** Divides this value by the other value,
flooring the result to an integer that is closer to negative infinity.
*\n@SinceKotlin("1.5")\n@kotlin.internal.InlineOnly\n@kotlin.internal.IntrinsicConstEvaluation\npublic inline
fun Int.floorDiv(other: Int): Int {\n    var q = this / other\n
    if (this xor other < 0 && q * other != this) q--\n    return q\n}\n\n/**\n * Calculates the remainder of flooring
division of this value by the other value.\n * \n * The result is either zero or has the same sign as the _divisor_ and

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has the absolute value less than the absolute value of the divisor.

```
*\n@SinceKotlin("1.5")\n@kotlin.internal.InlineOnly\n@kotlin.internal.IntrinsicConstEvaluation\npublic inline fun Int.mod(other: Int): Int {\n    val r = this % other\n    return r + (other and (((r xor other) and (r or -r)) shr 31))\n}\n\n/** Divides this value by the other value, flooring the result to an integer that is closer to negative infinity. */\n@SinceKotlin("1.5")\n@kotlin.internal.InlineOnly\n@kotlin.internal.IntrinsicConstEvaluation\npublic inline fun Int.floorDiv(other: Long): Long = \n    this.toLong().floorDiv(other)\n\n/**\n * Calculates the remainder of flooring division of this value by the other value.\n * \n * The result is either zero or has the same sign as the _divisor_ and has the absolute value less than the absolute value of the divisor.
```

```
*\n@SinceKotlin("1.5")\n@kotlin.internal.InlineOnly\n@kotlin.internal.IntrinsicConstEvaluation\npublic inline fun Int.mod(other: Long): Long = \n    this.toLong().mod(other)\n\n/** Divides this value by the other value, flooring the result to an integer that is closer to negative infinity.
```

```
*\n@SinceKotlin("1.5")\n@kotlin.internal.InlineOnly\n@kotlin.internal.IntrinsicConstEvaluation\npublic inline fun Long.floorDiv(other: Byte): Long = \n    this.floorDiv(other.toLong())\n\n/**\n * Calculates the remainder of flooring division of this value by the other value.\n * \n * The result is either zero or has the same sign as the _divisor_ and has the absolute value less than the absolute value of the divisor.
```

```
*\n@SinceKotlin("1.5")\n@kotlin.internal.InlineOnly\n@kotlin.internal.IntrinsicConstEvaluation\npublic inline fun Long.mod(other: Byte): Byte = \n    this.mod(other.toLong()).toByte()\n\n/** Divides this value by the other value, flooring the result to an integer that is closer to negative infinity.
```

```
*\n@SinceKotlin("1.5")\n@kotlin.internal.InlineOnly\n@kotlin.internal.IntrinsicConstEvaluation\npublic inline fun Long.floorDiv(other: Short): Long = \n    this.floorDiv(other.toLong())\n\n/**\n * Calculates the remainder of flooring division of this value by the other value.\n * \n * The result is either zero or has the same sign as the _divisor_ and has the absolute value less than the absolute value of the divisor.
```

```
*\n@SinceKotlin("1.5")\n@kotlin.internal.InlineOnly\n@kotlin.internal.IntrinsicConstEvaluation\npublic inline fun Long.mod(other: Short): Short = \n    this.mod(other.toLong()).toShort()\n\n/** Divides this value by the other value, flooring the result to an integer that is closer to negative infinity.
```

```
*\n@SinceKotlin("1.5")\n@kotlin.internal.InlineOnly\n@kotlin.internal.IntrinsicConstEvaluation\npublic inline fun Long.floorDiv(other: Int): Long = \n    this.floorDiv(other.toLong())\n\n/**\n * Calculates the remainder of flooring division of this value by the other value.\n * \n * The result is either zero or has the same sign as the _divisor_ and has the absolute value less than the absolute value of the divisor.
```

```
*\n@SinceKotlin("1.5")\n@kotlin.internal.InlineOnly\n@kotlin.internal.IntrinsicConstEvaluation\npublic inline fun Long.mod(other: Int): Int = \n    this.mod(other.toLong()).toInt()\n\n/** Divides this value by the other value, flooring the result to an integer that is closer to negative infinity.
```

```
*\n@SinceKotlin("1.5")\n@kotlin.internal.InlineOnly\n@kotlin.internal.IntrinsicConstEvaluation\npublic inline fun Long.floorDiv(other: Long): Long {\n    var q = this / other\n    if (this xor other < 0 && q * other != this) q--\n    return q\n}\n\n/**\n * Calculates the remainder of flooring division of this value by the other value.\n * \n * The result is either zero or has the same sign as the _divisor_ and has the absolute value less than the absolute value of the divisor.
```

```
*\n@SinceKotlin("1.5")\n@kotlin.internal.InlineOnly\n@kotlin.internal.IntrinsicConstEvaluation\npublic inline fun Long.mod(other: Long): Long {\n    val r = this % other\n    return r + (other and (((r xor other) and (r or -r)) shr 63))\n}\n\n/**\n * Calculates the remainder of flooring division of this value by the other value.\n * \n * The result is either zero or has the same sign as the _divisor_ and has the absolute value less than the absolute value of the divisor.\n * \n * If the result cannot be represented exactly, it is rounded to the nearest representable number. In this case the absolute value of the result can be less than or _equal to_ the absolute value of the divisor.
```

```
*\n@SinceKotlin("1.5")\n@kotlin.internal.InlineOnly\n@kotlin.internal.IntrinsicConstEvaluation\npublic inline fun Float.mod(other: Float): Float {\n    val r = this % other\n    return if (r != 0.0.toFloat() && r.sign != other.sign) r +
```

```

other else r\n}\n\n/**\n * Calculates the remainder of flooring division of this value by the other value.\n * \n * The
result is either zero or has the same sign as the _divisor_ and has the absolute value less than the absolute value of
the divisor.\n * \n * If the result cannot be represented exactly, it is rounded to the nearest representable number. In
this case the absolute value of the result can be less than or _equal to_ the absolute value of the divisor.\n
*\n@SinceKotlin("1.5")\n@kotlin.internal.InlineOnly\n@kotlin.internal.IntrinsicConstEvaluation\npublic inline
fun Float.mod(other: Double): Double = \n  this.toDouble().mod(other)\n\n/**\n * Calculates the remainder of
flooring division of this value by the other value.\n * \n * The result is either zero or has the same sign as the
_divisor_ and has the absolute value less than the absolute value of the divisor.\n * \n * If the result cannot be
represented exactly, it is rounded to the nearest representable number. In
this case the absolute value of the result can be less than or _equal to_ the absolute value of the divisor.\n
*\n@SinceKotlin("1.5")\n@kotlin.internal.InlineOnly\n@kotlin.internal.IntrinsicConstEvaluation\npublic inline
fun Double.mod(other: Float): Double = \n  this.mod(other.toDouble())\n\n/**\n * Calculates the remainder of
flooring division of this value by the other value.\n * \n * The result is either zero or has the same sign as the
_divisor_ and has the absolute value less than the absolute value of the divisor.\n * \n * If the result cannot be
represented exactly, it is rounded to the nearest representable number. In this case the absolute value of the result
can be less than or _equal to_ the absolute value of the divisor.\n
*\n@SinceKotlin("1.5")\n@kotlin.internal.InlineOnly\n@kotlin.internal.IntrinsicConstEvaluation\npublic inline
fun Double.mod(other: Double): Double { \n  val r = this % other\n  return if (r != 0.0 && r.sign != other.sign) r +
other else r\n}\n\n", /*\n
* Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code
is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\npackage
kotlin\n\nimport kotlin.internal.InlineOnly\n\n/**\n * Returns a hash code value for the object or zero if the object
is `null`. \n * \n * @see Any.hashCode\n */\n@SinceKotlin("1.3")\n@InlineOnly\npublic inline fun
Any?.hashCode(): Int = this?.hashCode() ?: 0\n", /*\n * Copyright 2010-2020 JetBrains s.r.o. and Kotlin
Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be
found in the license/LICENSE.txt file.\n */\n\npackage kotlin\n\n/**\n * Represents a version of the Kotlin standard
library.\n * \n * [major], [minor] and [patch] are integer components of a version,\n * they must be non-negative and
not greater than 255 ([MAX_COMPONENT_VALUE]).\n * \n * @constructor Creates a version from all three
components.\n
*\n@SinceKotlin("1.1")\npublic class KotlinVersion(val major: Int, val minor: Int, val patch: Int) :
Comparable<KotlinVersion> { \n  /**\n   * Creates a version from [major] and [minor] components, leaving
[patch] component zero.\n   * \n   * @param major The major component.\n   * @param minor The minor component.\n
*/\n  public constructor(major: Int, minor: Int) : this(major, minor, 0)\n\n  private val
version = versionOf(major, minor, patch)\n\n  private fun versionOf(major: Int, minor: Int, patch: Int): Int { \n
require(major in 0..MAX_COMPONENT_VALUE && minor in 0..MAX_COMPONENT_VALUE && patch in
0..MAX_COMPONENT_VALUE) { \n    "\nVersion components are out of range: $major.$minor.$patch"\n
}\n  return major.shl(16) + minor.shl(8) + patch\n } \n\n  /**\n   * Returns the string representation of this
version.\n   * \n   * @return The string representation of this version.\n   */\n  override fun toString(): String = "$major.$minor.$patch"\n\n  override fun equals(other:
Any?): Boolean { \n    if (this === other) return true\n    val otherVersion = (other as?
KotlinVersion)?: return false\n    return this.version == otherVersion.version\n  }\n\n  override fun
hashCode(): Int = version\n\n  override fun compareTo(other: KotlinVersion): Int = version - other.version\n\n
/**\n   * Returns `true` if this version is not less than the version specified\n   * with the provided [major] and
[minor] components.\n   * \n   * @param major The major component.\n   * @param minor The minor component.\n
*/\n  public fun isAtLeast(major: Int, minor: Int): Boolean = // this.version >=
versionOf(major, minor, 0)\n    this.major > major || (this.major == major &&\n      this.minor >=
minor)\n\n  /**\n   * Returns `true` if this version is not less than the version specified\n   * with the provided
[major], [minor] and [patch] components.\n   * \n   * @param major The major component.\n   * @param minor The
minor component.\n   * @param patch The patch component.\n   */\n  public fun isAtLeast(major: Int, minor: Int, patch: Int): Boolean
= // this.version >= versionOf(major, minor, patch)\n    this.major > major || (this.major == major &&\n
(this.minor > minor || this.minor == minor &&\n

```



```

        this.patch >= patch))\n    companion object {\n        /**\n         * Maximum value a version component can
have, a constant value 255.\n        */\n        // NOTE: Must be placed before CURRENT because its initialization
requires this field being initialized in JS\n        public const val MAX_COMPONENT_VALUE = 255\n        /**\n         * Returns the current version of the Kotlin standard library.\n        */\n        @kotlin.jvm.JvmField\n        public
val CURRENT: KotlinVersion = KotlinVersionCurrentValue.get()\n    }\n\n// this class is ignored during
classpath normalization when considering whether to recompile dependencies in Kotlin build\nprivate object
KotlinVersionCurrentValue {\n    @kotlin.jvm.JvmStatic\n    fun get(): KotlinVersion = KotlinVersion(1, 8, 0) //
value is written here automatically during build\n}", "/**\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin
Programming Language contributors.\n * Use of this source code is governed by the Apache
2.0 license that can be found in the license/LICENSE.txt file.\n
*/\n\n@file:kotlin.jvm.JvmName("LateinitKt")\n@file:Suppress("unused")\n\npackage kotlin\n\nimport
kotlin.internal.InlineOnly\nimport kotlin.internal.AccessibleLateinitPropertyLiteral\nimport
kotlin.reflect.KProperty0\n\n/**\n * Returns `true` if this lateinit property has been assigned a value, and `false`
otherwise.\n * Cannot be used in an inline function, to avoid binary compatibility issues.\n
*/\n\n@SinceKotlin("1.2")\n@InlineOnly\ninline val @receiver:AccessibleLateinitPropertyLiteral
KProperty0<*>.isInitialized: Boolean\n    get() = throw NotImplementedError("Implementation is
intrinsic")\n}", "/**\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use
of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*/\n\n@file:kotlin.jvm.JvmName("LazyKt")\n@file:kotlin.jvm.JvmMultifileClass\n\npackage kotlin\n\nimport
kotlin.reflect.KProperty\n\n/**\n * Represents a value with lazy initialization.\n * To create an instance of
[Lazy] use the [lazy] function.\n */\n\npublic interface Lazy<out T> {\n    /**\n     * Gets the lazily initialized value of
the current Lazy instance.\n     * Once the value was initialized it must not change during the rest of lifetime of this
Lazy instance.\n     */\n    public val value: T\n    /**\n     * Returns `true` if a value for this Lazy instance has been
already initialized, and `false` otherwise.\n     * Once this function has returned `true` it stays `true` for the rest of
lifetime of this Lazy instance.\n     */\n    public fun isInitialized(): Boolean\n}\n\n/**\n * Creates a new instance of
the [Lazy] that is already initialized with the specified [value].\n */\n\npublic fun <T> lazyOf(value: T): Lazy<T> =
InitializedLazyImpl(value)\n\n/**\n * An extension to delegate a read-only property of type [T] to an instance of
[Lazy].\n * This extension allows to
use instances of Lazy for property delegation:\n * `val property: String by lazy { initializer }`\n
*/\n\n@kotlin.internal.InlineOnly\npublic inline operator fun <T> Lazy<T>.getValue(thisRef: Any?, property:
KProperty<*>): T = value\n\n/**\n * Specifies how a [Lazy] instance synchronizes initialization among multiple
threads.\n */\n\npublic enum class LazyThreadSafetyMode {\n    /**\n     * Locks are used to ensure that only a
single thread can initialize the [Lazy] instance.\n     */\n    SYNCHRONIZED,\n    /**\n     * Initializer function
can be called several times on concurrent access to uninitialized [Lazy] instance value,\n     * but only the first
returned value will be used as the value of [Lazy] instance.\n     */\n    PUBLICATION,\n    /**\n     * No locks are
used to synchronize an access to the [Lazy] instance value; if the instance is accessed from multiple threads, its
behavior is undefined.\n     * This mode should not be used unless the [Lazy] instance is guaranteed
never to be initialized from more than one thread.\n     */\n    NONE,\n}\n\n\ninternal object
UNINITIALIZED_VALUE\n\n// internal to be called from lazy in JS\ninternal class UnsafeLazyImpl<out
T>(initializer: () -> T) : Lazy<T>, Serializable {\n    private var initializer: (() -> T)? = initializer\n    private var
_value: Any? = UNINITIALIZED_VALUE\n\n    override val value: T\n        get() {\n            if (_value ===
UNINITIALIZED_VALUE) {\n                _value = initializer!!()\n                initializer = null\n            }\n
\n            @Suppress("UNCHECKED_CAST")\n            return _value as T\n        }\n\n        override fun isInitialized():
Boolean = _value !== UNINITIALIZED_VALUE\n\n        override fun toString(): String = if (isInitialized())
value.toString() else "Lazy value not initialized yet.\n\n        private fun writeReplace(): Any =
InitializedLazyImpl(value)\n}\n\ninternal class InitializedLazyImpl<out T>(override val value: T) : Lazy<T>,
Serializable {\n

```

```

    override fun isInitialized(): Boolean = true\n\n    override fun toString(): String = value.toString()\n\n}"/*\n *
Copyright 2010-2019 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is
governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*/\n\n@file:kotlin.jvm.JvmMultifileClass\n@file:kotlin.jvm.JvmName("NumbersKt")\npackage kotlin\n\n*/\n *
Counts the number of set bits in the binary representation of this [Int] number.\n
*/\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic expect fun
Int.countOneBits(): Int\n\n*/\n * Counts the number of consecutive most significant bits that are zero in the binary
representation of this [Int] number.\n
*/\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic expect fun
Int.countLeadingZeroBits(): Int\n\n*/\n * Counts the number of consecutive least significant bits that are zero in
the binary representation
of this [Int] number.\n
*/\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic
expect fun Int.countTrailingZeroBits(): Int\n\n*/\n * Returns a number having a single bit set in the position of the
most significant set bit of this [Int] number,\n * or zero, if this number is zero.\n
*/\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic expect fun
Int.takeHighestOneBit(): Int\n\n*/\n * Returns a number having a single bit set in the position of the least
significant set bit of this [Int] number,\n * or zero, if this number is zero.\n
*/\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic expect fun
Int.takeLowestOneBit(): Int\n\n*/\n * Rotates the binary representation of this [Int] number left by the specified
[bitCount] number of bits.\n * The most significant bits pushed out from the left side reenter the number as the least
significant bits on the right side.\n * Rotating the number left by a
negative bit count is the same as rotating it right by the negated bit count:\n * `number.rotateLeft(-n) ==
number.rotateRight(n)`\n * Rotating by a multiple of [Int.SIZE_BITS] (32) returns the same number, or more
generally\n * `number.rotateLeft(n) == number.rotateLeft(n % 32)`\n
*/\n@SinceKotlin("1.6")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic expect fun
Int.rotateLeft(bitCount: Int): Int\n\n*/\n * Rotates the binary representation of this [Int] number right by the
specified [bitCount] number of bits.\n * The least significant bits pushed out from the right side reenter the number
as the most significant bits on the left side.\n * Rotating the number right by a negative bit count is the same as
rotating it left by the negated bit count:\n * `number.rotateRight(-n) == number.rotateLeft(n)`\n * Rotating by a
multiple of [Int.SIZE_BITS] (32) returns the same number, or more generally\n * `number.rotateRight(n) ==
number.rotateRight(n % 32)`\n
*/\n@SinceKotlin("1.6")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic
expect fun Int.rotateRight(bitCount: Int): Int\n\n*/\n * Counts the number of set bits in the binary representation
of this [Long] number.\n
*/\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic
expect fun Long.countOneBits(): Int\n\n*/\n * Counts the number of consecutive most significant bits that are zero
in the binary representation of this [Long] number.\n
*/\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic expect fun
Long.countLeadingZeroBits(): Int\n\n*/\n * Counts the number of consecutive least significant bits that are zero in
the binary representation of this [Long] number.\n
*/\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic expect fun
Long.countTrailingZeroBits(): Int\n\n*/\n * Returns a number having a single bit set in the position of the most
significant set bit of this [Long] number,\n * or zero, if this number
is zero.\n
*/\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic expect fun
Long.takeHighestOneBit(): Long\n\n*/\n * Returns a number having a single bit set in the position of the least
significant set bit of this [Long] number,\n * or zero, if this number is zero.\n
*/\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic expect fun
Long.takeLowestOneBit(): Long\n\n*/\n * Rotates the binary representation of this [Long] number left by the
specified [bitCount] number of bits.\n * The most significant bits pushed out from the left side reenter the number as

```

the least significant bits on the right side.\n \*\n \* Rotating the number left by a negative bit count is the same as rotating it right by the negated bit count:\n \* `number.rotateLeft(-n) == number.rotateRight(n)`\n \*\n \* Rotating by a multiple of [Long.SIZE\_BITS] (64) returns the same number, or more generally\n \*\n \* `number.rotateLeft(n) == number.rotateLeft(n % 64)`\n

```
*\n@SinceKotlin("1.6")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic expect fun Long.rotateLeft(bitCount: Int): Long\n\n*\n * Rotates the binary representation of this [Long] number right by the specified [bitCount] number of bits.\n *\n * The least significant bits pushed out from the right side reenter the number as the most significant bits on the left side.\n *\n * Rotating the number right by a negative bit count is the same as rotating it left by the negated bit count:\n *\n * `number.rotateRight(-n) == number.rotateLeft(n)`\n *\n * Rotating by a multiple of [Long.SIZE_BITS] (64) returns the same number, or more generally\n *\n * `number.rotateRight(n) == number.rotateRight(n % 64)`\n
```

```
*\n@SinceKotlin("1.6")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic expect fun Long.rotateRight(bitCount: Int): Long\n\n*\n * Counts the number of set bits in the binary representation of this [Byte] number.\n
```

```
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun Byte.countOneBits(): Int = (toInt() and 0xFF).countOneBits()\n\n*\n * Counts the number of consecutive most significant bits that are zero in the binary representation of this [Byte] number.\n
```

```
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun Byte.countLeadingZeroBits(): Int = (toInt() and 0xFF).countLeadingZeroBits() - (Int.SIZE_BITS - Byte.SIZE_BITS)\n\n*\n * Counts the number of consecutive least significant bits that are zero in the binary representation of this [Byte] number.\n
```

```
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun Byte.countTrailingZeroBits(): Int = (toInt() or 0x100).countTrailingZeroBits()\n\n*\n * Returns a number having a single bit set in the position of the most significant set bit of this [Byte] number,\n * or zero, if this number is zero.\n
```

```
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun Byte.takeHighestOneBit(): Byte = (toInt() and 0xFF).takeHighestOneBit().toByte()\n\n*\n * Returns a number having a single bit set in the position of the least significant set bit of this [Byte] number,\n * or zero, if this number is zero.\n
```

```
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun Byte.takeLowestOneBit(): Byte = toInt().takeLowestOneBit().toByte()\n\n*\n * Rotates the binary representation of this [Byte] number left by the specified [bitCount] number of bits.\n *\n * The most significant bits pushed out from the left side reenter the number as the least significant bits on the right side.\n *\n * Rotating the number left by a negative bit count is the same as rotating it right by the negated bit count:\n *\n * `number.rotateLeft(-n) == number.rotateRight(n)`\n *\n * Rotating by a multiple of [Byte.SIZE_BITS] (8) returns the same number, or more generally\n *\n * `number.rotateLeft(n) == number.rotateLeft(n % 8)`\n
```

```
*\n@SinceKotlin("1.6")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic fun Byte.rotateLeft(bitCount: Int): Byte =\n    (toInt().shl(bitCount and 7) or (toInt() and 0xFF).ushr(8 - (bitCount and 7))).toByte()\n\n*\n * Rotates the binary representation of this [Byte] number right by the specified [bitCount] number of bits.\n *\n * The least significant bits pushed out from the right side reenter the number as the most significant bits on the left side.\n *\n * Rotating the number right by a negative bit count is the same as rotating it left by the negated bit count:\n *\n * `number.rotateRight(-n) == number.rotateLeft(n)`\n *\n * Rotating by a multiple of [Byte.SIZE_BITS] (8) returns the same number, or more generally\n *\n * `number.rotateRight(n) == number.rotateRight(n % 8)`\n
```

```
*\n@SinceKotlin("1.6")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic fun Byte.rotateRight(bitCount: Int): Byte =\n    (toInt().shr(bitCount and 7) or (toInt() and 0xFF).shl(8 - (bitCount and 7))).toByte()\n
```

Int): Byte =\n (toInt().shl(8 - (bitCount and 7)) or (toInt() and 0xFF).ushr(bitCount and 7)).toByte()\n\n/\*\*\n \* Counts the number of set bits in the binary representation of this [Short] number.\n

```

*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun Short.countOneBits(): Int = (toInt() and 0xFFFF).countOneBits()\n\n/**\n * Counts the number of consecutive most significant bits that are zero in the binary representation of this [Short] number.\n
```

```

*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun Short.countLeadingZeroBits(): Int =\n (toInt() and 0xFFFF).countLeadingZeroBits() - (Int.SIZE_BITS - Short.SIZE_BITS)\n\n/**\n * Counts the number of consecutive least significant bits that are zero in the binary representation of this [Short] number.\n
```

```

*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun Short.countTrailingZeroBits(): Int = (toInt() or 0x10000).countTrailingZeroBits()\n\n/**\n * Returns a number having a single bit set in the position of the most significant set bit of this [Short] number,\n * or zero, if this number is zero.\n
```

```

*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun Short.takeHighestOneBit(): Short = (toInt() and 0xFFFF).takeHighestOneBit().toShort()\n\n/**\n * Returns a number having a single bit set in the position of the least significant set bit of this [Short] number,\n * or zero, if this number is zero.\n
```

```

*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun Short.takeLowestOneBit(): Short = toInt().takeLowestOneBit().toShort()\n\n/**\n * Rotates the binary representation of this [Short] number left by the specified [bitCount] number of bits.\n * The most significant bits pushed out from the left side reenter the number as the least significant bits on the right side.\n * Rotating the number left by a negative bit count is the same as rotating it right by the negated bit count:\n * `number.rotateLeft(-n) == number.rotateRight(n)`\n * Rotating by a multiple of [Short.SIZE_BITS] (16) returns the same number, or more generally\n * `number.rotateLeft(n) == number.rotateLeft(n % 16)`\n
```

```

*\n@SinceKotlin("1.6")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic fun Short.rotateLeft(bitCount: Int): Short =\n (toInt().shl(bitCount and 15) or (toInt() and 0xFFFF).ushr(16 - (bitCount and 15))).toShort()\n\n/**\n * Rotates the binary representation of this [Short] number right by the specified [bitCount] number of bits.\n * The least significant bits pushed out from the right side reenter the number as the most significant bits on the left side.\n * Rotating the number right by a negative bit count is the same as rotating it left by the negated bit count:\n * `number.rotateRight(-n) == number.rotateLeft(n)`\n * Rotating by a multiple of [Short.SIZE_BITS] (16) returns the same number, or more generally\n * `number.rotateRight(n) == number.rotateRight(n % 16)`\n
```

```

*\n@SinceKotlin("1.6")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic fun Short.rotateRight(bitCount: Int): Short =\n (toInt().shl(16 - (bitCount and 15)) or (toInt() and 0xFFFF).ushr(bitCount and 15)).toShort()\n\n"/*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\npackage kotlin\nimport kotlin.internal.RequireKotlin\nimport kotlin.internal.RequireKotlinVersionKind\n\n@kotlin.internal.InlineOnly\n@SinceKotlin("1.2")\n@Suppress("INVISIBLE_MEMBER", "INVISIBLE_REFERENCE")\npublic inline fun <R> suspend(noinline block: suspend () -> R): suspend () -> R = block\n\n"/*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
```

```

*\n\n@file:kotlin.jvm.JvmName("TuplesKt")\n\npackage kotlin\n\n\n/**\n * Represents a generic pair of two values.\n * There is no meaning attached to values in this class, it can be used for any purpose.\n * Pair exhibits value semantics, i.e. two pairs are equal if both components are equal.\n * An example of decomposing it into values:\n * @sample samples.misc.Tuples.pairDestructuring\n * @param A type of the first value.\n * @param

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B type of the second value.\n * @property first First value.\n * @property second Second value.\n * @constructor
Creates a new instance of Pair.\n */\npublic data class Pair<out A, out B>(\n    public val first: A,\n    public val\n    second: B)\n) : Serializable {\n\n    /**\n     * Returns string representation of the [Pair] including its [first] and\n    [second] values.\n\n    */\n    public override fun toString(): String = \"($first, $second)\"\n}\n\n/**\n * Creates a tuple of type [Pair] from\n    this and [that].\n * This can be useful for creating [Map] literals with less noise, for example:\n * @sample\n    samples.collections.maps.instantiation.mapFromPairs\n */\npublic infix fun <A, B> A.to(that: B): Pair<A, B> =\n    Pair(this, that)\n\n/**\n * Converts this pair into a list.\n * @sample\n    samples.misc.tuples.pairToList\n */\npublic\n    fun <T> Pair<T, T>.toList(): List<T> = listOf(first, second)\n\n/**\n * Represents a triad of values\n * There is\n    no meaning attached to values in this class, it can be used for any purpose.\n * Triple exhibits value semantics, i.e.\n    two triples are equal if all three components are equal.\n * An example of decomposing it into values:\n * @sample\n    samples.misc.tuples.tripleDestructuring\n */\n * @param A type of the first value.\n * @param B type of the second\n    value.\n * @param C type of the third value.\n * @property first First value.\n\n * @property second Second value.\n * @property third Third value.\n */\npublic data class Triple<out A, out B, out\n    C>(\n    public val first: A,\n    public val second: B,\n    public val third: C)\n) : Serializable {\n\n    /**\n     * Returns string representation of the [Triple] including its [first], [second] and [third] values.\n    */\n    public\n        override fun toString(): String = \"($first, $second, $third)\"\n}\n\n/**\n * Converts this triple into a list.\n * @sample\n    samples.misc.tuples.tripleToList\n */\npublic fun <T> Triple<T, T, T>.toList(): List<T> = listOf(first,\n    second, third)\n", "/\n * Copyright 2010-2022 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\n// Auto-generated file. DO NOT EDIT!\npackage kotlin.ranges\n\nimport kotlin.internal.*\n\n/**\n * A\n    range of values of type `UInt`.\n\n */\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@OptIn(ExperimentalStdlib\n    Api::class)\npublic\n    class UIntRange(start: UInt, endInclusive: UInt) : UIntProgression(start, endInclusive, 1), ClosedRange<UInt>,\n    OpenEndRange<UInt> {\n\n        override val start: UInt get() = first\n        override val endInclusive: UInt get() = last\n\n        @SinceKotlin("1.7")\n        @ExperimentalStdlibApi\n        @Deprecated("Can throw an exception when it's\n            impossible to represent the value with UInt type, for example, when the range includes MAX_VALUE. It's\n            recommended to use 'endInclusive' property that doesn't throw.")\n        override val endExclusive: UInt get() {\n            if (last == UInt.MAX_VALUE) error("Cannot return the exclusive upper bound of a range that includes\n                MAX_VALUE.")\n            return last + 1u\n        }\n\n        override fun contains(value: UInt): Boolean = first <= value\n            && value <= last\n\n        /**\n         * Checks if the range is empty.\n         * The range is empty if its start value is\n            greater than\n            the end value.\n         */\n        override fun isEmpty(): Boolean = first > last\n\n        override fun equals(other: Any?):\n            Boolean =\n                other is UIntRange && (isEmpty() && other.isEmpty() ||\n                    first == other.first && last ==\n                    other.last)\n\n        override fun hashCode(): Int =\n            if (isEmpty()) -1 else (31 * first.toInt() + last.toInt())\n\n        override fun toString(): String = \"$first..$last\"\n\n        companion object {\n            /**\n             * An empty range of values of\n                type UInt.\n             */\n            public val EMPTY: UIntRange = UIntRange(UInt.MAX_VALUE, UInt.MIN_VALUE)\n        }\n\n        /**\n         * A progression of values of type `UInt`.\n\n         */\n        @SinceKotlin("1.5")\n        @WasExperimental(ExperimentalUnsignedTypes::class)\n        public open class\n            UIntProgression\n                internal constructor(\n                    start: UInt,\n                    endInclusive: UInt,\n                    step: Int)\n                : Iterable<UInt> {\n\n                init {\n                    if (step == 0.toInt()) throw kotlin.IllegalArgumentException("Step must be non-zero.")\n                    if (step\n                        == Int.MIN_VALUE)\n                        throw kotlin.IllegalArgumentException("Step must be greater than Int.MIN_VALUE to avoid overflow on\n                            negation.")\n                }\n\n                /**\n                 * The first element in the progression.\n                 */\n                public val first: UInt = start\n\n                /**\n                 * The last element in the progression.\n                 */\n                public val last: UInt = getProgressionLastElement(start,\n                    endInclusive, step)\n\n                /**\n                 * The step of the progression.\n                 */\n                public val step: Int = step\n\n                final\n                    override fun iterator(): Iterator<UInt> = UIntProgressionIterator(first, last, step)\n\n                /**\n                 * Checks if the

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progression is empty.\n    \n    * Progression with a positive step is empty if its first element is greater than the last
element.\n    * Progression with a negative step is empty if its first element is less than the last element.\n    */\n
public open fun isEmpty(): Boolean = if (step > 0) first > last else first < last\n\n    override fun equals(other: Any?):
Boolean =\n        other is
    UIntProgression && (isEmpty() && other.isEmpty()) ||\n                first == other.first && last == other.last && step
== other.step)\n\n    override fun hashCode(): Int =\n        if (isEmpty()) -1 else (31 * (31 * first.toInt() + last.toInt())
+ step.toInt())\n\n    override fun toString(): String = if (step > 0) \"$first..$last step $step\" else \"$first downTo
$last step ${-step}\".\n\n    companion object {\n        /**\n            * Creates UIntProgression within the specified
bounds of a closed range.\n            * The progression starts with the [rangeStart] value and goes toward the
[rangeEnd] value not excluding it, with the specified [step].\n            * In order to go backwards the [step] must be
negative.\n            *\n            * [step] must be greater than `Int.MIN_VALUE` and not equal to zero.\n            */\n
        public fun fromClosedRange(rangeStart: UInt, rangeEnd: UInt, step: Int): UIntProgression =
        UIntProgression(rangeStart, rangeEnd, step)\n    }\n\n    /**\n        * An iterator
over a progression of values of type `UInt`.\n        * @property step the number by which the value is incremented on
each step.\n        */\n\n    @SinceKotlin("1.3")\n    private class UIntProgressionIterator(first: UInt, last: UInt, step: Int) :
    Iterator<UInt> {\n        private val finalElement = last\n        private var hasNext: Boolean = if (step > 0) first <= last else
first >= last\n        private val step = step.toUInt() // use 2-complement math for negative steps\n        private var next = if
(hasNext) first else finalElement\n\n        override fun hasNext(): Boolean = hasNext\n\n        override fun next(): UInt
{\n            val value = next\n            if (value == finalElement) {\n                if (!hasNext) throw
                kotlin.NoSuchElementException()\n                hasNext = false\n            } else {\n                next += step\n            }\n
            return value\n        }\n    }\n\n    /**\n        * Copyright 2010-2022 JetBrains s.r.o. and Kotlin Programming Language
contributors.\n        * Use of this source code is governed by the Apache 2.0 license
that can be found in the license/LICENSE.txt file.\n        */\n\n    // Auto-generated file. DO NOT EDIT!\n\n    package
kotlin.ranges\n\n    import kotlin.internal.*\n\n    /**\n        * A range of values of type `ULong`.\n        */\n\n    @SinceKotlin("1.5")\n    @WasExperimental(ExperimentalUnsignedTypes::class)\n    @OptIn(ExperimentalStdlib
Api::class)\n    public class ULongRange(start: ULong, endInclusive: ULong) : ULongProgression(start, endInclusive,
1), ClosedRange<ULong>, OpenEndRange<ULong> {\n        override val start: ULong get() = first\n        override val
endInclusive: ULong get() = last\n    }\n\n    @SinceKotlin("1.7")\n    @ExperimentalStdlibApi\n    @Deprecated("Can throw an exception when it's impossible to represent the value with ULong type, for example,
when the range includes MAX_VALUE. It's recommended to use 'endInclusive' property that doesn't throw.")\n
    override val endExclusive: ULong get() {\n        if (last == ULong.MAX_VALUE) error("Cannot return the
exclusive upper bound of a range that includes
        MAX_VALUE.")\n        return last + 1u\n    }\n\n    override fun contains(value: ULong): Boolean = first <= value
&& value <= last\n\n    /**\n        * Checks if the range is empty.\n        * The range is empty if its start value is
greater than the end value.\n        */\n\n    override fun isEmpty(): Boolean = first > last\n\n    override fun equals(other:
Any?): Boolean =\n        other is ULongRange && (isEmpty() && other.isEmpty()) ||\n                first == other.first
&& last == other.last)\n\n    override fun hashCode(): Int =\n        if (isEmpty()) -1 else (31 * (first xor (first shr
32)).toInt() + (last xor (last shr 32)).toInt())\n\n    override fun toString(): String = \"$first..$last\"\n\n    companion
object {\n        /**\n            * An empty range of values of type ULong.\n            */\n        public val EMPTY: ULongRange =
        ULongRange(ULong.MAX_VALUE, ULong.MIN_VALUE)\n    }\n\n    /**\n        * A progression of values of type
`ULong`.\n        */\n\n    @SinceKotlin("1.5")\n    @WasExperimental(ExperimentalUnsignedTypes::class)\n    public
open class ULongProgression\n        internal constructor(\n            start: ULong,\n            endInclusive: ULong,\n            step: Long\n        ) :
    Iterable<ULong> {\n        init {\n            if (step == 0.toLong()) throw kotlin.IllegalArgumentException("Step must be
non-zero.")\n            if (step == Long.MIN_VALUE) throw kotlin.IllegalArgumentException("Step must be greater
than Long.MIN_VALUE to avoid overflow on negation.")\n        }\n\n        /**\n            * The first element in the
progression.\n            */\n        public val first: ULong = start\n\n        /**\n            * The last element in the progression.\n            */\n
        public val last: ULong = getProgressionLastElement(start, endInclusive, step)\n\n        /**\n            * The step of the
progression.\n            */\n        public val step: Long = step\n\n        final override fun iterator(): Iterator<ULong> =

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ULongProgressionIterator(first, last, step)\n\n /**\n * Checks if the progression is empty.\n\n *
Progression with a positive step is empty if its
first element is greater than the last element.\n * Progression with a negative step is empty if its first element is
less than the last element.\n\n */\n public open fun isEmpty(): Boolean = if (step > 0) first > last else first <
last\n\n override fun equals(other: Any?): Boolean =\n other is ULongProgression && (isEmpty() &&
other.isEmpty()) ||\n first == other.first && last == other.last && step == other.step)\n\n override fun
hashCode(): Int =\n if (isEmpty()) -1 else (31 * (31 * (first xor (first shr 32)).toInt() + (last xor (last shr
32)).toInt()) + (step xor (step ushr 32)).toInt())\n\n override fun toString(): String = if (step > 0) \"$first..$last step
$step\" else \"$first downTo $last step ${-step}\"
companion object {\n /**\n * Creates
ULongProgression within the specified bounds of a closed range.\n\n * The progression starts with the
[rangeStart] value and goes toward the [rangeEnd] value not excluding
it, with the specified [step].\n\n * In order to go backwards the [step] must be negative.\n\n * [step]
must be greater than `Long.MIN_VALUE` and not equal to zero.\n\n */\n public fun
fromClosedRange(rangeStart: ULong, rangeEnd: ULong, step: Long): ULongProgression =
ULongProgression(rangeStart, rangeEnd, step)\n }
}\n\n/**\n * An iterator over a progression of values of type
`ULong`.\n * @property step the number by which the value is incremented on each step.\n
*/\n@SinceKotlin("1.3")\nprivate class ULongProgressionIterator(first: ULong, last: ULong, step: Long) :
Iterator<ULong> {\n private val finalElement = last\n private var hasNext: Boolean = if (step > 0) first <= last
else first >= last\n private val step = step.toULong() // use 2-complement math for negative steps\n private var
next = if (hasNext) first else finalElement\n\n override fun hasNext(): Boolean = hasNext\n\n override fun
next(): ULong {\n
val value = next\n if (value == finalElement) {\n if (!hasNext) throw
kotlin.NoSuchElementException()\n hasNext = false\n } else {\n next += step\n }\n
return value\n }\n}\n\n"/*\n * Copyright 2010-2021 JetBrains s.r.o. and Kotlin Programming Language
contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n */\npackage kotlin.math\n/**\n * Returns the smaller of two values.\n
*/\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\npublic inline fun min(a: UInt, b: UInt): UInt {\n return minOf(a, b)\n}\n\n/**\n * Returns the smaller of two
values.\n
*/\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\npublic inline fun min(a: ULong, b: ULong): ULong {\n return minOf(a, b)\n}\n\n/**\n * Returns the greater of
two values.\n
*/\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\npublic
inline fun max(a: UInt, b: UInt): UInt {\n return maxOf(a, b)\n}\n\n/**\n * Returns the greater of two values.\n
*/\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\npublic
inline fun max(a: ULong, b: ULong): ULong {\n return maxOf(a, b)\n}\n"/*\n * Copyright 2010-2021
JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the
Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*/\n\n@file:kotlin.jvm.JvmName("UNumbersKt")\npackage kotlin\n\n/**\n * Counts the number of set bits in the
binary representation of this [UInt] number.\n
*/\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class,
ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun UInt.countOneBits(): Int =
toInt().countOneBits()\n\n/**\n * Counts
the number of consecutive most significant bits that are zero in the binary representation of this [UInt] number.\n
*/\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class,
ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun UInt.countLeadingZeroBits(): Int =
toInt().countLeadingZeroBits()\n\n/**\n * Counts the number of consecutive least significant bits that are zero in the

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binary representation of this [UInt] number.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class,
ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun UInt.countTrailingZeroBits(): Int =
toInt().countTrailingZeroBits()\n\n/**\n * Returns a number having a single bit set in the position of the most
significant set bit of this [UInt] number,\n * or zero, if this number is zero.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class,
ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic
inline fun UInt.takeHighestOneBit(): UInt = toInt().takeHighestOneBit().toUInt()\n\n/**\n * Returns a number
having a single bit set in the position of the least significant set bit of this [UInt] number,\n * or zero, if this number
is zero.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class,
ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun UInt.takeLowestOneBit(): UInt =
toInt().takeLowestOneBit().toUInt()\n\n/**\n * Rotates the binary representation of this [UInt] number left by the
specified [bitCount] number of bits.\n * The most significant bits pushed out from the left side reenter the number as
the least significant bits on the right side.\n * Rotating the number left by a negative bit count is the same as
rotating it right by the negated bit count:\n * `number.rotateLeft(-n) == number.rotateRight(n)`\n * Rotating by a
multiple of [UInt.SIZE_BITS] (32) returns the same number, or more generally\n * `number.rotateLeft(n)
== number.rotateLeft(n % 32)`\n
*\n@SinceKotlin("1.6")\n@WasExperimental(ExperimentalStdlibApi::class,
ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\npublic inline fun UInt.rotateLeft(bitCount: Int):
UInt = toInt().rotateLeft(bitCount).toUInt()\n\n/**\n * Rotates the binary representation of this [UInt] number
right by the specified [bitCount] number of bits.\n * The least significant bits pushed out from the right side reenter
the number as the most significant bits on the left side.\n * Rotating the number right by a negative bit count is
the same as rotating it left by the negated bit count:\n * `number.rotateRight(-n) == number.rotateLeft(n)`\n *
Rotating by a multiple of [UInt.SIZE_BITS] (32) returns the same number, or more generally\n *
`number.rotateRight(n) == number.rotateRight(n % 32)`\n
*\n@SinceKotlin("1.6")\n@WasExperimental(ExperimentalStdlibApi::class,
ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\npublic inline
fun UInt.rotateRight(bitCount: Int): UInt = toInt().rotateRight(bitCount).toUInt()\n\n/**\n * Counts the number of
set bits in the binary representation of this [ULong] number.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class,
ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun ULong.countOneBits(): Int =
toLong().countOneBits()\n\n/**\n * Counts the number of consecutive most significant bits that are zero in the
binary representation of this [ULong] number.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class,
ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun ULong.countLeadingZeroBits(): Int =
toLong().countLeadingZeroBits()\n\n/**\n * Counts the number of consecutive least significant bits that are zero
in the binary representation of this [ULong] number.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class,
ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic
inline fun ULong.countTrailingZeroBits(): Int = toLong().countTrailingZeroBits()\n\n/**\n * Returns a number
having a single bit set in the position of the most significant set bit of this [ULong] number,\n * or zero, if this
number is zero.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class,
ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun ULong.takeHighestOneBit(): ULong
= toLong().takeHighestOneBit().toULong()\n\n/**\n * Returns a number having a single bit set in the position of the
least significant set bit of this [ULong] number,\n * or zero, if this number is zero.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class,
ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun ULong.takeLowestOneBit(): ULong
= toLong().takeLowestOneBit().toULong()\n\n/**\n * Rotates the binary representation of this [ULong] number left
by the specified [bitCount]

```



number of bits.\n \* The most significant bits pushed out from the left side reenter the number as the least significant bits on the right side.\n \* Rotating the number left by a negative bit count is the same as rotating it right by the negated bit count:\n \* `number.rotateLeft(-n) == number.rotateRight(n)`\n \* Rotating by a multiple of [ULong.SIZE\_BITS] (64) returns the same number, or more generally\n \* `number.rotateLeft(n) == number.rotateLeft(n % 64)`\n \* \n @SinceKotlin("1.6")\n @WasExperimental(ExperimentalStdlibApi::class, ExperimentalUnsignedTypes::class)\n @kotlin.internal.InlineOnly\n public inline fun ULong.rotateLeft(bitCount: Int): ULong = toLong().rotateLeft(bitCount).toULong()\n \n \*\*\n \* Rotates the binary representation of this [ULong] number right by the specified [bitCount] number of bits.\n \* The least significant bits pushed out from the right side reenter the number as the most significant bits on the left side.\n \* Rotating the number right by a negative bit count is the same as rotating it left by the negated bit count:\n \* `number.rotateRight(-n) == number.rotateLeft(n)`\n \* Rotating by a multiple of [ULong.SIZE\_BITS] (64) returns the same number, or more generally\n \* `number.rotateRight(n) == number.rotateRight(n % 64)`\n \* \n @SinceKotlin("1.6")\n @WasExperimental(ExperimentalStdlibApi::class, ExperimentalUnsignedTypes::class)\n @kotlin.internal.InlineOnly\n public inline fun ULong.rotateRight(bitCount: Int): ULong = toLong().rotateRight(bitCount).toULong()\n \n \*\*\n \* Counts the number of set bits in the binary representation of this [UByte] number.\n \* \n @SinceKotlin("1.5")\n @WasExperimental(ExperimentalUnsignedTypes::class, ExperimentalStdlibApi::class)\n @kotlin.internal.InlineOnly\n public inline fun UByte.countOneBits(): Int = toUInt().countOneBits()\n \n \*\*\n \* Counts the number of consecutive most significant bits that are zero in the binary representation of this [UByte] number.\n \* \n @SinceKotlin("1.5")\n @WasExperimental(ExperimentalUnsignedTypes::class, ExperimentalStdlibApi::class)\n @kotlin.internal.InlineOnly\n public inline fun UByte.countLeadingZeroBits(): Int = toByte().countLeadingZeroBits()\n \n \*\*\n \* Counts the number of consecutive least significant bits that are zero in the binary representation of this [UByte] number.\n \* \n @SinceKotlin("1.5")\n @WasExperimental(ExperimentalUnsignedTypes::class, ExperimentalStdlibApi::class)\n @kotlin.internal.InlineOnly\n public inline fun UByte.countTrailingZeroBits(): Int = toByte().countTrailingZeroBits()\n \n \*\*\n \* Returns a number having a single bit set in the position of the most significant set bit of this [UByte] number,\n \* or zero, if this number is zero.\n \* \n @SinceKotlin("1.5")\n @WasExperimental(ExperimentalUnsignedTypes::class, ExperimentalStdlibApi::class)\n @kotlin.internal.InlineOnly\n public inline fun UByte.takeHighestOneBit(): UByte = toInt().takeHighestOneBit().toUByte()\n \n \*\*\n \* Returns a number having a single bit set in the position of the least significant set bit of this [UByte] number,\n \* or zero, if this number is zero.\n \* \n @SinceKotlin("1.5")\n @WasExperimental(ExperimentalUnsignedTypes::class, ExperimentalStdlibApi::class)\n @kotlin.internal.InlineOnly\n public inline fun UByte.takeLowestOneBit(): UByte = toInt().takeLowestOneBit().toUByte()\n \n \*\*\n \* Rotates the binary representation of this [UByte] number left by the specified [bitCount] number of bits.\n \* The most significant bits pushed out from the left side reenter the number as the least significant bits on the right side.\n \* Rotating the number left by a negative bit count is the same as rotating it right by the negated bit count:\n \* `number.rotateLeft(-n) == number.rotateRight(n)`\n \* Rotating by a multiple of [UByte.SIZE\_BITS] (8) returns the same number, or more generally\n \* `number.rotateLeft(n) == number.rotateLeft(n % 8)`\n \* \n @SinceKotlin("1.6")\n @WasExperimental(ExperimentalStdlibApi::class, ExperimentalUnsignedTypes::class)\n @kotlin.internal.InlineOnly\n public inline fun UByte.rotateLeft(bitCount: Int): UByte = toByte().rotateLeft(bitCount).toUByte()\n \n \*\*\n \* Rotates the binary representation of this [UByte] number right by the specified [bitCount] number of bits.\n \* The least significant bits pushed out from the right side reenter the number as the most significant bits on the left side.\n \* Rotating the number right by a negative bit count is the same as rotating it left by the negated bit count:\n \* `number.rotateRight(-n) == number.rotateLeft(n)`\n \* Rotating by a multiple of [UByte.SIZE\_BITS] (8) returns the same number, or more generally\n \* `number.rotateRight(n) == number.rotateRight(n % 8)`\n \* \n

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*\n@SinceKotlin("1.6")\n@WasExperimental(ExperimentalStdlibApi::class,
ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\npublic inline fun UByte.rotateRight(bitCount:
Int): UByte = toByte().rotateRight(bitCount).toUByte()\n\n/**\n * Counts the number of set bits in the
binary representation of this [UShort] number.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class,
ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun UShort.countOneBits(): Int =
toUInt().countOneBits()\n\n/**\n * Counts the number of consecutive most significant bits that are zero in the
binary representation of this [UShort] number.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class,
ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun UShort.countLeadingZeroBits(): Int =
toShort().countLeadingZeroBits()\n\n/**\n * Counts the number of consecutive least significant bits that are zero
in the binary representation of this [UShort] number.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class,
ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun UShort.countTrailingZeroBits(): Int =
toShort().countTrailingZeroBits()\n\n/**\n * Returns
a number having a single bit set in the position of the most significant set bit of this [UShort] number,\n * or zero, if
this number is zero.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class,
ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun UShort.takeHighestOneBit(): UShort =
toInt().takeHighestOneBit().toUShort()\n\n/**\n * Returns a number having a single bit set in the position of the
least significant set bit of this [UShort] number,\n * or zero, if this number is zero.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class,
ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun UShort.takeLowestOneBit(): UShort =
toInt().takeLowestOneBit().toUShort()\n\n/**\n * Rotates the binary representation of this [UShort] number left
by the specified [bitCount] number of bits.\n * The most significant bits pushed out from the left side reenter the
number as the least significant
bits on the right side.\n * Rotating the number left by a negative bit count is the same as rotating it right by the
negated bit count:\n * `number.rotateLeft(-n) == number.rotateRight(n)`\n * Rotating by a multiple of
[UShort.SIZE_BITS] (16) returns the same number, or more generally\n * `number.rotateLeft(n) ==
number.rotateLeft(n % 16)`\n
*\n@SinceKotlin("1.6")\n@WasExperimental(ExperimentalStdlibApi::class,
ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\npublic inline fun UShort.rotateLeft(bitCount:
Int): UShort = toShort().rotateLeft(bitCount).toUShort()\n\n/**\n * Rotates the binary representation of this
[UShort] number right by the specified [bitCount] number of bits.\n * The least significant bits pushed out from the
right side reenter the number as the most significant bits on the left side.\n * Rotating the number right by a
negative bit count is the same as rotating it left by the negated bit count:\n * `number.rotateRight(-n) ==
number.rotateLeft(n)`\n
*\n * Rotating by a multiple of [UShort.SIZE_BITS] (16) returns the same number, or more generally\n *
`number.rotateRight(n) == number.rotateRight(n % 16)`\n
*\n@SinceKotlin("1.6")\n@WasExperimental(ExperimentalStdlibApi::class,
ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\npublic inline fun UShort.rotateRight(bitCount:
Int): UShort = toShort().rotateRight(bitCount).toUShort()\n\n"/*\n * Copyright 2010-2021 JetBrains s.r.o. and Kotlin
Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be
found in the license/LICENSE.txt file.\n *\npackage kotlin.internal\n// (a - b) mod c\nprivate fun
differenceModulo(a: UInt, b: UInt, c: UInt): UInt {\n    val ac = a % c\n    val bc = b % c\n    return if (ac >= bc) ac -
bc else ac - bc + c\n}\nprivate fun differenceModulo(a: ULong, b: ULong, c: ULong): ULong {\n    val ac = a %
c\n    val bc = b % c\n    return if (ac >= bc) ac - bc else ac - bc + c\n}\n\n/**\n * Calculates the final element of a bounded arithmetic progression, i.e. the last element of the progression which is
in the range\n * from [start] to [end] in case of a positive [step], or from [end] to [start] in case of a negative\n *
[step].\n * No validation on passed parameters is performed. The given parameters should satisfy the

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condition:\n *\n * - either `step > 0` and `start <= end`,\n * - or `step < 0` and `start >= end`.\n *\n * @param start
first element of the progression\n *\n * @param end ending bound for the progression\n *\n * @param step increment, or
difference of successive elements in the progression\n *\n * @return the final element of the progression\n *\n *
@suppress\n *\n @PublishedApi\n @SinceKotlin("1.3")\n internal fun getProgressionLastElement(start: UInt, end:
UInt, step: Int): UInt = when {\n     step > 0 -> if (start >= end) end else end - differenceModulo(end, start,
step.toUInt())\n     step < 0 -> if (start <= end) end else end + differenceModulo(start,
end, (-step).toUInt())\n     else -> throw kotlin.IllegalArgumentException("Step is zero.")\n }\n\n/**\n * Calculates
the final element of a bounded arithmetic progression, i.e. the last element of the progression which is in the range\n
* from [start] to [end] in case of a positive [step], or from [end] to [start] in case of a negative\n * [step].\n *\n * No
validation on passed parameters is performed. The given parameters should satisfy the condition:\n *\n * - either
`step > 0` and `start <= end`,\n *\n * - or `step < 0` and `start >= end`.\n *\n * @param start first element of the
progression\n *\n * @param end ending bound for the progression\n *\n * @param step increment, or difference of
successive elements in the progression\n *\n * @return the final element of the progression\n *\n * @suppress\n
*\n @PublishedApi\n @SinceKotlin("1.3")\n internal fun getProgressionLastElement(start: ULong, end: ULong,
step: Long): ULong = when {\n     step > 0 -> if (start >= end) end else end - differenceModulo(end,
start, step.toULong())\n     step < 0 -> if (start <= end) end else end + differenceModulo(start, end, (-
step).toULong())\n     else -> throw kotlin.IllegalArgumentException("Step is zero.")\n }\n\n"/**\n * Copyright 2010-
2021 JetBrains s.r.o. and Kotlin Programming Language contributors.\n *\n * Use of this source code is governed by the
Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*\n @file:kotlin.jvm.JvmName("UStringsKt") // string representation of unsigned numbers\n\npackage
kotlin.text\n\n/**\n * Returns a string representation of this [Byte] value in the specified [radix].\n *\n * @throws
IllegalArgumentException when [radix] is not a valid radix for number to string conversion.\n
*\n @SinceKotlin("1.5")\n @WasExperimental(ExperimentalUnsignedTypes::class)\n @kotlin.internal.InlineOnly
\npublic /*inline*/ fun UByte.toString(radix: Int): String = this.toInt().toString(radix)\n\n/**\n * Returns a string
representation of this [Short] value in the specified
[radix].\n *\n * @throws IllegalArgumentException when [radix] is not a valid radix for number to string
conversion.\n
*\n @SinceKotlin("1.5")\n @WasExperimental(ExperimentalUnsignedTypes::class)\n @kotlin.internal.InlineOnly
\npublic /*inline*/ fun UShort.toString(radix: Int): String = this.toInt().toString(radix)\n\n/**\n * Returns a string
representation of this [Int] value in the specified [radix].\n *\n * @throws IllegalArgumentException when [radix] is
not a valid radix for number to string conversion.\n
*\n @SinceKotlin("1.5")\n @WasExperimental(ExperimentalUnsignedTypes::class)\n @kotlin.internal.InlineOnly
\npublic /*inline*/ fun UInt.toString(radix: Int): String = this.toLong().toString(radix)\n\n/**\n * Returns a string
representation of this [Long] value in the specified [radix].\n *\n * @throws IllegalArgumentException when [radix]
is not a valid radix for number to string conversion.\n
*\n @SinceKotlin("1.5")\n @WasExperimental(ExperimentalUnsignedTypes::class)\n public
fun ULong.toString(radix: Int): String = ulongToString(this.toLong(), checkRadix(radix))\n\n/**\n * Parses the
string as a signed [UByte] number and returns the result.\n *\n * @throws NumberFormatException if the string is not a
valid representation of a number.\n
*\n @SinceKotlin("1.5")\n @WasExperimental(ExperimentalUnsignedTypes::class)\n public fun String.toUByte():
UByte = toUByteOrNull() ?: numberFormatException(this)\n\n/**\n * Parses the string as a signed [UByte] number and
returns the result.\n *\n * @throws NumberFormatException if the string is not a valid representation of a number.\n
*\n * @throws IllegalArgumentException when [radix] is not a valid radix for string to number conversion.\n
*\n @SinceKotlin("1.5")\n @WasExperimental(ExperimentalUnsignedTypes::class)\n public fun
String.toUByte(radix: Int): UByte = toUByteOrNull(radix) ?: numberFormatException(this)\n\n/**\n * Parses the
string as a [UShort] number and returns the result.\n *\n * @throws NumberFormatException if the
string is not a valid representation of a number.\n
*\n @SinceKotlin("1.5")\n @WasExperimental(ExperimentalUnsignedTypes::class)\n public fun String.toUShort():

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UShort = toUShortOrNull() ?: numberFormatException(this)\n\n/**\n * Parses the string as a [UShort] number and
returns the result.\n * @throws NumberFormatException if the string is not a valid representation of a number.\n *
@throws IllegalArgumentException when [radix] is not a valid radix for string to number conversion.\n
*/\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun
String.toUShort(radix: Int): UShort = toUShortOrNull(radix) ?: numberFormatException(this)\n\n/**\n * Parses the
string as an [UInt] number and returns the result.\n * @throws NumberFormatException if the string is not a valid
representation of a number.\n
*/\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun String.toInt():
UInt = toUIntOrNull() ?: numberFormatException(this)\n\n/**\n * Parses
the string as an [UInt] number and returns the result.\n * @throws NumberFormatException if the string is not a
valid representation of a number.\n * @throws IllegalArgumentException when [radix] is not a valid radix for string
to number conversion.\n
*/\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun String.toUInt():
UInt = toUIntOrNull(radix) ?: numberFormatException(this)\n\n/**\n * Parses the string as a
[ULong] number and returns the result.\n * @throws NumberFormatException if the string is not a valid
representation of a number.\n
*/\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun String.toULong():
ULong = toULongOrNull() ?: numberFormatException(this)\n\n/**\n * Parses the string as a [ULong] number and
returns the result.\n * @throws NumberFormatException if the string is not a valid representation of a number.\n *
@throws IllegalArgumentException when [radix] is not a valid radix for string to
number conversion.\n */\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic
fun String.toULong(radix: Int): ULong = toULongOrNull(radix) ?: numberFormatException(this)\n\n/**\n * Parses the
string as an [UByte] number and returns the result\n * or `null` if the string is not a valid representation of
a number.\n */\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun
String.toUByteOrNull(): UByte? = toUByteOrNull(radix = 10)\n\n/**\n * Parses the string as an [UByte] number
and returns the result\n * or `null` if the string is not a valid representation of a number.\n * @throws
IllegalArgumentException when [radix] is not a valid radix for string to number conversion.\n
*/\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun
String.toUByteOrNull(radix: Int): UByte? {\n    val int = this.toIntOrNull(radix) ?: return null\n    if (int >
UByte.MAX_VALUE) return null\n    return int.toUByte()\n}\n\n/**\n * Parses the string as an [UShort] number and
returns the result\n * or `null` if the string is not a valid
representation of a number.\n
*/\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun
String.toUShortOrNull(): UShort? = toUShortOrNull(radix = 10)\n\n/**\n * Parses the string as an [UShort] number
and returns the result\n * or `null` if the string is not a valid representation of a number.\n * @throws
IllegalArgumentException when [radix] is not a valid radix for string to number conversion.\n
*/\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun
String.toUShortOrNull(radix: Int): UShort? {\n    val int = this.toIntOrNull(radix) ?: return null\n    if (int >
UShort.MAX_VALUE) return null\n    return int.toUShort()\n}\n\n/**\n * Parses the string as an [UInt] number and
returns the result\n * or `null` if the string is not a valid representation of a number.\n
*/\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic
fun String.toUIntOrNull(): UInt? = toUIntOrNull(radix = 10)\n\n/**\n * Parses the string as an [UInt] number and
returns the result\n * or `null` if the string is not a valid representation of a number.\n * @throws
IllegalArgumentException when [radix] is not a valid radix for string to number conversion.\n
*/\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun
String.toUIntOrNull(radix: Int): UInt? {\n    checkRadix(radix)\n\n    val length = this.length\n    if (length == 0)
return null\n\n    val limit: UInt = UInt.MAX_VALUE\n    val start: Int\n    val firstChar = this[0]\n    if (firstChar < '0') {\n        if (length == 1 || firstChar != '+') return null\n        start = 1\n    } else {\n        start = 0\n    }\n    val

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limitForMaxRadix = 119304647u // limit / 36\n\n var limitBeforeMul = limitForMaxRadix\n val uradix =
radix.toUInt()\n var result = 0u\n for (i
in start until length) {\n val digit = digitOf(this[i], radix)\n if (digit < 0) return null\n if (result >
limitBeforeMul) {\n if (limitBeforeMul == limitForMaxRadix) {\n limitBeforeMul = limit /
uradix\n\n if (result > limitBeforeMul) {\n return null\n }\n } else {\n
return null\n }\n }\n result *= uradix\n val beforeAdding = result\n result +=
digit.toUInt()\n if (result < beforeAdding) return null // overflow has happened\n }\n return
result\n}\n\n**\n * Parses the string as an [ULong] number and returns the result\n * or `null` if the string is not a
valid representation of a number.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun
String.toULongOrNull(): ULong? = toULongOrNull(radix = 10)\n\n**\n * Parses the string as an [ULong] number
and returns the result\n
* or `null` if the string is not a valid representation of a number.\n *\n * @throws IllegalArgumentException when
[radix] is not a valid radix for string to number conversion.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun
String.toULongOrNull(radix: Int): ULong? {\n checkRadix(radix)\n\n val length = this.length\n if (length ==
0) return null\n\n val limit: ULong = ULong.MAX_VALUE\n val start: Int\n val firstChar = this[0]\n if
(firstChar < '0') {\n if (length == 1 || firstChar != '+') return null\n start = 1\n } else {\n start = 0\n
}\n\n val limitForMaxRadix = 512409557603043100uL // limit / 36\n\n var limitBeforeMul =
limitForMaxRadix\n val uradix = radix.toULong()\n var result = 0uL\n for (i in start until length) {\n val
digit = digitOf(this[i], radix)\n\n if (digit < 0) return null\n if (result > limitBeforeMul) {\n if
(limitBeforeMul
== limitForMaxRadix) {\n limitBeforeMul = limit / uradix\n\n if (result > limitBeforeMul) {\n
return null\n }\n } else {\n return null\n }\n }\n\n result *=
uradix\n\n val beforeAdding = result\n result += digit.toUInt()\n if (result < beforeAdding) return null
// overflow has happened\n }\n\n return result\n}\n\n"/**\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin
Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be
found in the license/LICENSE.txt file.\n *\n@file:Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\npackage kotlin\n\nimport kotlin.annotation.AnnotationTarget.*\nimport
kotlin.internal.RequireKotlin\nimport kotlin.internal.RequireKotlinVersionKind\n\n**\n * Marks the API that is
dependent on the experimental unsigned types, including those types themselves.\n
*\n * Usages of such API will be reported as warnings unless an explicit opt-in with\n * the [OptIn] annotation, e.g.
`@OptIn(ExperimentalUnsignedTypes::class)`\n * or with the `-opt-in=kotlin.ExperimentalUnsignedTypes`
compiler option is given.\n *\n * It's recommended to propagate the experimental status to the API that depends on
unsigned types by annotating it with this annotation.\n *\n@RequiresOptIn(level =
RequiresOptIn.Level.WARNING)\n@MustBeDocumented\n@Target(CLASS, ANNOTATION_CLASS,
PROPERTY, FIELD, LOCAL_VARIABLE, VALUE_PARAMETER, CONSTRUCTOR, FUNCTION,
PROPERTY_GETTER, PROPERTY_SETTER,
TYPEALIAS)\n@Retention(AnnotationRetention.BINARY)\npublic annotation class
ExperimentalUnsignedTypes\n"/**\n * Copyright 2010-2022 JetBrains s.r.o. and Kotlin Programming Language
contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n
*\n@file:kotlin.jvm.JvmMultifileClass\n@file:kotlin.jvm.JvmName("MathKt")\n\npackage
kotlin.math\n\n\n// constants, can't use them from nativeMath as they are not constants there\n\n** Ratio of the
circumference of a circle to its diameter, approximately 3.14159. *\n@SinceKotlin("1.2")\npublic const val PI:
Double = 3.141592653589793\n** Base of the natural logarithms, approximately 2.71828.
*\n@SinceKotlin("1.2")\npublic const val E: Double = 2.718281828459045\n\n// region =====
Double Math =====\n\n** Computes the sine of the angle [x]

```

given in radians.  
`sin(x: Double): Double`  
 Computes the sine of the angle [x] given in radians.  
 Special cases: `sin(NaN)` is `NaN`  
`cos(x: Double): Double`  
 Computes the cosine of the angle [x] given in radians.  
 Special cases: `cos(NaN)` is `NaN`  
`tan(x: Double): Double`  
 Computes the tangent of the angle [x] given in radians.  
 Special cases: `tan(NaN)` is `NaN`  
`asin(x: Double): Double`  
 Computes the arc sine of the value [x]; the returned value is an angle in the range from  $-\pi/2$  to  $\pi/2$  radians.  
 Special cases: `asin(x)` is `NaN`, when `abs(x) > 1` or `x` is `NaN`  
`acos(x: Double): Double`  
 Computes the arc cosine of the value [x]; the returned value is an angle in the range from  $0.0$  to  $\pi$  radians.  
 Special cases: `acos(x)` is `NaN`, when `abs(x) > 1` or `x` is `NaN`  
`atan(x: Double): Double`  
 Computes the arc tangent of the value [x]; the returned value is an angle in the range from  $-\pi/2$  to  $\pi/2$  radians.  
 Special cases: `atan(NaN)` is `NaN`  
`atan2(y: Double, x: Double): Double`  
 Returns the angle  $\theta$  of the polar coordinates  $(r, \theta)$  that correspond to the rectangular coordinates  $(x, y)$  by computing the arc tangent of the value  $y / x$ ; the returned value is an angle in the range from  $-\pi$  to  $\pi$  radians.  
 Special cases: `atan2(0.0, 0.0)` is  $0.0$   
`atan2(0.0, x)` is  $0.0$  for  $x > 0$  and  $\pi$  for  $x < 0$   
`atan2(-0.0, x)` is  $-0.0$  for  $x > 0$  and  $-\pi$  for  $x < 0$   
`atan2(y, +Inf)` is  $0.0$  for  $0 < y < +Inf$  and  $-0.0$  for  $-Inf < y < 0$   
`atan2(y, -Inf)` is  $\pi$  for  $0 < y < +Inf$  and  $-\pi$  for  $-Inf < y < 0$   
`atan2(y, 0.0)` is  $\pi/2$  for  $y > 0$  and  $-\pi/2$  for  $y < 0$   
`atan2(+Inf, x)` is  $\pi/2$  for finite  $x$   
`atan2(-Inf, x)` is  $-\pi/2$  for finite  $x$   
`atan2(NaN, x)` and `atan2(y, NaN)` is `NaN`  
`sinh(x: Double): Double`  
 Computes the hyperbolic sine of the value [x].  
 Special cases: `sinh(NaN)` is `NaN`  
`sinh(+Inf)` is  $+Inf$   
`sinh(-Inf)` is  $-Inf$   
`cosh(x: Double): Double`  
 Computes the hyperbolic cosine of the value [x].  
 Special cases: `cosh(NaN)` is `NaN`  
`cosh(+Inf)` is  $+Inf$   
`tanh(x: Double): Double`  
 Computes the hyperbolic tangent of the value [x].  
 Special cases: `tanh(NaN)` is `NaN`  
`tanh(+Inf)` is  $1.0$   
`tanh(-Inf)` is  $-1.0$   
`asinh(x: Double): Double`  
 Computes the inverse hyperbolic sine of the value [x]. The returned value is  $y$  such that  $\sinh(y) == x$ .  
 Special cases: `asinh(NaN)` is `NaN`  
`asinh(+Inf)` is  $+Inf$   
`asinh(-Inf)` is  $-Inf$   
`acosh(x: Double): Double`  
 Computes the inverse hyperbolic cosine of the value [x]. The returned value is  $y$  such that  $\cosh(y) == x$ .  
 Special cases: `acosh(NaN)` is `NaN`  
`acosh(x)` is `NaN` when  $x < 1$   
`acosh(+Inf)` is  $+Inf$   
`atanh(x: Double): Double`  
 Computes the inverse hyperbolic tangent of the value [x]. The returned value is  $y$  such that  $\tanh(y) == x$ .  
 Special cases: `atanh(NaN)` is `NaN`  
`atanh(x)` is `NaN` when  $x > 1$  or  $x < -1$   
`atanh(1.0)` is  $+Inf$   
`atanh(-1.0)` is  $-Inf$   
`hypot(x: Double, y: Double): Double`  
 Computes the positive square root of the value  $\sqrt{x^2 + y^2}$  without intermediate overflow or underflow.  
 Special cases: `hypot(x)` is `NaN` when  $x < 0$  or  $x$  is `NaN`  
`exp(x: Double): Double`  
 Computes Euler's number  $e$  raised to the power of the value [x].  
 Special cases: `exp(NaN)` is `NaN`  
`exp(+Inf)` is  $+Inf$   
`exp(-Inf)` is  $0.0$   
`expm1(x: Double): Double`  
 Computes  $\exp(x) - 1$ . This function can be implemented to produce more precise result for [x] near zero.  
 Special cases: `expm1(NaN)` is `NaN`  
`expm1(+Inf)` is  $+Inf$   
`expm1(-Inf)` is  $-1.0$   
 @see [exp] function.  
`log(x: Double, base: Double): Double`  
 Computes the logarithm of the value [x] to the given [base].  
 Special cases: `log(NaN, base)` is `NaN`  
`log(x, 1)` is  $0.0$   
`log(x, 0)` is  $NaN$   
`log(x, -1)` is  $NaN$   
`log(x, +Inf)` is  $NaN$   
`log(x, -Inf)` is  $NaN$

-  $\log(x, b)$  is NaN if either  $x$  or  $b$  are NaN \*  $-\log(x, b)$  is NaN when  $x < 0$  or  $b \leq 0$  or  $b == 1.0$  \*  $-\log(+Inf, +Inf)$  is NaN \*  $-\log(+Inf, b)$  is +Inf for  $b > 1$  and -Inf for  $b < 1$  \*  $-\log(0.0, b)$  is -Inf for  $b > 1$  and +Inf for  $b > 1$  \* See also logarithm functions for common fixed bases: [ln], [log10] and [log2].

`@SinceKotlin("1.2")` public expect fun log(x: Double, base: Double): Double \* Computes the natural logarithm (base 'E') of the value [x]. \* Special cases:  $\ln(\text{NaN})$  is NaN \*  $\ln(x)$  is NaN when  $x < 0.0$  \*  $\ln(+Inf)$  is +Inf \*  $\ln(0.0)$  is -Inf

`@SinceKotlin("1.2")` public expect fun ln(x: Double): Double \* Computes the common logarithm (base 10) of the value [x]. \* @see [ln] function for special cases.

`@SinceKotlin("1.2")` public expect fun log10(x: Double): Double \* Computes the binary logarithm (base 2) of the value [x]. \* @see [ln] function for special cases.

`@SinceKotlin("1.2")` public expect fun log2(x: Double): Double \* Computes  $\ln(x + 1)$ . \* This function can be implemented to produce more precise result for [x] near zero. \* Special cases:  $\ln1p(\text{NaN})$  is NaN \*  $\ln1p(x)$  is NaN where  $x < -1.0$  \*  $\ln1p(-1.0)$  is -Inf \*  $\ln1p(+Inf)$  is +Inf \* @see [ln] function \* @see [expm1] function

`@SinceKotlin("1.2")` public expect fun ln1p(x: Double): Double \* Rounds the given value [x] to an integer towards positive infinity. \* @return the smallest double value that is greater than or equal to the given value [x] and is a mathematical integer. \* Special cases:  $\text{ceil}(x)$  is  $x$  where  $x$  is NaN or +Inf or -Inf or already a mathematical integer.

`@SinceKotlin("1.2")` public expect fun ceil(x: Double): Double \* Rounds the given value [x] to an integer towards negative infinity. \* @return the largest double value that is smaller than or equal to the given value [x] and is a mathematical integer. \* Special cases:  $\text{floor}(x)$  is  $x$  where  $x$  is NaN or +Inf or -Inf or already a mathematical integer.

`@SinceKotlin("1.2")` public expect fun floor(x: Double): Double \* Rounds the given value [x] to an integer towards zero. \* @return the value [x] having its fractional part truncated. \* Special cases:  $\text{truncate}(x)$  is  $x$  where  $x$  is NaN or +Inf or -Inf or already a mathematical integer.

`@SinceKotlin("1.2")` public expect fun truncate(x: Double): Double \* Rounds the given value [x] towards the closest integer with ties rounded towards even integer. \* Special cases:  $\text{round}(x)$  is  $x$  where  $x$  is NaN or +Inf or -Inf or already a mathematical integer.

`@SinceKotlin("1.2")` public expect fun round(x: Double): Double \* Returns the absolute value of the given value [x]. \* Special cases:  $\text{abs}(\text{NaN})$  is NaN \* @see absoluteValue extension property for [Double]

`@SinceKotlin("1.2")` public expect fun abs(x: Double): Double \* Returns the sign of the given value [x]:  $-1.0$  if the value is negative,  $0$  if the value is zero,  $1.0$  if the value is positive \* Special case:  $\text{sign}(\text{NaN})$  is NaN

`@SinceKotlin("1.2")` public expect fun sign(x: Double): Double \* Returns the smaller of two values. \* If either value is NaN, then the result is NaN.

`@SinceKotlin("1.2")` public expect fun min(a: Double, b: Double): Double \* Returns the greater of two values. \* If either value is NaN, then the result is NaN.

`@SinceKotlin("1.2")` public expect fun max(a: Double, b: Double): Double \* Returns the cube root of [x]. For any  $x$ ,  $\text{cbrt}(-x) == -\text{cbrt}(x)$ ; that is, the cube root of a negative value is the negative of the cube root of that value's magnitude. \* Special cases: \* If the argument is NaN, then the result is NaN. \* If the argument is infinite, then the result is an infinity with the same sign as the argument. \* If the argument is zero, then the result is a zero with the same sign as the argument.

`@SinceKotlin("1.8")` @WasExperimental(ExperimentalStdlibApi::class) public expect fun cbrt(x: Double): Double // extensions \* Raises this value to the power [x]. \* Special cases:  $b.\text{pow}(0.0)$  is  $1.0$  \*  $b.\text{pow}(1.0) == b$  \*  $b.\text{pow}(\text{NaN})$  is NaN \*  $\text{NaN}.\text{pow}(x)$  is NaN for  $x != 0.0$  \*  $b.\text{pow}(\text{Inf})$  is NaN for  $\text{abs}(b) == 1.0$  \*  $b.\text{pow}(x)$  is NaN for  $b < 0$  and  $x$  is finite and not an integer

`@SinceKotlin("1.2")` public expect fun Double.pow(x: Double): Double \* Raises this value to the integer power [n]. \* See the other overload of [pow] for details.

`@SinceKotlin("1.2")` public expect fun Double.pow(n: Int): Double \* Returns the absolute value of this value. \* Special cases:  $\text{NaN}.\text{absoluteValue}$  is NaN \* @see abs

function\n \* \n@SinceKotlin("1.2")\npublic expect val Double.absoluteValue: Double\n\n/\*\*\n \* Returns the sign of this value:\n \* -  $-1.0$  if the value is negative,\n \* - zero if the value is zero,\n \* -  $1.0$  if the value is positive\n \* \n \* Special case:\n \* -  $\text{NaN}$ .sign` is  $\text{NaN}$ \n \* \n@SinceKotlin("1.2")\npublic expect val Double.sign: Double\n\n/\*\*\n \* Returns this value with the sign bit same as of the [sign] value.\n \* \n \* If [sign] is  $\text{NaN}$  the sign of the result is undefined.\n \* \n@SinceKotlin("1.2")\npublic expect fun Double.withSign(sign: Double): Double\n\n/\*\*\n \* Returns this value with the sign bit same as of the [sign] value.\n \* \n@SinceKotlin("1.2")\npublic expect fun Double.withSign(sign: Int): Double\n\n/\*\*\n \* Returns the ulp (unit in the last place) of this value.\n \* \n \* An ulp is a positive distance between this value and the next nearest [Double] value larger in magnitude.\n \* \n \* Special Cases:\n \* -  $\text{NaN.ulp}$  is  $\text{NaN}$ \n \* -  $x.ulp$  is  $+Inf$  when  $x$  is  $+Inf$  or  $-Inf$ \n \* -  $0.0.ulp$  is  $\text{Double.MIN\_VALUE}$ \n \* \n@SinceKotlin("1.2")\npublic expect val Double.ulp: Double\n\n/\*\*\n \* Returns the [Double] value nearest to this value in direction of positive infinity.\n \* \n@SinceKotlin("1.2")\npublic expect fun Double.nextUp(): Double\n\n/\*\*\n \* Returns the [Double] value nearest to this value in direction of negative infinity.\n \* \n@SinceKotlin("1.2")\npublic expect fun Double.nextDown(): Double\n\n/\*\*\n \* Returns the [Double] value nearest to this value in direction from this value towards the value [to].\n \* \n \* Special cases:\n \* -  $x.nextTowards(y)$  is  $\text{NaN}$  if either  $x$  or  $y$  are  $\text{NaN}$ \n \* -  $x.nextTowards(x) == x$ \n \* \n@SinceKotlin("1.2")\npublic expect fun Double.nextTowards(to: Double): Double\n\n/\*\*\n \* Rounds this [Double] value to the nearest integer and converts the result to [Int].\n \* \n \* Ties are rounded towards positive infinity.\n \* \n \* Special cases:\n \* -  $x.roundToInt() == \text{Int.MAX\_VALUE}$  when  $x > \text{Int.MAX\_VALUE}$ \n \* -  $x.roundToInt() == \text{Int.MIN\_VALUE}$  when  $x < \text{Int.MIN\_VALUE}$ \n \* \n \* @throws IllegalArgumentException when this value is  $\text{NaN}$ \n \* \n@SinceKotlin("1.2")\npublic expect fun Double.roundToInt(): Int\n\n/\*\*\n \* Rounds this [Double] value to the nearest integer and converts the result to [Long].\n \* \n \* Ties are rounded towards positive infinity.\n \* \n \* Special cases:\n \* -  $x.roundToLong() == \text{Long.MAX\_VALUE}$  when  $x > \text{Long.MAX\_VALUE}$ \n \* -  $x.roundToLong() == \text{Long.MIN\_VALUE}$  when  $x < \text{Long.MIN\_VALUE}$ \n \* \n \* @throws IllegalArgumentException when this value is  $\text{NaN}$ \n \* \n@SinceKotlin("1.2")\npublic expect fun Double.roundToLong(): Long\n\n// endregion\n\n// region\n\n==== Float Math =====\n\n/\*\*\n \* Computes the sine of the angle [x] given in radians.\n \* \n \* Special cases:\n \* -  $\text{sin}(\text{NaN} + Inf - Inf)$  is  $\text{NaN}$ \n \* \n@SinceKotlin("1.2")\npublic expect fun sin(x: Float): Float\n\n/\*\*\n \* Computes the cosine of the angle [x] given in radians.\n \* \n \* Special cases:\n \* -  $\text{cos}(\text{NaN} + Inf - Inf)$  is  $\text{NaN}$ \n \* \n@SinceKotlin("1.2")\npublic expect fun cos(x: Float): Float\n\n/\*\*\n \* Computes the tangent of the angle [x] given in radians.\n \* \n \* Special cases:\n \* -  $\text{tan}(\text{NaN} + Inf - Inf)$  is  $\text{NaN}$ \n \* \n@SinceKotlin("1.2")\npublic expect fun tan(x: Float): Float\n\n/\*\*\n \* Computes the arc sine of the value [x];\n \* \n \* the returned value is an angle in the range from  $-\text{PI}/2$  to  $\text{PI}/2$  radians.\n \* \n \* Special cases:\n \* -  $\text{asin}(x)$  is  $\text{NaN}$ , when  $\text{abs}(x) > 1$  or  $x$  is  $\text{NaN}$ \n \* \n@SinceKotlin("1.2")\npublic expect fun asin(x: Float): Float\n\n/\*\*\n \* Computes the arc cosine of the value [x];\n \* \n \* the returned value is an angle in the range from  $0.0$  to  $\text{PI}$  radians.\n \* \n \* Special cases:\n \* -  $\text{acos}(x)$  is  $\text{NaN}$ , when  $\text{abs}(x) > 1$  or  $x$  is  $\text{NaN}$ \n \* \n@SinceKotlin("1.2")\npublic expect fun acos(x: Float): Float\n\n/\*\*\n \* Computes the arc tangent of the value [x];\n \* \n \* the returned value is an angle in the range from  $-\text{PI}/2$  to  $\text{PI}/2$  radians.\n \* \n \* Special cases:\n \* -  $\text{atan}(\text{NaN})$  is  $\text{NaN}$ \n \* \n@SinceKotlin("1.2")\npublic expect fun atan(x: Float): Float\n\n/\*\*\n \* Returns the angle  $\theta$  of the polar coordinates  $(r, \theta)$  that correspond\n \* \n \* to the rectangular coordinates  $(x, y)$  by computing the arc tangent of the value  $y / x$ ;\n \* \n \* the returned value is an angle in the range from  $-\text{PI}$  to  $\text{PI}$  radians.\n \* \n \* Special cases:\n \* -  $\text{atan2}(0.0, 0.0)$  is  $0.0$ \n \* -  $\text{atan2}(0.0, x)$  is  $0.0$  for  $x > 0$  and  $\text{PI}$  for  $x < 0$ \n \* -  $\text{atan2}(-0.0, x)$  is  $-0.0$  for  $x > 0$  and  $-\text{PI}$  for  $x < 0$ \n \* -  $\text{atan2}(y, +Inf)$  is  $0.0$  for  $0 < y < +Inf$  and  $-0.0$  for  $-\text{Inf} < y < 0$ \n \* -  $\text{atan2}(y, -Inf)$  is  $\text{PI}$  for  $0 < y < +Inf$  and  $-\text{PI}$  for  $-\text{Inf} < y < 0$ \n \* -  $\text{atan2}(y, 0.0)$  is  $\text{PI}/2$  for  $y > 0$  and  $-\text{PI}/2$  for  $y < 0$ \n \* -  $\text{atan2}(+Inf, x)$  is  $\text{PI}/2$  for finite  $x > 0$ \n \* -  $\text{atan2}(-Inf, x)$  is  $-\text{PI}/2$  for finite  $x$ \n \* -  $\text{atan2}(\text{NaN}, x)$  and  $\text{atan2}(y, \text{NaN})$  is  $\text{NaN}$ \n \* \n@SinceKotlin("1.2")\npublic expect fun atan2(y: Float, x: Float): Float\n\n/\*\*\n \* Computes the hyperbolic sine of the value [x].\n \* \n \* Special cases:\n \* -  $\text{sinh}(\text{NaN})$  is  $\text{NaN}$ \n \* -  $\text{sinh}(+Inf)$



`is`+Inf`\n * -`sinh(-Inf)` is`-Inf`\n */\n@SinceKotlin("1.2")\npublic expect fun sinh(x: Float): Float\n\n/**\n * Computes the hyperbolic cosine of the value [x].\n */\n * Special cases:\n * -`cosh(NaN)` is`NaN`\n * -`cosh(+Inf|-Inf)` is`+Inf`\n */\n */\n@SinceKotlin("1.2")\npublic expect fun cosh(x: Float): Float\n\n/**\n * Computes the hyperbolic tangent of the value [x].\n */\n * Special cases:\n * -`tanh(NaN)` is`NaN`\n * -`tanh(+Inf)` is`1.0`\n * -`tanh(-Inf)` is`-1.0`\n */\n */\n@SinceKotlin("1.2")\npublic expect fun tanh(x: Float): Float\n\n/**\n * Computes the inverse hyperbolic sine of the value [x].\n */\n * The returned value is `y` such that `sinh(y) == x`.\n */\n * Special cases:\n * -`asinh(NaN)` is`NaN`\n * -`asinh(+Inf)` is`+Inf`\n * -`asinh(-Inf)` is`-Inf`\n */\n */\n@SinceKotlin("1.2")\npublic expect fun asinh(x: Float): Float\n\n/**\n * Computes the inverse hyperbolic cosine of the value [x].\n */\n * The returned value is positive `y` such that `cosh(y) == x`.\n */\n * Special cases:\n * -`acosh(NaN)` is`NaN`\n * -`acosh(x)` is`NaN` when `x < 1`\n * -`acosh(+Inf)` is`+Inf`\n */\n */\n@SinceKotlin("1.2")\npublic expect fun acosh(x: Float): Float\n\n/**\n * Computes the inverse hyperbolic tangent of the value [x].\n */\n * The returned value is `y` such that `tanh(y) == x`.\n */\n * Special cases:\n * -`tanh(NaN)` is`NaN`\n * -`tanh(x)` is`NaN` when `x > 1` or `x < -1`\n * -`tanh(1.0)` is`+Inf`\n * -`tanh(-1.0)` is`-Inf`\n */\n */\n@SinceKotlin("1.2")\npublic expect fun atanh(x: Float): Float\n\n/**\n * Computes `sqrt(x^2 + y^2)` without intermediate overflow or underflow.\n */\n * Special cases:\n * - returns`+Inf` if any of arguments is infinite\n * - returns`NaN` if any of arguments is`NaN` and the other is not infinite\n */\n */\n@SinceKotlin("1.2")\npublic expect fun hypot(x: Float, y: Float): Float\n\n/**\n * Computes the positive square root of the value [x].\n */\n * Special cases:\n * -`sqrt(x)` is`NaN` when `x < 0` or `x` is`NaN`\n */\n */\n@SinceKotlin("1.2")\npublic expect fun sqrt(x: Float): Float\n\n/**\n * Computes Euler's number `e` raised to the power of the value [x].\n */\n * Special cases:\n * -`exp(NaN)` is`NaN`\n * -`exp(+Inf)` is`+Inf`\n * -`exp(-Inf)` is`0.0`\n */\n */\n@SinceKotlin("1.2")\npublic expect fun exp(x: Float): Float\n\n/**\n * Computes `exp(x) - 1`.\n */\n * This function can be implemented to produce more precise result for [x] near zero.\n */\n * Special cases:\n * -`expm1(NaN)` is`NaN`\n * -`expm1(+Inf)` is`+Inf`\n * -`expm1(-Inf)` is`-1.0`\n */\n * @see [exp] function.\n */\n */\n@SinceKotlin("1.2")\npublic expect fun expm1(x: Float): Float\n\n/**\n * Computes the logarithm of the value [x] to the given [base].\n */\n * Special cases:\n * -`log(x, b)` is`NaN` if either `x` or `b` are`NaN`\n * -`log(x, b)` is`NaN` when `x < 0` or `b <= 0` or `b == 1.0`\n * -`log(+Inf, +Inf)` is`NaN`\n * -`log(+Inf, b)` is`+Inf` for `b > 1` and`-Inf` for `b < 1`\n * -`log(0.0, b)` is`-Inf` for `b > 1` and`+Inf` for `b > 1`\n */\n * See also logarithm functions for common fixed bases: [ln], [log10] and [log2].\n */\n */\n@SinceKotlin("1.2")\npublic expect fun log(x: Float, base: Float): Float\n\n/**\n * Computes the natural logarithm (base `E`) of the value [x].\n */\n * Special cases:\n * -`ln(NaN)` is`NaN`\n * -`ln(x)` is`NaN` when `x < 0.0`\n * -`ln(+Inf)` is`+Inf`\n * -`ln(0.0)` is`-Inf`\n */\n */\n@SinceKotlin("1.2")\npublic expect fun ln(x: Float): Float\n\n/**\n * Computes the common logarithm (base 10) of the value [x].\n */\n * @see [ln] function for special cases.\n */\n */\n@SinceKotlin("1.2")\npublic expect fun log10(x: Float): Float\n\n/**\n * Computes the binary logarithm (base 2) of the value [x].\n */\n * @see [ln] function for special cases.\n */\n */\n@SinceKotlin("1.2")\npublic expect fun log2(x: Float): Float\n\n/**\n * Computes `ln(x + 1)`.\n */\n * This function can be implemented to produce more precise result for [x] near zero.\n */\n * Special cases:\n * -`ln1p(NaN)` is`NaN`\n * -`ln1p(x)` is`NaN` where `x < -1.0`\n * -`ln1p(-1.0)` is`-Inf`\n * -`ln1p(+Inf)` is`+Inf`\n */\n * @see [ln] function\n * @see [expm1] function\n */\n */\n@SinceKotlin("1.2")\npublic expect fun ln1p(x: Float): Float\n\n/**\n * Rounds the given value [x] to an integer towards positive infinity.\n */\n * @return the smallest Float value that is greater than or equal to the given value [x] and is a mathematical integer.\n */\n * Special cases:\n * -`ceil(x)` is`x` where `x` is`NaN` or`+Inf` or`-Inf` or already a mathematical integer.\n */\n */\n@SinceKotlin("1.2")\npublic expect fun ceil(x: Float): Float\n\n/**\n * Rounds the given value [x] to an integer towards negative infinity.\n */\n * @return the largest Float value that is smaller than or equal to the given value [x] and is a mathematical integer.\n */\n * Special cases:\n * -`floor(x)` is`x` where `x` is`NaN` or`+Inf` or`-Inf` or already a mathematical integer.\n */\n */\n@SinceKotlin("1.2")\npublic expect fun floor(x: Float): Float\n\n/**\n * Rounds the given value [x] to an integer towards zero.\n */\n * @return the value [x] having its`

fractional part truncated.  
`truncate(x)` is `x` where `x` is `NaN` or `+Inf` or `-Inf` or already a mathematical integer.  
`truncate(x: Float): Float`  
Rounds the given value [x] towards the closest integer with ties rounded towards even integer.  
Special cases:  
`round(x)` is `x` where `x` is `NaN` or `+Inf` or `-Inf` or already a mathematical integer.  
`round(x: Float): Float`  
Returns the absolute value of the given value [x].  
Special cases:  
`abs(NaN)` is `NaN`  
@see `absoluteValue` extension property for `[Float]`  
`abs(x: Float): Float`  
Returns the sign of the given value [x]:  
`-1.0` if the value is negative,  
zero if the value is zero,  
`1.0` if the value is positive  
Special case:  
`sign(NaN)` is `NaN`  
`sign(x: Float): Float`  
Returns the smaller of two values.  
If either value is `NaN`, then the result is `NaN`.  
`min(a: Float, b: Float): Float`  
Returns the greater of two values.  
If either value is `NaN`, then the result is `NaN`.  
`max(a: Float, b: Float): Float`  
Returns the cube root of [x]. For any `x`, `cbrt(-x) == -cbrt(x)`; that is, the cube root of a negative value is the negative of the cube root of that value's magnitude. Special cases:  
Special cases:  
If the argument is `NaN`, then the result is `NaN`.  
If the argument is infinite, then the result is an infinity with the same sign as the argument.  
If the argument is zero, then the result is a zero with the same sign as the argument.  
`cbrt(x: Float): Float`  
// extensions  
Raises this value to the power [x].  
Special cases:  
`b.pow(0.0)` is `1.0`  
`b.pow(1.0) == b`  
`b.pow(NaN)` is `NaN`  
`NaN.pow(x)` is `NaN` for `x != 0.0`  
`b.pow(Inf)` is `NaN` for `abs(b) == 1.0`  
`b.pow(x)` is `NaN` for `b < 0` and `x` is finite and not an integer  
`Float.pow(x: Float): Float`  
Raises this value to the integer power [n].  
See the other overload of `[pow]` for details.  
`Float.pow(n: Int): Float`  
Returns the absolute value of this value.  
Special cases:  
`NaN.absoluteValue` is `NaN`  
@see `abs` function  
`Float.absoluteValue: Float`  
Returns the sign of this value:  
`-1.0` if the value is negative,  
zero if the value is zero,  
`1.0` if the value is positive  
Special case:  
`NaN.sign` is `NaN`  
`Float.sign: Float`  
Returns this value with the sign bit same as of the [sign] value.  
If [sign] is `NaN` the sign of the result is undefined.  
`Float.withSign(sign: Float): Float`  
Returns this value with the sign bit same as of the [sign] value.  
`Float.withSign(sign: Int): Float`  
Rounds this [Float] value to the nearest integer and converts the result to [Int].  
Ties are rounded towards positive infinity.  
Special cases:  
`x.roundToInt() == Int.MAX_VALUE` when `x > Int.MAX_VALUE`  
`x.roundToInt() == Int.MIN_VALUE` when `x < Int.MIN_VALUE`  
@throws `IllegalArgumentException` when this value is `NaN`  
`Float.roundToInt(): Int`  
Rounds this [Float] value to the nearest integer and converts the result to [Long].  
Ties are rounded towards positive infinity.  
Special cases:  
`x.roundToLong() == Long.MAX_VALUE` when `x > Long.MAX_VALUE`  
`x.roundToLong() == Long.MIN_VALUE` when `x < Long.MIN_VALUE`  
@throws `IllegalArgumentException` when this value is `NaN`  
`Float.roundToLong(): Long`  
// endregion  
// Integer Math  
Returns the absolute value of the given value [n].  
Special cases:  
`abs(Int.MIN_VALUE)` is `Int.MIN_VALUE` due to an overflow  
@see `absoluteValue` extension property for `[Int]`  
`abs(n: Int): Int`  
Returns the smaller of two values.  
`min(a: Int, b: Int): Int`  
Returns the greater of two values.  
`max(a: Int, b: Int): Int`  
Returns the absolute value of this value.  
Special cases:  
`Int.MIN_VALUE.absoluteValue` is `Int.MIN_VALUE` due to an overflow  
@see `abs` function  
`Int.absoluteValue: Int`

Int.absoluteValue: Int\n\n/\*\*\n \* Returns the sign of this value:\n \* - `1` if the value is negative,\n \* - `0` if the value is zero,\n \* - `1` if the value is positive\n \*/\n@SinceKotlin("1.2")\npublic expect val Int.sign:

Int\n\n/\*\*\n \* Returns the absolute value of the given value [n].\n \*/\n \* Special cases:\n \* - `abs(Long.MIN\_VALUE)` is `Long.MIN\_VALUE` due to an overflow\n \* @see absoluteValue extension property for [Long]\n \*/\n@SinceKotlin("1.2")\npublic expect fun abs(n: Long): Long\n\n/\*\*\n \* Returns the smaller of two values.\n \*/\n@SinceKotlin("1.2")\npublic expect fun min(a: Long, b: Long): Long\n\n/\*\*\n \* Returns the greater of two values.\n \*/\n@SinceKotlin("1.2")\npublic expect fun max(a: Long, b: Long): Long\n\n/\*\*\n \* Returns the absolute value of this value.\n \*/\n \* Special cases:\n \* - `Long.MIN\_VALUE.absoluteValue` is `Long.MIN\_VALUE` due to an overflow\n \* @see abs function\n \*/\n@SinceKotlin("1.2")\npublic expect val Long.absoluteValue: Long\n\n/\*\*\n \* Returns the sign of this value:\n \* - `1` if the value is negative,\n \* - `0` if the value is zero,\n \* - `1` if the value is positive\n \*/\n@SinceKotlin("1.2")\npublic expect val Long.sign: Int\n\n\n// endregion\n", "/\*\n \* Copyright 2010-2022 JetBrains s.r.o. and Kotlin Programming Language contributors.\n \* Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n \*/\npackage kotlin.js\n\n/\*\*\n \* Exposes the JavaScript [Math object](https://developer.mozilla.org/en/docs/Web/JavaScript/Reference/Global\_Objects/Math) to Kotlin.\n \*/\n@PublishedApi\n@JsName("Math")\ninternal external object JsMath {\n val LN2: Double\n fun abs(value: Double): Double\n fun acos(value: Double): Double\n fun asin(value: Double): Double\n fun atan(value: Double): Double\n fun atan2(y: Double, x: Double): Double\n fun cos(value: Double): Double\n fun sin(value: Double): Double\n fun exp(value: Double): Double\n fun max(vararg values: Int): Int\n fun max(vararg values: Float): Float\n fun max(vararg values: Double): Double\n fun min(vararg values: Int): Int\n fun min(vararg values: Float): Float\n fun min(vararg values: Double): Double\n fun sqrt(value: Double): Double\n fun tan(value: Double): Double\n fun log(value: Double): Double\n fun cbrt(value: Double): Double\n fun pow(base: Double, exp: Double): Double\n fun round(value: Number): Double\n fun floor(value: Number): Double\n fun ceil(value: Number): Double\n}\n\ninternal const val defineTaylorNBound = \"\"\n var epsilon = 2.220446049250313E-16;\n var taylor\_2\_bound = Math.sqrt(epsilon);\n var taylor\_n\_bound = Math.sqrt(taylor\_2\_bound);\n\ninternal const val defineUpperTaylor2Bound = \"\"\n\n\$defineTaylorNBound\n var upper\_taylor\_2\_bound = 1/taylor\_2\_bound;\n\ninternal const val defineUpperTaylorNBound = \"\"\n\n\$defineUpperTaylor2Bound\n var upper\_taylor\_n\_bound = 1/taylor\_n\_bound;\n\n\"\", \"names\": [], \"mappings\": \"AAWC,CAXA,yB;EACG,IAAI,OAAO,MAAO,KAAI,UAAW,IAAG,MAAM,IAA1C,C;IACI,MAAM,CAAC,QAAD,EAAW,CAAC,SAAD,CAAX,EAAwB,OAAxB,C;SAEL,IAAI,OAAO,OAAQ,KAAI,QAAvB,C;IACD,OAAO,CAAC,MAAM,QAAP,C;;IAGP,IAAI,OAAQ,GAAE,E;IACd,OAAO,CAAC,IAAI,OAAL,C;;CAEd,CAAC,IAAD,EAAO,kB;EACJ,IAAI,IAAI,M;ECPU;;;IAAtB,MAAM,eAAgB,GAAE,a;IACpB,OAAoD,CAA5C,KAAK,QAAQ,CAAC,CAAD,CAAI,IAAG,CAAe,YAAW,SAAW,KAAG,CAAC,OAAQ,KAAI,c;G;EAGxE,MAAM,YAAa,GAAE,a;IACjB,OAAO,CAAe,YAAW,SAAU,IAAG,CAAC,OAAQ,KAAI,c;G;EAGID,MAAM,aAAc,GAAE,a;IACIB,OAAO,CAAe,YAAW,U;G;EAGxB,MAAM,YAAa,GAAE,a;IACjB,OAAO,CAAe,YAAW,WAAY,IAAG,CAAC,OAAQ,KAAI,W;G;EAGpD,MAAM,WAAY,GAAE,a;IAChB,OAAO,CAAe,YAAW,U;G;EAGxB,MAAM,aAAc,GAAE,a;IACIB,OAAO,CAAe,YAAW,Y;G;EAGxB,MAAM,cAAe,GAAE,a;IACnB,OAAO,CAAe,YAAW,Y;G;EAGxB,MAAM,YAAa,GAAE,a;IACjB,OAAO,KAAK,QAAQ,CAAC,CAAD,CAAI,IAAG,CAAC,OAAQ,KAAI,W;G;EAG5C,MAAM,QAAS,GAAE,a;IACb,OAAO,KAAK,QA AQ,CAAC,CAAD,CAAI,IAAG,CAAC,CAAC,O;G;EAGjC,MAAM,WAAY,GAAE,a;IACb,OAAO,KAAK,QAA Q,CAAC,CAAD,CAAI,IAAG,WAAW,OAAO,CAAC,CAAD,C;G;EAGjD,MAAM,cAAe,GAAE,a;IACnB,IAAI,C AAe,KAAI,IAAV,C;MAAgB,OAAO,M;IACvB,IAAI,WAAW,MAAM,YAAY,CAAC,CAAD,CAAI,GAAE,MAA M,aAAR,GAAwB,MAAM,S;IACnE,OAAO,GAAI,GAAE,KAAK,UAAU,IAAI,KAAK,CAAC,CAAD,EAAL,a;M AAc,OAAO,QAAQ,CAAC,CAAD,C;KAAjC,CAAwC,KAAK,CAAC,IAAD,CAAo,GAAE,G;G;EAG/F,MAAM,k BAAmB,GAAE,e;IACvB,OAAO,MAAM,OAAO,YAAY,wBAAwB,CAAC,GAAD,C;G;EAG5D,MAAM,YAAa,G AAe,gB;IACjB,IAAI,CAAe,KAAI,CAAV,C;MACI,OAAO,I;;IAEX,IAAI,CAAe,KAAI,IAAK,IAAG,CAAe,KA

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T,C;YACA,e;;YAEA,c;;UNuoVA,iB;UACA,IAAK,WA1SyD,cA0SrD,CAAe,OAAf,CAAJ,C;;QA1ST,OA4SO,W;  
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e;;YAEA,c;;UNypVA,iB;UACA,IAAK,WA/SyD,cA+SrD,CAAe,OAAf,CAAJ,C;;QA/ST,OAIto,W;O;KA3TX,C;  
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CI,UAItd,WakTvC,CAAY,OAAZ,C;UM/qVP,U;UADP,YNirVe,WMjrVH,WNirVwB,GMjrVxB,C;UACL,IAAI  
,aAAJ,C;YACH,aN+qVuC,gB;YAA5B,WM9qVX,aN8qVgC,GM9qVhC,EAAS,MAAT,C;YACA,e;;YAEA,c;;UN  
2qVA,iB;UACA,IAAK,WApTyD,cAoTrD,CAAe,OAAf,CAAJ,C;;QApTT,OAsTO,W;O;KAhUX,C;uFAaA,yB;M  
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C;MACZ,wBAaA,SAAb,gB;QAAa,WAAA,SAAb,M;QACI,WAAY,WAAI,WAAU,cAAV,EAAU,sBAaV,WAA  
mB,IAaNB,CAAJ,C;;MACHB,OAAO,W;K;gGAGX,6C;MAQiB,UACiB,M;MAF9B,YAAY,C;MACZ,wBAaA,SA  
Ab,gB;QAAa,WAAA,SAAb,M;QACI,WAAY,WAAI,WAAU,cAAV,EAAU,sBAaV,WAaMb,IAaNB,CAAJ,C;;  
MACHB,OAAO,W;K;gGAGX,6C;MAQiB,UACiB,M;MAF9B,YAAY,C;MACZ,wBAaA,SAAb,gB;QAAa,WAAA  
,SAAb,M;QACI,WAAY,WAAI,WAAU,cAAV,EAAU,sBAaV,WAaMb,IAaNB,CAAJ,C;;MACHB,OAAO,W;K;g  
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Y,C;MACZ,wBAaA,SAAb,gB;QAAa,WAAA,SAAb,M;QACI,WAAY,WAAI,WAAU,cAAV,EAAU,sBAaV,WA  
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,gB;QAAGB,cAAA,SAAhB,M;QACI,OAAO,SAAS,OAAT,C;;MAEX,OAAO,G;K;8FAGX,+B;MAOoB,Q;MADh  
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B,M;QACI,OAAO,SAAS,OAAT,C;;MAEX,OAAO,G;K;8FAGX,+B;MAOoB,Q;MADhB,UAAkB,G;MACIB,wB  
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F16DG,MAAO,KE06DE,GF16DF,EE06DO,CF16DP,C;;ME46Dd,OAAO,G;K;IAGX,2B;MAWI,eAAe,oB;MACf,  
IAAI,CAAC,QAAS,UAAAd,C;QAAyB,MAAM,6B;MAC/B,UAAU,QAAS,O;MACnB,OAAO,QAAS,UAAhB,C;Q  
ACI,QAAQ,QAAS,O;QACjB,MF18DG,MAAO,KE08DE,GF18DF,EE08DO,CF18DP,C;;ME48Dd,OAAO,G;K;IA  
GX,2B;MASI,eAAe,oB;MACf,IAAI,CAAC,QAAS,UAAAd,C;QAAyB,MAAM,6B;MAC/B,UAAU,QAAS,O;MAC  
nB,OAAO,QAAS,UAAhB,C;QACI,QAAQ,QAAS,O;QACjB,IAAI,sBAAM,CAAN,KA AJ,C;UAAa,MAAM,C;;M  
AEvB,OAAO,G;K;kFAGX,yB;MAAA,sE;MAAA,sC;QAWI,eAAe,oB;QACf,IAAI,CAAC,QAAS,UAAAd,C;UAAy  
B,MAAM,6B;QAC/B,cAAc,QAAS,O;QACvB,IAAI,CAAC,QAAS,UAAAd,C;UAAyB,OAAO,O;QAChC,eAAe,SA  
AS,OAAT,C;;UAEX,QAAQ,QAAS,O;UACjB,QAAQ,SAAS,CAAT,C;UACR,IAAI,2BAAW,CAAX,KA AJ,C;YA  
CI,UAAU,C;YACV,WAAW,C;;;QAED,QAAT,QAAS,W;QACIB,OAAO,O;O;KAXBX,C;8FA2BA,+B;MAOI,eA  
Ae,oB;MACf,IAAI,CAAC,QAAS,UAAAd,C;QAAyB,OAAO,I;MACHC,cAAc,QAAS,O;MACvB,IAAI,CAAC,QAA  
S,UAAAd,C;QAAyB,OAAO,O;MACHC,eAAe,SAAS,OAAT,C;;QAEX,QAAQ,QAAS,O;QACjB,QAAQ,SAAS,CA  
AT,C;QACR,IAAI,2BAAW,CAAX,KA AJ,C;UACI,UAAU,C;UACV,WAAW,C;;;MAED,QAAT,QAAS,W;MACI  
B,OAAO,O;K;mFAGX,yB;MAAA,sE;MFjhEA,iB;MEihEA,sC;QAaI,eAAe,oB;QACf,IAAI,CAAC,QAAS,UAAAd,  
C;UAAyB,MAAM,6B;QAC/B,eAAe,SAAS,QAAS,OAAIB,C;QACf,OAAO,QAAS,UAAhB,C;UACI,QAAQ,SAA  
S,QAAS,OAAIB,C;UACR,Wf3hEG,MAAO,KE2hEO,QF3hEP,EE2hEiB,CF3hEjB,C;;QE6hEd,OAAO,Q;O;KAp  
BX,C;mFAuBA,yB;MAAA,sE;MFnjEA,iB;MEMjEA,sC;QAaI,eAAe,oB;QACf,IAAI,CAAC,QAAS,UAAAd,C;UA  
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ilErB,2B;QAAhB,OAAGB,cAAhB,C;UAAgB,yB;UACZ,MX/5EmD,eW+5EnD,GX/5E8D,KAAK,KW+5E5D,SA  
AS,OAAT,CX/5EuE,KAAX,CAAhB,C;;QWi6EvD,OAAO,G;O;KAhBX,C;IAyBe,oD;MAAA,qB;QAAE,e;UAAM  
,MAAM,gCAAyB,2BAAwB,mBAAXB,MAAZB,C;;QAAZ,S;O;K;IANjB,qC;MAMI,OAAO,kBAAI,gCAAJ,C;K;I  
AGX,oC;MAaI,OAAO,sBAAS,IAAT,EAAe,IAAf,EAAc,IAAtC,C;K;IAGX,+C;MAkBI,OAAO,sBAAS,IAAT,E  
AAe,IAAf,EAAc,IAAtC,EAAwD,SAAXD,C;K;IASA,0D;MAAA,4B;MAAA,sC;K;IAG0B,+E;MAAA,qB;QAAE  
,IAAI,CAAC,iBAAD,IAAY,WAAM,eAAN,CAAhB,C;UAAiC,oBAAU,I;UAA3C,OAAiD,K;;UAAjD,OAA8D,I;  
O;K;6CAF7F,Y;MACI,kBAAc,KAAd,C;MACA,OAAkB,SAAX,eAAW,EAAO,kEAAp,CAA8E,W;K;;IAT5G,qC;  
MAMI,kD;K;IAkBO,6D;MAAA,4B;MAAA,wC;K;IAE6B,iE;MAAA,qB;QAAE,gBAAM,gBAAN,K;O;K;+CADl  
C,Y;MACI,OAAkB,YAAX,eAAW,EAAU,4DAAV,CAA6B,W;K;;IAZ3D,sC;MASI,IAAI,Q/B0qKG,YAAQ,C+B1  
qKf,C;QAAwB,OAAO,S;MAC/B,qD;K;IAGBO,6D;MAAA,wC;MAAA,4B;K;IAMiC,8D;MAAA,qB;QAAE,OAA  
M,aAAN,mB;O;K;+CALtC,Y;MACI,YAAqB,6BAAT,qBAAS,C;MACrB,IAAI,KAAM,UAAV,C;QACI,OAAO,e  
AAW,W;;QAEIB,OAAkB,YAAX,eAAW,EAAU,4CAAV,CAA0B,W;K;;IAf5D,sC;MASI,qD;K;IAoBO,6D;MAA  
A,wC;MAAA,4B;K;IAMiC,8D;MAAA,qB;QAAE,OAAM,aAAN,mB;O;K;+CALtC,Y;MACI,YAAqB,UAAT,qB  
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X,C;wFAUA,yB;MAAA,+D;MAAA,6B;MAAA,uC;QAYoB,Q;QAFhB,YAAY,gB;QACZ,aAAa,gB;QACG,2B;Q  
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sE;MAkBkD,oB;QAAA,OAAy,C;MAAG,8B;QAAA,iBAA0B,K;MACvF,OAAwE,OAAjE,8BAAiB,IAAjB,EAA  
uB,IAAvB,EAA6B,cAA7B,EAA2D,IAA3D,CAAiE,EAAI,SAAJ,C;K;IAYpC,4B;MAAY,cAAM,EAAAN,C;K;IATp  
D,kC;MASI,OAAO,oBAAgB,SAAhB,EAAcB,KAAtB,EAA6B,UAA7B,C;K;IAGX,6C;MAUI,OAAO,oBAAgB,S  
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A,wB;MAAA,kC;K;;sDAAA,Y;;oCACl,sC;cACf,IAAI,CAAC,mBAAS,UAAAd,C;gBAAyB,M;;gBAAzB,gB;;;  
;;mCACc,mBAAS,O;cACvB,gB;;cAAA,KAAO,mBAAS,UAAhB,C;gBAAA,gB;;gCACe,mBAAS,O;cACpB,gB  
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;;MW3xBP,aAAa,qBAAiB,SAAjB,C;MACb,MAAO,mBAAU,KAAY,C;MACP,OAAO,M;K;IAGX,uC;MAMI,aA  
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AAJ,C;YAAwB,qBAAO,O;YAAP,uB;;;QAC9C,qBAAO,I;;;MAnOP,yB;K;iFAGJ,gC;MASW,sB;;;QAIOS,Q;QAA  
A,2B;QAAhB,OAAgB,cAAhB,C;UAAgB,yB;UAAM,IAjOH,SAiOO,CAAU,OAAV,CAAJ,C;YAAwB,qBAAO,O;  
YAAP,uB;;;QAC9C,qBAAO,I;;;MAIOP,yB;K;iFAGJ,gC;MASW,sB;;;QA+NS,Q;QAAA,2B;QAAhB,OAAgB,cAA  
hB,C;UAAgB,yB;UAAM,IAhOH,SAgOO,CAAU,OAAV,CAAJ,C;YAAwB,qBAAO,O;YAAP,uB;;;QAC9C,qBA  
AO,I;;;MAjOP,yB;K;iFAGJ,gC;MASW,sB;;;QA+NS,Q;QAAA,2B;QAAhB,OAAgB,cAAhB,C;UAAgB,yB;UAAM  
,IA/NH,SA+NO,CAAU,OAAV,CAAJ,C;YAAwB,qBAAO,O;YAAP,uB;;;QAC9C,qBAAO,I;;;MAhOP,yB;K;yFA  
GJ,yB;MAgoBA,+C;MAkuFI,0D;MAI2GJ,uC;QASW,qB;;;UAgoBO,Q;UAAA,OAAa,SAytFX,YAAR,iBAAQ,CA  
ztFW,CAAb,W;UAAAd,OAAC,cAAAd,C;YAAc,uB;YACV,cAAc,sBAAK,KAAL,C;YACd,IAloBc,SAkoBV,CAAU,  
OAAV,CAAJ,C;cAAwB,oBAAO,O;cAAP,sB;;;UAE5B,oBAAO,I;;;QApoBP,wB;O;KATJ,C;yFAYA,yB;MAooB  
A,+C;MA0tFI,0D;MA91GJ,uC;QASW,qB;;;UAooBO,Q;UAAA,OAAa,SAitFX,YAAR,iBAAQ,CAjtFW,CAAb,W;  
UAAAd,OAAC,cAAAd,C;YAAc,uB;YACV,cAAc,sBAAK,KAAL,C;YACd,IAtoBc,SAsoBV,CAAU,OAAV,CAAJ,C;  
cAAwB,oBAAO,O;cAAP,sB;;;UAE5B,oBAAO,I;;;QAxoBP,wB;O;KATJ,C;yFAYA,yB;MAwoBA,+C;MAktFI,0D  
;MA11GJ,uC;QASW,qB;;;UAwoBO,Q;UAAA,OAAa,SAysFX,YAAR,iBAAQ,CAzsFW,CAAb,W;UAAAd,OAAC,c  
AAAd,C;YAAc,uB;YACV,cAAc,sBAAK,KAAL,C;YACd,IAloBc,SAoBV,CAAU,OAAV,CAAJ,C;cAAwB,oBA  
AO,O;cAAP,sB;;;UAE5B,oBAAO,I;;;QA5oBP,wB;O;KATJ,C;yFAYA,yB;MA4oBA,+C;MA0sFI,0D;MA11GJ,uC;  
QASW,qB;;;UA4oBO,Q;UAAA,OAAa,SAisFX,YAAR,iBAAQ,CAjsFW,CAAb,W;UAAAd,OAAC,cAAAd,C;YAAc,u  
B;YACV,cAAc,sBAAK,KAAL,C;YACd,IA9oBc,SA8oBV,CAAU,OAAV,CAAJ,C;cAAwB,oBAAO,O;cAAP,sB;;  
;UAE5B,oBAAO,I;;;QAhpBP,wB;O;KATJ,C;mFAYA,yB;MAAA,8C;MpC1GA,6B;MoC0GA,4B;QASI,OpCzGm  
C,coCyGpB,MAAR,iBAAQ,CpCzGoB,C;O;KoCgGvC,C;mFAYA,yB;MAAA,8C;MnBvGA,+B;MmBuGA,4B;QA  
SI,OnBtGsC,emBsGvB,MAAR,iBAAQ,CnBtGuB,C;O;KmB6F1C,C;mFAYA,yB;MAAA,8C;MrChLA,+B;MqCgL  
A,4B;QASI,OrC/KsC,eqC+KvB,MAAR,iBAAQ,CrC/KuB,C;O;KqCsK1C,C;mFAYA,yB;MAAA,8C;MnC/KA,iC;

MmC+KA,4B;QASI,OnC9KyC,gBmC8K1B,MAAR,iBAAQ,CnC9K0B,C;O;KmCqK7C,C;mFAYA,yB;MAAA,iE  
;MAAA,uC;QAQoB,Q;QAAA,2B;QAaHb,OAAgB,cAAhB,C;UAAgB,yB;UAAM,IAAI,UAAU,OAAV,CAAJ,C;  
YAAwB,OAAO,O;;QACrD,MAAM,gCAAuB,mDAAvB,C;O;KATV,C;mFAYA,yB;MAAA,iE;MAAA,uC;QAQo  
B,Q;QAAA,2B;QAaHb,OAAgB,cAAhB,C;UAAgB,yB;UAAM,IAAI,UAAU,OAAV,CAAJ,C;YAAwB,OAAO,O;  
;QACrD,MAAM,gCAAuB,mDAAvB,C;O;KATV,C;mFAYA,yB;MAAA,iE;MAAA,uC;QAQoB,Q;QAAA,2B;QA  
AhB,OAAgB,cAAhB,C;UAAgB,yB;UAAM,IAAI,UAAU,OAAV,CAAJ,C;YAAwB,OAAO,O;;QACrD,MAAM,g  
CAAuB,mDAAvB,C;O;KATV,C;mFAYA,yB;MAAA,iE;MAAA,uC;QAQoB,Q;QAAA,2B;QAaHb,OAAgB,cAA  
hB,C;UAAgB,yB;UAAM,IAAI,UAAU,OAAV,CAAJ,C;YAAwB,OAAO,O;;QACrD,MAAM,gCAAuB,mDAAvB,  
C;O;KATV,C;IAYA,mC;MAMI,OAAW,mBAAJ,GAAe,IAAf,GAAYB,sBAAK,CAAL,C;K;IAGpC,mC;MAMI,O  
AAW,mBAAJ,GAAe,IAAf,GAAYB,sBAAK,CAAL,C;K;IAGpC,mC;MAMI,OAAW,mBAAJ,GAAe,IAAf,GAAYB  
,sBAAK,CAAL,C;K;IAGpC,mC;MAMI,OAAW,mBAAJ,GAAe,IAAf,GAAYB,sBAAK,CAAL,C;K;+FAGpC,gC;  
MAOoB,Q;MAAA,2B;MAAhB,OAAgB,cAAhB,C;QAAGB,yB;QAAM,IAAI,UAAU,OAAV,CAAJ,C;UAAwB,O  
AAO,O;;MACrD,OAAO,I;K;+FAGX,gC;MAOoB,Q;MAAA,2B;MAAhB,OAAgB,cAAhB,C;QAAGB,yB;QAAM,I  
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AGX,gC;MAOoB,Q;MAAA,2B;MAAhB,OAAgB,cAAhB,C;QAAGB,yB;QAAM,IAAI,UAAU,OAAV,CAAJ,C;U  
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A2pGT,cAAR,iBAAQ,C;;QA3pGhB,OAAO,OAAcS,sBAAI,KAAJ,CAAtC,GAASD,aAAa,KAAb,C;O;KAPjE,C;2  
FAUA,yB;MAGqGI,8D;MAhqGJ,iD;QAOe,oBAAS,C;QAAT,S;UAAc,gBAypGT,cAAR,iBAAQ,C;;QAZpGhB,O  
AAO,OAAcS,sBAAI,KAAJ,CAAtC,GAASD,aAAa,KAAb,C;O;KAPjE,C;2FAUA,yB;MA8pGI,8D;MA9pGJ,iD;Q  
AOe,oBAAS,C;QAAT,S;UAAc,gBAupGT,cAAR,iBAAQ,C;;QAvpGhB,OAAO,OAAcS,sBAAI,KAAJ,CAAtC,G  
AASD,aAAa,KAAb,C;O;KAPjE,C;2FAUA,yB;MA4pGI,8D;MA5pGJ,iD;QAOe,oBAAS,C;QAAT,S;UAAc,gBAqp  
GT,cAAR,iBAAQ,C;;QArpGhB,OAAO,OAAcS,sBAAI,KAAJ,CAAtC,GAASD,aAAa,KAAb,C;O;KAPjE,C;IAUA  
,wC;MAQe,oBAAS,C;MAAT,S;QAAC,gBAknGT,gBAAR,iBAAQ,C;;MAlnGhB,OAAO,OAAcS,sBAAI,KAAJ,C  
AAtC,GAASD,I;K;IAGjE,wC;MAQe,oBAAS,C;MAAT,S;QAAC,gBA+mGT,gBAAR,iBAAQ,C;;MA/mGhB,OAA  
O,OAAcS,sBAAI,KAAJ,CAAtC,GAASD,I;K;IAGjE,wC;MAQe,oBAAS,C;MAAT,S;QAAC,gBA4mGT,gBAAR,i  
BAAQ,C;;MA5mGhB,OAAO,OAAcS,sBAAI,KAAJ,CAAtC,GAASD,I;K;IAGjE,wC;MAQe,oBAAS,C;MAAT,S;  
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MAAA,kD;MAAA,qC;QAOI,OAAe,QAAR,iBAAQ,EAAQ,OpChdU,KoCgdIB,C;O;KAPnB,C;uFAUA,yB;MAA  
A,kD;MAAA,qC;QAOI,OAAe,QAAR,iBAAQ,EAAQ,OnB/cY,KmB+cpB,C;O;KAPnB,C;uFAUA,yB;MAAA,kD;  
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ZA,6B;MoCsZA,0BAOgC,yB;QpC7ZhC,6B;eoC6ZgC,6B;UAAA,qB;YAAE,yBpCnZK,coCmZK,EpCnZL,CoCm  
ZL,C;W;S;OAAF,C;MAPhC,uC;QAOMB,kBAAR,iB;QAAQ,uB;;UvC+0Bf,0D;YACI,IuCh1B0B,UpCnZK,cHmu  
CjB,YAAK,KAAL,CGnuCiB,CoCmZL,CvCg1B1B,C;cACI,sBAAO,K;cAAP,wB;;;UAGR,sBAAO,E;;;QuCp1BP,  
0B;O;KAPjC,iGAUA,yB;MAAA,sC;MnBjZA,+B;MmBiZA,0BAOgC,yB;QnBxZhC,+B;emBwZgC,6B;UAAA,q  
B;YAAE,yBnB9YQ,emB8YE,EnB9YF,CmB8YR,C;W;S;OAAF,C;MAPhC,uC;QAOMB,kBAAR,iB;QAAQ,uB;;U  
vCi1Bf,0D;YACI,IuCl1B0B,UnB9YQ,epBguCpB,YAAK,KAAL,CoBhuCoB,CmB8YR,CvCk1B1B,C;cACI,sBAA  
O,K;cAAP,wB;;;UAGR,sBAAO,E;;;QuCt1BP,0B;O;KAPjC,iGAUA,yB;MAAA,sC;MrCxdA,+B;MqCwdA,0BAO  
gC,yB;QrC/dhC,+B;eqC+dgC,6B;UAAA,qB;YAAE,yBrCrdQ,eqCqdE,ErCrdF,CqCqdR,C;W;S;OAAF,C;MAPhC,  
uC;QAOMB,kBAAR,iB;QAAQ,uB;;UvCmyBf,0D;YACI,IuCpyB0B,UrCrdQ,eFyvCpB,YAAK,KAAL,CEzvCoB,  
CqCqdR,CvCoyB1B,C;cACI,sBAAO,K;cAAP,wB;;;UAGR,sBAAO,E;;;QuCxyBP,0B;O;KAPjC,iGAUA,yB;MA  
AA,sC;MnCrDA,iC;MmCqdA,0BAOgC,yB;QnC5dhC,iC;emC4dgC,6B;UAAA,qB;YAAE,yBnCldW,gBmCkdD,En  
CldC,CmCkdX,C;W;S;OAAF,C;MAPhC,uC;QAOMB,kBAAR,iB;QAAQ,uB;;UvCqyBf,0D;YACI,IuCtyB0B,UnCl  
dW,gBJwvCvB,YAAK,KAAL,CIxvCuB,CmCkdX,CvCsY1B1B,C;cACI,sBAAO,K;cAAP,wB;;;UAGR,sBAAO,E;;;  
QuC1yBP,0B;O;KAPjC,+FAUA,yB;MAAA,sC;MvCs5BA,0D;MAAA,+C;MGp1CA,6B;MoC8ba,yBAO+B,yB;  
QpCrc/B,6B;eoCqc+B,6B;UAAA,qB;YAAE,yBpC3bM,coC2bI,EpC3bJ,CoC2bN,C;W;S;OAAF,C;MAP/B,uC;QA  
OMB,kBAAR,iB;QAAQ,sB;;UvCm5BD,Q;UAAA,OAAQ,SAAR,wBAAQ,CAAR,W;UAAAd,OAAc,cAAAd,C;YAA

c,uB;YACV,IuCp5ByB,UpC3bM,cH+0CjB,YAAK,KAAL,CG/0CiB,CoC2bN,CvCo5BzB,C;cACI,qBAAO,K;cAA  
P,uB;;;UAGR,qBAAO,E;;;QuCx5BP,yB;O;KAPJ,C;+FAUA,yB;MAAA,sC;MvCw5BA,0D;MAAA,+C;MoBj1CA,  
+B;MmBybA,yBAO+B,yB;QnBhc/B,+B;emBgc+B,6B;UAAA,qB;YAAE,yBnBtbS,emBsbC,EnBtbD,CmBsbT,C;  
W;S;OAAF,C;MAP/B,uC;QAOMB,kBAAR,iB;QAAQ,sB;;UvCq5BD,Q;UAAA,OAAQ,SAAR,wBAAQ,CAAR,W  
;UAAAd,OAAc,cAAAd,C;YAAc,uB;YACV,IuCt5ByB,UnBtbS,epB40CpB,YAAK,KAAL,CoB50CoB,CmBsbT,CvCs  
5BzB,C;cACI,qBAAO,K;cAAP,uB;;;UAGR,qBAAO,E;;;QuC15BP,yB;O;KAPJ,C;+FAUA,yB;MAAA,sC;MvC02  
BA,0D;MAAA,+C;ME12CA,+B;MqCggBA,yBAO+B,yB;QrCvgB/B,+B;eqCugB+B,6B;UAAA,qB;YAAE,yBrC7f  
S,eqC6fC,ErC7fD,CqC6fT,C;W;S;OAAF,C;MAP/B,uC;QAOMB,kBAAR,iB;QAAQ,sB;;UvCu2BD,Q;UAAA,OA  
AQ,SAAR,wBAAQ,CAAR,W;UAAAd,OAAc,cAAAd,C;YAAc,uB;YACV,IuCx2ByB,UrC7fS,eFq2CpB,YAAK,KAA  
L,CER2CoB,CqC6fT,CvCw2BzB,C;cACI,qBAAO,K;cAAP,uB;;;UAGR,qBAAO,E;;;QuC52BP,yB;O;KAPJ,C;+FA  
UA,yB;MAAA,sC;MvC42BA,0D;MAAA,+C;MIz2CA,iC;MmC6fA,yBAO+B,yB;QnCpgB/B,iC;emCogB+B,6B;U  
AAA,qB;YAAE,yBnC1fY,gBmC0fF,EnC1fE,CmC0fZ,C;W;S;OAAF,C;MAP/B,uC;QAOMB,kBAAR,iB;QAAQ,s  
B;;UvCy2BD,Q;UAAA,OAAQ,SAAR,wBAAQ,CAAR,W;UAAAd,OAAc,cAAAd,C;YAAc,uB;YACV,IuC12ByB,Un  
C1fY,gBjO2CvB,YAAK,KAAL,CIp2CuB,CmC0fZ,CvC02BzB,C;cACI,qBAAO,K;cAAP,uB;;;UAGR,qBAAO,E;;;  
QuC92BP,yB;O;KAPJ,C;+FAUA,yB;MAAA,4C;MpCteA,6B;MoCseA,4B;QAWI,OpCvemC,coCuepB,KAAR,iBA  
AQ,CpCveoB,C;O;KoC4dvC,C;iFACa,yB;MAAA,4C;MnBreA,+B;MmBqeA,4B;QAWI,OnBtesC,emBsevB,KAA  
R,iBAAQ,CnBteuB,C;O;KmB2d1C,C;iFACa,yB;MAAA,4C;MrChjBA,+B;MqCgjBA,4B;QAWI,OrCjjBsC,eqCijB  
vB,KAAR,iBAAQ,CrCjjBuB,C;O;KqCsiB1C,C;iFACa,yB;MAAA,4C;MnCjjBA,iC;MmCijBA,4B;QAWI,OnCljB  
yC,gBmCkjB1B,KAAR,iBAAQ,CnCljB0B,C;O;KmCuiB7C,C;iFACa,yB;MAAA,+C;MAAA,iE;MA83FI,0D;MA9  
3FJ,uC;QAWkB,Q;QAAA,OAAa,SAm3FX,YAn3FF,SAm3FN,QAAQ,CAn3FW,CAAb,W;QAAd,OAAc,cAAAd,C;  
UAAc,uB;UACV,cAAc,sBAAK,KAAL,C;UACd,IAAI,UAAU,OAAV,CAAJ,C;YAAwB,OAAO,O;;QAEEnC,MAA  
M,gCAAuB,mDAAvB,C;O;KafV,C;iFakBA,yB;MAAA,+C;MAAA,iE;MAo3FI,0D;MAP3FJ,uC;QAWkB,Q;QA  
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sBAAK,KAAL,C;UACd,IAAI,UAAU,OAAV,CAAJ,C;YAAwB,OAAO,O;;QAEEnC,MAAM,gCAAuB,mDAAvB,  
C;O;KafV,C;iFakBA,yB;MAAA,+C;MAAA,iE;MA02FI,0D;MA12FJ,uC;QAWkB,Q;QAAA,OAAa,SA+1FX,YA  
/1FF,SA+1FN,QAAQ,CA/1FW,CAAb,W;QAAd,OAAc,cAAAd,C;UAAc,uB;UACV,cAAc,sBAAK,KAAL,C;UACd,  
IAAI,UAAU,OAAV,CAAJ,C;YAAwB,OAAO,O;;QAEEnC,MAAM,gCAAuB,mDAAvB,C;O;KafV,C;iFakBA,yB;  
MAAA,+C;MAAA,iE;MAg2FI,0D;MAh2FJ,uC;QAWkB,Q;QAAA,OAAa,SAq1FX,YAr1FF,SAq1FN,QAAQ,CAr  
1FW,CAAb,W;QAAd,OAAc,cAAAd,C;UAAc,uB;UACV,cAAc,sBAAK,KAAL,C;UACd,IAAI,UAAU,OAAV,CAA  
J,C;YAAwB,OAAO,O;;QAEEnC,MAAM,gCAAuB,mDAAvB,C;O;KafV,C;+FakBA,yB;MAAA,0D;MAAA,qC;Q  
AOI,OAAe,YAAR,iBAAQ,EAAY,OpCxsBM,KoCwsBIB,C;O;KAPnB,C;+FAUA,yB;MAAA,0D;MAAA,qC;QA  
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Af,GAAyB,sBAAK,iBAAO,CAAP,IAAL,C;K;IAGpC,kC;MAQI,OAAW,mBAAJ,GAAe,IAAf,GAAyB,sBAAK,i  
BAAO,CAAP,IAAL,C;K;IAGpC,kC;MAQI,OAAW,mBAAJ,GAAe,IAAf,GAAyB,sBAAK,iBAAO,CAAP,IAAL,  
C;K;IAGpC,kC;MAQI,OAAW,mBAAJ,GAAe,IAAf,GAAyB,sBAAK,iBAAO,CAAP,IAAL,C;K;6FAGpC,yB;MA  
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AO,O;;QAEEnC,OAAO,I;O;KAbX,C;6FAGBA,yB;MAAA,+C;MA0tFI,0D;MA1tFJ,uC;QASkB,Q;QAAA,OAAa,S  
AitFX,YAjtFF,SAitFN,QAAQ,CAjtFW,CAAb,W;QAAd,OAAc,cAAAd,C;UAAc,uB;UACV,cAAc,sBAAK,KAAL,  
C;UACd,IAAI,UAAU,OAAV,CAAJ,C;YAAwB,OAAO,O;;QAEEnC,OAAO,I;O;KAbX,C;6FAGBA,yB;MAAA,+C;  
MAktFI,0D;MAItFJ,uC;QASkB,Q;QAAA,OAAa,SAYSFX,YAZsFF,SAYSFN,QAAQ,CAZsFW,CAAb,W;QAAd,O  
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Q,MA4jDA,EA5jDO,OAAQ,aAAR,GAAuB,CAAvB,IA4jDP,CAApB,CA5jDqD,C;K;IAGhE,sC;MASKB,Q;MAH  
d,WAAmB,wBAAR,OAAQ,EAawB,EAaxB,C;MACnB,IAAI,SAAQ,CAAZ,C;QAAe,OAAO,W;MACTB,WAA  
W,iBAAGB,IAAhB,C;MACG,yB;MAAd,OAAc,cAAd,C;QAAC,uB;QACV,IAAK,WAAI,sBAAI,KAAJ,CAAJ,C;;  
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CV,IAAK,WAAI,sBAAI,KAAJ,CAAJ,C;;MAET,OAAO,I;K;IAGX,sC;MASKB,Q;MAHd,WAAmB,wBAAR,OA  
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CG,yB;MAAd,OAAc,cAAd,C;QAAC,uB;QACV,IAAK,WAAI,sBAAI,KAAJ,CAAJ,C;;MAET,OAAO,I;K;IAGX,s

C;MASKB,Q;MAHd,WAAmB,wBAAR,OAAQ,EAAwB,EAAxB,C;MACnB,IAAI,SAAQ,CAAZ,C;QAAe,OAAO,W;MACtB,WAAW,iBAaKB,IAAIB,C;MACG,yB;MAAd,OAAc,cAAAd,C;QAAC,uB;QACV,IAAK,WAAI,sBAAI,KA AJ,CAAJ,C;;MAET,OAAO,I;K;IAGX,2C;MAMI,OAAO,cAAKB,aAAR,iBAAQ,EAAW,OAA X,CAAIB,C;K;IAGX,2C;MAMI,OAAO,eAAmB,aAAR,iBAAQ,EAAW,OAA X,CAAIB,C;K;IAGX,2C;MAMI,OAAO,eAAmB,aAAR,iBAAQ,EAAW,OAA X,CAAIB,C;K;IAGX,2C;MAMI,OAAO,gBAAoB,aAAR,iBAAQ,EAAW,OAA X,CAA pB,C;K;IAGX,2C;MAMI,OAAO,cAAKB,cAAR,iBAAQ,EAAW,OAA X,CAAIB,C;K;IAGX,2C;MAMI,OAAO,eAAmB,cAAR,iBAAQ,EAAW,OAA X,CAAIB,C;K;IAGX,2C;MAMI,OAAO,eAAmB,aAAR,iBAAQ,EAAW,OAA X,CAAIB,C;K;IAGX,2C;MAMI,OAAO,gBAAoB,cAAR,iBAAQ,EAAW,OAA X,CAA pB,C;K;IAGX,+B;MAGBiB,Q;MxBjyEb,IAAI,EwB2xEI,KAAK,CxB3xET,CAAJ,C;QACI,cwB0xEc,sD;QxBzxEd,MAAM,gCAAyB,OAAQ,WAAjC,C;;MwB0xEV,IAAI,MAAK,CAAT,C;QAAY,OAAO,W;MACnB,IAAI,KAAK,cAAT,C;QAAe,OAAO,mB;MACtB,IAAI,MAAK,CAAT,C;QAAY,OAAO,OAAO,sBAAK,CAAL,CAAP,C;MACnB,YAAY,C;MACZ,WAAW,iBAAGB,CAAhB,C;MACE,2B;MAAb,OAAa,cAAb,C;QAAa,sB;QACT,IAAK,WAAI,IAAJ,C;QACL,IAAI,mCAAW,CAAf,C;UACI,K;;MAER,OAAO,I;K;IAGX,+B;MAGBiB,Q;MxBzzEb,IAAI,EwBmzEI,KAAK,CxBnzET,CAAJ,C;QACI,cwBkzEc,sD;QxBjzEd,MAAM,gCAAyB,OAAQ,WAAjC,C;;MwBkzEV,IAAI,MAAK,CAAT,C;QAAY,OAAO,W;MACnB,IAAI,KAAK,cAAT,C;QAAe,OAAO,mB;MACtB,IAAI,MAAK,CAAT,C;QAAY,OAAO,OAAO,sBAAK,CAAL,CAAP,C;MACnB,YAAY,C;MACZ,WAAW,iBAAiB,CAAjB,C;MACE,2B;MAAb,OAAa,cAAb,C;QAAa,sB;QACT,IAAK,WAAI,IAAJ,C;QACL,IAAI,mCAAW,CAAf,C;UACI,K;;MAER,OAAO,I;K;IAGX,+B;MAGBiB,Q;MxBj1Eb,IAAI,EwB20EI,KAAK,CxB30ET,CAAJ,C;QACI,cwB00Ec,sD;QxBz0Ed,MAAM,gCAAyB,OAAQ,WAAjC,C;;MwB00EV,IAAI,MAAK,CAAT,C;QAAY,OAAO,W;MACnB,IAAI,KAAK,cAAT,C;QA Ae,OAAO,mB;MACtB,IAAI,MAAK,CAAT,C;QAAY,OAAO,OAAO,sBAAK,CAAL,CAAP,C;MACnB,YAAY,C;MACZ,WAAW,iBAAiB,CAAjB,C;MACE,2B;MAAb,OAAa,cAAb,C;QAAa,sB;QACT,IAAK,WAAI,IAAJ,C;QACL,IAAI,mCAAW,CAAf,C;UACI,K;;MAER,OAAO,I;K;IAGX,+B;MAGBiB,Q;MxBz2Eb,IAAI,EwBm2EI,KAAK,CxBn2ET,CAAJ,C;QACI,cwBk2Ec,sD;QxBj2Ed,MAAM,gCAAyB,OAAQ,WAAjC,C;;MwBk2EV,IAAI,MAAK,CAAT,C;QAAY,OAAO,W;MACnB,IAAI,KAAK,cAAT,C;QAAe,OAAO,mB;MACtB,IAAI,MAAK,CAAT,C;QAAY,OAAO,OAAO,sBAAK,CAAL,CAAP,C;MACnB,YAAY,C;MACZ,WAAW,iBAaKB,CAAIB,C;MACE,2B;MAAb,OAAa,cAAb,C;QAAa,sB;QACT,IAAK,WAAI,IAAJ,C;QACL,IAAI,mCAAW,CAAf,C;UACI,K;;MAER,OAAO,I;K;IAGX,mC;MxBj3EI,IAAI,EwB23EI,KAAK,CxB33ET,CAAJ,C;QACI,cwB03Ec,sD;QxBz3Ed,MAAM,gCAAyB,OAAQ,WAAjC,C;;MwB03EV,IAAI,MAAK,CAAT,C;QAAY,OAAO,W;MACnB,WAAW,c;MACX,IAAI,KAAK,IAAT,C;QAAe,OAAO,mB;MACtB,IAAI,MAAK,CAAT,C;QAAY,OAAO,OAAO,sBAAK,OAAO,CAAP,IAAL,CAAP,C;MACnB,WAAW,iBAAGB,CAAhB,C;MACX,iBAAc,OAAO,CAAP,IAAd,UAA6B,IAA7B,U;QACI,IAAK,WAAI,sBAAK,KAAL,CAAJ,C;MACT,OAAO,I;K;IAGX,mC;MxBt4EI,IAAI,EwBg5EI,KAAK,CxBh5ET,CAAJ,C;QACI,cwB+4Ec,sD;QxB94Ed,MAAM,gCAAyB,OAAQ,WAAjC,C;;MwB+4EV,IAAI,MAAK,CAAT,C;QAAY,OAAO,W;MACnB,WAAW,c;MACX,IAAI,KAAK,IAAT,C;QAAe,OAAO,mB;MACtB,IAAI,MAAK,CAAT,C;QAAY,OAAO,OAAO,sBAAK,OAAO,CAAP,IAAL,CAAP,C;MACnB,WAAW,iBAAiB,CAAjB,C;MACX,iBAAc,OAAO,CAAP,IAAd,UAA6B,IAA7B,U;QACI,IAAK,WAAI,sBAAK,KAAL,CAAJ,C;MACT,OAAO,I;K;IAGX,mC;MxB35EI,IAAI,EwBq6EI,KAAK,CxBr6ET,CAAJ,C;QACI,cwBo6Ec,sD;QxBn6Ed,MAAM,gCAAyB,OAAQ,WAAjC,C;;MwBo6EV,IAAI,MAAK,CAAT,C;QAAY,OAAO,W;MACnB,WAAW,c;MACX,IAAI,KAAK,IAAT,C;QAAe,OAAO,mB;MACtB,IAAI,MAAK,CAAT,C;QAAY,OAAO,OAAO,sBAAK,OAAO,CAAP,IAAL,CAAP,C;MACnB,WAAW,iBAaKB,CAAIB,C;MACX,iBAAc,OAAO,CAAP,IAAd,UAA6B,IAA7B,U;QACI,IAAK,WAAI,sBAAK,KAAL,CAAJ,C;MACT,OAAO,I;K;MAGX,yB;MAAA,4C;MAAA,gD;MAS2CI,8D;MAT2CJ,uC;QASI,iBA61CgB,cAAR,iBAAQ,CA71ChB,WAA+B,CAA/B,U;UACI,IAAI,CAAC,UAAU,sBAAK,KAAL,CAAV,CAAL,C;YACI,OAAO,gBAAK,QAAQ,CAAR,IAAL,C;;QAGf,OAAO,iB;O;KadX,C;mGAiBA,yB;MAAA,4C;MAAA,gD;MA61CI,8D;MA71CJ,uC;QASI,iBAo1CgB,cAAR,iBAAQ,CAp1ChB,WAA+B,CAA/B,U;UACI,IAAI,CAAC,UAAU,sBAAK,KAAL,CAAV,CAAL,C;YACI,OAAO,gB



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;MACI,OAAO,mCAAsB,WAAK,KAAM,E;K;mCAG5C,Y;MACI,OAAO,M;K;mCAGX,Y;MACI,OAAuC,oBAA  
nB,UAAV,IAAH,EAAa,CAAmB,C;K;0CAG3C,iB;MACI,OAAU,IAAI,EAAP,GAAY,K;K;kCAGvB,Y;MAEI,OA  
AO,M;K;;+DAIf,gB;MAEI,YAAY,MAAY,IAAK,OAAjB,C;MACZ,sBAAU,IAAV,a;QACI,UAAU,KAAC,CAAL  
,C;QACV,IAAI,oBAAJ,C;UACI,MAAM,CAAN,IAAW,EAAS,MAAM,MAAK,GAAL,C;;UAE1B,MAAM,CAAN  
,IAAW,G;;MAGnB,OAAO,EAAS,OAAO,OAAM,EAAN,EAAGB,KAahB,C;K;IAG3B,2B;MAMW,WAAO,S;M  
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AJ,C;UACI,MAAM,CAAN,IAAW,EAAS,MAAM,MAAK,GAAL,C;;UAE1B,MAAM,CAAN,IAAW,G;;MAYnB,  
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,CAAY,OAAAd,KAA2B,SAAhD,C;QAJCA,YAAY,MAKCM,IAICW,OAAjB,C;QACZ,sBAiCkB,IAjCIB,a;UACI,U  
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,C;;YAE1B,MAAM,CAAN,IAAW,G;;QA4Bf,OAZBG,EAAS,OAAO,OAAM,EAAN,EAAGB,KAahB,C;;QA2Bn  
B,WAAW,C;QACX,0BAAU,IAAV,e;UACY,IAAoB,I;UAA5B,eAAQ,QAAoB,OAApB,IAAQ,CAAH,GAAG,CA  
AY,OAApB,oCAAR,K;;QAEJ,aAAa,IAAO,CAAC,YAAR,CAAqB,IAArB,C;QE3FjB,IF4FyB,CE5FhB,OAAL,K  
AAkB,SAAtB,C;UF4F4B,ME3FxB,UF2FqB,CE3FF,O;;QF4FnB,OAAO,C;QACP,0BAAU,IAAV,e;UAE0B,YAC  
X,M;UAFX,YAAU,IAAQ,CAAH,GAAG,C;UACLSAAJ,KAAL,O;UAAtB,aAAU,CAAV,kB;YACI,OAAO,aAAP,  
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,MAAM,KAAX,CAAiB,SAAjB,C;MAWrD,eAAiB,I;MAXW,OAYrB,K;K;IAVX,uB;MAC6B,WAAS,W;MAAT,  
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7B,mBAAsC,I;MACtC,qBAAYC,I;MAEzC,yBAAGD,yBAAMb,Q;MAEnE,sBAAGD,I;K;wFAFhD,Y;MAAA,6B;  
K;0CAIA,Y;MAEY,kBADR,M;MAAA,U;MAAA,2C;QAAA,e;;QAES,gBADD,2CAAQ,yCAAR,gDAawD,IAAx  
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D,WAA9B,C;K;yDuCxDnD,kB;MvCwD6C,MAAM,6BuCvDzC,uCvCuDuE,WAA9B,C;K;+CuCpDnD,Y;MAAk  
C,8C;K;;;IARtC,6C;MAAA,4C;QAAA,2B;;MAAA,qC;K;IGyDA,mG;IAAA,yH;IAAA,6F;MAKW,kC;MAAS,4C;  
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K;IAG2C,+C;MAA0D,4BAAiB,OAAjB,EAA0B,KAA1B,C;;K;;IACrG,2C;MAAA,+D;MAAuB,kCAAK,IAAL,E  
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,2C;MAAA,+D;MAAuB,kCAAK,IAAL,C;MAAvB,Y;K;IAI0C,uC;8BAAwD,O;;K;;IACIG,0C;MAAA,8D;MAAu  
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CtD,OAAO,G;K;IAIX,wD;MAMuC,Q;MALnC,aAAa,MAAO,OAAM,CAAN,EAAS,OAAT,C;MA0BpB,IAzBc,M  
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P,C;K;IID4zDhB,2B;MAQI,IAAI,mBAAO,CAAX,C;QAAC,UAU,SAAV,C;K;IAGIB,wC;MAQI,IAAI,mBAAO,  
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UA Ae,gB;MACvF,oCAAA,2BAakB,SAAlB,EAA6B,OAA7B,EAAsC,gBAAtC,C;MACb,gBAAc,SAAd,EAAoB,S  
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;MACHE,oCAAA,2BAakB,SAAlB,EAA6B,OAA7B,EAAsC,gBAAtC,C;MACb,eAAoB,SAAY,UAAS,SAAT,EA  
AoB,OAAPB,C;MACvB,KAAT,QAAS,C;K;IAGb,gD;MAakC,yB;QAAA,YAAiB,C;MAAG,uB;QAAA,UA Ae,gB  
;MACjE,oCAAA,2BAakB,SAAlB,EAA6B,OAA7B,EAAsC,gBAAtC,C;MACb,eAAoB,SAAY,UAAS,SAAT,EA  
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B,C;MACvB,KAAT,QAAS,C;K;IAGb,gD;MAamC,yB;QAAA,YAAiB,C;MAAG,uB;QAAA,UA Ae,gB;MACIE,o  
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;KAJ/C,C;yGAOA,yB;MAAA,4E;MAAA,gE;MAAA,0C;QAI1,qBAaQb,QAARb,C;QAC8B,gBAAvB,eAAa,QAA  
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3D,C;IAQA,qB;MAIuD,oBAAU,IAAV,E;K;sGAEvD,yB;MAAA,wE;MAAA,gC;QAIiC,gBAAtB,oB;QAA4B,aJh  
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AAP,C;;UAG7C,mBAAC,YAAy,CAAZ,IAAd,aAAmC,CAAnC,Y;YACI,YAAy,oBAAoB,OAAPB,IAAZ,IAAyC  
,OAAO,aAAa,OAAb,IAAP,C;;K;8GAMzD,qB;MAEgF,gB;K;kGAehF,yB;MAAA,4D;MAAA,4B;QAC8E,OAA  
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AEI,IAAI,QAAQ,CAAZ,C;QACI,oB;;MAEJ,OAAO,K;K;IAGX,mC;MAEI,IAAI,QAAQ,CAAZ,C;QACI,oB;;MA  
EJ,OAAO,K;K;IAIX,mC;MAIqD,mB;K;IAErD,wC;MPINI,IAAI,EOiOI,YAAy,CPjOhB,CAAJ,C;QACI,cOgOqB,  
gC;QP/NrB,MAAM,gCAAyB,OAAQ,WAAjC,C;;K;IIEzB4C,qC;MAAiC,6B;K;uDAlvF,mB;MACI,qB;MACA,eA  
Ae,e;MACf,OAAO,QAAS,UAAhB,C;QACI,IAAI,OAAA,QAAS,OAAT,EAAMB,OAAAnB,CAAJ,C;UACI,QAAS,  
S;UACT,OAAO,I;;MAGf,OAAO,K;K;yDAGX,oB;MAGoB,Q;MAFhB,qB;MACA,eAAe,K;MACC,0B;MAAhB,  
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,sE;MAAA,qB;QAAE,OAAO,gBAAN,mB;O;K;4DAFpD,oB;MAEY,Q;MADR,qB;MACA,OAAoC,YAA5B,iEA  
A4B,EAAU,oDAAV,C;K;IAKU,sE;MAAA,qB;QAAE,QAAO,gBAAP,mB;O;K;4DAFpD,oB;MAEY,Q;MADR,q  
B;MACA,OAAoC,YAA5B,iEAA4B,EAAU,oDAAV,C;K;gDAGxC,Y;MACI,qB;MACA,eAAe,IAAK,W;MACpB,  
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K;;IC3CgD,+B;MAAiC,oC;MACjF,gBAA8B,C;K;8CAM9B,mB;MAMI,qB;MACA,iBAAL,SAAJ,EAAU,OAAV,  
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,qB;MACA,aAAa,K;MACb,cAAc,K;MACJ,0B;MAAV,OAAU,cAAV,C;QAAU,mB;QACN,kBAAL,eAAJ,EAAI,u

BAAJ,WAAc,CAAd,C;QACA,UAAU,I;;MAEd,OAAO,O;K;0CAGX,Y;MACI,qB;MACA,yBAAY,CAAZ,EAAe, SAAf,C;K;IAKiB,gE;MAAA,qB;QAAE,OAAM,gBAAN,mB;O;K;sDAFvB,oB;MACI,qB;MACA,OAAO,kBAAU ,8CAAV,C;K;IAKU,gE;MAAA,qB;QAAE,QAAO,gBAAP,mB;O;K;sDAFvB,oB;MACI,qB;MACA,OAAO,kBAA U,8CAAV,C;K;6CAIX,Y;MAAqD,iD;K;mDAErD,mB;MAAoD,0BAAQ,OAAR,KAAoB,C;K;kDAExE,mB;MAC qB,Q;MAAA,6B;MAAjB,iBAAc,CAAd,yB;QACI,IAAI,wBAAI,KAAJ,GAAc,OAAd,CAAJ,C;UACI,OAAO,K;;; MAGf,OAAO,E;K;sDAGX,mB;MACI,iBAAc,sBAAd,WAA+B,CAA/B,U;QACI,IAAI,wBAAI,KAAJ,GAAc,OA Ad,CAAJ,C;UACI,OAAO,K;;;MAGf,OAAO,E;K;iDAGX,Y;MAA6D,iCAAA,CAAb,C;K;yDAC7D,iB;MAAuE,sD AAIb,KAAjB,C;K;oDAGvE,8B;MAA4E,uCAAQ,IAAR,EAAC,SAAd,EAAYB,OAAzB,C;K;wDAE5E,8B;MAII,e AAe,0BAAa,SAAb,C;MACf,YAAO,UAAU,SAAV,I;M/DuDX,iBAAc,CAAd,UAAaB,KAAtB,U;Q+DtDiB,e;QAC A,iB;;K;2CAIjB,iB;MAMI,IAAI,UAAU,IAAd,C;QAAoB,OAAO,I;MAC3B,IAAI,2BAAJ,C;QAAuB,OAAO,K;M AE9B,OAAO,oCAAA,uBAAc,IAAd,EAAoB,KAApB,C;K;6CAGxB,Y;MAG+B,OAAA,oCAAA,yBAAGB,IAAhB, C;K;IAG5C,kD;MAAA,oB;MACI,eACsB,C;MAcTb,cAIqB,E;K;yDAErB,Y;MAAkC,sBAAQ,gB;K;sDAE1C,Y; MAEW,Q;MADP,IAAI,CAAC,cAAL,C;QAAgB,MAAM,6B;MAcTb,eAAO,mBAAP,EAAO,2BAAP,O;MACA,O AAO,wBAAI,WAAJ,C;K;wDAGX,Y;MIE5CJ,IAAI,EkE6CU,gBAAQ,EIE7CIB,CAAJ,C;QACI,ckE4CwB,sE;QIE 3CxB,MAAM,6BAAsB,OAAQ,WAA9B,C;;MkE6CF,6BAAS,WAAT,C;MACA,eAAQ,W;MACR,cAAO,E;K;;IA OqB,6D;MAHpC,oB;MAGmD,wD;MAG3C,oCAAA,4BAAmB,KAAAnB,EAA0B,WAAyB,KAAAnD,C;MACb,eAA a,K;K;iEAGjB,Y;MAAsC,sBAAQ,C;K;+DAE9C,Y;MAAgC,mB;K;8DAEhC,Y;MACI,IAAI,CAAC,kBAAL,C;Q AAoB,MAAM,6B;MAE1B,eAAO,mCAAP,EAAO,YAAP,C;MACA,OAAO,wBAAI,WAAJ,C;K;mEAGX,Y;MA AoC,sBAAQ,CAAR,I;K;+DAEpC,mB;MACI,wBAAI,YAAJ,EAAW,OAAx,C;MACA,mC;MACA,cAAO,E;K;+D AGX,mB;MIE1FJ,IAAI,EkEmFU,gBAAQ,ElEnFIB,CAAJ,C;QACI,ckEkFwB,4E;QIEjFxB,MAAM,6BAAsB,OAA Q,WAA9B,C;;MkEkFF,wBAAI,WAAJ,EAAU,OAAV,C;K;;IAIgb,+D;MAAuF,8B;MAAtF,kB;MAA0C,4B;MAC/ D,eAAyB,C;MAGrB,oCAAA,2BAAkB,gBAAIB,EAA6B,OAA7B,EAAcS,WAAK,KAA3C,C;MACb,eAAa,UAAU ,gBAAV,I;K;wDAGjB,0B;MACI,oCAAA,4BAAmB,KAAAnB,EAA0B,YAA1B,C;MAEb,WAAK,aAAI,mBAAY,K AAZ,IAAJ,EAAuB,OAAvB,C;MACL,mC;K;wDAGJ,iB;MACI,oCAAA,2BAAkB,KAAIB,EAAyB,YAAzB,C;MA Eb,OAAO,wBAAK,mBAAY,KAAZ,IAAL,C;K;6DAGX,iB;MACI,oCAAA,2BAAkB,KAAIB,EAAyB,YAAzB,C; MAEb,aAAa,WAAK,kBAAS,mBAAY,KAAZ,IAAT,C;MACIB,mC;MACA,OAAO,M;K;wDAGX,0B;MACI,oCA Aa,2BAAkB,KAAIB,EAAyB,YAAzB,C;MAEb,OAAO,WAAK,aAAI,mBAAY,KAAZ,IAAJ,EAAuB,OAAvB,C;K ;MGAGO,Y;MAAQ,mB;K;2DAE/B,Y;MAA+C,WAAK,iB;K;;ICxMN,8B;MAAiC,sB;MAwCnF,uBAAoC,I;MA+ CpC,yBAA6C,I;K;IAIFR,oD;MAAC,wB;MAGIC,gBAAqB,K;K;iFAHa,Y;MAAA,yB;K;uGAKZ,Y;MAAQ,oB;K; 8DAE9B,oB;MAKI,eAAe,IAAK,S;MACpB,gBAAC,Q;MACd,OAAO,Q;K;wDAGX,Y;MAA+B,iEAAc,IAAd,C;K ;wDAC/B,Y;MAAkC,iEAAc,IAAd,C;K;sDACIC,iB;MAA4C,+DAAY,IAAZ,EAakB,KAAIB,C;K;;IAIB5C,8E;M AAA,wE;MAAsC,2CAAK,KAAM,IAAX,EAAGB,KAAM,MAAtB,C;MAAtC,Y;K;IASBJ,+C;MACsE,6B;K;mEA CIE,mB;MAAmD,kCAAc,OAAd,C;K;iEAEnD,mB;MAAiD,gCAAY,OAAZ,C;K;;yCAIrD,Y;MACI,YAAQ,Q;K;I AOQ,+F;MAAA,sD;MAAS,6B;K;uFACb,mB;MAAwC,MAAM,qCAA8B,8BAA9B,C;K;mFAC9C,Y;MACI,4BA AwB,Q;K;4FAG5B,mB;MAAsD,sDAAY,OAAZ,C;K;IAI3C,oH;MAAA,kD;K;4GACH,Y;MAAkC,OAAA,0BAA c,U;K;yGACHd,Y;MAAYB,OAAA,0BAAc,OAAO,I;K;2GAC9C,Y;MAAwB,0BAAc,S;K;;sFAL9C,Y;MACI,oBA AoB,oCAAQ,W;MAC5B,6G;K;0FAOJ,mB;MACI,qB;MACA,IAAI,+CAAY,OAAZ,CAAJ,C;QACI,4BAAwB,cA AO,OAAP,C;QACxB,OAAO,I;;MAEX,OAAO,K;K;oIAGY,Y;MAAQ,OAAA,4BAAwB,K;K;4FAEvD,Y;MAAsC ,4BAAwB,iB;K;;0FA9B1E,Y;MACI,IAAI,4BAAJ,C;QACI,6F;;MA+BJ,OAAO,mC;K;kDAKf,gB;MAEyB,Q;MA DrB,qB;MACqB,OAAA,I5EkR2D,QAAQ,W;M4EIRxF,OAAqB,cAArB,C;QAAqB,wB;QAaf,U5EmMsD,U;Q4E nMjD,Y5EgNiD,Y;Q4E/MxD,iBAAI,GAAJ,EAAS,KAAAT,C;;K;IAQc,iG;MAAA,sD;MAAS,oC;K;yFACf,mB;MA AwC,MAAM,qCAA8B,gCAA9B,C;K;qFAC9C,Y;MAAuB,4BAAwB,Q;K;8FAE/C,mB;MAAsD,wDAAc,OAAd, C;K;IAI3C,sH;MAAA,kD;K;8GACH,Y;MAAkC,OAAA,0BAAc,U;K;2GACHd,Y;MAAYB,OAAA,0BAAc,OAA O,M;K;6GAC9C,Y;MAAwB,0BAAc,S;K;;wFAL9C,Y;MACI,oBAAoB,oCAAQ,W;MAC5B,+G;K;sIAOmB,Y;M AAQ,OAAA,4BAAwB,K;K;8FAEvD,Y;MAAsC,4BAAwB,iB;K;;4FAnB1E,Y;MACI,IAAI,8BAAJ,C;QACI,iG;; MAoBJ,OAAO,qC;K;gDAGf,e;MACI,qB;MACA,WAaw,YAAQ,W;MACnB,OAAO,IAAK,UAAZ,C;QACI,YA AY,IAAK,O;QACjB,QAAQ,KAAM,I;QACd,IAAI,YAAO,CAAP,CAAJ,C;UACI,YAAY,KAAM,M;UACIB,IAA K,S;UACL,OAAO,K;;;MAGf,OAAO,I;K;kDAIX,Y;K;;IC3I+C,8B;MAAiC,oC;K;0CAEHf,iB;MAMI,IAAI,UAAU



,IAAd,C;QAAoB,OAAO,I;MAC3B,IAAI,0BAAJ,C;QAAsB,OAAO,K;MAC7B,OAAO,mCAAY,mBAAU,IAAV,EAAGB,KAaHb,C;K;4CAGvB,Y;MAG+B,OAAA,mCAAY,2BAAkB,IAAIB,C;K;;ICbT,0B;MAAuD,8B;MAAIC,4B;MACvD,4BAAkC,K;K;gCAkBIc,Y;MAEI,qB;MACA,4BAAa,I;MACb,OAAO,I;K;qCAGX,Y;K;iDAGA,uB;K;iFAG8B,Y;MAAQ,OAAA,oBAAM,O;K;sCAC5C,iB;MACyC,Q;MAAA,oCAAM,0BAAW,KAAX,CAAN,4D;K;sCACzC,0B;MAIW,IAAa,I;MAHpB,qB;MACA,0BAAW,KAAX,C;MAEoB,gBAAb,qBAAM,KAAN,C;MAAqB,qC;MAA5B,OAAO,CAAa,OIE8BjB,SkE9BI,2D;K;oCAGX,mB;MACI,qB;MACM,oBAAY,MAAK,OAAL,C;MACIB,qC;MACA,OAAO,I;K;sCAGX,0B;MACI,qB;MACM,oBAAY,QAAO,mCAAoB,KAAPB,CAAP,EAAMC,C;AAAnC,EAAsC,OAAtC,C;MACIB,qC;K;yCAGJ,oB;MACI,qB;MACA,IAAI,QAAS,UAAb,C;QAAwB,OAAO,K;MAE/B,uBAAA,oBpEioDoB,QMhrD0C,Y8D+CrD,Q9D/CqD,CNgrD1C,C;MoEhoDpB,qC;MACA,OAAO,I;K;yCAGX,2B;MACI,qB;MACA,mCAAoB,KAAPB,C;MAEA,IAAI,UAAS,SAAb,C;QAAmB,OAAO,oBAAO,QAAP,C;MAC1B,IAAI,QAAS,UAAb,C;QAAwB,OAAO,K;MAE3B,IADE,KACF,e;QAAQ,OAAO,oBAAO,QAAP,C;WACf,IAFE,KAef,O;QAAK,uB9D5DqD,Y8D4D7C,Q9D5D6C,CNgrD1C,QoEpnD6B,oBpEonD7B,C;;QoEnnDR,uBAAoC,cAA5B,oBAA4B,EAAY,CAAU,EAAP,KAAO,CAAY,Q9D7DE,Y8D6DK,Q9D7DL,C8D6DF,EAA4C,cAAN,oBAAM,EAAY,KAAZ,EAAMB,SAANB,CAA5C,C;;MAG5D,qC;MACA,OAAO,I;K;2CAGX,iB;MACI,qB;MACA,0BAAW,KAAX,C;MACA,qC;MACA,OAAW,UAAS,sBAAb,GACG,oBAAY,MADf,GAGG,oBAAY,QAAO,KAAP,EAAC,CAAd,CAAIB,CAAMC,CAAnC,C;K;uCAGR,mB;MAEkB,Q;MADd,qB;MACc,2B;MAAd,mD;QACI,IAAI,4BAAM,KAAN,GAAgB,OAaHb,CAAJ,C;UACU,oBAAY,QAAO,KAAP,EAAC,CAAd,C;UACIB,qC;UACA,OAAO,I;;MAGf,OAAO,K;K;8CAGX,8B;MACI,qB;MACA,qC;MACM,oBAAY,QAAO,SAAP,EAAB,UAAU,SAAV,IAAIB,C;K;gCAGtB,Y;MACI,qB;MACA,uBhChHuC,E;MgCiHvC,qC;K;wCAIJ,mB;MAA+C,OAAm,QAAO,oBAAM,EAAY,QAAR,C;K;4CAErD,mB;MAAmD,OAAM,YAAN,oBAAM,EAAY,OAAZ,C;K;mCAEzD,Y;MAA0B,uBAAC,oBAAd,C;K;0CAE1B,iB;MAGe,UAGL,MAHK,EAMO,M;MAPIB,IAAI,KAAM,OAAN,GAAa,SAAJB,C;QACI,OAAO,2D;;MAGc,gBAAXB,eAAK,SAAL,IAAK,gBAAL,yB;MpEuWBL,UAAU,SAAV,EoEvWbS,C,KpEuWbT,C,EAD+F,CAC/F,EADoH,CACpH,EADuI,gBACvI,C;MoErwBI,IAAI,KAAM,OAAN,GAAa,SAAJB,C;QACI,MAAM,SAAN,IAAc,6E;;MAGIB,OAAO,K;K;kCAGX,Y;MACI,OAAO,EAAS,MAAM,MAAK,oBAAL,C;K;yCAI1B,Y;MACI,IAAI,yBAAJ,C;QAAGB,MAAM,oC;K;+CAG1B,iB;MACI,oCAAa,kCAAYB,SAAZB,C;MADoB,Y;K;wDAIrC,iB;MACI,oCAAa,mCAA0B,SAA1B,C;MAD6B,Y;K;;IAIJ9C,+B;MAAA,mD;MAG8B,sBhCRa,EgCQb,C;MAH9B,Y;K;IAKA,kD;MAAA,mD;MAIkD,sBhCdP,EgCcO,C;MAJID,Y;K;IAMA,2C;MAAA,mD;MAGqD,sB9DLA,Y8DKR,Q9DLQ,C8DKb,C;MAHrD,Y;K;ICrBJ,0C;MACI,IAAI,6BAAJ,C;QACU,KAAY,MAAK,UAAAL,C;;QAEIB,UAAU,KAAY,EAawC,CAAxC,EAaiD,cAAN,KAAM,CAAjD,EAA4D,eAAW,UAAAX,CAA5D,C;;K;IAMiB,kD;MAAA,uB;QAAGB,OAAA,kBAAW,SAAQ,CAAR,EAawC,CAAX,C;O;K;IAFpD,4C;MACI,IAAI,6BAAJ,C;QACI,iBAaiB,gC;QACX,KAAY,MAAK,UAAAL,C;;QAEIB,UAAU,KAAY,EAawC,CAAxC,EAaiD,cAAN,KAAM,CAAjD,EAA4D,UAA5D,C;;K;IAIR,gE;MACI,IAAI,aAAY,UAAU,CAAV,IAAZ,CAAJ,C;QACI,UAAU,KAAY,EAawC,SAAxC,EAAMD,UAAU,CAAV,IAAnD,EAAGe,UAAhE,C;;K;IAMiB,gC;MAAGB,OAAE,iBAAF,CAAE,EAU,CAAV,C;K;IAF3C,0B;MACI,IAAI,6BAAJ,C;QACI,iBAaiB,gB;QACX,KAAY,MAAK,UAAAL,C;;QAEIB,UAAU,KAAY,EAawC,CAAxC,EAaiD,cAAN,KAAM,CAAjD,EAA4D,cAA5D,C;;K;;IAAa,kD;MAAoB,QAAC,IAAM,CAAP,KAAa,IAAM,CAAnB,K;K;IARzC,uC;MACI,sC;QAAiC,OAAjC,yB;;MACA,4BAA4B,K;MAE5B,YAAY,E;MAGZ,iBAAC,CAAd,UAAsB,GAAtB,U;QAAiC,KAAY,MAAK,KAAL,C;MAC7C,iBAaiB,kC;MACX,KAAY,MAAK,UAAAL,C;MACIB,mBAAC,CAAd,YAAsB,KAAM,OAA5B,Y;QACI,QA AQ,MAAM,UAAQ,CAAR,IAAN,C;QACR,QAAQ,MAAM,OAAN,C;QACR,IAAI,CAAC,IAAM,CAAP,OAAC,IAAM,CAAPB,KAA0B,KAAK,CAAnC,C;UAAsC,OAAO,K;;MAEjD,4BAA4B,I;MAC5B,OAAO,I;K;IAIX,2D;MACI,aAAa,gBAAMB,KAAM,OAAzB,O;MACb,aAAa,YAAU,KAAY,EAaiB,MAAjB,EAAYB,KAazB,EAAGC,YAAhC,EAA8C,UAA9C,C;MACb,IAAI,WAAW,KAAf,C;QACI,aAAU,KAAY,OAAiB,YAAjB,M;UAA+B,MAAM,CAAN,IAAW,OAAO,CAAP,C;;K;IAIID,4D;MAEI,IAAI,UAAS,GAAb,C;QACI,OAAO,K;;MAGX,aAAa,CAAC,QAAQ,GAAR,IAAD,IAAGB,CAAhB,I;MACb,WAAW,YAAU,KAAY,EAaiB,MAAjB,EAAYB,KAazB,EAAGC,MAAhC,EAawC,UAAxC,C;MACX,YAAY,YAAU,KAAY,EAaiB,MAAjB,EAAYB,SAAS,CAAT,IAAZB,EAAGqC,GAArC,EAA0C,UAA1C,C;MAEZ,aAAiB,SAAS,MAAb,GAAqB,KAArB,GAAgC,M;MAG7C,gBAAGB,K;MAChB,iBAaiB,SAAS,CAAT,I;MACjB,aAAU,KAAY,OAAiB,GAAjB,M;QAEQ,iBAaA,MAAb,IAAuB,cAAc,GAArC,C;UACI,gBAAGB,KAAK,SAAL,C;UACHb,iBAaiB,MAAM,UAAN,C;UAEjB,IAAI,UAAW,SAAQ,SAAR,E

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J,C;QAaKB,OAAO,C;MACzB,aAAa,C;MACb,wBAAgB,SAaHb,gB;QAaGB,cAAA,SAaHb,M;QAEQ,oB;UAA  
mB,U;;UACnB,I5BFiC,MAAa,Y4BEnC,O5BFmC,C4BE9C,C;YAAwD,iCAAhC,OAAgC,C;iBAExD,uC;YAAmC  
,2BAAR,OAAQ,C;eACnC,wC;YAAmC,2BAAR,OAAQ,C;eACnC,sC;YAAmC,2BAAR,OAAQ,C;eACnC,uC;YA  
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;qDAEPf,mB;MACI,IAAI,iBAAS,OAAAT,CAAJ,C;QACI,WAAa,cAAO,OAAQ,IAAf,C;QACb,OAAO,I;;MAEX,  
OAAO,K;K;wFAGY,Y;MAAQ,OAAA,WAAa,K;K;;8BA6ChD,Y;MACI,0BAAY,Q;K;0CAIhB,e;MAAmD,OAA  
A,0BAAY,gBAAS,GAAT,C;K;4CAE/D,iB;MAAmE,gBAAZ,0B;MAAY,c;;QnEqnDnD,Q;QADhB,IAAI,wCAAs  
B,mBAA1B,C;UAAqC,aAAO,K;UAAP,e;;QACrB,2B;QAaHb,OAAgB,cAAhB,C;UAAGb,yB;UAAM,ImErnDm  
D,uBAAS,gBnEqnD9C,OmErnDwD,MAAV,QnEqnD5D,C;YAAwB,aAAO,I;YAAP,e;;QAC9C,aAAO,K;;MmEt  
nDgD,iB;K;kFAInD,Y;MACI,IAAI,+BAAJ,C;QACI,0BAAW,qB;;MAEf,OAAO,sC;K;uCAGf,Y;MAAgF,iC;K;kC  
AEhF,e;MAA+C,OAAA,0BAAY,WAAI,GAAJ,C;K;oCAE3D,sB;MAAgD,OAAA,0BAAY,aAAI,GAAJ,EAAS,K  
AAT,C;K;qCAE5D,e;MAAYC,OAAA,0BAAY,cAAO,GAAP,C;K;+EAEvB,Y;MAAQ,OAAA,0BAAY,K;K;;IA5D  
ID,0C;MAAA,iD;MAAuD,8B;MAvC3D,mB;MAwCQ,8BAAMb,W;MACnB,2BAAGb,WAAy,S;MAFhC,Y;K;IA  
KA,+B;MAAA,iD;MAGuB,aAAK,kEAAL,Q;MAHvB,Y;K;IAKA,4D;MAAA,iD;MAQ8D,qB;MzEpC9D,IAAI,Ey  
EsCQ,mBAAmB,CzEtC3B,CAAJ,C;QACI,cyEqCgC,+C;QzEpChC,MAAM,gCAAYB,OAAQ,WAAjC,C;;MAFV,I  
AAI,EyEuCQ,cAAc,CzEvCtB,CAAJ,C;QACI,gByEsC2B,yC;QzErC3B,MAAM,gCAAYB,SAaQ,WAAjC,C;;MyE  
0BV,Y;K;IAcA,gD;MAAA,iD;MAA2C,eAAK,eAAL,EAASB,GAAtB,Q;MAA3C,Y;K;IAGA,yC;MAAA,iD;MAG  
8C,qB;MAC1C,KAaK,gBAAO,QAAP,C;MAJT,Y;K;IAqCJ,4B;MAK8E,gBAAnE,aAAmB,gEAAAnB,C;MAA2E,  
wB;MAAIF,OtEvCO,S;K;;MuEjEP,uB;;kCAyCA,mB;MACI,UAAU,gBAAI,aAAI,OAAJ,EAaA,IAAb,C;MACd,O  
AAO,W;K;8BAGX,Y;MACI,gBAAI,Q;K;uCAOR,mB;MAA6D,OAAA,gBAAI,mBAAY,OAAZ,C;K;gCAEjE,Y;  
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AAI,cAAO,OAAP,CAAJ,Q;K;+EAEpB,Y;MAAQ,OAAA,gBAAI,K;K;;IA5D1C,6B;MAAA,iD;MAGoB,8B;MAZ  
xB,mB;MAaQ,oBAAM,gB;MAJV,Y;K;IAOA,yC;MAAA,iD;MAG2C,8B;MANb/C,mB;MAoBQ,oBAAM,eAAgB  
,QAAS,KAaZB,C;MACN,qBAAO,QAAP,C;MALJ,Y;K;IAQA,4D;MAAA,iD;MAQ2D,8B;MAhC/D,mB;MAiCQ,  
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AtB,Q;MAA3C,Y;K;IAEA,oC;MAAA,iD;MAM0C,8B;MA5C9C,mB;MA6CQ,oBAAW,G;MAPf,Y;K;IAmCJ,+B;  
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kB;MACiC,sBAAYB,C;K;2EAHY,Y;MAAA,8B;K;2FAGrC,Y;MAAA,0B;K,OAAA,gB;MAAA,0B;K;gDAGA,sB  
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X,YAAuC,Y;UACvC,cAAKB,wBAAN,KAAM,EAAiB,GAajB,C;UACIB,IAAI,eAAJ,C;YACI,OAAO,OAAM,gB  
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K;iDAGX,e;MAE0D,IAAnC,I;MADnB,eAAe,aAAS,qBAAY,GAaZ,C;MACL,oCAASB,QAAtB,C;MAAA,iB;QA  
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,OAAO,KAAM,M;;UAEb,OAAO,I;;QAGX,YAAuC,Y;QACvC,8BAAc,KAAAd,iB;UACI,cAAY,MAAM,KAAN,C  
;UACZ,IAAI,aAAS,gBAAO,GAAP,EAAY,OAAM,IAAI,CAAb,C;YACI,IAAI,KAAM,OAAN,KAAC,CAAI,CAI,C;  
cACU,KAAN,UAA2B,C;c9BtE/C,O8BwEqC,iB9BxEb,C8BwEoC,Q9BxEpC,C;;c8B2Ea,KAAY,QAAO,KAAP,  
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YAAO,C;K;mDAGX,e;MAAyC,uBAAS,GAAT,S;K;8CAEzC,e;MAA+B,Q;MAAA,+BAAS,GAAT,8B;K;+CAE/  
B,e;MAC2E,IAApD,I;MAAA,oCAAsB,aAAS,qBAAY,GAAZ,CAA/B,C;MAAA,iB;QAAoD,OAAO,I;MAA9E,m  
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;K;uDAIrB,0B;MACI,sB;Q1FsoCY,Q;QAAhB,iD;UAAgB,cAAhB,e;UAAsB,I0FtoCK,aAAS,gB1FsoCA,00FtoC  
a,IAAb,M1FsoCd,C;YAAwB,qBAAO,O;YAAP,uB;QAC9C,qBAAO,I;M0FvoCH,yB;K;IAIO,8E;MAAA,wD;M  
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K;mEAIf,Y;MACI,IAAI,eAAS,EAAb,C;QACI,aAAQ,oB;MACZ,OAAO,eAAS,C;K;gEAGpB,Y;MAEoB,Q;MAD  
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;MAHJ,oB;MAKA,iBAaiB,S;MACjB,aAAQ,E;MACR,OAAO,S;K;KEAGX,Y;M3E/CR,I2EgDyB,c3EhDrB,QAA  
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C;MACzB,iBAAY,I;MAEZ,uC;K;6CAtdZ,Y;MAEI,2D;K;4DAyDJ,oB;MACI,mBAAmB,kBAAW,QAAX,C;MA  
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,IAAjB,C;MAEb,OAAO,KAAP,IAAgB,C;M/BXpB,O+BYqB,M/BZR,C+BYgB,K/BZhB,C;M+BaT,OAAO,M;K;  
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B;K,OAAA,gB;MAAA,0B;K;iDAWA,e;MACI,IAAI,0BAAJ,C;QAAoB,OAAO,K;MAC3B,OAAO,kBAAW,GAA  
X,MAAoB,S;K;4CAG/B,e;MACI,IAAI,0BAAJ,C;QAAoB,OAAO,I;MAC3B,YAA,Y,kBAAW,GAA,X,C;MACZ,O  
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Ada,qB;QAeb,MAAM,gCAAYB,OAAQ,WAAjC,C;M6EUN,eAAe,kBAAW,GAA,X,C;MACf,kBAAW,GAA,X,IA  
AkB,K;MAEIB,IAAI,aAAa,SAAjB,C;QACI,6B;QAEA,OAAO,I;QAGP,OAAO,Q;K;+CAIf,e;MACI,IAAI,0BAA  
J,C;QAAoB,OAAO,I;MAC3B,YAA,Y,kBAAW,GAA,X,C;MACZ,IAAI,UAAU,SAAd,C;QhCnDJ,OgCoDyB,iBhC  
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Cb,YAAO,C;K;IAKA,0E;MAAA,oD;MACH,cAAkC,MAAA,MAAK,mCAAL,C;MAC/C,kBAA4B,qBAAL,WAA  
K,C;MAC5B,iBAA+B,I;K;iEAE/B,Y;MAAkC,OAAA,eAAS,U;K;8DAE3C,Y;MAIuB,gB;MAHnB,UAAU,eAAS,  
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,c;M7EchD,uB;MAeP,IAfoB,KAehB,QAaj,C;QACI,cAhByB,0B;QaiBzB,MAAM,6BAAsB,OAAQ,WAA9B,C;  
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;KHAC9B,Y;MAAQ,uB;K;oHACN,Y;MAAQ,6CAAuB,gBAAvB,C;K;2EAE9B,oB;MAAwC,OAAA,2BAAuB,aA  
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5D,e;MAAsD,iE;K;MCItd,sBAOsC,I;MA6CtC,yB;MAOA,4BAakC,K;IArIE,sD;MAZpC,oB;MAYyD,0CAAq  
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C,cAcS,C,I;MAGlC,cAAO,iC;K;6DAIX,Y;MACI,OAAO,gBAAS,I;K;0DAGpB,Y;MAEI,IAAI,CAAC,cAAL,C;Q  
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K;6CAC/D,Y;MACI,WAAmB,Q;K;6DAGvB,mB;MAAgE,OAAA,WAAmB,uBAAc,OAAc,C;K;gDAEnF,Y;MA  
AwE,qD;K;2DAExE,mB;MACI,qB;MACA,IAAI,iBAAS,OAAI,CAAJ,C;QACI,WAAmB,cAAO,OAAQ,IAAf,C;  
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,0B;UaiBzB,MAAM,6BAAsB,SAAQ,WAA9B,C;UAEN,sBAnBgB,K;Q8EkBZ,+B;QAEA,yBAAO,K;QACP,yB

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ACP,yBAAO,I;K;oCA8CX,Y;MAEL,qB;MACA,4BAaA,I;MACb,OAAO,I;K;oCAGX,Y;MACI,qB;MACA,kBAAI  
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,C;UACI,OAAO,I;;QAEX,OAAO,cAAA,IAAK,aAAL,C;;MACF,iBAAS,mBAAT,C;MACT,OAAO,K;K;6CAIX,  
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CI,qB;MAEA,UAAU,kBAAI,WAAI,GAaJ,C;MACd,IAAI,OAAO,IAAX,C;QACI,eAAe,mCAAW,GAAX,EAAG  
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D;MAFV,Y;K;IAKA,kE;MAAA,uD;MAQ8D,eAAM,eAAN,EAaU,B,UAAvB,Q;MA/KIE,yB;MAGLQ,sBAAM,gB  
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A8B,S;MAC/B,OAAO,I;K;6CAGX,Y;MAA+C,gBAAI,iB;K;;IAhCnD,wC;MAAA,uD;MAAmD,eAAM,GAAN,Q;  
MAPvD,yB;MAOI,Y;K;IAEA,qC;MAAA,uD;MAGuB,eAAM,oBAAN,Q;MAZ3B,yB;MASI,Y;K;IAKA,+C;MAA  
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vD,O5EoBO,S;K;;;kf6EzEX,uB;MAQL,OAAO,O;K;ICXX,sB;K;mCACI,Y;MACI,mBAAM,IAAN,C;K;2CAGJ,  
mB;MACI,mBAAM,OAAN,C;MACA,c;K;;iCAKJ,Y;K;;IAKuB,oC;MAA8B,qB;MAA7B,gC;K;2CACxB,mB;MA  
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,C;K;;IAIhB,0B;MAEQC,qB;MACjC,cAAa,E;K;6CAEb,mB;MACI,eAoCyC,OApcxB,OAoCwB,C;K;qCAjC7C,Y  
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,C;;MoEjLzE,4BAAU,C;K;iDAGd,Y;MACI,OAAQ,KAAL,WAAJ,C;MACR,cAAS,E;K;;IAWjB,yB;MACiD,cAA  
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O,eAAM,OAAN,C;K;IAGX,kB;MACqC,MAAM,qCAA8B,sCAA9B,C;K;IAE3C,wB;MAC4C,MAAM,qCAA8B,4  
CAA9B,C;K;ICIGID,mD;MACI,0B;MASA,gBAA2B,a;K;2FAFvB,Y;MAAQ,OAAA,eAAS,Q;K;oDAIrB,kB;MA  
CI,UAAU,IAAK,S;MAEX,YAAQ,2CAAR,C;QACI,gBAAc,MAAO,M;WAEzB,YAAQ,yBAAR,C;QACI,gBAAc,  
yC;QACd,eAAS,oBAAW,MAAX,C;;QAEL,MAAM,6BAASB,iBAAtB,C;K;4CAItB,Y;MAOW,Q;MALP,IAAI,kB  
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;WACtB,0C;QAA4B,MAAM,MAAO,U;;QACjC,a;MAHZ,W;K;;IA7BJ,gD;MAAA,0D;MACyD,6BAAK,QAAL,E  
AAe,2CAAf,C;MADzD,Y;K;;;ICRA,2C;MAAA,+D;MAAuB,iC;MAF3B,iC;MAEL,Y;K;IACA,sD;MAAA,+D;M  
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SI,sC;MAAA,4C;K;IATJ,iGAWY,Y;MAAQ,2B;KAXpB,E;IAAA,0DAaQ,kB;MACI,wBAAW,MAAX,C;K;IAdZ,  
sF;I2C5C2E,0C;M5CkKhE,Q;MADP,e4ChKA,M5CgKA,C;MACO,Q4CjKP,M5CiKO,+D;M4ChKX,W;K;;+FCuH  
A,gB;MACI,aAAa,IAAO,MAAP,E;MACb,KAAK,MAAL,C;MACA,OAAO,M;K;wFC3HX,yB;MAAA,uD;MAA  
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C,aAAO,K;;;M8I75YP,e;QACI,kBAA6B,MAAX,UAAW,C;Q5GyIM,U;Q4GxIb,a5GwImC,OAAtB,+B4GxIvB,m  
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B,S;MACjB,EAAE,oBAAF,IAA0B,kB;MAC1B,EAAE,uBAAF,IAA6B,qB;MAC7B,EAAE,iCAAF,IAAuC,+B;M

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,SAAd,C;QAA4B,4B;QAAnE,OY7iBO,W;;MZ6iBP,W;K;IAEJ,mC;MAOI,Q;MAAA,IAAI,SAAK,UAAT,C;QAA  
A,OAA0B,QAAN,KAAM,C;;QAAiC,kBAApB,qBAAc,SAAd,C;QAA4B,0B;QAAnE,OYtjBO,W;;MZsjBP,W;K;I  
AEJ,mC;MAOwB,kBAApB,qBAAc,SAAd,C;MAA4B,4B;MAA5B,OAA4C,oBY/jBrC,WZ+jBqC,C;K;IAEhD,iC;  
MAOwB,kBAApB,qBAAc,SAAd,C;MAA4B,+B;MAA5B,OYxkBO,W;K;0FZ2kBX,2B;MAKI,sBAAI,IAAK,MA  
AT,EAAgB,IAAK,OAArB,C;K;4FAGJ,yB;MAAA,gD;MAAA,mC;QAKI,kBAAO,KAAP,C;O;KALJ,C;4FAQA,y  
B;MAAA,gD;MAAA,mC;QAKI,kBAAO,KAAP,C;O;KALJ,C;4FAQA,yB;MAAA,gD;MAAA,mC;QAKI,kBAAO,  
KAAP,C;O;KALJ,C;4FAQA,0B;MAKI,yBAAO,GAAP,C;K;IAGJ,kC;MAOwB,kBAAf,aAAL,SAAK,C;MA  
sCL,6  
B;MAAtCA,OAA+C,oBY1nBxC,WZ0nBwC,C;K;IAEnD,mC;MAQwB,kBAAf,aAAL,SAAK,C;MAqCK,YAAL,gB  
AAK,O;MArCV,OAAgD,oBYpoBzC,WZooByC,C;K;IAEpD,mC;MAQwB,kBAAf,aAAL,SAAK,C;MAoCK,YAA  
L,gBAAK,O;MApCV,OAAgD,oBY9oBzC,WZ8oByC,C;K;IAEpD,mC;MAQwB,kBAAf,aAAL,SAAK,C;MAMC  
K,YAAL,gBAAK,O;MANCV,OAAgD,oBYxpBzC,WZwpByC,C;K;4FAEpD,0B;MAMI,uBAAO,GAAP,C;K;8FA  
GJ,yB;MAAA,sD;MAAA,kC;QAMc,UAAV,SAAK,KAAC,EAAU,IAAV,C;O;KANd,C;8FASA,yB;MAAA,sD;M  
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aACL,C;UAFkD,gB;;UAAA,OAG1C,S;;K;oF2K5wBZ,yB;MAAA,8D;MAAA,8B;MAAA,qC;QAUIC,Q;QAA7B,  
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T,C;IAQA,qC;MAIU,IAIe,I;MAHjB,kBADE,QACF,c;QAAiB,OAAO,yBAAO,QAAP,C;;QAEpB,aAAsB,K;QAC  
T,0B;QAAb,OAAa,cAAb,C;UAAa,sB;UACT,IAAI,oBAAI,IAAJ,CAAJ,C;YAAe,SAAS,I;;QAC5B,OAAO,M;;K;I  
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AJ,C;UAAe,SAAS,I;;MAE5B,OAAO,M;K;IAGX,uC;MAII,OAAO,yBAAgB,OAAT,QAAS,CAAhB,C;K;IAGX,i  
D;MAKI,OAAI,oCAAJ,GAAwB,SAAxB,GAAC,mB;K;IAEtC,0C;MAII,OAAO,4BAAmB,6BAAT,QAAS,CAAn  
B,C;K;IAGX,0C;MAII,WAAoB,UAAAT,QAAS,C;MACpB,O5KuEwD,C4KvEjD,I5KuEkD,U4KvEiD,IAAqB,4BA  
AU,IAAV,C;K;IAGhC,0C;MAII,OjLuoPO,EiLvoPA,QjL+jPA,YAAQ,CAwER,CiLvoPA,IAAyB,4BAAmB,OAA  
T,QAAS,CAAnB,C;K;IAGpC,0C;MAII,OAAO,4BAAmB,6BAAT,QAAS,CAAnB,C;K;IAGX,0C;MAII,IjLynPO,  
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M;K;IAIX,2C;MAKkF,gCAAc,SAAd,EAAYB,IAAZB,C;K;IAEIF,2C;MAKkF,gCAAc,SAAd,EAAYB,KAAZB,C;K  
;IAEIF,sE;MACI,iBAAa,KAAb,C;M/JvJgB,kB+JwJX,oB;MACD,OAAO,qBAAP,C;QACI,IAAI,UAAU,kBAAV,6  
BAAJ,C;UACI,oB;UACA,WAAS,I;;MAGrB,OAAO,Q;K;oFAIX,4B;MAM6D,kCAAS,KAAAT,C;K;IAE7D,gC;M  
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KwD,OAAI,mBAAJ,GAAe,IAAf,GAAYB,2BAAS,CAAT,C;K;IAEjF,+B;MAKgD,IAAI,mBAAJ,C;QAAe,MAA  
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;QAAiB,mB;QAArC,oE;UACI,2BAAS,WAAT,C;QAEJ,OAAO,I;;QAEp,OAAO,K;;K;ICtSf,wB;K;kCAEI,Y;MA  
A4B,sB;K;;IAMhC,wB;K;kCAEI,Y;MAA4B,mC;K;;IAMhC,yB;K;mCAEI,Y;MAA4B,uB;K;;IAMhC,uB;K;iCAEI  
,Y;MAA4B,qB;K;;IAMhC,wB;K;kCAEI,Y;MAA4B,sB;K;;IAMhC,yB;K;mCAEI,Y;MAA4B,uB;K;;IAMhC,0B;K;  
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Y;MAAQ,OAAA,eAAS,K;K;iDACxC,iB;MAAKC,mCAAS,0BAAoB,KAApB,CAAT,C;K;;IAGT,gC;MAAyC,8B;  
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;mCAEIC,Y;MAAuB,eAAS,Q;K;8CACHC,iB;MAAuC,OAAA,eAAS,kBAAS,0BAAoB,KAApB,CAAT,C;K;yCA  
EhD,0B;MAA8C,OAAA,eAAS,aAAI,0BAAoB,KAApB,CAAJ,EAAGC,OAAhC,C;K;yCACvD,0B;MACI,eAAS,a  
AAI,2BAAqB,KAArB,CAAJ,EAAiC,OAAjC,C;K;;IAIjB,+C;MACoB,Q;MAAA,kC;MAAhB,IAAa,CAAT,0BAAJ  
,C;QAAA,OAA2B,8BAAY,KAAZ,I;;QAAuB,MAAM,8BAA0B,mBAAgB,KAAhB,2BAA0C,gBAAG,2BAAH,C  
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AK+C,gCAAqB,SAArB,C;K;IAE/C,iC;MAM6D,wBAAa,SAAb,C;K;;;IrKpC7D,oD;MAQuF,wC;K;IARvF,8CAS  
I,Y;MAAuC,8B;K;IAT3C,gF;IsKa8G,wC;MAAA,mB;QAAE,kBAAS,aAAT,C;O;K;IAVhH,yB;MAUqG,oCAAS,s  
BAAT,C;K;IAErG,2B;MASI,eAAe,6B;MACf,oBAA0B,+BAAN,KAAM,EAawC,QAAxC,EAA+D,QAA/D,C;MA  
C1B,OAAO,Q;K;IAc+B,yB;K;+CAoBtC,kC;MAOI,IAAI,uCAA0B,QAAS,UAAvC,C;QAAkD,M;MACID,OAAO,  
sBAAS,QAAS,WAAIB,e;K;+CAGX,kC;MAQqD,6BAAS,QAAS,WAAIB,e;K;;;;;IAYzD,mC;MAA2C,wB;MAC  
vC,eAAoB,C;MACpB,mBAA4B,I;MAC5B,sBAAyC,I;MACzC,gBAAoC,I;K;gDAEpC,Y;MACI,OAAO,IAAP,C;  
QACI,QAAM,YAAN,C;eACI,C;YAAA,K;eACA,C;YACI,IAAI,kCAAe,UAAAnB,C;cACI,eAAQ,C;cACR,OAAO,I  
;;cAEP,sBAAe,I;;YALvB,K;eAOA,C;YAAc,OAAO,K;eACrB,C;eAAA,C;YAAgC,OAAO,I;;YAC/B,MAAM,yB;;  
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;K;6C4HwFA,Y;MACU,IASe,I;MATrB,QAAM,YAAN,C;aACI,C;aAAA,C;UAAcC,OAAO,qB;aAC7C,C;UACI,e  
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UAEH,MAAM,yB;;K;uDAItB,Y;MACI,IAAI,CAAC,cAAL,C;QAAgB,MAAM,6B;;QAA8B,OAAO,W;K;2DAG/  
D,Y;MAA4C,QAAM,YAAN,C;aACxC,C;UADwC,OAC1B,6B;aACd,C;UAFwC,OAExB,6BAAsB,sBAAtB,C;;U  
AFwB,OAGhC,6BAAsB,uCAAoC,YAA1D,C;;K;IAOqC,4E;MAAA,oB;QACzC,wCAAW,C;QAAX,OACA,yB;O;

K;oDALR,+B;MACI,mBAAY,K;MACZ,eAAQ,C;MACR,OAA6C,0CAAtC,c;K;IAUsC,+E;MAAA,oB;QACzC,w  
CAAW,C;QAAX,OACA,yB;O;K;yDANR,kC;MACI,IAAI,CAAC,QAAS,UAAAd,C;QAAYB,M;MACzB,sBA Ae,Q;  
MACf,eAAQ,C;MACR,OAA6C,6CAAtC,c;K;2DAMX,kB;M7HNO,Q;MADP,e6HSI,M7HTJ,C;MACO,Q6HQH,  
M7HRG,+D;M6HSH,eAAQ,C;K;kGAIR,Y;MAAQ,0C;K;;ItK/KhB,oD;MAQuF,wC;K;IARvF,8CASI,Y;MAAuC,  
8B;K;IAT3C,gF;sFAAA,yB;MAAA,kC;MAAA,0C;MAAA,kD;QAQuF,wC;O;MARvF,4CASI,Y;QAAuC,8B;O;M  
AT3C,8E;MAAA,2B;QAQuF,2C;O;KARvF,C;IAiBgE,+C;MAAA,mB;QAAE,sB;O;K;IALIE,kC;MAKuD,OAAk  
B,2CAAT,+BAAS,E;K;IAEzE,8B;MAK6D,OAAI,QdksPtD,YAAQ,CclsP0C,GAAwB,eAAxB,GAA sD,WAAT,Q  
AAS,C;K;IAEnH,yB;MAG8C,kC;K;IAE9C,yB;MAAA,6B;K;uCACI,Y;MAA6C,kC;K;2CAC7C,a;MAA4B,kC;K;  
2CAC5B,a;MAA4B,kC;K;;IAHhC,qC;MAAA,oC;QAAA,mB;;MAAA,6B;K;oFAMA,yB;MAAA,2D;MAAA,4B;  
QAM4D,uCAAQ,e;O;KANpE,C;IAGB4F,mH;MAAA,wC;MAAA,6B;MAAA,yB;MAAA,wC;MAAA,wD;MAAA,  
kC;K;;;kDAAA,Y;;;;;cACxF,eAAe,uBAAa,W;cAC5B,IAAI,QAAS,UAAb,C;gBACI,gB;gCAAA,sCAAS,QAAT,  
O;oBAAA,2C;yBAAA,yB;gBAAA,Q;;gBAEA,gB;gCAAA,sCAAS,iCAAT,O;oBAAA,2C;yBAAA,yB;gBAAA,Q;  
;;;;;cAJJ,W;;cAAA,W;;;;;;;K;IADwF,gE;MAAA,yD;uBAAA,uG;YAAA,S;iBAAA,Q;;iBAAA,uB;O;K;IAP5  
F,4C;MAOmF,gBAAS,uCAAT,C;K;IAGBb,4B;MAAE,OAAA,EAAG,W;K;IAP3E,8B;MAO8D,4BAAQ,cAAR,C;  
K;IAUQ,8B;MAAE,OAAA,EAAG,W;K;IAR3E,8B;MAQ8D,4BAAQ,gBAAR,C;K;IAM1B,8B;MAAE,S;K;IAJtC,  
wC;MAEgB,Q;MADZ,IAAI,8CAAJ,C;QACI,OAA4C,CAApC,2EAAoC,kBAAQ,QAAR,C;;MAEHd,OAAO,uBA  
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ACC,2B;MAAb,OAAa,cAAb,C;QAAa,sB;QACT,KAAM,WAAL,IAAK,MAAT,C;QACN,KAAM,WAAL,IAAK,O  
AAT,C;;MAEV,OAAO,UAAS,KAAT,C;K;IAGX,+B;MAQqD,6BAAS,4BAAT,C;K;IAW0B,+G;MAAA,wC;MA  
AA,6B;MAAA,yB;MAAA,0C;MAAA,4C;MAAA,0B;MAAA,kC;K;;;mDAAA,Y;;;;;kCAC9D,0C;cACb,gB;;;;;cA  
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cAC1D,gB;8BAAA,iCAAM,KAAN,O;kBAAA,2C;uBAAA,yB;cAAA,Q;;cAJJ,gB;;;cAMJ,W;;;;;;;K;IAR+E,  
4D;MAAA,yD;uBAAA,mG;YAAA,S;iBAAA,Q;;iBAAA,uB;O;K;IAT/E,uC;MASmE,gBAAY,kCAAZ,C;K;IAkB  
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Ae,iCAAS,W;MACxB,iBAAqB,E;MACrB,gBAAmB,I;K;oEAEnB,Y;MACI,OAAO,aAAS,UAAhB,C;QACI,WA  
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MAGR,iBAAY,C;K;8DAGhB,Y;MASW,Q;MARP,IAAI,mBAAa,EAAjB,C;QACI,iB;MACJ,IAAI,mBAAa,CAAj  
B,C;QACI,MAAM,6B;MACV,aAAa,a;MACb,gBAAW,I;MACX,iBAAY,E;MAEZ,OAAO,yE;K;iEAGX,Y;MACI,  
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0B;MAAmC,gC;K;IACJ,gF;MAAA,0D;MACnC,gBA Ae,oCAAS,W;K;iEACxB,Y;MACI,OAAO,6CAAY,aAAS,O  
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,eAA5B,EAA sC,kBAAtC,EAAmD,QAAnD,C;K;;IAUf,4D;MAAY,0B;MAAmC,gC;K;IACJ,8F;MAAA,wE;MAC  
nC,gBA Ae,2CAAS,W;MACxB,aAAY,C;K;wEACZ,Y;MAC0C,Q;MAAtC,OAAO,oDAAY,oBAAmB,iBAAnB,E  
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E;K;;IAkB3C,oC;MAAY,0B;K;IAC6C,wE;MACJd,gBA Ae,gCAAS,W;MACxB,aAAY,C;K;6DACZ,Y;MAC2C,Q  
;MAAvC,OAAO,iBAAa,oBAAmB,iBAAnB,EAAmB,yBAAnB,QAAb,EAA0C,aAAS,OAA nD,C;K;gEAGX,Y;M  
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AU,OAApB,EAA4B,cAAU,OAAtC,C;K;+DAGX,Y;MACI,OAAO,cAAU,UAAV,IAAuB,cAAU,U;K;;yCARhD,Y  
;MAAuC,uD;K;;IAc3C,6D;MACI,0B;MACA,gC;MACA,0B;K;IAEuC,4E;MAAA,sD;MACnC,gBA Ae,kCAAS,W;  
MACxB,oBAAiC,I;K;+DAEjC,Y;MACI,IAAI,CAAC,2BAAL,C;QACI,MAAM,6B;MACV,OAAO,gCA Ae,O;K;k  
EAG1B,Y;MACI,OAAO,2B;K;+EAGX,Y;MACQ,Q;MAAJ,IAAI,iEAA2B,KAA/B,C;QACI,oBAAe,I;MAEnB,O  
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AO,I;K;;4CA9Bf,Y;MAAuC,0D;K;;IAoC9B,6I;MAAA,wC;MAAA,6B;MAAA,yB;MAAA,4C;MAAA,kD;MAAA  
,gD;MAAA,wB;MAAA,yB;MAAA,kC;K;;;yDAAA,Y;;;;;kBAGyC,I;iCAFIC,C;cACI,sD;cAAhB,gB;;;;;cAAA,KA  
AgB,yBAAhB,C;gBAAA,gB;;;;;cAAGB,oC;cACZ,aAAa,6BAAU,oBAAmB,uBAAnB,EAAmB,+BAAnB,QA AV,E

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;;cAIJ,W;;;;;;K;IANS,0F;MAAA,yD;uBAAA,iI;YAAA,S;iBAAA,Q;;iBAAA,uB;O;K;IADb,wD;MACI,gBA  
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C;QACI,cD8T2B,+CAA4C,iB;QC7TvE,MAAM,gCAAYB,OAAQ,WAAjC,C;;MAFV,IAAI,EDgUQ,mBAAAY,CCh  
UpB,CAAJ,C;QACI,gBD+TyB,6CAA0C,e;QC9TnE,MAAM,gCAAYB,SAAQ,WAAjC,C;;MAFV,IAAI,EDiUQ,m  
BAAAY,iBcJUpB,CAAJ,C;QACI,gBDgUkC,0DAAuD,eAAvD,WAAMe,iB;QC/TrG,MAAM,gCAAYB,SAAQ,WA  
AjC,C;;K;sFDkUa,Y;MAAQ,yBAAW,iBAAX,I;K;yCAE/B,a;MAAYC,OAAI,KAAK,YAAT,GAAgB,eAAhB,GA  
AqC,gBAAAY,eAAZ,EAAsB,oBAAa,CAAb,IAAtB,EAAsC,eAAtC,C;K;yCAC9E,a;MAAYC,OAAI,KAAK,YAAT,  
GAAgB,IAAhB,GAA0B,gBAAAY,eAAZ,EAAsB,iBAAtB,EAAkC,oBAAa,CAAb,IAAI,C;K;IAEzC,8D;MAAA,w  
C;MAEtB,gBAAe,2BAAS,W;MACxB,gBAAe,C;K;0DAEf,Y;MAEI,OAAO,gBAAW,kCAAX,IAAYB,aAAS,UAA  
zC,C;QACI,aAAS,O;QACT,qC;;K;2DAIR,Y;MACI,a;MACA,OAAQ,gBAAW,gCAAZ,IAAYB,aAAS,U;K;wDAG  
7C,Y;MACI,a;MACA,IAAI,iBAAAY,gCAAhB,C;QACI,MAAM,6B;MACV,qC;MACA,OAAO,aAAS,O;K;;qCAvB  
xB,Y;MAA0B,mD;K;;IAgCA,uC;MAC1B,0B;MACA,oB;MC3WA,IAAI,ED+WQ,gBAAS,CC/WjB,CAAJ,C;QA  
CI,cD8WsB,yCAAsC,YAAtC,M;QC7WtB,MAAM,gCAAYB,OAAQ,WAAjC,C;;K;0CDgXV,a;MAAYC,OAAI,K  
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;MACX,gBAAe,4BAAS,W;K;yDAExB,Y;MACI,IAAI,cAAQ,CAAZ,C;QACI,MAAM,6B;MACV,6B;MACA,OA  
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D;MACI,0B;MACA,4B;K;IAEuC,0E;MAAA,oD;MACnC,gBAAe,iCAAS,W;MACxB,iBAAqB,E;MACrB,gBAA  
mB,I;K;oEAEnB,Y;MACI,IAAI,aAAS,UAb,C;QACI,WAAW,aAAS,O;QACpB,IAAI,wCAAU,IAAV,CAAJ,C;U  
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BAAAY,E;MACZ,OAAO,M;K;iEAGX,Y;MACI,IAAI,mBAAa,EAAjB,C;QACI,iB;MACJ,OAAO,mBAAa,C;K;;2C  
AIC5B,Y;MAAuC,yD;K;;IA2Cb,uC;MAC1B,0B;MACA,oB;MC5bA,IAAI,ED+bQ,gBAAS,CC/bjB,CAAJ,C;QAC  
I,cD8bsB,yCAAsC,YAAtC,M;QC7btB,MAAM,gCAAYB,OAAQ,WAAjC,C;;K;0CDgcV,a;MItXO,SJxXmC,eAAQ  
,CAAR,I;MAAD,OAA4B,KAAK,CAAT,GAAY,yBAAZ,GAAuC,iBAAa,eAAb,EAAuB,EAAvB,C;K;0CACxG,a;  
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kB,aAAS,U;K;;2CAIC1C,Y;MAAuC,yD;K;;IAuCN,+C;MAAC,sB;MAAiC,gC;K;0CACnE,Y;MAAuC,4BAAiB,a  
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a,8D;MAEb,iBAAAY,E;MACZ,OAAO,M;K;iEAGX,Y;MACI,IAAI,iBAAAY,CAAhB,C;QACI,iB;MACJ,OAAO,mB  
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d,CAAb,C;K;uFAE1E,yB;MAAA,2D;MAAA,mB;QAGgD,qB;O;KAHhD,C;IAKA,+B;MAC2D,OAAS,aAAT,QA  
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W/CO,SIUwC,Q;O;KfkBnD,C;wFA2BA,yB;Me1CA,wE;Mf0CA,0C;QetCsC,gBAA3B,mBf6DiB,Qe7DjB,C;Qf6D  
2B,aW/EIC,W;QX+EA,OW9EO,SliBgD,Q;O;KfsC3D,C;sFAGCA,yB;MAAA,mD;MAAA,4B;QAEkD,uCAAQ,U;  
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,+DAAkB,KAAIB,EAAyB,YAAzB,C;MAEA,OAAO,wBAAK,mBAAy,KAAZ,IAAL,C;K;qFAGY,Y;MAAQ,mB  
;K;;IASR,wC;MAAqD,uB;MAApD,sB;MtKrDxB,IAAI,EsKuDQ,cAAc,CtKvDtB,CAAJ,C;QACI,csKsD2B,wE;Qt  
KrD3B,MAAM,gCAAyB,OAAQ,WAAjC,C;;MAFV,IAAI,EsKwDQ,cAAc,aAAO,OtKxD7B,CAAJ,C;QACI,gBsK  
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P,+DAAkB,KAAIB,EAAyB,SAAzB,C;MAEA,OAAO,sBAmGmC,CAnG5B,iBAmG6B,GAnGV,KAmGU,IAAD,I  
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Z, Y; MAAuC, kD; K; 2CAgBvC, iB; MAGiE, UAQ1C, MAR0C, EAe1C, MAf0C, EAqBtD, M; MATBP, aACQ, KAAM, O  
AAN, GAAa, IAAK, KAAAtB, GAAkC, UAAN, KAAM, EAAO, IAAK, KAAZ, CAAIC, GAAyD, kD; MAE7D, WAAW, I  
AAK, K; MAEhB, WAAW, C; MACX, UAAU, iB; MAEV, OAAO, OAAO, IAAP, IA Ae, MAAM, eAA5B, C; QACI, OAA  
O, IAAP, IA Ae, wBAAO, GAAP, gE; QACf, mB; QACA, iB; MAGJ, MAAM, C; MACN, OAAO, OAAO, IAAd, C; QACI,  
OAAO, IAAP, IA Ae, wBAAO, GAAP, gE; QACf, mB; QACA, iB; MAEJ, IAAI, MAAO, OAAP, GAAc, IAAK, KAAvB, C  
; QAA6B, OAAO, IAAK, KAAZ, IA AoB, I; MAEjD, OAAO, uD; K; mCAGX, Y; MACI, OAAO, qBAAQ, gBAAa, SAAb,  
OAR, C; K; 4CAGX, uB; MAKI, kBAAoD, eAAjC, mBAAy, mBAAa, CAAzB, IAA8B, CAA9B, IAAiC, EAAa, WAAb,  
C; MACpD, gBAAoB, sBAAc, CAAIB, GAA4B, UAAP, aAAO, EAAO, WAAP, CAA5B, GAAqD, qBAAQ, gBAAa, WA  
Ab, OAR, C; MACrE, OAAO, eAAW, SAAX, EAA5B, SAAtB, C; K; qCAGX, mB; MAII, IAAI, aAAJ, C; QACI, MAAM,  
6BAAsB, qBAAtB, C; MAGV, cA6B0C, CA7BnC, iBA6BoC, GA7BjB, SA6BiB, IAAD, IA Aa, eAAb, IA7B1C, IAAmC,  
O; MACnC, 6B; K; +CAGJ, a; MtKhJA, IAAI, EsKoJQ, KAAK, CtKpJb, CAAJ, C; QACI, csKmJkB, wC; QtKIJb, MAAM,  
gCAAyB, OAAQ, WAAjC, C; MAFV, IAAI, EsKqJQ, KAAK, StKrJb, CAAJ, C; QACI, gBsKoJqB, wEAA8D, S; QtKnJn  
F, MAAM, gCAAyB, SAAQ, WAAjC, C; MsKqJN, IAAI, IAAI, CAAR, C; QACI, YAAy, iB; QACZ, UAgBsC, CAhB5B,  
KAgB6B, GAhBf, CAgBe, IAAD, IA Aa, eAAb, I; QAdtC, IAAI, QAAQ, GAAZ, C; UACW, OAAP, aAAO, EAAK, IAAL,  
EAAW, KAAX, EAAkB, eAAIB, C; UACA, OAAP, aAAO, EAAK, IAAL, EAAW, CAAX, EAAc, GAAd, C; UAEA, OA  
AP, aAAO, EAAK, IAAL, EAAW, KAAX, EAAkB, GAAIB, C; QAGX, oBAAa, G; QACb, wBAAQ, CAAR, I; K; qCAK  
R, wB; MAC8C, QAAC, YAAO, CAAP, IAAD, IA Aa, eAAb, I; K; IA9G9C, 0C; MAAA, oD; MAA6B, uBAAK, gBAAmB,  
QAA nB, OAAL, EAAMc, CAAnC, C; MAA7B, Y; K; ICvFJ, 0C; MAII, QAAQ, I; MACR, QAAQ, K; MACR, YAAy, kBA  
AM, CAAC, OAAO, KAAP, IAAD, IA AiB, CAAjB, IAAN, C; MACZ, OAAO, KAAK, CAAZ, C; QACI, OpL+B4E, 0BoL/  
BrE, kBAAM, CAAN, CpLoR2B, KAAL, GAAiB, GARP8B, EoL/B1D, KpLoRgB, KAAL, GAAiB, GARP8B, CoL/BrE, I  
AAP, C; UACI, a; QACJ, OpL6B4E, 0BoL7BrE, kBAAM, CAAN, CpLkR2B, KAAL, GAAiB, GARP8B, EoL7B1D, KpLk  
RgB, KAAL, GAAiB, GARP8B, CoL7BrE, IAAP, C; UACI, a; QACJ, IAAI, KAAK, CAAT, C; UACI, UAAU, kBAAM, CA  
AN, C; UACV, kBAAM, CAAN, EAAW, kBAAM, CAAN, CAAX, C; UACA, kBAAM, CAAN, EAAW, GAAX, C; UACA  
, a; UACA, a; MAGR, OAAO, C; K; IAGX, uC; MAGI, YAAy, aAAU, KAAV, EAAiB, IAAjB, EAAuB, KAAvB, C; MAC  
Z, IAAI, QAAO, QAAQ, CAAR, IAAP, CAAJ, C; QACI, UAAU, KAAV, EAAiB, IAAjB, EAAuB, QAAQ, CAAR, IAAvB  
, C; MACJ, IAAI, QAAQ, KAAZ, C; QACI, UAAU, KAAV, EAAiB, KAAjB, EAAwB, KAAxB, C; K; IAGR, 0C; MAII, QA  
AQ, I; MACR, QAAQ, K; MACR, YAAy, kBAAM, CAAC, OAAO, KAAP, IAAD, IA AiB, CAAjB, IAAN, C; MACZ, OA  
AO, KAAK, CAAZ, C; QACI, OILM6E, 0BkLNtE, kBAAM, CAAN, CILoP2B, KAAL, GAAiB, KA9O+B, EkLN3D, KIL  
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L, GAAiB, KA9O+B, EkLJ3D, KILkPgB, KAAL, GAAiB, KA9O+B, CkLJtE, IAAP, C; UACI, a; QACJ, IAAI, KAAK, CA  
AT, C; UACI, UAAU, kBAAM, CAAN, C; UACV, kBAAM, CAAN, EAAW, kBAAM, CAAN, CAAX, C; UACA, kBAAM  
, CAAN, EAAW, GAAX, C; UACA, a; UACA, a; MAGR, OAAO, C; K; IAGX, yC; MAGI, YAAy, aAAU, KAAV, EAAiB,  
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B, EAAuB, QAAQ, CAAR, IAAvB, C; MACJ, IAAI, QAAQ, KAAZ, C; QACI, YAAU, KAAV, EAAiB, KAAjB, EAAwB,  
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, UAAU, kBAAM, CAAN, C; UACV, kBAAM, CAAN, EAAW, kBAAM, CAAN, CAAX, C; UACA, kBAAM, CAAN, EA  
AW, GAAX, C; UACA, a; UACA, a; MAGR, OAAO, C; K; IAGX, yC; MAGI, YAAy, aAAU, KAAV, EAAiB, IAAjB, EA  
AuB, KAAvB, C; MACZ, IAAI, QAAO, QAAQ, CAAR, IAAP, CAAJ, C; QACI, YAAU, KAAV, EAAiB, IAAjB, EAAuB,  
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K; IAGR, 0C; MAII, QAAQ, I; MACR, QAAQ, K; MACR, YAAy, kBAAM, CAAC, OAAO, KAAP, IAAD, IA AiB, CAAjB  
, IAAN, C; MACZ, OAAO, KAAK, CAAZ, C; QACI, OIK5C+D, akK4CxD, kBAAM, CAAN, CIK5C0E, KAAIB, EkK4C7  
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Cb,c;UAHJ,OAGiB,C;;UAHjB,OAIY,kBAAW,SAAQ,CAAR,EAAW,CAAX,C;O;K;IAb/B,gC;MAQL,sBAAW,6B  
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,+C;MAW2C,IAAI,IAAJ,EAGV,M;MAL7B,IAAI,+CAAJ,C;QAEI,OAAW,GAAL,kBAAS,SAAK,IAAd,CAAR,G  
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C,e;MAAyD,W;K;mDACzD,8B;MAA4E,c;K;mDAC5E,mB;MAAwE,c;K;uDACxE,e;MAA8D,W;K;+CAC9D,Y;  
MAAsC,Q;K;+CACtC,Y;MAAyC,8B;K;;IAB7C,6C;MAAA,4C;QAAA,2B;;MAAA,qC;K;IAqB8B,wC;MAC1B,k  
B;MACA,wB;K;4CAGA,e;MAGQ,Q;MAFJ,UAAU,I;MACV,OAAO,IAAP,C;QACI,YAAA,GAAL,UAAJ,aAAY,  
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HZ,W;K;uCAOJ,Y;MAIc,IAAI,IAAJ,Q;MAHV,UAAU,I;MACV,WAAW,C;MACX,OAAO,IAAP,C;QACU,uBA  
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BAAI,OAAQ,IAAZ,GAAoB,OAAPB,C;K;8CAEJ,mB;MAQ4B,Q;MAPxB,UAAU,O;MACV,OAAO,IAAP,C;QA  
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Ab,C;;M2L9/YT,O3L+/Y9B,W;K;;;I4LjrZX,oE;MA4BI,MAAM,wBAAoB,sEAAPB,C;K;8GA5BV,yB;MAAA,2D  
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;;IAVA,2C;MAAA,sB;MAAA,mC;K;;IAKA,oC;MAAA,sB;MAAA,4B;K;;IAKA,qC;MAAA,sB;MAAA,6B;K;;Iat  
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AP,mB;;QAER,iBAAO,E;;MAGEuC,qB;K;+EAEID,yB;MAAA,8B;MAAA,2C;MAAA,4B;QAI8C,Q;QAAD,OA  
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K;yEAG/B,+B;MAIqE,8BAAW,SAAX,C;K;2EAERe,+B;MAUwE,8BAAW,SAAX,C;K;IAIxE,yC;MACI,aAAa,K  
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C,C;UACX,IAAI,YAAY,IAAZ,IAAoB,yBAAY,IAAZ,MAAxB,C;YAA0C,MAAM,gCAAYB,yCAAZB,C;UACHD,  
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,C;O;KDwDpD,C;0FASA,yB;MAqHA,WAS6D,wB;MAT7D,+B;MkBrLA,oD;MIBgEA,wB;QAQ6C,OkBIES,eIB  
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wDA,yB;MAAA,yC;MAWsC,yC;QAAA,wB;UAAW,OAAA,aAAK,KAAL,CjCiMV,K;S;O;MiC5MvC,6B;QAWI,  
OAAO,oBAAW,+BAAU,IAAV,GAAGB,uBAAhB,CAAX,C;O;KAXX,C;kFAcA,oB;MAGqE,e;K;IhCrE7C,oB;M  
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C;MAEnC,kBAGmC,C;MAEnC,iBAGkC,E;K;;IANbtC,sC;MAAA,qC;QAAA,oB;;MAAA,8B;K;oGAsBA,yB;M  
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KAAL,GAAiB,GAAtB,CCvQ4D,MAA7B,C;O;KAvBIE,C;oGAQA,yB;MC8QA,6B;MDtQA,8C;MARA,wB;QAM  
2D,OASO,YAAy,IAAK,KAAjB,EAA6B,CCwQ5D,cDjRuC,KCiR7B,KAAL,GAAiB,KAAtB,CDxQ4D,MAA7B,  
C;O;KAFIE,C;gGAQA,yB;MAAA,8C;MAAA,wB;QAOKE,mBAAy,IAAK,KAAjB,EAAuB,KAAM,KAA7B,C;O;  
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,sB;MAT7D,+B;MA5PA,wB;QAEwD,OiBAA,eAAW,CjBmQ9B,eAAW,oBAAL,SAAK,CAAL,iBAAN,CiBnQ8B  
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D,+B;MgB5PA,wB;QAEwD,OAMD,eAAM,IAAK,KAAK,KAAW,ChB6P7C,eAAW,oBgBnQkB,KhBmQvB,KA  
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D,OASA,eAAM,IAAK,KAAK,UAAY,CIB+O/C,eAAW,oBkBxPmB,KIBwPxB,KAAK,CAAL,UAAN,CkB/O+C,  
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FAGA,yB;MAAA,+B;MAAA,wB;QAEwD,sBAAM,IAAK,KAAK,UAAM,KAAZ,CAAhB,C;O;KAFxD,C  
;8FAIA,yB;MIBoOA,WAS6D,wB;MAT7D,+B;MkBpOA,wB;QAEwD,OASA,eAAM,IAAK,KAAK,UAAY,CIBk  
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+B;MkB9MA,8C;MATA,wB;QAEsD,OASA,YAAY,IAAZ,EIBqNjB,eAAW,oBkB9Ne,KIB8NpB,KAAK,CAAL,  
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;O;KA3BtD,C;0FAOA,yB;MhBoMA,aAS6D,0B;MAT7D,+B;MgBtLA,oD;MAdA,wB;QAMuD,OAcd,eAAe,IAAf  
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AOA,yB;MhBuKA,aAS6D,0B;MAT7D,+B;MgB/MA,8C;MAwCA,wB;QAMmD,OA5CG,YAAY,IAAZ,EhBsNjB,  
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B;MkBjNI,wB;QAQ6C,OiBoNP,eAAW,OkB3PK,eAAe,IAAf,EIBwLjB,eAAW,oBkBjJM,KIBiJX,KAAK,CAAL,  
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U5C,SQvVY,URuVZ,CA5U4C,MAAX,IAAf,C;;;K;IQRzD,0B;MAEI,IAAE,QAAF,CAAe,CAAF,C;QAD2C,OA  
C9B,2B;;QACb,SS4SuC,cT5SIC,6BAAM,US4S0C,KAAAd,CT5SvC,C;UAF2C,OAER,6BAAM,U;;UACzC,SS2Su  
C,cT3SIC,6BAAM,US2S0C,KAAAd,CT3SvC,C;YAH2C,OAGR,6BAAM,U;eACzC,4C;YAJ2C,OSkWL,UT9Vd,uB  
AAF,CAAe,CS8Vc,C;;YTIWK,OSUY,UAAW,CAwV5B,UT3VF,uBAA3B,IAAI,oBAAuB,CS2VE,CaxV4B,MA  
AK,KAAW,CTHzB,gCSGyB,MAAX,CAAhB,C;;;K;ITC3D,yB;MAC4C,QAAC,CAAqB,GAAf,UAAP,IAAmC,C  
AAC,MAAO,EAAW,IAAJ,EAAf,IAAgC,C;K;IAE/G,0B;MAC8C,OAAC,qBAAO,EAAP,CAAW,WAAZ,GAAyB  
,IAAZB,GAAiC,YAAjC,W;K;IAG9C,0B;MAA8C,uBAAc,CAAd,EAAiB,EAAjB,C;K;IAE9C,kC;MACI,IAAI,gB  
AAK,CAAT,C;QAAY,OAAS,WAAF,CAAe,EAAS,IAAT,C;MAErB,eAAiB,qBAAO,CAAP,CAAD,yBAAa,IAAb  
,EAAD,WAAwB,CAAxB,C;MACf,UAAU,WAAI,sCAAW,IAAX,EAAJ,C;MACV,IAAI,kBAAO,IAAX,C;QACI,  
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AAI,EAAS,IAAT,C;K;IiO1FzC,qC;K;.....



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jar/org/zeroturnaround/zip/commons/FileExistsException.java

\*

/opt/cola/permits/1820506552\_1697149599.2539036/0/zt-zip-1-14-sources-5-  
jar/org/zeroturnaround/zip/commons/FilenameUtils.java

\* /opt/cola/permits/1820506552\_1697149599.2539036/0/zt-zip-1-14-sources-5-  
jar/org/zeroturnaround/zip/commons/FileUtilsV2\_2.java

\* /opt/cola/permits/1820506552\_1697149599.2539036/0/zt-zip-1-14-sources-5-  
jar/org/zeroturnaround/zip/commons/IOUtils.java

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\* /opt/cola/permits/1820506552\_1697149599.2539036/0/zt-zip-1-14-sources-5-jar/org/zeroturnaround/zip/NameMapper.java

\* /opt/cola/permits/1820506552\_1697149599.2539036/0/zt-zip-1-14-sources-5-jar/org/zeroturnaround/zip/timestamps/TimestampStrategyFactory.java

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\* /opt/cola/permits/1820506552\_1697149599.2539036/0/zt-zip-1-14-sources-5-jar/org/zeroturnaround/zip/ZipEntryUtil.java

\* /opt/cola/permits/1820506552\_1697149599.2539036/0/zt-zip-1-14-sources-5-jar/org/zeroturnaround/zip/ZipUtil.java

\* /opt/cola/permits/1820506552\_1697149599.2539036/0/zt-zip-1-14-sources-5-jar/org/zeroturnaround/zip/ZTFileUtil.java

\* /opt/cola/permits/1820506552\_1697149599.2539036/0/zt-zip-1-14-sources-5-jar/org/zeroturnaround/zip/FileSource.java

\*

/opt/cola/permits/1820506552\_1697149599.2539036/0/zt-zip-1-14-sources-5-jar/org/zeroturnaround/zip/ZipEntrySource.java

\* /opt/cola/permits/1820506552\_1697149599.2539036/0/zt-zip-1-14-sources-5-jar/org/zeroturnaround/zip/ZipEntryCallback.java

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```
* /opt/cola/permits/1820506552_1697149599.2539036/0/zt-zip-1-14-sources-5-
jar/org/zeroturnaround/zip/IdentityNameMapper.java
* /opt/cola/permits/1820506552_1697149599.2539036/0/zt-zip-1-14-sources-5-
jar/org/zeroturnaround/zip/ByteSource.java
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```
* /opt/cola/permits/1820506552_1697149599.2539036/0/zt-zip-1-14-sources-5-
jar/org/zeroturnaround/zip/extra/ZipShort.java
*
/opt/cola/permits/1820506552_1697149599.2539036/0/zt-zip-1-14-sources-5-
jar/org/zeroturnaround/zip/extra/AsiExtraField.java
* /opt/cola/permits/1820506552_1697149599.2539036/0/zt-zip-1-14-sources-5-
jar/org/zeroturnaround/zip/extra/ExtraFieldUtils.java
* /opt/cola/permits/1820506552_1697149599.2539036/0/zt-zip-1-14-sources-5-
jar/org/zeroturnaround/zip/extra/ZipLong.java
* /opt/cola/permits/1820506552_1697149599.2539036/0/zt-zip-1-14-sources-5-
jar/org/zeroturnaround/zip/extra/ZipConstants.java
* /opt/cola/permits/1820506552_1697149599.2539036/0/zt-zip-1-14-sources-5-
jar/org/zeroturnaround/zip/extra/ZipExtraField.java
* /opt/cola/permits/1820506552_1697149599.2539036/0/zt-zip-1-14-sources-5-
jar/org/zeroturnaround/zip/extra/UnrecognizedExtraField.java
```

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Found in path(s):

```
* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/META-INF/native-
image/io.netty/netty-codec/native-image.properties
```

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\* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-  
jar/io/netty/handler/codec/compression/ByteBufChecksum.java  
\* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-  
jar/io/netty/handler/codec/compression/CompressionUtil.java  
\*

/opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-  
jar/io/netty/handler/codec/string/LineEncoder.java  
\* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-  
jar/io/netty/handler/codec/string/LineSeparator.java  
\* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-  
jar/io/netty/handler/codec/CodecOutputList.java  
\* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-  
jar/io/netty/handler/codec/DateFormatter.java  
\* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-  
jar/io/netty/handler/codec/DatagramPacketEncoder.java  
\* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-  
jar/io/netty/handler/codec/DatagramPacketDecoder.java

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Found in path(s):

\* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-  
jar/io/netty/handler/codec/compression/Lz4XXHash32.java

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*/
/*
* Written by Robert Harder and released to the public domain, as explained at
* https://creativecommons.org/licenses/publicdomain
*/
/**
* Utility class for {@link ByteBuf} that encodes and decodes to and from
* Base64 notation.
* <p>
* The encoding and decoding algorithm in this class has been derived from
* Robert Harder's Public Domain
* Base64 Encoder/Decoder</a>.
*/
```

Found in path(s):

```
* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-
jar/io/netty/handler/codec/base64/Base64.java
```

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Found in path(s):

- \* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/compression/Bzip2Decoder.java
- \* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/json/package-info.java
- \*
- /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/compression/Bzip2BlockDecompressor.java
- \* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/compression/Bzip2MoveToFrontTable.java
- \* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/compression/Bzip2HuffmanStageDecoder.java
- \* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/compression/Bzip2BitReader.java
- \* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/compression/FastLzFrameEncoder.java
- \* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/compression/LzfDecoder.java
- \* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/compression/SnappyFramedDecoder.java
- \*
- /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/DecoderResultProvider.java
- \* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/compression/Bzip2MTFAndRLE2StageEncoder.java
- \* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/compression/Bzip2Rand.java
- \* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/compression/Lz4Constants.java
- \* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/compression/Bzip2DivSufSort.java
- \* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/compression/Crc32.java
- \* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/AsciiHeadersEncoder.java
- \*
- /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/compression/LzmaFrameEncoder.java
- \* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/compression/LzfEncoder.java
- \* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/compression/SnappyFramedEncoder.java
- \* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/json/JsonObjectDecoder.java
- \* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/compression/Bzip2Constants.java
- \* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/MessageAggregationException.java

```
* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-
jar/io/netty/handler/codec/compression/Bzip2BitWriter.java
*
/opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-
jar/io/netty/handler/codec/compression/Bzip2Encoder.java
* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-
jar/io/netty/handler/codec/compression/Lz4FrameDecoder.java
* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-
jar/io/netty/handler/codec/compression/FastLzFrameDecoder.java
* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-
jar/io/netty/handler/codec/compression/Bzip2HuffmanStageEncoder.java
* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-
jar/io/netty/handler/codec/compression/FastLz.java
* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-
jar/io/netty/handler/codec/compression/Bzip2BlockCompressor.java
* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-
jar/io/netty/handler/codec/compression/Bzip2HuffmanAllocator.java
*
/opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-
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Found in path(s):
* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/META-
INF/maven/io.netty/netty-codec/pom.xml
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\*/  
 /\*\*

\* A decoder that splits the received { @link ByteBuf}s dynamically by the  
 \* value of the length field in the message. It is particularly useful when you  
 \* decode a binary message which has an integer header field that represents the  
 \* length of the message body or the whole message.

\*

<p>

\* { @link LengthFieldBasedFrameDecoder } has many configuration parameters so  
 \* that it can decode any message with a length field, which is often seen in  
 \* proprietary client-server protocols. Here are some example that will give  
 \* you the basic idea on which option does what.

\*

\* <h3>2 bytes length field at offset 0, do not strip header</h3>

\*

\* The value of the length field in this example is <tt>12 (0x0C)</tt> which  
 \* represents the length of "HELLO, WORLD". By default, the decoder assumes  
 \* that the length field represents the number of the bytes that follows the  
 \* length field. Therefore, it can be decoded with the simplistic parameter  
 \* combination.

\* <pre>

```
* <b>lengthFieldOffset</b> = <b>0</b>
* <b>lengthFieldLength</b> = <b>2</b>
* lengthAdjustment = 0
* initialBytesToStrip = 0 (= do not strip header)
```

\*

\* BEFORE DECODE (14 bytes)      AFTER DECODE (14 bytes)

```
* +-----+-----+      +-----+-----+
```

```
* | Length | Actual Content
```

```
|---->| Length | Actual Content |
```

```
* | 0x000C | "HELLO, WORLD" |      | 0x000C | "HELLO, WORLD" |
```

```
* +-----+-----+      +-----+-----+
```

\* </pre>

\*

\* <h3>2 bytes length field at offset 0, strip header</h3>

\*

\* Because we can get the length of the content by calling  
 \* { @link ByteBuf#readableBytes() }, you might want to strip the length  
 \* field by specifying <tt>initialBytesToStrip</tt>. In this example, we

\* specified `<tt>2</tt>`, that is same with the length of the length field, to

\* strip the first two bytes.

```
* <pre>
* lengthFieldOffset = 0
* lengthFieldLength = 2
* lengthAdjustment = 0
* <b>initialBytesToStrip</b> = <b>2</b> (= the length of the Length field)
*
* BEFORE DECODE (14 bytes)    AFTER DECODE (12 bytes)
* +-----+-----+ +-----+
* | Length | Actual Content |---->| Actual Content |
* | 0x000C | "HELLO, WORLD" |   | "HELLO, WORLD" |
* +-----+-----+ +-----+
```

\* </pre>

\* <h3>2 bytes length field at offset 0, do not strip header, the length field represents the length of the whole message</h3>

\* In most cases, the length field represents the length of the message body only, as shown in the previous examples. However, in some protocols, the length field represents the length of the whole message, including the message header. In such a case, we specify a non-zero

\* `<tt>lengthAdjustment</tt>`. Because the length value in this example message is always greater than the body length by `<tt>2</tt>`, we specify `<tt>-2</tt>` as `<tt>lengthAdjustment</tt>` for compensation.

```
* <pre>
* lengthFieldOffset = 0
* lengthFieldLength = 2
* <b>lengthAdjustment</b> = <b>-2</b> (= the length of the Length field)
* initialBytesToStrip = 0
*
* BEFORE DECODE (14 bytes)    AFTER DECODE (14 bytes)
* +-----+-----+ +-----+-----+
* | Length | Actual Content |---->| Length | Actual
* Content |
* | 0x000E | "HELLO, WORLD" |   | 0x000E | "HELLO, WORLD" |
* +-----+-----+ +-----+
```

\* </pre>

\* <h3>3 bytes length field at the end of 5 bytes header, do not strip header</h3>

\* The following message is a simple variation of the first example. An extra header value is prepended to the message. `<tt>lengthAdjustment</tt>` is zero again because the decoder always takes the length of the prepended data into account during frame length calculation.

```
* <pre>
* <b>lengthFieldOffset</b> = <b>2</b> (= the length of Header 1)
* <b>lengthFieldLength</b> = <b>3</b>
```



```

* lengthAdjustment = 0
* initialBytesToStrip = 0
*
* BEFORE DECODE (17 bytes)          AFTER DECODE (17 bytes)
* +-----+-----+-----+-----+-----+
* | Header 1 | Length | Actual Content |----->| Header 1 | Length | Actual Content |
* | 0xCAFE | 0x00000C | "HELLO, WORLD" |
* | 0xCAFE | 0x00000C | "HELLO, WORLD" |
* +-----+-----+-----+-----+-----+
* </pre>

```

\* **3 bytes length field at the beginning of 5 bytes header, do not strip header**

\* This is an advanced example that shows the case where there is an extra header between the length field and the message body. You have to specify a positive `lengthAdjustment` so that the decoder counts the extra header into the frame length calculation.

```

* <pre>
* lengthFieldOffset = 0
* lengthFieldLength = 3
* <b>lengthAdjustment</b> = <b>2</b> (= the length of Header 1)
* initialBytesToStrip = 0
*
* BEFORE DECODE (17 bytes)          AFTER DECODE (17 bytes)
* +-----+-----+-----+-----+-----+
* | Length | Header 1 | Actual Content |----->| Length | Header 1 | Actual Content |
* | 0x00000C | 0xCAFE | "HELLO, WORLD" | | 0x00000C | 0xCAFE | "HELLO,
* WORLD" |
* +-----+-----+-----+-----+-----+
* </pre>

```

\* **2 bytes length field at offset 1 in the middle of 4 bytes header, strip the first header field and the length field**

\* This is a combination of all the examples above. There are the prepended header before the length field and the extra header after the length field. The prepended header affects the `lengthFieldOffset` and the extra header affects the `lengthAdjustment`. We also specified a non-zero `initialBytesToStrip` to strip the length field and the prepended header from the frame. If you don't want to strip the prepended header, you could specify `0` for `initialBytesToSkip`.

```

* <pre>
* lengthFieldOffset = 1 (= the length of HDR1)
* lengthFieldLength = 2
* <b>lengthAdjustment</b> = <b>1</b> (= the length of HDR2)
* <b>initialBytesToStrip</b> = <b>3</b> (= the length of HDR1 +
* LEN)

```

```

* BEFORE DECODE (16 bytes)          AFTER DECODE (13 bytes)
* +-----+-----+-----+-----+-----+ +-----+-----+
* | HDR1 | Length | HDR2 | Actual Content |---->| HDR2 | Actual Content |
* | 0xCA | 0x000C | 0xFE | "HELLO, WORLD" |   | 0xFE | "HELLO, WORLD" |
* +-----+-----+-----+-----+-----+ +-----+-----+

```

\* </pre>

\*

\* <h3>2 bytes length field at offset 1 in the middle of 4 bytes header,  
\* strip the first header field and the length field, the length field  
\* represents the length of the whole message</h3>

\*

\* Let's give another twist to the previous example. The only difference from  
\* the previous example is that the length field represents the length of the  
\* whole message instead of the message body, just like the third example.  
\* We have to count the length of HDR1 and Length into <tt>lengthAdjustment</tt>.  
\* Please note that we don't need to take the length of HDR2 into account  
\* because  
the length field already includes the whole header length.

\* <pre>

\* lengthFieldOffset = 1

\* lengthFieldLength = 2

\* <b>lengthAdjustment</b> = <b>-3</b> (= the length of HDR1 + LEN, negative)

\* <b>initialBytesToStrip</b> = <b>3</b>

\*

```

* BEFORE DECODE (16 bytes)          AFTER DECODE (13 bytes)

```

```

* +-----+-----+-----+-----+-----+ +-----+-----+
* | HDR1 | Length | HDR2 | Actual Content |---->| HDR2 | Actual Content |
* | 0xCA | 0x0010 | 0xFE | "HELLO, WORLD" |   | 0xFE | "HELLO, WORLD" |
* +-----+-----+-----+-----+-----+ +-----+-----+

```

\* </pre>

\* @see LengthFieldPrepender

\*/

Found in path(s):

\* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/LengthFieldBasedFrameDecoder.java

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\* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-  
jar/io/netty/handler/codec/compression/SnappyOptions.java

\* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-  
jar/io/netty/handler/codec/compression/EncoderUtil.java

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jar/io/netty/handler/codec/EmptyHeaders.java

\* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-  
jar/io/netty/handler/codec/Headers.java

\* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-  
jar/io/netty/handler/codec/DefaultHeaders.java

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\* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/LineBasedFrameDecoder.java

\* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/DecoderException.java

\*

/opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/PrematureChannelClosureException.java

\* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/ReplayingDecoderByteBuf.java

\* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/marshalling/ThreadLocalMarshallerProvider.java

\* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/bytes/ByteArrayEncoder.java

\* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/marshalling/MarshallingEncoder.java

\* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/marshalling/MarshallingDecoder.java

\* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/EncoderException.java

\*

/opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/MessageToMessageEncoder.java

\* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/FixedLengthFrameDecoder.java

\* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/serialization/ObjectEncoder.java

\* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/compression/package-info.java

\* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/serialization/ObjectEncoderOutputStream.java

\* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/compression/SnappyFrameDecoder.java

\* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/serialization/ObjectDecoderInputStream.java

\*

/opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/serialization/ClassLoaderClassResolver.java

\* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/compression/Snappy.java

\* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/string/package-info.java

\* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/compression/ZlibUtil.java  
\* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/compression/JZlibEncoder.java  
\* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/marshalling/DefaultMarshallerProvider.java  
\* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/bytes/package-info.java  
\*  
/opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/xml/package-info.java  
\* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/ReplayingDecoder.java  
\* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/CodecException.java  
\* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/serialization/ObjectDecoder.java  
\* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/MessageToByteEncoder.java  
\* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/LengthFieldPrepender.java  
\* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/string/StringEncoder.java  
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/opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/base64/package-info.java  
\* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/compression/ZlibEncoder.java  
\* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/serialization/CompactObjectOutputStream.java  
\* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/serialization/ReferenceMap.java  
\* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/UnsupportedMessageTypeException.java  
\* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/serialization/ClassResolver.java  
\* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/string/StringDecoder.java  
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/opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/serialization/SoftReferenceMap.java  
\* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/compression/SnappyFrameEncoder.java  
\* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/compression/JZlibDecoder.java  
\* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/marshalling/CompatibleMarshallingEncoder.java  
\* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-

jar/io/netty/handler/codec/Delimiters.java  
\* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-  
jar/io/netty/handler/codec/serialization/CompactObjectInputStream.java  
\* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-  
jar/io/netty/handler/codec/TooLongFrameException.java  
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/opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-  
jar/io/netty/handler/codec/marshalling/LimitingByteInput.java  
\* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-  
jar/io/netty/handler/codec/package-info.java  
\* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-  
jar/io/netty/handler/codec/serialization/ClassResolvers.java  
\* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-  
jar/io/netty/handler/codec/serialization/WeakReferenceMap.java  
\* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-  
jar/io/netty/handler/codec/ByteToMessageDecoder.java  
\* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-  
jar/io/netty/handler/codec/marshalling/ContextBoundUnmarshallerProvider.java  
\* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-  
jar/io/netty/handler/codec/serialization/package-info.java  
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jar/io/netty/handler/codec/compression/CompressionException.java  
\* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-  
jar/io/netty/handler/codec/marshalling/ChannelBufferByteInput.java  
\* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-  
jar/io/netty/handler/codec/marshalling/UnmarshallerProvider.java  
\* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-  
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jar/io/netty/handler/codec/MessageToMessageDecoder.java  
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jar/io/netty/handler/codec/MessageToMessageCodec.java  
\* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-  
jar/io/netty/handler/codec/marshalling/ThreadLocalUnmarshallerProvider.java  
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/opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-  
jar/io/netty/handler/codec/compression/ZlibDecoder.java  
\* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-  
jar/io/netty/handler/codec/DelimiterBasedFrameDecoder.java  
\* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-  
jar/io/netty/handler/codec/serialization/CompatibleObjectEncoder.java  
\* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-  
jar/io/netty/handler/codec/compression/ZlibCodecFactory.java  
\* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-  
jar/io/netty/handler/codec/marshalling/UnmarshallerProvider.java  
\* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-  
jar/io/netty/handler/codec/MessageAggregator.java

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/opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/CorruptedFrameException.java  
\* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/marshalling/CompatibleMarshallingDecoder.java  
\* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/compression/DecompressionException.java  
\* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/protobuf/package-info.java  
\* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/serialization/CachingClassResolver.java  
\* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/DecoderResult.java  
\* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/compression/JdkZlibEncoder.java

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/opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/compression/ZlibWrapper.java  
\* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/base64/Base64Encoder.java  
\* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/marshalling/package-info.java  
\* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/ByteToMessageCodec.java  
\* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/base64/Base64Decoder.java  
\* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/marshalling/DefaultUnmarshallerProvider.java  
\* /opt/cola/permits/1820904464\_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/marshalling/ChannelBufferByteOutput.java  
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jar/io/netty/handler/codec/UnsupportedValueConverter.java
* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-
jar/io/netty/handler/codec/protobuf/ProtobufEncoderNano.java
*
/opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-
jar/io/netty/handler/codec/protobuf/ProtobufEncoder.java
* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-
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* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-
jar/io/netty/handler/codec/ProtocolDetectionState.java
* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-
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* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-
jar/io/netty/handler/codec/HeadersUtils.java
*
/opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-
jar/io/netty/handler/codec/protobuf/ProtobufDecoder.java
```

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jar/io/netty/resolver/ResolvedAddressTypes.java

\* /opt/cola/permits/1820904471\_1697192352.9256797/0/netty-resolver-4-1-100-final-sources-

jar/io/netty/resolver/HostsFileEntries.java

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jar/io/netty/resolver/DefaultHostsFileEntriesResolver.java

\*

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jar/io/netty/resolver/AddressResolver.java

\* /opt/cola/permits/1820904471\_1697192352.9256797/0/netty-resolver-4-1-100-final-sources-

jar/io/netty/resolver/CompositeNameResolver.java

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jar/io/netty/resolver/DefaultNameResolver.java

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jar/io/netty/resolver/InetSocketAddressResolver.java

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jar/io/netty/resolver/DefaultAddressResolverGroup.java

\* /opt/cola/permits/1820904471\_1697192352.9256797/0/netty-resolver-4-1-100-final-sources-

jar/io/netty/resolver/HostsFileEntriesResolver.java

\* /opt/cola/permits/1820904471\_1697192352.9256797/0/netty-resolver-4-1-100-final-sources-

jar/io/netty/resolver/AbstractAddressResolver.java

\* /opt/cola/permits/1820904471\_1697192352.9256797/0/netty-resolver-4-1-100-final-sources-

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\* /opt/cola/permits/1820904471\_1697192352.9256797/0/netty-resolver-4-1-100-final-sources-jar/io/netty/resolver/SimpleNameResolver.java

\* /opt/cola/permits/1820904471\_1697192352.9256797/0/netty-resolver-4-1-100-final-sources-jar/io/netty/resolver/package-info.java

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/opt/cola/permits/1820904471\_1697192352.9256797/0/netty-resolver-4-1-100-final-sources-jar/io/netty/resolver/NoopAddressResolverGroup.java

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Found in path(s):

\* /opt/cola/permits/1820904471\_1697192352.9256797/0/netty-resolver-4-1-100-final-sources-jar/io/netty/resolver/HostsFileEntriesProvider.java

## 1.778 netty 4.1.100.Final

## 1.778.1 Available under license :

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 */
```

Found in path(s):

```
* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/internal/ReflectionUtil.java
* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/internal/PriorityQueue.java
* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/internal/LongAdderCounter.java
*
/opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/NettyRuntime.java
* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/internal/logging/LocationAwareSlf4JLogger.java
* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/SuppressForbidden.java
* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/internal/ObjectCleaner.java
* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/UncheckedBooleanSupplier.java
* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/internal/EmptyPriorityQueue.java
```

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```
<project xmlns="http://maven.apache.org/POM/4.0.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://maven.apache.org/POM/4.0.0 http://maven.apache.org/maven-v4_0_0.xsd">
  <modelVersion>4.0.0</modelVersion>

  <artifactId>jctools-core</artifactId>
  <groupId>org.jctools</groupId>
  <version>3.1.0</version>
```

```

<name>Java Concurrency Tools Core Library</name>
<description>Java Concurrency Tools Core Library</description>
<packaging>bundle</packaging>

<dependencies>
<dependency>
<groupId>org.hamcrest</groupId>
<artifactId>hamcrest-all</artifactId>
<version>${hamcrest.version}</version>
<scope>test</scope>
</dependency>

<dependency>
<groupId>junit</groupId>
<artifactId>junit</artifactId>
<version>${junit.version}</version>
<scope>test</scope>
</dependency>

<dependency>
<groupId>com.google.guava</groupId>
<artifactId>guava-testlib</artifactId>
<version>${guava-testlib.version}</version>
<scope>test</scope>
</dependency>
</dependencies>
<build>
<plugins>
<plugin>
<groupId>org.apache.maven.plugins</groupId>
<artifactId>maven-surefire-plugin</artifactId>
<version>3.0.0-M3</version>
<configuration>
<includes>
<include>*</include>
</includes>
</configuration>
</plugin>
<plugin>
<groupId>org.apache.felix</groupId>
<artifactId>maven-bundle-plugin</artifactId>
<version>4.2.1</version>
<extensions>>true</extensions>
<configuration>
<instructions>
<Import-Package>sun.misc;resolution:=optional</Import-Package>
</instructions>
</configuration>
</plugin>
</plugins>
</build>

```

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</plugin>
<plugin>
<groupId>org.apache.maven.plugins</groupId>
<artifactId>maven-source-plugin</artifactId>
<version>3.2.0</version>
<executions>
<execution>
<id>attach-sources</id>
<phase>verify</phase>
<goals>
<goal>jar-no-fork</goal>
</goals>
</execution>
</executions>
</plugin>
<plugin>
<groupId>org.apache.maven.plugins</groupId>
<artifactId>maven-javadoc-plugin</artifactId>
<version>3.1.1</version>
<configuration>
<additionalOptions>
<additionalOption>-Xdoclint:none</additionalOption>
</additionalOptions>
<source>8</source>
</configuration>
<executions>
<execution>
<id>attach-javadocs</id>
<goals>
<goal>jar</goal>
</goals>
</execution>
</executions>
</plugin>
</plugins>
</build>

<distributionManagement>
<repository>
<id>bintray-jctools-jctools</id>
<name>jctools-jctools</name>
<url>https://api.bintray.com/maven/jctools/jctools/jctools-core/?publish=1</url>
</repository>
</distributionManagement>

<url>https://github.com/JCTools</url>
<inceptionYear>2013</inceptionYear>

```

```
<licenses>
  <license>
    <name>Apache
License, Version 2.0</name>
    <url>http://www.apache.org/licenses/LICENSE-2.0.txt</url>
    <distribution>repo</distribution>
  </license>
</licenses>

<scm>
  <url>https://github.com/JCTools/JCTools</url>
  <connection>scm:git:https://github.com/JCTools/JCTools</connection>
  <tag>HEAD</tag>
</scm>

<developers>
  <developer>
    <url>https://github.com/nitsanw</url>
  </developer>
  <developer>
    <url>https://github.com/mjpt777</url>
  </developer>
  <developer>
    <url>https://github.com/RichardWarburton</url>
  </developer>
  <developer>
    <url>https://github.com/kay</url>
  </developer>
  <developer>
    <url>https://github.com/franz1981</url>
  </developer>
</developers>

<prerequisites>
  <maven>3.5.0</maven>
</prerequisites>

<properties>
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  <java.version>1.6</java.version>
  <java.test.version>1.8</java.test.version>

  <maven.compiler.source>${java.version}</maven.compiler.source>
  <maven.compiler.target>${java.version}</maven.compiler.target>
  <maven.compiler.testSource>${java.test.version}</maven.compiler.testSource>
  <maven.compiler.testTarget>${java.test.version}</maven.compiler.testTarget>

  <hamcrest.version>1.3</hamcrest.version>
```

```
<junit.version>4.12</junit.version>
<guava-testlib.version>21.0</guava-testlib.version>
</properties>
</project>
```

#### Found

in path(s):

```
* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/META-INF/maven/org.jctools/jctools-core/pom.xml
```

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Found in path(s):

```
* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/internal/SuppressJava6Requirement.java
```

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\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/NetUtilSubstitutions.java

\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/NetUtilInitializations.java

\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/DomainWildcardMappingBuilder.java

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\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/internal/ThreadLocalRandom.java

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\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/internal/IntegerHolder.java

\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/ResourceLeakHint.java

\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/Mapping.java

\*

/opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/AsciiString.java

\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/internal/UnpaddedInternalThreadLocalMap.java

\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/concurrent/FastThreadLocal.java

\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/DomainNameMapping.java

\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/internal/NativeLibraryLoader.java

\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/internal/InternalThreadLocalMap.java

\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/concurrent/PromiseAggregator.java

\*

/opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/ThreadDeathWatcher.java

\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/concurrent/PromiseNotifier.java

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```
* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/internal/svm/PlatformDependent0Substitution.java
* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/internal/ThreadExecutorMap.java
*
/opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/internal/svm/PlatformDependentSubstitution.java
* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/internal/svm/CleanerJava6Substitution.java
* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/internal/svm/UnsafeRefArrayAccessSubstitution.java
* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/internal/Hidden.java
* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/internal/svm/package-info.java
* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/internal/ReferenceCountUpdater.java
* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/internal/ObjectPool.java
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* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/META-
INF/native-image/io.netty.netty-common/native-image.properties
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- \* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/CharsetUtil.java
- \* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/concurrent/DefaultEventExecutor.java
- \* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/package-info.java
- \*
- /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/internal/logging/Slf4JLogger.java
- \* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/concurrent/EventExecutorGroup.java
- \* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/internal/logging/InternalLogLevel.java
- \* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/internal/logging/Log4JLoggerFactory.java
- \* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/AbstractConstant.java
- \* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/internal/SystemPropertyUtil.java
- \* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/DefaultAttributeMap.java
- \*
- /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/concurrent/MultithreadEventExecutorGroup.java
- \* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/IllegalReferenceCountException.java
- \* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/concurrent/SucceededFuture.java
- \* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/AttributeKey.java
- \* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/Timeout.java
- \* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/Constant.java
- \* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/concurrent/GlobalEventExecutor.java
- \*
- /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/Signal.java
- \* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/internal/logging/AbstractInternalLogger.java
- \* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/concurrent/SingleThreadEventExecutor.java
- \* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/internal/logging/CommonsLoggerFactory.java
- \* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/internal/package-info.java

\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/internal/logging/Slf4JLoggerFactory.java  
\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/Attribute.java  
\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/HashedWheelTimer.java  
\*  
/opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/AttributeMap.java  
\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/internal/logging/JdkLoggerFactory.java  
\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/NetUtil.java  
\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/concurrent/DefaultEventExecutorGroup.java  
\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/Timer.java  
\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/internal/logging/InternalLoggerFactory.java  
\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/concurrent/EventExecutor.java  
\*  
/opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/concurrent/FailedFuture.java  
\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/TimerTask.java  
\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/internal/PlatformDependent.java  
\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/concurrent/BlockingOperationException.java  
\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/internal/StringUtil.java

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```
* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/internal/logging/InternalLogger.java
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```
/opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/internal/logging/CommonsLogger.java
```

```
* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/internal/logging/Log4JLogger.java
```

```
* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/internal/logging/JdkLogger.java
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/opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/internal/logging/MessageFormatter.java

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\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/internal/logging/Log4J2Logger.java

\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/internal/ThrowableUtil.java

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/opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/concurrent/RejectedExecutionHandler.java

\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/internal/ConstantTimeUtils.java

\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/IntSupplier.java

\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/internal/OutOfDirectMemoryError.java

\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/concurrent/RejectedExecutionHandlers.java

\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-



jar/io/netty/util/concurrent/UnorderedThreadPoolEventExecutor.java  
\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-  
jar/io/netty/util/concurrent/UnaryPromiseNotifier.java  
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/opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-  
jar/io/netty/util/concurrent/NonStickyEventExecutorGroup.java  
\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-  
jar/io/netty/util/internal/PromiseNotificationUtil.java  
\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-  
jar/io/netty/util/internal/MacAddressUtil.java  
\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-  
jar/io/netty/util/concurrent/EventExecutorChooserFactory.java  
\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-  
jar/io/netty/util/concurrent/PromiseCombiner.java  
\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-  
jar/io/netty/util/BooleanSupplier.java  
\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-  
jar/io/netty/util/internal/UnstableApi.java  
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/opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-  
jar/io/netty/util/internal/logging/Log4J2LoggerFactory.java  
\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-  
jar/io/netty/util/concurrent/DefaultEventExecutorChooserFactory.java  
\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-  
jar/io/netty/util/concurrent/OrderedEventExecutor.java  
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jar/io/netty/util/internal/SocketUtils.java  
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jar/io/netty/util/internal/NativeLibraryUtil.java  
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jar/io/netty/util/DomainNameMappingBuilder.java  
\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-  
jar/io/netty/util/ResourceLeakDetectorFactory.java  
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- \* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/internal/EmptyArrays.java
- \* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/concurrent/ThreadPerTaskExecutor.java
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- /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/internal/logging/package-info.java
- \* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/concurrent/ImmediateExecutor.java
- \* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/concurrent/ScheduledFuture.java
- \* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/concurrent/DefaultPromise.java
- \* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/ResourceLeak.java
- \* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/Recycler.java
- \* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/concurrent/package-info.java
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- \* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/ConstantPool.java
- \* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/concurrent/Future.java
- \* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/concurrent/ProgressiveFuture.java
- \* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/concurrent/AbstractEventExecutorGroup.java
- \* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/concurrent/ScheduledFutureTask.java
- \* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/concurrent/DefaultThreadFactory.java
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- /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/internal/RecyclableArrayList.java

\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/internal/NoOpTypeParameterMatcher.java  
\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/AbstractReferenceCounted.java  
\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/internal/ConcurrentSet.java  
\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/internal/AppendableCharSequence.java  
\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/concurrent/AbstractFuture.java  
\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/Version.java  
\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/concurrent/GenericProgressiveFutureListener.java  
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\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/ResourceLeakException.java  
\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/internal/ReadOnlyIterator.java  
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\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/concurrent/GenericFutureListener.java  
\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/concurrent/CompleteFuture.java  
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\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-

jar/io/netty/util/internal/PlatformDependent0.java

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Found in path(s):

\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-

jar/io/netty/util/internal/ClassInitializerUtil.java

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\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-

jar/io/netty/util/internal/shaded/org/jctools/queues/BaseLinkedQueue.java

\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-

jar/io/netty/util/internal/shaded/org/jctools/queues/MpscArrayQueue.java

\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-

jar/io/netty/util/internal/shaded/org/jctools/queues/BaseMpscLinkedArrayQueue.java

\*

/opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-

jar/io/netty/util/internal/shaded/org/jctools/queues/MessagePassingQueue.java

\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/internal/shaded/org/jctools/queues/QueueFactory.java

\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/internal/shaded/org/jctools/maps/AbstractEntry.java

\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/internal/shaded/org/jctools/queues/atomic/AtomicQueueFactory.java

\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/internal/shaded/org/jctools/queues/atomic/MpscAtomicArrayQueue.java

\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/internal/shaded/org/jctools/queues/atomic/SpSCChunkedAtomicArrayQueue.java

\*

/opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/internal/shaded/org/jctools/queues/MpscUnboundedArrayQueue.java

\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/internal/shaded/org/jctools/queues/atomic/BaseSpSCLinkedAtomicArrayQueue.java

\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/internal/shaded/org/jctools/queues/MpscUnboundedXaddChunk.java

\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/internal/shaded/org/jctools/queues/atomic/SequencedAtomicReferenceArrayQueue.java

\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/internal/shaded/org/jctools/queues/atomic/SpmcAtomicArrayQueue.java

\*

/opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/internal/shaded/org/jctools/queues/LinkedQueueNode.java

\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/internal/shaded/org/jctools/queues/atomic/MpmcAtomicArrayQueue.java

\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/internal/shaded/org/jctools/maps/NonBlockingSetInt.java

\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/internal/shaded/org/jctools/queues/package-info.java

\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/internal/shaded/org/jctools/queues/atomic/SpSCGrowableAtomicArrayQueue.java

\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/internal/shaded/org/jctools/util/Pow2.java

\*

/opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/internal/shaded/org/jctools/maps/NonBlockingHashMapLong.java

\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/internal/shaded/org/jctools/queues/atomic/SpSCAtomicArrayQueue.java

\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/internal/shaded/org/jctools/queues/MpscCompoundQueue.java

\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/internal/shaded/org/jctools/queues/MpmcArrayQueue.java

\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/internal/shaded/org/jctools/maps/NonBlockingHashSet.java

\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/internal/shaded/org/jctools/queues/MpscGrowableArrayQueue.java

\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-

jar/io/netty/util/internal/shaded/org/jctools/util/UnsafeAccess.java  
\*  
/opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-  
jar/io/netty/util/internal/shaded/org/jctools/queues/SpSCGrowableArrayQueue.java  
\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-  
jar/io/netty/util/internal/shaded/org/jctools/queues/atomic/AtomicReferenceArrayQueue.java  
\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-  
jar/io/netty/util/internal/shaded/org/jctools/queues/MessagePassingQueueUtil.java  
\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-  
jar/io/netty/util/internal/shaded/org/jctools/queues/atomic/LinkedQueueAtomicNode.java  
\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-  
jar/io/netty/util/internal/shaded/org/jctools/queues/SpSCLinkedQueue.java  
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/opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-  
jar/io/netty/util/internal/shaded/org/jctools/queues/SpSCArrayQueue.java  
\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-  
jar/io/netty/util/internal/shaded/org/jctools/queues/spec/Ordering.java  
\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-  
jar/io/netty/util/internal/shaded/org/jctools/queues/atomic/BaseMpscLinkedAtomicArrayQueue.java  
\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-  
jar/io/netty/util/internal/shaded/org/jctools/queues/spec/Preference.java  
\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-  
jar/io/netty/util/internal/shaded/org/jctools/util/PortableJvmInfo.java  
\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-  
jar/io/netty/util/internal/shaded/org/jctools/queues/SpSCChunkedArrayQueue.java  
\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-  
jar/io/netty/util/internal/shaded/org/jctools/queues/MpmcUnboundedXaddArrayQueue.java  
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jar/io/netty/util/internal/shaded/org/jctools/queues/spec/ConcurrentQueueSpec.java  
\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-  
jar/io/netty/util/internal/shaded/org/jctools/maps/NonBlockingHashMap.java  
\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-  
jar/io/netty/util/internal/shaded/org/jctools/queues/SupportsIterator.java  
\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-  
jar/io/netty/util/internal/shaded/org/jctools/util/UnsafeLongArrayAccess.java  
\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-  
jar/io/netty/util/internal/shaded/org/jctools/queues/MpscLinkedQueue.java  
\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-  
jar/io/netty/util/internal/shaded/org/jctools/util/InternalAPI.java  
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/opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-  
jar/io/netty/util/internal/shaded/org/jctools/queues/MpscUnboundedXaddArrayQueue.java  
\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-  
jar/io/netty/util/internal/shaded/org/jctools/util/UnsafeRefArrayAccess.java  
\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-  
jar/io/netty/util/internal/shaded/org/jctools/queues/ConcurrentCircularArrayQueue.java  
\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-



jar/io/netty/util/internal/shaded/org/jctools/maps/NonBlockingIdentityHashMap.java  
\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-  
jar/io/netty/util/internal/shaded/org/jctools/queues/MpscChunkedArrayQueue.java  
\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-  
jar/io/netty/util/internal/shaded/org/jctools/queues/atomic/MpscGrowableAtomicArrayQueue.java  
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/opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-  
jar/io/netty/util/internal/shaded/org/jctools/queues/SpSCUnboundedArrayQueue.java  
\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-  
jar/io/netty/util/internal/shaded/org/jctools/queues/atomic/MpscChunkedAtomicArrayQueue.java  
\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-  
jar/io/netty/util/internal/shaded/org/jctools/util/UnsafeJvmInfo.java  
\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-  
jar/io/netty/util/internal/shaded/org/jctools/queues/atomic/SpSCLinkedAtomicQueue.java  
\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-  
jar/io/netty/util/internal/shaded/org/jctools/queues/atomic/SpSCUnboundedAtomicArrayQueue.java  
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jar/io/netty/util/internal/shaded/org/jctools/queues/IndexedQueueSizeUtil.java  
\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-  
jar/io/netty/util/internal/shaded/org/jctools/queues/atomic/MpscUnboundedAtomicArrayQueue.java  
\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-  
jar/io/netty/util/internal/shaded/org/jctools/queues/MpmcUnboundedXaddChunk.java  
\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-  
jar/io/netty/util/internal/shaded/org/jctools/queues/atomic/MpscLinkedAtomicQueue.java  
\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-  
jar/io/netty/util/internal/shaded/org/jctools/queues/MpscBlockingConsumerArrayQueue.java  
\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-  
jar/io/netty/util/internal/shaded/org/jctools/queues/ConcurrentSequencedCircularArrayQueue.java  
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/opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-  
jar/io/netty/util/internal/shaded/org/jctools/util/RangeUtil.java  
\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-  
jar/io/netty/util/internal/shaded/org/jctools/queues/BaseSpSCLinkedArrayQueue.java  
\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-  
jar/io/netty/util/internal/shaded/org/jctools/queues/atomic/BaseLinkedAtomicQueue.java  
\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-  
jar/io/netty/util/internal/shaded/org/jctools/queues/SpMCArrayQueue.java  
\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-  
jar/io/netty/util/internal/shaded/org/jctools/maps/ConcurrentAutoTable.java  
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```

Found in path(s):

```
* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/ByteProcessorUtils.java
* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/internal/ResourcesUtil.java
```

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# under the License.
io.netty.util.internal.Hidden$NettyBlockHoundIntegration
```

Found in path(s):

```
* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/META-
INF/services/reactor.blockhound.integration.BlockHoundIntegration
```

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\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-  
jar/io/netty/util/concurrent/ThreadProperties.java  
\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-  
jar/io/netty/util/internal/DefaultPriorityQueue.java  
\*

/opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-  
jar/io/netty/util/internal/LongCounter.java  
\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-  
jar/io/netty/util/internal/PriorityQueueNode.java  
\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-  
jar/io/netty/util/DomainMappingBuilder.java  
\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-  
jar/io/netty/util/HashingStrategy.java  
\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-  
jar/io/netty/util/AsyncMapping.java  
\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-  
jar/io/netty/util/concurrent/AbstractScheduledEventExecutor.java

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\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-  
jar/io/netty/util/internal/MathUtil.java  
\* /opt/cola/permits/1820904486\_1697192360.8623555/0/netty-common-4-1-100-final-sources-  
jar/io/netty/util/ByteProcessor.java

# 1.779 netty-transport 4.1.100.Final

## 1.779.1 Available under license :

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Manifest-Version: 1.0

Implementation-Title: Netty/Transport

Bundle-Description: Netty is an asynchronous event-driven network application framework for rapid development of maintainable high performance protocol servers and clients.

Automatic-Module-Name: io.netty.transport

Bundle-License: <https://www.apache.org/licenses/LICENSE-2.0>

Bundle-SymbolicName: io.netty.transport

Implementation-Version: 4.1.100.Final

Built-By: norman

Bnd-LastModified: 1696948198155

Bundle-ManifestVersion: 2

Implementation-Vendor-Id: io.netty

Bundle-DocURL: <https://netty.io/>

Bundle-Vendor: The Netty Project

Import-Package: io.netty.bootstrap,io.netty.buffer;version="[4.1,5)",io.netty.channel,io.netty.channel.nio,io.netty.channel.oio,io.netty.channel.socket,io.netty.resolver;version="[4.1,5)",io.netty.util;version="[4.1,5)",io.netty.util.concurrent;version="[4.1,5)",io.netty.util.internal;version="[4.1,5)",io.netty.util.internal.logging;version="[4.1,5)",sun.nio.ch;resolution:=optional,org.eclipse.jetty.npn;version="[1,2)";resolution:=optional,org.eclipse.jetty.alpn;version="[1,2)";resolution:=optional

Require-Capability: osgi.ee;filter="(&(osgi.ee=JavaSE)(version=1.6))"

Tool: Bnd-6.3.1.202206071316

Implementation-Vendor: The Netty Project

Export-Package: io.netty.bootstrap;uses:="io.netty.channel,io.netty.resolver,io.netty.util";version="4.1.100",io.netty.channel;uses:="io.netty.bootstrap,io.netty.buffer,io.netty.util,io.netty.util.concurrent";version="4.1.100",io.netty.channel.embedded;uses:="io.netty.channel";version="4.1.100",io.netty.channel.group;uses:="io.netty.channel,io.netty.util.concurrent";version="4.1.100",io.netty.channel.internal;version="4.1.100",io.netty.channel.local;uses:="io.netty.channel";version="4.1.100",io.netty.channel.nio;uses:="io.netty.buffer,io.netty.channel,io.netty.util,io.netty.util.concurrent";version="4.1.100",io.netty.channel.oio;uses:="io.netty.buffer,io.netty.channel";version="4.1.100",io.netty.channel.pool;uses:="io.netty.bootstrap,io.netty.channel,io.netty.util.concurrent";version="4.1.100",io.netty.channel.socket;uses:="io.netty.buffer,io.netty.channel,io.netty.util";version="4.1.100",io.netty.channel.socket.nio;uses:="io.netty.buffer,io.netty.channel,io.netty.channel.nio,io.netty.channel.socket";version="4.1.100",io.netty.channel.socket.oio;uses:="io.netty.buffer,io.netty.channel,io

netty.channel.oio,io.netty.channel.socket";version="4.1.100"

Bundle-Name: Netty/Transport

Bundle-Version: 4.1.100.Final

Build-Jdk-Spec: 1.8

Created-By: Apache Maven Bundle Plugin 5.1.8

Build-Jdk: 1.8.0\_382

Implementation-URL: <https://netty.io/netty-transport/>

Found in path(s):

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## 1.780 openjdk-jre 17.0.8.1u1

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```
</pre>
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```

```
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A copy of the Oracle modified WebKit library source code is located in the following OpenJDK git repository:

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```
rt/modules/javafx.web/src/main/native/  
...
```

```
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...
```

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Any

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|                | GL/gltext.h        | Khronos        |
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include/GL/gl.h :

Mesa 3-D  
graphics library

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```
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include/GL/glxext.h
include/GL/wglxext.h :
```

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libfreetype/src/psaux/psft.c  
libfreetype/src/psaux/psft.h  
libfreetype/src/psaux/psglue.h  
libfreetype/src/psaux/pshints.c  
libfreetype/src/psaux/pshints.h  
libfreetype/src/psaux/psintrp.c  
libfreetype/src/psaux/psintrp.h  
libfreetype/src/psaux/psread.c  
libfreetype/src/psaux/psread.h  
libfreetype/src/psaux/psstack.c  
libfreetype/src/psaux/psstack.h  
libfreetype/src/psaux/pstypes.h

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```
## The Unicode Standard, Unicode Character Database, Version 13.0.0
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### Unicode Character Database
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include/GL/glxext.h  
include/GL/wglxext.h :

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\* /opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ssl/ocsp/OcspClientHandler.java  
\* /opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ssl/SslClientHelloHandler.java  
\* /opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ssl/Conscrypt.java  
\* /opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ssl/SslCloseCompletionEvent.java  
\* /opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ssl/AbstractSniHandler.java  
\* /opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ssl/OptionalSslHandler.java  
\* /opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ssl/JdkAlpnSslUtils.java  
\* /opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ssl/SniCompletionEvent.java  
\*  
\* /opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ssl/JdkAlpnSslEngine.java  
\* /opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ssl/ocsp/package-info.java  
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\* /opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ssl/StacklessSSLHandshakeException.java

\* /opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ssl/EnhancingX509ExtendedTrustManager.java

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\* /opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/pcap/PcapWriter.java

\* /opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/pcap/PcapWriteHandler.java

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/opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/pcap/package-info.java

\* /opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/pcap/PcapHeaders.java

\* /opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/pcap/TCPpacket.java

\* /opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/pcap/UDPPacket.java

\* /opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/pcap/IPPacket.java

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\* /opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/logging/package-info.java

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/opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/stream/package-info.java

\* /opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/timeout/IdleStateEvent.java

\* /opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/stream/ChunkedStream.java

\* /opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ssl/package-info.java

\* /opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/timeout/WriteTimeoutException.java

\* /opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/timeout/package-info.java

\* /opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/timeout/IdleState.java

\* /opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ssl/util/package-info.java

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/opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/stream/ChunkedInput.java

\* /opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/stream/ChunkedWriteHandler.java

\* /opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-

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jar/io/netty/handler/timeout/IdleStateHandler.java
* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-
jar/io/netty/handler/stream/ChunkedNioStream.java
* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-
jar/io/netty/handler/timeout/TimeoutException.java
* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-
jar/io/netty/handler/logging/LogLevel.java
* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-
jar/io/netty/handler/timeout/ReadTimeoutException.java
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/opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-
jar/io/netty/handler/stream/ChunkedNioFile.java
* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-
jar/io/netty/handler/ssl/NotSslRecordException.java
* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-
jar/io/netty/handler/timeout/WriteTimeoutHandler.java
* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-
jar/io/netty/handler/stream/ChunkedFile.java
* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-
jar/io/netty/handler/logging/LoggingHandler.java
* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-
jar/io/netty/handler/ssl/SslHandler.java
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\* /opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ssl/IdentityCipherSuiteFilter.java  
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/opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ipfilter/UniqueIpFilter.java  
\* /opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ssl/SslContext.java  
\* /opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ssl/OpenSslEngine.java  
\* /opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ssl/OpenSslApplicationProtocolNegotiator.java  
\* /opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ssl/PemReader.java  
\* /opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ipfilter/IpFilterRule.java  
\* /opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ssl/SslProvider.java  
\* /opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ipfilter/RuleBasedIpFilter.java  
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/opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ssl/OpenSslServerContext.java  
\* /opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ssl/JettyAlpnSslEngine.java  
\* /opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ssl/SupportedCipherSuiteFilter.java  
\* /opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ssl/util/OpenJdkSelfSignedCertGenerator.java  
\* /opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ssl/ApplicationProtocolNegotiator.java  
\* /opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-

jar/io/netty/handler/ssl/CipherSuiteConverter.java  
\* /opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-  
jar/io/netty/handler/ssl/util/LazyX509Certificate.java  
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/opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-  
jar/io/netty/handler/ssl/CipherSuiteFilter.java  
\* /opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-  
jar/io/netty/handler/ssl/Java7SslParametersUtils.java  
\* /opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-  
jar/io/netty/handler/ssl/OpenSslServerSessionContext.java  
\* /opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-  
jar/io/netty/handler/traffic/GlobalChannelTrafficCounter.java  
\* /opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-  
jar/io/netty/handler/ipfilter/IpFilterRuleType.java  
\* /opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-  
jar/io/netty/handler/ipfilter/package-info.java  
\* /opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-  
jar/io/netty/handler/ssl/JdkBaseApplicationProtocolNegotiator.java  
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/opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-  
jar/io/netty/handler/ssl/OpenSslNpnApplicationProtocolNegotiator.java  
\* /opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-  
jar/io/netty/handler/ssl/SniHandler.java  
\* /opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-  
jar/io/netty/handler/ssl/SslUtils.java  
\* /opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-  
jar/io/netty/handler/ipfilter/AbstractRemoteAddressFilter.java  
\* /opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-  
jar/io/netty/handler/ssl/JdkSslClientContext.java  
\* /opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-  
jar/io/netty/handler/ssl/JdkSslContext.java  
\* /opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-  
jar/io/netty/handler/ssl/JdkSslEngine.java  
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/opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-  
jar/io/netty/handler/ssl/util/ThreadLocalInsecureRandom.java  
\* /opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-  
jar/io/netty/handler/ssl/JettyNpnSslEngine.java  
\* /opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-  
jar/io/netty/handler/ssl/OpenSsl.java  
\* /opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-  
jar/io/netty/handler/ssl/OpenSslDefaultApplicationProtocolNegotiator.java  
\* /opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-  
jar/io/netty/handler/ssl/OpenSslSessionStats.java  
\* /opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-  
jar/io/netty/handler/ssl/util/SimpleTrustManagerFactory.java  
\* /opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-  
jar/io/netty/handler/ssl/ApplicationProtocolConfig.java

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/opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ssl/JdkNpnApplicationProtocolNegotiator.java  
\* /opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ssl/JdkAlpnApplicationProtocolNegotiator.java  
\* /opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ssl/util/FingerprintTrustManagerFactory.java  
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\* /opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ssl/JdkSslServerContext.java  
\* /opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ssl/ApplicationProtocolUtil.java  
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/opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ssl/util/InsecureTrustManagerFactory.java  
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\* /opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ssl/OpenSslContext.java  
\* /opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ssl/OpenSslSessionContext.java  
\* /opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ssl/OpenSslClientContext.java

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jar/io/netty/handler/traffic/AbstractTrafficShapingHandler.java

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jar/io/netty/handler/ssl/PemX509Certificate.java

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jar/io/netty/handler/flush/package-info.java

\* /opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ssl/PemEncoded.java  
\* /opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ssl/Java8SslUtils.java  
\* /opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ssl/OpenSslCertificateException.java  
\* /opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ssl/ReferenceCountedOpenSslClientContext.java  
\* /opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ssl/PemValue.java  
\* /opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ssl/ReferenceCountedOpenSslEngine.java  
\* /opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ssl/PemPrivateKey.java  
\*  
/opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ssl/ReferenceCountedOpenSslContext.java  
\* /opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ssl/ReferenceCountedOpenSslServerContext.java  
\* /opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ssl/util/X509TrustManagerWrapper.java  
\* /opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/flow/package-info.java  
\* /opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ssl/OpenSslKeyMaterialManager.java  
\* /opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ssl/DelegatingSslContext.java  
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```
* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-
jar/io/netty/handler/traffic/ChannelTrafficShapingHandler.java
*
/opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-
jar/io/netty/handler/traffic/GlobalTrafficShapingHandler.java
* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-
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jar/io/netty/handler/ssl/ExtendedOpenSslSession.java
* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-
jar/io/netty/handler/ssl/OpenSslCachingKeyMaterialProvider.java
*
/opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-
jar/io/netty/handler/ssl/SignatureAlgorithmConverter.java
* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-
jar/io/netty/handler/ssl/OpenSslSession.java
* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-
jar/io/netty/handler/ssl/OpenSslPrivateKey.java
* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-
jar/io/netty/handler/ssl/OpenSslCachingX509KeyManagerFactory.java
* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-
jar/io/netty/handler/ssl/OpenSslKeyMaterialProvider.java
* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-
jar/io/netty/handler/ssl/OpenSslX509KeyManagerFactory.java
* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-
jar/io/netty/handler/ssl/DefaultOpenSslKeyMaterial.java
*
/opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-
jar/io/netty/handler/ssl/OpenSslKeyMaterial.java
```

\* /opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ssl/OpenSslX509TrustManagerWrapper.java

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\* /opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ssl/util/TrustManagerFactoryWrapper.java

\* /opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ssl/util/KeyManagerFactoryWrapper.java

\*

/opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ssl/OpenSslPrivateKeyMethod.java

\* /opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/address/DynamicAddressConnectHandler.java

\* /opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ssl/util/SimpleKeyManagerFactory.java

\* /opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ssl/PseudoRandomFunction.java

\* /opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ssl/util/X509KeyManagerWrapper.java

\* /opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ssl/SslMasterKeyHandler.java

\* /opt/cola/permits/1824197368\_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/address/package-info.java

## 1.784 netty-codec-dns 4.1.100.Final

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jar/io/netty/handler/codec/dns/DnsOptEcsRecord.java  
\* /opt/cola/permits/1824197333\_1697526499.6075978/0/netty-codec-dns-4-1-100-final-sources-  
jar/io/netty/handler/codec/dns/DefaultDnsPtrRecord.java  
\*

/opt/cola/permits/1824197333\_1697526499.6075978/0/netty-codec-dns-4-1-100-final-sources-  
jar/io/netty/handler/codec/dns/AbstractDnsOptPseudoRrRecord.java  
\* /opt/cola/permits/1824197333\_1697526499.6075978/0/netty-codec-dns-4-1-100-final-sources-  
jar/io/netty/handler/codec/dns/DnsOptPseudoRecord.java  
\* /opt/cola/permits/1824197333\_1697526499.6075978/0/netty-codec-dns-4-1-100-final-sources-  
jar/io/netty/handler/codec/dns/DefaultDnsOptEcsRecord.java  
\* /opt/cola/permits/1824197333\_1697526499.6075978/0/netty-codec-dns-4-1-100-final-sources-  
jar/io/netty/handler/codec/dns/DnsPtrRecord.java

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\* /opt/cola/permits/1824197333\_1697526499.6075978/0/netty-codec-dns-4-1-100-final-sources-jar/io/netty/handler/codec/dns/DefaultDnsRecordEncoder.java  
\*  
/opt/cola/permits/1824197333\_1697526499.6075978/0/netty-codec-dns-4-1-100-final-sources-jar/io/netty/handler/codec/dns/DefaultDnsQuestion.java  
\* /opt/cola/permits/1824197333\_1697526499.6075978/0/netty-codec-dns-4-1-100-final-sources-jar/io/netty/handler/codec/dns/DefaultDnsRecordDecoder.java  
\* /opt/cola/permits/1824197333\_1697526499.6075978/0/netty-codec-dns-4-1-100-final-sources-jar/io/netty/handler/codec/dns/DnsOpCode.java  
\* /opt/cola/permits/1824197333\_1697526499.6075978/0/netty-codec-dns-4-1-100-final-sources-jar/io/netty/handler/codec/dns/DatagramDnsQuery.java  
\* /opt/cola/permits/1824197333\_1697526499.6075978/0/netty-codec-dns-4-1-100-final-sources-jar/io/netty/handler/codec/dns/DefaultDnsQuery.java  
\* /opt/cola/permits/1824197333\_1697526499.6075978/0/netty-codec-dns-4-1-100-final-sources-jar/io/netty/handler/codec/dns/AbstractDnsRecord.java  
\* /opt/cola/permits/1824197333\_1697526499.6075978/0/netty-codec-dns-4-1-100-final-sources-jar/io/netty/handler/codec/dns/DatagramDnsQueryDecoder.java  
\*  
/opt/cola/permits/1824197333\_1697526499.6075978/0/netty-codec-dns-4-1-100-final-sources-jar/io/netty/handler/codec/dns/DefaultDnsRawRecord.java  
\* /opt/cola/permits/1824197333\_1697526499.6075978/0/netty-codec-dns-4-1-100-final-sources-jar/io/netty/handler/codec/dns/DnsMessage.java  
\* /opt/cola/permits/1824197333\_1697526499.6075978/0/netty-codec-dns-4-1-100-final-sources-jar/io/netty/handler/codec/dns/DnsRecordType.java  
\* /opt/cola/permits/1824197333\_1697526499.6075978/0/netty-codec-dns-4-1-100-final-sources-jar/io/netty/handler/codec/dns/DnsQuery.java  
\* /opt/cola/permits/1824197333\_1697526499.6075978/0/netty-codec-dns-4-1-100-final-sources-jar/io/netty/handler/codec/dns/DatagramDnsResponseEncoder.java  
\* /opt/cola/permits/1824197333\_1697526499.6075978/0/netty-codec-dns-4-1-100-final-sources-jar/io/netty/handler/codec/dns/DnsResponseCode.java  
\* /opt/cola/permits/1824197333\_1697526499.6075978/0/netty-codec-dns-4-1-100-final-sources-jar/io/netty/handler/codec/dns/DnsRecordDecoder.java  
\*  
/opt/cola/permits/1824197333\_1697526499.6075978/0/netty-codec-dns-4-1-100-final-sources-jar/io/netty/handler/codec/dns/DnsRawRecord.java  
\* /opt/cola/permits/1824197333\_1697526499.6075978/0/netty-codec-dns-4-1-100-final-sources-jar/io/netty/handler/codec/dns/DnsRecord.java  
\* /opt/cola/permits/1824197333\_1697526499.6075978/0/netty-codec-dns-4-1-100-final-sources-jar/io/netty/handler/codec/dns/DnsResponse.java  
\* /opt/cola/permits/1824197333\_1697526499.6075978/0/netty-codec-dns-4-1-100-final-sources-jar/io/netty/handler/codec/dns/AbstractDnsMessage.java  
\* /opt/cola/permits/1824197333\_1697526499.6075978/0/netty-codec-dns-4-1-100-final-sources-jar/io/netty/handler/codec/dns/DnsRecordEncoder.java  
\* /opt/cola/permits/1824197333\_1697526499.6075978/0/netty-codec-dns-4-1-100-final-sources-jar/io/netty/handler/codec/dns/package-info.java  
\* /opt/cola/permits/1824197333\_1697526499.6075978/0/netty-codec-dns-4-1-100-final-sources-

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jar/io/netty/handler/codec/dns/DatagramDnsQueryEncoder.java
*
/opt/cola/permits/1824197333_1697526499.6075978/0/netty-codec-dns-4-1-100-final-sources-
jar/io/netty/handler/codec/dns/DnsSection.java
* /opt/cola/permits/1824197333_1697526499.6075978/0/netty-codec-dns-4-1-100-final-sources-
jar/io/netty/handler/codec/dns/DatagramDnsResponseDecoder.java
* /opt/cola/permits/1824197333_1697526499.6075978/0/netty-codec-dns-4-1-100-final-sources-
jar/io/netty/handler/codec/dns/DefaultDnsResponse.java
* /opt/cola/permits/1824197333_1697526499.6075978/0/netty-codec-dns-4-1-100-final-sources-
jar/io/netty/handler/codec/dns/DnsMessageUtil.java
* /opt/cola/permits/1824197333_1697526499.6075978/0/netty-codec-dns-4-1-100-final-sources-
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## 1.785 netty-transport-native-unix-common

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\* /opt/cola/permits/1824197187\_1697526505.2585757/0/netty-transport-native-unix-common-4-1-100-final-sources-jar/netty\_unix\_util.h  
\* /opt/cola/permits/1824197187\_1697526505.2585757/0/netty-transport-native-unix-common-4-1-100-final-sources-jar/io/netty/channel/unix/ErrorsStaticallyReferencedJniMethods.java  
\*  
/opt/cola/permits/1824197187\_1697526505.2585757/0/netty-transport-native-unix-common-4-1-100-final-sources-jar/io/netty/channel/unix/Limits.java  
\* /opt/cola/permits/1824197187\_1697526505.2585757/0/netty-transport-native-unix-common-4-1-100-final-sources-jar/netty\_unix\_limits.h  
\* /opt/cola/permits/1824197187\_1697526505.2585757/0/netty-transport-native-unix-common-4-1-100-final-sources-jar/netty\_unix\_util.c  
\* /opt/cola/permits/1824197187\_1697526505.2585757/0/netty-transport-native-unix-common-4-1-100-final-sources-jar/io/netty/channel/unix/SocketWritableByteChannel.java  
\* /opt/cola/permits/1824197187\_1697526505.2585757/0/netty-transport-native-unix-common-4-1-100-final-sources-jar/io/netty/channel/unix/PeerCredentials.java  
\* /opt/cola/permits/1824197187\_1697526505.2585757/0/netty-transport-native-unix-common-4-1-100-final-sources-jar/io/netty/channel/unix/LimitsStaticallyReferencedJniMethods.java

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\* /opt/cola/permits/1824197187\_1697526505.2585757/0/netty-transport-native-unix-common-4-1-100-final-sources-jar/io/netty/channel/unix/DomainDatagramSocketAddress.java

\*

/opt/cola/permits/1824197187\_1697526505.2585757/0/netty-transport-native-unix-common-4-1-100-final-sources-jar/io/netty/channel/unix/DomainDatagramChannelConfig.java

\* /opt/cola/permits/1824197187\_1697526505.2585757/0/netty-transport-native-unix-common-4-1-100-final-sources-jar/io/netty/channel/unix/SegmentedDatagramPacket.java

\* /opt/cola/permits/1824197187\_1697526505.2585757/0/netty-transport-native-unix-common-4-1-100-final-sources-jar/io/netty/channel/unix/DomainDatagramPacket.java

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- \* /opt/cola/permits/1824197187\_1697526505.2585757/0/netty-transport-native-unix-common-4-1-100-final-sources-jar/io/netty/channel/unix/FileDescriptor.java
  - \* /opt/cola/permits/1824197187\_1697526505.2585757/0/netty-transport-native-unix-common-4-1-100-final-sources-jar/netty\_unix\_errors.h
  - \*
    - /opt/cola/permits/1824197187\_1697526505.2585757/0/netty-transport-native-unix-common-4-1-100-final-sources-jar/netty\_unix\_filedescriptor.h
    - \* /opt/cola/permits/1824197187\_1697526505.2585757/0/netty-transport-native-unix-common-4-1-100-final-sources-jar/netty\_unix\_socket.h
    - \* /opt/cola/permits/1824197187\_1697526505.2585757/0/netty-transport-native-unix-common-4-1-100-final-sources-jar/io/netty/channel/unix/DomainSocketReadMode.java
    - \* /opt/cola/permits/1824197187\_1697526505.2585757/0/netty-transport-native-unix-common-4-1-100-final-sources-jar/netty\_unix\_filedescriptor.c
    - \* /opt/cola/permits/1824197187\_1697526505.2585757/0/netty-transport-native-unix-common-4-1-100-final-sources-jar/io/netty/channel/unix/DomainSocketAddress.java
    - \* /opt/cola/permits/1824197187\_1697526505.2585757/0/netty-transport-native-unix-common-4-1-100-final-sources-jar/netty\_unix\_socket.c
    - \* /opt/cola/permits/1824197187\_1697526505.2585757/0/netty-transport-native-unix-common-4-1-100-final-sources-jar/io/netty/channel/unix/UnixChannel.java
  - \*
    - /opt/cola/permits/1824197187\_1697526505.2585757/0/netty-transport-native-unix-common-4-1-100-final-sources-jar/netty\_unix\_errors.c
    - \* /opt/cola/permits/1824197187\_1697526505.2585757/0/netty-transport-native-unix-common-4-1-100-final-sources-jar/io/netty/channel/unix/DatagramSocketAddress.java
    - \* /opt/cola/permits/1824197187\_1697526505.2585757/0/netty-transport-native-unix-common-4-1-100-final-sources-jar/io/netty/channel/unix/Errors.java
    - \* /opt/cola/permits/1824197187\_1697526505.2585757/0/netty-transport-native-unix-common-4-1-100-final-sources-jar/io/netty/channel/unix/ServerDomainSocketChannel.java
    - \* /opt/cola/permits/1824197187\_1697526505.2585757/0/netty-transport-native-unix-common-4-1-100-final-sources-jar/io/netty/channel/unix/DomainSocketChannel.java
    - \* /opt/cola/permits/1824197187\_1697526505.2585757/0/netty-transport-native-unix-common-4-1-100-final-sources-jar/io/netty/channel/unix/DomainSocketChannelConfig.java
    - \* /opt/cola/permits/1824197187\_1697526505.2585757/0/netty-transport-native-unix-common-4-1-100-final-sources-jar/io/netty/channel/unix/Socket.java
  - \*
    - /opt/cola/permits/1824197187\_1697526505.2585757/0/netty-transport-native-unix-common-4-1-100-final-sources-jar/io/netty/channel/unix/NativeInetAddress.java
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sources-jar/io/netty/channel/unix/PreferredDirectByteBufferAllocator.java
* /opt/cola/permits/1824197187_1697526505.2585757/0/netty-transport-native-unix-common-4-1-100-final-
sources-jar/io/netty/channel/unix/Buffer.java
*
/opt/cola/permits/1824197187_1697526505.2585757/0/netty-transport-native-unix-common-4-1-100-final-sources-
jar/netty_unix_buffer.h
* /opt/cola/permits/1824197187_1697526505.2585757/0/netty-transport-native-unix-common-4-1-100-final-
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* /opt/cola/permits/1824197187_1697526505.2585757/0/netty-transport-native-unix-common-4-1-100-final-
```

sources-jar/io/netty/channel/unix/package-info.java

\*

/opt/cola/permits/1824197187\_1697526505.2585757/0/netty-transport-native-unix-common-4-1-100-final-sources-jar/io/netty/channel/unix/Unix.java

\* /opt/cola/permits/1824197187\_1697526505.2585757/0/netty-transport-native-unix-common-4-1-100-final-sources-jar/io/netty/channel/unix/IovArray.java

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\* /opt/cola/permits/1824197187\_1697526505.2585757/0/netty-transport-native-unix-common-4-1-100-final-sources-jar/netty\_unix\_jni.h

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\* /opt/cola/permits/1824197187\_1697526505.2585757/0/netty-transport-native-unix-common-4-1-100-final-sources-jar/io/netty/channel/unix/IntegerUnixChannelOption.java

\*

/opt/cola/permits/1824197187\_1697526505.2585757/0/netty-transport-native-unix-common-4-1-100-final-sources-jar/io/netty/channel/unix/RawUnixChannelOption.java

## 1.786 netty-transport-classes-epoll

### 4.1.100.Final

#### 1.786.1 Available under license :

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*/
/**
 * Set the {@code TCP_MD5SIG} option on the socket. See {@code linux/tcp.h} for more details.
 * Keys can only be set on, not read to prevent a potential leak, as they are confidential.
 * Allowing them being read would mean anyone with access to the channel could get them.

 */
/**
 * Set the {@code TCP_QUICKACK} option on the socket.
 * See <a href="https://linux.die.net/man/7/tcp">TCP_QUICKACK</a>
 * for more details.
 */

```

Found in path(s):

```

* /opt/cola/permits/1824197247_1697526509.5122175/0/netty-transport-classes-epoll-4-1-100-final-sources-
jar/io/netty/channel/epoll/EpollSocketChannelConfig.java

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jar/io/netty/channel/epoll/AbstractEpollChannel.java
* /opt/cola/permits/1824197247_1697526509.5122175/0/netty-transport-classes-epoll-4-1-100-final-sources-
jar/io/netty/channel/epoll/EpollSocketChannel.java
*
/opt/cola/permits/1824197247_1697526509.5122175/0/netty-transport-classes-epoll-4-1-100-final-sources-
jar/io/netty/channel/epoll/EpollServerSocketChannel.java
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jar/io/netty/channel/epoll/Epoll.java  
\* /opt/cola/permits/1824197247\_1697526509.5122175/0/netty-transport-classes-epoll-4-1-100-final-sources-  
jar/io/netty/channel/epoll/EpollTcpInfo.java  
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jar/io/netty/channel/epoll/EpollDatagramChannel.java  
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jar/io/netty/channel/epoll/NativeDatagramPacketArray.java  
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jar/io/netty/channel/epoll/EpollEventLoopGroup.java  
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jar/io/netty/channel/epoll/package-info.java  
\*  
/opt/cola/permits/1824197247\_1697526509.5122175/0/netty-transport-classes-epoll-4-1-100-final-sources-  
jar/io/netty/channel/epoll/EpollEventLoop.java  
\* /opt/cola/permits/1824197247\_1697526509.5122175/0/netty-transport-classes-epoll-4-1-100-final-sources-  
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jar/io/netty/channel/epoll/EpollDomainDatagramChannelConfig.java  
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/opt/cola/permits/1824197247\_1697526509.5122175/0/netty-transport-classes-epoll-4-1-100-final-sources-  
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jar/io/netty/channel/epoll/EpollDomainSocketChannelConfig.java
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/opt/cola/permits/1824197247_1697526509.5122175/0/netty-transport-classes-epoll-4-1-100-final-sources-
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* /opt/cola/permits/1824197247_1697526509.5122175/0/netty-transport-classes-epoll-4-1-100-final-sources-
jar/io/netty/channel/epoll/EpollChannelConfig.java
* /opt/cola/permits/1824197247_1697526509.5122175/0/netty-transport-classes-epoll-4-1-100-final-sources-
jar/io/netty/channel/epoll/EpollRecvByteAllocatorHandle.java
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jar/io/netty/channel/epoll/NativeStaticallyReferencedJniMethods.java
* /opt/cola/permits/1824197247_1697526509.5122175/0/netty-transport-classes-epoll-4-1-100-final-sources-
jar/io/netty/channel/epoll/LinuxSocket.java
```

## 1.787 netty-resolver-dns 4.1.100.Final

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* /opt/cola/permits/1824197291_1697526511.4534771/0/netty-resolver-dns-4-1-100-final-sources-
jar/io/netty/resolver/dns/UnixResolverOptions.java
* /opt/cola/permits/1824197291_1697526511.4534771/0/netty-resolver-dns-4-1-100-final-sources-
jar/io/netty/resolver/dns/LoggingDnsQueryLifeCycleObserverFactory.java
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jar/io/netty/resolver/dns/DefaultAuthoritativeDnsServerCache.java
* /opt/cola/permits/1824197291_1697526511.4534771/0/netty-resolver-dns-4-1-100-final-sources-
jar/io/netty/resolver/dns/NoopAuthoritativeDnsServerCache.java
*
```

```
/opt/cola/permits/1824197291_1697526511.4534771/0/netty-resolver-dns-4-1-100-final-sources-
jar/io/netty/resolver/dns/DnsRecordResolveContext.java
* /opt/cola/permits/1824197291_1697526511.4534771/0/netty-resolver-dns-4-1-100-final-sources-
jar/io/netty/resolver/dns/DefaultDnsCnameCache.java
* /opt/cola/permits/1824197291_1697526511.4534771/0/netty-resolver-dns-4-1-100-final-sources-
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```
jar/io/netty/resolver/dns/Cache.java
* /opt/cola/permits/1824197291_1697526511.4534771/0/netty-resolver-dns-4-1-100-final-sources-
jar/io/netty/resolver/dns/DnsAddressDecoder.java
* /opt/cola/permits/1824197291_1697526511.4534771/0/netty-resolver-dns-4-1-100-final-sources-
jar/io/netty/resolver/dns/DnsCnameCache.java
* /opt/cola/permits/1824197291_1697526511.4534771/0/netty-resolver-dns-4-1-100-final-sources-
jar/io/netty/resolver/dns/DnsAddressResolveContext.java
* /opt/cola/permits/1824197291_1697526511.4534771/0/netty-resolver-dns-4-1-100-final-sources-
jar/io/netty/resolver/dns/AuthoritativeDnsServerCache.java
*
/opt/cola/permits/1824197291_1697526511.4534771/0/netty-resolver-dns-4-1-100-final-sources-
jar/io/netty/resolver/dns/NoopDnsCnameCache.java
* /opt/cola/permits/1824197291_1697526511.4534771/0/netty-resolver-dns-4-1-100-final-sources-
jar/io/netty/resolver/dns/AuthoritativeDnsServerCacheAdapter.java
* /opt/cola/permits/1824197291_1697526511.4534771/0/netty-resolver-dns-4-1-100-final-sources-
jar/io/netty/resolver/dns/DirContextUtils.java
* /opt/cola/permits/1824197291_1697526511.4534771/0/netty-resolver-dns-4-1-100-final-sources-
jar/io/netty/resolver/dns/NameServerComparator.java
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jar/io/netty/resolver/dns/InflightNameResolver.java
* /opt/cola/permits/1824197291_1697526511.4534771/0/netty-resolver-dns-4-1-100-final-sources-
jar/io/netty/resolver/dns/NoopDnsCache.java
*
/opt/cola/permits/1824197291_1697526511.4534771/0/netty-resolver-dns-4-1-100-final-sources-
jar/io/netty/resolver/dns/DefaultDnsCache.java
* /opt/cola/permits/1824197291_1697526511.4534771/0/netty-resolver-dns-4-1-100-final-sources-
jar/io/netty/resolver/dns/DnsCache.java
* /opt/cola/permits/1824197291_1697526511.4534771/0/netty-resolver-dns-4-1-100-final-sources-
jar/io/netty/resolver/dns/RoundRobinDnsAddressResolverGroup.java
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jar/io/netty/resolver/dns/DnsQueryLifecycleObserverFactory.java
* /opt/cola/permits/1824197291_1697526511.4534771/0/netty-resolver-dns-4-1-100-final-sources-
jar/io/netty/resolver/dns/DnsServerAddressStreamProvider.java
*
/opt/cola/permits/1824197291_1697526511.4534771/0/netty-resolver-dns-4-1-100-final-sources-
jar/io/netty/resolver/dns/UniSequentialDnsServerAddressStreamProvider.java
* /opt/cola/permits/1824197291_1697526511.4534771/0/netty-resolver-dns-4-1-100-final-sources-
jar/io/netty/resolver/dns/MultiDnsServerAddressStreamProvider.java
* /opt/cola/permits/1824197291_1697526511.4534771/0/netty-resolver-dns-4-1-100-final-sources-
jar/io/netty/resolver/dns/DefaultDnsServerAddressStreamProvider.java
* /opt/cola/permits/1824197291_1697526511.4534771/0/netty-resolver-dns-4-1-100-final-sources-
jar/io/netty/resolver/dns/UnixResolverDnsServerAddressStreamProvider.java
* /opt/cola/permits/1824197291_1697526511.4534771/0/netty-resolver-dns-4-1-100-final-sources-
jar/io/netty/resolver/dns/BiDnsQueryLifecycleObserver.java
* /opt/cola/permits/1824197291_1697526511.4534771/0/netty-resolver-dns-4-1-100-final-sources-
jar/io/netty/resolver/dns/NoopDnsQueryLifecycleObserver.java
*
/opt/cola/permits/1824197291_1697526511.4534771/0/netty-resolver-dns-4-1-100-final-sources-
jar/io/netty/resolver/dns/NoopDnsQueryLifecycleObserverFactory.java
* /opt/cola/permits/1824197291_1697526511.4534771/0/netty-resolver-dns-4-1-100-final-sources-
jar/io/netty/resolver/dns/LoggingDnsQueryLifecycleObserver.java
* /opt/cola/permits/1824197291_1697526511.4534771/0/netty-resolver-dns-4-1-100-final-sources-
jar/io/netty/resolver/dns/BiDnsQueryLifecycleObserverFactory.java
* /opt/cola/permits/1824197291_1697526511.4534771/0/netty-resolver-dns-4-1-100-final-sources-
jar/io/netty/resolver/dns/SequentialDnsServerAddressStreamProvider.java
* /opt/cola/permits/1824197291_1697526511.4534771/0/netty-resolver-dns-4-1-100-final-sources-
jar/io/netty/resolver/dns/DnsCacheEntry.java
* /opt/cola/permits/1824197291_1697526511.4534771/0/netty-resolver-dns-4-1-100-final-sources-
```

jar/io/netty/resolver/dns/DnsQueryLifecycleObserver.java  
\* /opt/cola/permits/1824197291\_1697526511.4534771/0/netty-resolver-dns-4-1-100-final-sources-  
jar/io/netty/resolver/dns/SingletonDnsServerAddressStreamProvider.java  
\*  
/opt/cola/permits/1824197291\_1697526511.4534771/0/netty-resolver-dns-4-1-100-final-sources-  
jar/io/netty/resolver/dns/DnsServerAddressStreamProviders.java  
\* /opt/cola/permits/1824197291\_1697526511.4534771/0/netty-resolver-dns-4-1-100-final-sources-  
jar/io/netty/resolver/dns/DnsNameResolverTimeoutException.java  
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jar/io/netty/resolver/dns/DnsNameResolverBuilder.java
* /opt/cola/permits/1824197291_1697526511.4534771/0/netty-resolver-dns-4-1-100-final-sources-
jar/io/netty/resolver/dns/ShuffledDnsServerAddressStream.java
*
/opt/cola/permits/1824197291_1697526511.4534771/0/netty-resolver-dns-4-1-100-final-sources-
jar/io/netty/resolver/dns/RotationalDnsServerAddresses.java
* /opt/cola/permits/1824197291_1697526511.4534771/0/netty-resolver-dns-4-1-100-final-sources-
jar/io/netty/resolver/dns/DnsServerAddressStream.java
* /opt/cola/permits/1824197291_1697526511.4534771/0/netty-resolver-dns-4-1-100-final-sources-
jar/io/netty/resolver/dns/SingletonDnsServerAddresses.java
* /opt/cola/permits/1824197291_1697526511.4534771/0/netty-resolver-dns-4-1-100-final-sources-
jar/io/netty/resolver/dns/DnsNameResolverException.java
* /opt/cola/permits/1824197291_1697526511.4534771/0/netty-resolver-dns-4-1-100-final-sources-
jar/io/netty/resolver/dns/SequentialDnsServerAddressStream.java
* /opt/cola/permits/1824197291_1697526511.4534771/0/netty-resolver-dns-4-1-100-final-sources-
jar/io/netty/resolver/dns/DnsQueryContextManager.java
* /opt/cola/permits/1824197291_1697526511.4534771/0/netty-resolver-dns-4-1-100-final-sources-
jar/io/netty/resolver/dns/DefaultDnsServerAddresses.java
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jar/io/netty/resolver/dns/DatagramDnsQueryContext.java
* /opt/cola/permits/1824197291_1697526511.4534771/0/netty-resolver-dns-4-1-100-final-sources-
jar/io/netty/resolver/dns/PreferredAddressTypeComparator.java
*
/opt/cola/permits/1824197291_1697526511.4534771/0/netty-resolver-dns-4-1-100-final-sources-
jar/io/netty/resolver/dns/TcpDnsQueryContext.java
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* /opt/cola/permits/1824197291_1697526511.4534771/0/netty-resolver-dns-4-1-100-final-sources-
jar/io/netty/resolver/dns/package-info.java
*
/opt/cola/permits/1824197291_1697526511.4534771/0/netty-resolver-dns-4-1-100-final-sources-
jar/io/netty/resolver/dns/DnsResolveContext.java
* /opt/cola/permits/1824197291_1697526511.4534771/0/netty-resolver-dns-4-1-100-final-sources-
jar/io/netty/resolver/dns/DnsQueryContext.java
* /opt/cola/permits/1824197291_1697526511.4534771/0/netty-resolver-dns-4-1-100-final-sources-
jar/io/netty/resolver/dns/DnsAddressResolverGroup.java
* /opt/cola/permits/1824197291_1697526511.4534771/0/netty-resolver-dns-4-1-100-final-sources-
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* /opt/cola/permits/1824197347_1697526480.4248974/0/netty-codec-http-4-1-100-final-sources-
jar/io/netty/handler/codec/http/CombinedHttpHeaders.java
*
/opt/cola/permits/1824197347_1697526480.4248974/0/netty-codec-http-4-1-100-final-sources-
jar/io/netty/handler/codec/http/HttpUtil.java
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jar/io/netty/handler/codec/http/cookie/ClientCookieEncoder.java
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jar/io/netty/handler/codec/rtsp/RtspEncoder.java
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Upstream-Contact: Yann Collet <[Cyan4973@github.com](mailto:Cyan4973@github.com)>

Source: <https://github.com/lz4/lz4>

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Jean-loup Gailly      Mark Adler  
jloup@gzip.org      madler@alumni.caltech.edu

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basecvt.pod

gcd.pod

invmod.pod

isprime.pod

lap.pod

mpi-test.pod

prime.txt

prng.pod

# This file contains a list of people who've made non-trivial  
# contribution to the Google C++ Testing Framework project. People  
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# here. Please keep the list sorted by first names.

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# 1.796 ca-certificates 2023.2.60\_v7.0.306-72.el7\_9

## 1.796.1 Available under license :

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\* /opt/cola/permits/1828010211\_1697890214.5470614/0/ca-certificates-2023.2.60\_v7.0.306-72.el7\_9.src.rpm-cosi-expand-archive-byEyruxa/ca-certificates.spec

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////

ca-legacy(8)

=====

:doctype: manpage

:man source: ca-legacy

NAME

----

ca-legacy - Manage the system configuration for legacy CA certificates

SYNOPSIS

-----

\*ca-legacy\* ['COMMAND']

DESCRIPTION



-----

ca-legacy(8) is used to include or exclude a set of legacy Certificate Authority (CA) certificates in the system's list of trusted CA certificates.

The list of CA certificates and trust flags included in the ca-certificates package are based on the decisions made by Mozilla.org according to the Mozilla CA policy.

Occasionally, removal or distrust decisions made by Mozilla.org might be incompatible with the requirements or limitations of some applications that also use the CA certificates list in the Linux environment.

The ca-certificates package might keep some CA certificates included and trusted by default, as long as it is seen necessary by the maintainers, despite the fact that they have been removed by Mozilla. These certificates are called legacy CA certificates.

The general requirements to keep legacy CA certificates included and trusted might change over time, for example if functional limitations of software packages have been resolved. Future versions of the ca-certificates package might reduce the set of legacy CA certificates that are included and trusted by default.

The ca-legacy(8) command can be used to override the default behaviour.

The mechanisms to individually trust or distrust CA certificates as described in update-ca-trust(8) still apply.

## COMMANDS

-----

**\*check\*::**

The current configuration will be shown.

**\*default\*::**

Configure the system to use the default configuration, as recommended by the package maintainers.

**\*disable\*::**

Configure the system to explicitly disable legacy CA certificates. Using this configuration, the system will use the set of included and trusted CA certificates as released by Mozilla.

**\*install\*::**

The configuration file will be read and the system configuration will be set accordingly. This command is executed automatically during upgrades of the ca-certificates package.

## FILES

-----

/etc/pki/ca-trust/ca-legacy.conf::

A configuration file that will be used and modified by the ca-legacy command.

The contents of the configuration file will be read on package upgrades.

## AUTHOR

-----

Written by Kai Engert.

Found in path(s):

\* /opt/cola/permits/1828010211\_1697890214.5470614/0/ca-certificates-2023.2.60\_v7.0.306-72.el7\_9.src.rpm-cosi-expand-archive-byEyruxa/ca-legacy.8.txt

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////

update-ca-trust(8)

=====

:doctype: manpage

:man source: update-ca-trust

## NAME

----

update-ca-trust - manage consolidated and dynamic configuration of CA certificates and associated trust

## SYNOPSIS

-----

\*update-ca-trust\* ['COMMAND']

## DESCRIPTION

-----

update-ca-trust(8) is used to manage a consolidated and dynamic configuration

feature of Certificate Authority (CA) certificates and associated trust.

The feature is available for new applications that read the consolidated configuration files found in the `/etc/pki/ca-trust/extracted` directory or that load the PKCS#11 module `p11-kit-trust.so`

Parts of the new feature are also provided in a way to make it useful for legacy applications.

Many legacy applications expect CA certificates and trust configuration in a fixed location, contained in files with particular path and name, or by referring to a classic PKCS#11 trust module provided by the NSS cryptographic library.

The dynamic configuration feature provides functionally compatible replacements for classic configuration files and for the classic NSS trust module named `libnssckbi`.

In order to enable legacy applications, that read the classic files or access the classic module, to make use of the new consolidated and dynamic configuration feature, the classic filenames have been changed to symbolic links. The symbolic links refer to dynamically created and consolidated output stored below the `/etc/pki/ca-trust/extracted` directory hierarchy.

The output is produced using the `'update-ca-trust'` command (without parameters), or using the `'update-ca-trust extract'` command. In order to produce the output, a flexible set of source configuration is read, as described in section `<<sourceconf,SOURCE CONFIGURATION>>`.

In addition, the classic PKCS#11 module is replaced with a new PKCS#11 module (`p11-kit-trust.so`) that dynamically reads the same source configuration.

`[[sourceconf]]`

SOURCE CONFIGURATION

-----

The dynamic configuration feature uses several source directories that will be scanned for any number of source files. \*It is important to select the correct subdirectory for adding files, as the subdirectory defines how contained certificates will be trusted or distrusted, and which file formats are read.\*

Files in \*subdirectories below the directory hierarchy `/usr/share/pki/ca-trust-source/*` contain CA certificates and trust settings in the PEM file format. The trust settings found here will be interpreted with a \*low priority\*.

Files in \*subdirectories below the directory hierarchy /etc/pki/ca-trust/source/\* contain CA certificates and trust settings in the PEM file format. The trust settings found here will be interpreted with a \*high priority\*.

.You may use the following rules of thumb to decide, whether your configuration files should be added to the /etc or rather to the /usr directory hierarchy:

\* If you are manually adding a configuration file to a system, you probably want it to override any other default configuration, and you most likely should add it to the respective subdirectory in the /etc hierarchy.

\* If you are creating a package that provides additional root CA certificates, that is intended for distribution to several computer systems, but you still want to allow the administrator to override your list, then your package should add your files to the respective subdirectory in the /usr hierarchy.

\* If you are creating a package that is supposed to override the default system trust settings, that is intended for distribution to several computer systems, then your package should install the files to the respective subdirectory in the /etc hierarchy.

.\*QUICK HELP 1\*: To add a certificate in the simple PEM or DER file formats to the list of CAs trusted on the system:

- \* add it as a new file to directory /etc/pki/ca-trust/source/anchors/
- \* run 'update-ca-trust extract'

.\*QUICK HELP 2\*: If your certificate is in the extended BEGIN TRUSTED file format (which may contain distrust/blacklist trust flags, or trust flags for usages other than TLS) then:

- \* add it as a new file to directory /etc/pki/ca-trust/source/
- \* run 'update-ca-trust extract'

.In order to offer simplicity and flexibility, the way certificate files are treated depends on the subdirectory they are installed to.

- \* simple trust anchors subdirectory: /usr/share/pki/ca-trust-source/anchors/ or /etc/pki/ca-trust/source/anchors/
- \*
- \* simple blacklist (distrust) subdirectory: /usr/share/pki/ca-trust-source/blacklist/ or /etc/pki/ca-trust/source/blacklist/
- \* extended format directory: /usr/share/pki/ca-trust-source/ or /etc/pki/ca-trust/source/

.In the main directories /usr/share/pki/ca-trust-source/ or /etc/pki/ca-trust/source/ you may install one or multiple files in the following file formats:

\* certificate files that include trust flags, in the BEGIN/END TRUSTED CERTIFICATE file format (any file name), which have been created using the openssl x509 tool and the -adject -addtrust options.

Bundle files with multiple certificates are supported.

\* files in the p11-kit file format using the .p11-kit file name extension, which can (e.g.) be used to distrust certificates based on serial number and issuer name, without having the full certificate available.

(This is currently an undocumented format, to be extended later.)

For examples of the supported formats, see the files shipped with the ca-certificates package.)

\* certificate files without trust flags in either the DER file format or in the PEM (BEGIN/END CERTIFICATE) file format (any file name). Such files will be added with neutral trust, neither trusted nor distrusted.

They will simply be known to the system, which might be helpful to assist cryptographic software in constructing chains of certificates.

(If you want a CA certificate in these file formats to be trusted, you should remove it from this directory and move it to the ./anchors subdirectory instead.)

In the anchors subdirectories /usr/share/pki/ca-trust-source/anchors/ or /etc/pki/ca-trust/source/anchors/ you may install one or multiple certificates in either the DER file format or in the PEM (BEGIN/END CERTIFICATE) file format.

Each certificate will be treated as \*trusted\* for all purposes.

In the blacklist subdirectories /usr/share/pki/ca-trust-source/blacklist/ or /etc/pki/ca-trust/source/blacklist/ you may install

one or multiple certificates in either the DER file format or in the PEM (BEGIN/END CERTIFICATE) file format.

Each certificate will be treated as \*distrusted\* for all purposes.

Please refer to the x509(1) manual page for the documentation of the BEGIN/END CERTIFICATE and BEGIN/END TRUSTED CERTIFICATE file formats.

Applications that rely on a static file for a list of trusted CAs may load one of the files found in the /etc/pki/ca-trust/extracted directory. After modifying any file in the /usr/share/pki/ca-trust-source/ or /etc/pki/ca-trust/source/ directories or in any of their subdirectories, or after adding a file, it is necessary to run the 'update-ca-trust extract' command, in order to update the consolidated files in /etc/pki/ca-trust/extracted/ .

Applications that load the classic PKCS#11 module using filename libnssckbi.so (which has been converted into a symbolic link pointing to the new module) and any application capable of loading PKCS#11 modules and loading p11-kit-trust.so, will benefit from the dynamically merged set of certificates and trust information stored in the /usr/share/pki/ca-trust-source/ and /etc/pki/ca-trust/source/ directories.

[[extractconf]]

EXTRACTED CONFIGURATION

-----

The directory /etc/pki/ca-trust/extracted/ contains generated CA certificate bundle files which are created and updated, based on the <<sourceconf,SOURCE CONFIGURATION>> by running the 'update-ca-trust extract' command.

If your application isn't able to load the PKCS#11 module p11-kit-trust.so, then you can use these files in your application to load a list of global root CA certificates.

Please never manually edit the files stored in this directory, because your changes will be lost and the files automatically overwritten, each time the 'update-ca-trust extract' command gets executed.

In order to install new trusted or distrusted certificates, please rather install them in the respective subdirectory below the /usr/share/pki/ca-trust-source/ or /etc/pki/ca-trust/source/ directories, as described in the <<sourceconf,SOURCE CONFIGURATION>> section.

The directory /etc/pki/ca-trust/extracted/java/ contains a CA certificate bundle in the java keystore file format. Distrust information cannot be represented in this file format, and distrusted certificates are missing from these files. File cacerts contains CA certificates trusted for TLS server authentication.

The directory /etc/pki/ca-trust/extracted/openssl/ contains CA certificate bundle files in the extended BEGIN/END TRUSTED CERTIFICATE file format, as described in the x509(1) manual page. File ca-bundle.trust.crt contains the full set of all trusted or distrusted certificates, including the associated trust flags.

The directory /etc/pki/ca-trust/extracted/pem/ contains CA certificate bundle files in the simple BEGIN/END CERTIFICATE file format, as described in the x509(1) manual page. Distrust information cannot be represented in this file format, and distrusted certificates are missing from these files. File tls-ca-bundle.pem contains CA certificates trusted for TLS server authentication. File email-ca-bundle.pem contains CA certificates trusted for E-Mail protection. File objsign-ca-bundle.pem contains CA certificates trusted for code signing.

## COMMANDS

-----

(absent/empty command)::

Same as the \*extract\* command described below. (However, the command may print fewer warnings, as this command is being run during rpm package installation, where non-fatal status output is undesired.)

\*extract\*::

Instruct update-ca-trust to scan the <<sourceconf,SOURCE CONFIGURATION>> and produce updated versions of the consolidated configuration files stored below the /etc/pki/ca-trust/extracted directory hierarchy.

## FILES

-----

/etc/pki/tls/certs/ca-bundle.crt::

Classic filename, file contains a list of CA certificates trusted for TLS server authentication usage, in the simple BEGIN/END CERTIFICATE file format, without distrust information.

This file is a symbolic link that refers to the consolidated output created by the update-ca-trust command.

/etc/pki/tls/certs/ca-bundle.trust.crt::

Classic filename, file contains a list of CA certificates in the extended BEGIN/END TRUSTED CERTIFICATE file format, which includes trust (and/or distrust) flags specific to certificate usage.

This file is a symbolic link that refers to the consolidated output created by the update-ca-trust command.

/etc/pki/java/cacerts::

Classic filename, file contains a list of CA certificates trusted for TLS server authentication usage, in the Java keystore file format, without distrust information.

This file is a symbolic link that refers to the consolidated output created by the update-ca-trust command.

/usr/share/pki/ca-trust-source::

Contains multiple, low priority source configuration files as explained in section <<sourceconf,SOURCE CONFIGURATION>>. Please pay attention to the specific meanings of the respective subdirectories.

/etc/pki/ca-trust/source::

Contains

multiple, high priority source configuration files as explained in section <<sourceconf,SOURCE CONFIGURATION>>. Please pay attention to the specific meanings of the respective subdirectories.

/etc/pki/ca-trust/extracted::

Contains consolidated and automatically generated configuration files for consumption by applications, which are created using the 'update-ca-trust extract' command. Don't edit files in this directory, because they will be overwritten.

See section <<extractconf,EXTRACTED CONFIGURATION>> for additional details.

## AUTHOR

-----

Written by Kai Engert and Stef Walter.

Found in path(s):

\* /opt/cola/permits/1828010211\_1697890214.5470614/0/ca-certificates-2023.2.60\_v7.0.306-72.el7\_9.src.rpm-cosi-expand-archive-byEyruxa/update-ca-trust.8.txt

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#

# certdata.txt

#

# This file contains the object definitions for the certs and other  
# information "built into" NSS.

#

# Object definitions:

#

# Certificates

#

# -- Attribute --            -- type --            -- value --

# CKA\_CLASS                CK\_OBJECT\_CLASS    CKO\_CERTIFICATE

# CKA\_TOKEN                CK\_BBOOL            CK\_TRUE

# CKA\_PRIVATE              CK\_BBOOL            CK\_FALSE

# CKA\_MODIFIABLE           CK\_BBOOL            CK\_FALSE

# CKA\_LABEL                UTF8                (varies)

# CKA\_CERTIFICATE\_TYPE    CK\_CERTIFICATE\_TYPE CKC\_X\_509

# CKA\_SUBJECT              DER+base64          (varies)

# CKA\_ID                    byte array          (varies)

#

  CKA\_ISSUER                DER+base64          (varies)

# CKA\_SERIAL\_NUMBER        DER+base64          (varies)

# CKA\_VALUE                DER+base64          (varies)

# CKA\_NSS\_EMAIL            ASCII7              (unused here)

# CKA\_NSS\_SERVER\_DISTRICT\_AFTER DER+base64          (varies)

# CKA\_NSS\_EMAIL\_DISTRICT\_AFTER DER+base64          (varies)

#

# Trust

#

# -- Attribute --            -- type --            -- value --

# CKA\_CLASS                CK\_OBJECT\_CLASS    CKO\_TRUST

# CKA\_TOKEN                CK\_BBOOL            CK\_TRUE

# CKA\_PRIVATE              CK\_BBOOL            CK\_FALSE

# CKA\_MODIFIABLE           CK\_BBOOL            CK\_FALSE

# CKA\_LABEL                UTF8                (varies)

# CKA\_ISSUER                DER+base64          (varies)

# CKA\_SERIAL\_NUMBER        DER+base64          (varies)

# CKA\_CERT\_HASH            binary+base64      (varies)

# CKA\_EXPIRES              CK\_DATE

(not used here)

# CKA\_TRUST\_DIGITAL\_SIGNATURE CK\_TRUST            (varies)

# CKA\_TRUST\_NON\_REPUDIATION CK\_TRUST            (varies)

# CKA\_TRUST\_KEY\_ENCIPHERMENT CK\_TRUST            (varies)

# CKA\_TRUST\_DATA\_ENCIPHERMENT CK\_TRUST            (varies)



```

# CKA_TRUST_KEY_AGREEMENT CK_TRUST (varies)
# CKA_TRUST_KEY_CERT_SIGN CK_TRUST (varies)
# CKA_TRUST_CRL_SIGN CK_TRUST (varies)
# CKA_TRUST_SERVER_AUTH CK_TRUST (varies)
# CKA_TRUST_CLIENT_AUTH CK_TRUST (varies)
# CKA_TRUST_CODE_SIGNING CK_TRUST (varies)
# CKA_TRUST_EMAIL_PROTECTION CK_TRUST (varies)
# CKA_TRUST_IPSEC_END_SYSTEM CK_TRUST (varies)
# CKA_TRUST_IPSEC_TUNNEL CK_TRUST (varies)
# CKA_TRUST_IPSEC_USER CK_TRUST (varies)
# CKA_TRUST_TIME_STAMPING CK_TRUST (varies)
# CKA_TRUST_STEP_UP_APPROVED CK_BBOOL (varies)
# (other
trust attributes can be defined)
#

#
# The object to tell NSS that this is a root list and we don't
# have to go looking for others.
#
BEGINDATA
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_BUILTIN_ROOT_LIST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Mozilla Builtin Roots"

#
# Certificate "GlobalSign Root CA"
#
# Issuer: CN=GlobalSign Root CA,OU=Root CA,O=GlobalSign nv-sa,C=BE
# Serial Number:04:00:00:00:00:01:15:4b:5a:c3:94
# Subject: CN=GlobalSign Root CA,OU=Root CA,O=GlobalSign nv-sa,C=BE
# Not Valid Before: Tue Sep 01 12:00:00 1998
# Not Valid After : Fri Jan 28 12:00:00 2028
# Fingerprint (SHA-256):
EB:D4:10:40:E4:BB:3E:C7:42:C9:E3:81:D3:1E:F2:A4:1A:48:B6:68:5C:96:E7:CE:F3:C1:DF:6C:D4:33:1C:99
# Fingerprint (SHA1): B1:BC:96:8B:D4:F4:9D:62:2A:A8:9A:81:F2:15:01:52:A4:1D:82:9C
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "GlobalSign
Root CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\127\061\013\060\011\006\003\125\004\006\023\002\102\105\061
\031\060\027\006\003\125\004\012\023\020\107\154\157\142\141\154

```

\123\151\147\156\040\156\166\055\163\141\061\020\060\016\006\003  
\125\004\013\023\007\122\157\157\164\040\103\101\061\033\060\031  
\006\003\125\004\003\023\022\107\154\157\142\141\154\123\151\147  
\156\040\122\157\157\164\040\103\101

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\127\061\013\060\011\006\003\125\004\006\023\002\102\105\061  
\031\060\027\006\003\125\004\012\023\020\107\154\157\142\141\154  
\123\151\147\156\040\156\166\055\163\141\061\020\060\016\006\003  
\125\004\013\023\007\122\157\157\164\040\103\101\061\033\060\031  
\006\003\125\004\003\023\022\107\154\157\142\141\154\123\151\147  
\156\040\122\157\157\164\040\103\101

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\013\004\000\000\000\000\001\025\113\132\303\224

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\165\060\202\002\135\240\003\002\001\002\002\013\004  
\000\000\000\000\001\025\113\132\303\224\060\015\006\011\052\206  
\110\206\367\015\001\001\005\005\000\060\127\061\013\060\011\006  
\003\125\004\006\023\002\102\105\061\031\060\027\006\003\125\004  
\012\023\020\107\154\157\142\141\154\123\151\147\156\040\156\166  
\055\163\141\061\020\060\016\006\003\125\004\013\023\007\122\157  
\157\164\040\103\101\061\033\060\031\006\003\125\004\003\023\022  
\107\154\157\142\141\154\123\151\147\156\040\122\157\157\164\040  
\103\101\060\036\027\015\071\070\060\071\060\061\061\062\060\060  
\060\060\132\027\015\062\070\060\061\062\070\061\062\060\060\060  
\060\132\060\127\061\013\060\011\006\003\125\004\006\023\002\102  
\105\061\031\060\027\006\003\125\004\012\023\020\107\154\157\142  
\141\154\123\151\147\156\040\156\166\055\163\141\061\020\060\016  
\006\003\125\004\013\023\007\122\157\157\164\040\103\101\061\033  
\060\031\006\003\125\004\003\023\022\107\154\157\142\141\154\123  
\151\147\156\040\122\157\157\164\040\103\101\060\202\001\042\060  
\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003\202  
\001\017\000\060\202\001\012\002\202\001\001\000\332\016\346\231  
\215\316\243\343\117\212\176\373\361\213\203\045\153\352\110\037  
\361\052\260\271\225\021\004\275\360\143\321\342\147\146\317\034  
\335\317\033\110\053\356\215\211\216\232\257\051\200\145\253\351  
\307\055\022\313\253\034\114\160\007\241\075\012\060\315\025\215  
\117\370\335\324\214\120\025\034\357\120\356\304\056\367\374\351  
\122\362\221\175\340\155\325\065\060\216\136\103\163\362\101\351  
\325\152\343\262\211\072\126\071\070\157\006\074\210\151\133\052  
\115\305\247\124\270\154\211\314\233\371\074\312\345\375\211\365  
\022\074\222\170\226\326\334\164\156\223\104\141\321\215\307\106  
\262\165\016\206\350\031\212\325\155\154\325\170\026\225\242\351  
\310\012\070\353\362\044\023\117\163\124\223\023\205\072\033\274  
\036\064\265\213\005\214\271\167\213\261\333\037\040\221\253\011

\123\156\220\316\173\067\164\271\160\107\221\042\121\143\026\171  
\256\261\256\101\046\010\310\031\053\321\106\252\110\326\144\052  
\327\203\064\377\054\052\301\154\031\103\112\007\205\347\323\174  
\366\041\150\357\352\362\122\237\177\223\220\317\002\003\001\000  
\001\243\102\060\100\060\016\006\003\125\035\017\001\001\377\004  
\004\003\002\001\006\060\017\006\003\125\035\023\001\001\377\004  
\005\060\003\001\001\377\060\035\006\003\125\035\016\004\026\004  
\024\140\173\146\032\105\015\227\312\211\120\057\175\004\315\064  
\250\377\374\375\113\060\015\006\011\052\206\110\206\367\015\001  
\001\005\005\000\003\202\001\001\000\326\163\347\174\117\166\320  
\215\277\354\272\242\276\064\305\050\062\265\174\374\154\234\054  
\053\275\011\236\123\277\153\136\252\021\110\266\345\010\243\263  
\312\075\141\115\323\106\011\263\076\303\240\343\143\125\033\362  
\272\357\255\071\341\103\271\070\243\346\057\212\046\073\357\240  
\120\126\371\306\012\375\070\315\304\013\160\121\224\227\230\004  
\337\303\137\224\325\025\311\024\101\234\304\135\165\144\025\015  
\377\125\060\354\206\217\377\015\357\054\271\143\106\366\252\374  
\337\274\151\375\056\022\110\144\232\340\225\360\246\357\051\217  
\001\261\025\265\014\035\245\376\151\054\151\044\170\036\263\247  
\034\161\142\356\312\310\227\254\027\135\212\302\370\107\206\156  
\052\304\126\061\225\320\147\211\205\053\371\154\246\135\106\235  
\014\252\202\344\231\121\335\160\267\333\126\075\141\344\152\341  
\134\326\366\376\075\336\101\314\007\256\143\122\277\123\123\364  
\053\351\307\375\266\367\202\137\205\322\101\030\333\201\263\004  
\034\305\037\244\200\157\025\040\311\336\014\210\012\035\326\146  
\125\342\374\110\311\051\046\151\340

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "GlobalSign Root CA"

# Issuer: CN=GlobalSign Root CA,OU=Root CA,O=GlobalSign nv-sa,C=BE

# Serial Number:04:00:00:00:00:01:15:4b:5a:c3:94

# Subject: CN=GlobalSign Root CA,OU=Root CA,O=GlobalSign nv-sa,C=BE

# Not Valid Before: Tue Sep 01 12:00:00 1998

#

Not Valid After : Fri Jan 28 12:00:00 2028

# Fingerprint (SHA-256):

EB:D4:10:40:E4:BB:3E:C7:42:C9:E3:81:D3:1E:F2:A4:1A:48:B6:68:5C:96:E7:CE:F3:C1:DF:6C:D4:33:1C:99

# Fingerprint (SHA1): B1:BC:96:8B:D4:F4:9D:62:2A:A8:9A:81:F2:15:01:52:A4:1D:82:9C

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "GlobalSign Root CA"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\261\274\226\213\324\364\235\142\052\250\232\201\362\025\001\122

\244\035\202\234

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\076\105\122\025\011\121\222\341\267\135\067\237\261\207\051\212

END

CKA\_ISSUER MULTILINE\_OCTAL

\060\127\061\013\060\011\006\003\125\004\006\023\002\102\105\061

\031\060\027\006\003\125\004\012\023\020\107\154\157\142\141\154

\123\151\147\156\040\156\166\055\163\141\061\020\060\016\006\003

\125\004\013\023\007\122\157\157\164\040\103\101\061\033\060\031

\006\003\125\004\003\023\022\107\154\157\142\141\154\123\151\147

\156\040\122\157\157\164\040\103\101

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\013\004\000\000\000\000\001\025\113\132\303\224

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "Verisign Class 1 Public Primary Certification Authority - G3"

#

# Issuer: CN=VeriSign Class 1 Public Primary Certification Authority - G3,OU="(c) 1999 VeriSign, Inc. - For authorized use only",OU=VeriSign Trust Network,O="VeriSign, Inc.",C=US

# Serial Number:00:8b:5b:75:56:84:54:85:0b:00:cf:af:38:48:ce:b1:a4

# Subject: CN=VeriSign Class 1 Public Primary Certification Authority - G3,OU="(c) 1999 VeriSign, Inc. - For authorized use only",OU=VeriSign Trust Network,O="VeriSign, Inc.",C=US

# Not Valid Before: Fri Oct 01 00:00:00 1999

# Not Valid After : Wed Jul 16 23:59:59 2036

# Fingerprint (SHA-256):

CB:B5:AF:18:5E:94:2A:24:02:F9:EA:CB:C0:ED:5B:B8:76:EE:A3:C1:22:36:23:D0:04:47:E4:F3:BA:55:4B:65

#

Fingerprint (SHA1): 20:42:85:DC:F7:EB:76:41:95:57:8E:13:6B:D4:B7:D1:E9:8E:46:A5

# For Email Distrust After: Wed Aug 31 00:00:00 2022

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Verisign Class 1 Public Primary Certification Authority - G3"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\201\312\061\013\060\011\006\003\125\004\006\023\002\125\123

\061\027\060\025\006\003\125\004\012\023\016\126\145\162\151\123

\151\147\156\054\040\111\156\143\056\061\037\060\035\006\003\125

\004\013\023\026\126\145\162\151\123\151\147\156\040\124\162\165  
\163\164\040\116\145\164\167\157\162\153\061\072\060\070\006\003  
\125\004\013\023\061\050\143\051\040\061\071\071\071\040\126\145  
\162\151\123\151\147\156\054\040\111\156\143\056\040\055\040\106  
\157\162\040\141\165\164\150\157\162\151\172\145\144\040\165\163  
\145\040\157\156\154\171\061\105\060\103\006\003\125\004\003\023  
\074\126\145\162\151\123\151\147\156\040\103\154\141\163\163\040  
\061\040\120\165\142\154\151\143\040\120\162\151\155\141\162\171  
\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101  
\165\164\150\157\162\151\164\171\040\055\040\107\063

END

CKA\_ID

UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\312\061\013\060\011\006\003\125\004\006\023\002\125\123  
\061\027\060\025\006\003\125\004\012\023\016\126\145\162\151\123  
\151\147\156\054\040\111\156\143\056\061\037\060\035\006\003\125  
\004\013\023\026\126\145\162\151\123\151\147\156\040\124\162\165  
\163\164\040\116\145\164\167\157\162\153\061\072\060\070\006\003  
\125\004\013\023\061\050\143\051\040\061\071\071\071\040\126\145  
\162\151\123\151\147\156\054\040\111\156\143\056\040\055\040\106  
\157\162\040\141\165\164\150\157\162\151\172\145\144\040\165\163  
\145\040\157\156\154\171\061\105\060\103\006\003\125\004\003\023  
\074\126\145\162\151\123\151\147\156\040\103\154\141\163\163\040  
\061\040\120\165\142\154\151\143\040\120\162\151\155\141\162\171  
\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101  
\165\164\150\157\162\151\164\171\040\055\040\107\063

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\021\000\213\133\165\126\204\124\205\013\000\317\257\070\110  
\316\261\244

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\004\032\060\202\003\002\002\021\000\213\133\165\126\204  
\124\205\013\000\317\257\070\110\316\261\244\060\015\006\011\052  
\206\110\206\367\015\001\001\005\005\000\060\201\312\061\013\060  
\011\006\003\125\004\006\023\002\125\123\061\027\060\025\006\003  
\125\004\012\023\016\126\145\162\151\123\151\147\156\054\040\111  
\156\143\056\061\037\060\035\006\003\125\004\013\023\026\126\145  
\162\151\123\151\147\156\040\124\162\165\163\164\040\116\145\164  
\167\157\162\153\061\072\060\070\006\003\125\004\013\023\061\050  
\143\051\040\061\071\071\071\040\126\145\162\151\123\151\147\156  
\054\040\111\156\143\056\040\055\040\106\157\162\040\141\165\164  
\150\157\162\151\172\145\144\040\165\163\145\040\157\156\154\171  
\061\105\060\103\006\003\125\004\003\023\074\126\145\162\151\123  
\151\147\156\040\103\154\141\163\163\040\061\040\120\165\142\154  
\151\143\040\120\162\151\155\141\162\171\040\103\145\162\164\151

\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151  
\164\171\040\055\040\107\063\060\036\027\015\071\071\061\060\060  
\061\060\060\060\060\060\060\132\027\015\063\066\060\067\061\066  
\062\063\065\071\065\071\132\060\201\312\061\013\060\011\006\003  
\125\004\006\023\002\125\123\061\027\060\025\006\003\125\004\012  
\023\016\126\145\162\151\123\151\147\156\054\040\111\156\143\056  
\061\037\060\035\006\003\125\004\013\023\026\126\145\162\151\123  
\151\147\156\040\124\162\165\163\164\040\116\145\164\167\157\162  
\153\061\072\060\070\006\003\125\004\013\023\061\050\143\051\040  
\061\071\071\071\040\126\145\162\151\123\151\147\156\054\040\111  
\156\143\056\040\055\040\106\157\162\040\141\165\164\150\157\162  
\151\172\145\144\040\165\163\145\040\157\156\154\171\061\105\060  
\103\006\003\125\004\003\023\074\126\145\162\151\123\151\147\156  
\040\103\154\141\163\163\040\061\040\120\165\142\154\151\143\040  
\120\162\151\155\141\162\171\040\103\145\162\164\151\146\151\143  
\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171\040  
\055\040\107\063\060\202\001\042\060\015\006\011\052\206\110\206  
\367\015\001\001\001\005\000\003\202\001\017\000\060\202\001\012  
\002\202\001\001\000\335\204\324\271\264\371\247\330\363\004\170  
\234\336\075\334\154\023\026\331\172\335\044\121\146\300\307\046  
\131\015\254\006\010\302\224\321\063\037\360\203\065\037\156\033  
\310\336\252\156\025\116\124\047\357\304\155\032\354\013\343\016  
\360\104\245\127\307\100\130\036\243\107\037\161\354\140\366\155  
\224\310\030\071\355\376\102\030\126\337\344\114\111\020\170\116  
\001\166\065\143\022\066\335\146\274\001\004\066\243\125\150\325  
\242\066\011\254\253\041\046\124\006\255\077\312\024\340\254\312  
\255\006\035\225\342\370\235\361\340\140\377\302\177\165\053\114  
\314\332\376\207\231\041\352\272\376\076\124\327\322\131\170\333  
\074\156\317\240\023\000\032\270\047\241\344\276\147\226\312\240  
\305\263\234\335\311\165\236\353\060\232\137\243\315\331\256\170  
\031\077\043\351\134\333\051\275\255\125\310\033\124\214\143\366  
\350\246\352\307\067\022\134\243\051\036\002\331\333\037\073\264  
\327\017\126\107\201\025\004\112\257\203\047\321\305\130\210\301  
\335\366\252\247\243\030\332\150\252\155\021\121\341\277\145\153  
\237\226\166\321\075\002\003\001\000\001\060\015\006\011\052\206  
\110\206\367\015\001\001\005\005\000\003\202\001\001\000\253\146  
\215\327\263\272\307\232\266\346\125\320\005\361\237\061\215\132  
\252\331\252\106\046\017\161\355\245\255\123\126\142\001\107\052  
\104\351\376\077\164\013\023\233\271\364\115\033\262\321\137\262  
\266\322\210\134\263\237\315\313\324\247\331\140\225\204\072\370  
\301\067\035\141\312\347\260\305\345\221\332\124\246\254\061\201  
\256\227\336\315\010\254\270\300\227\200\177\156\162\244\347\151  
\023\225\145\037\304\223\074\375\171\217\004\324\076\117\352\367  
\236\316\315\147\174\117\145\002\377\221\205\124\163\307\377\066  
\367\206\055\354\320\136\117\377\021\237\162\006\326\270\032\361  
\114\015\046\145\342\104\200\036\307\237\343\335\350\012\332\354  
\245\040\200\151\150\241\117\176\341\153\317\007\101\372\203\216  
\274\070\335\260\056\021\261\153\262\102\314\232\274\371\110\042

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\171\112\031\017\262\034\076\040\164\331\152\303\276\362\050\170
\023\126\171\117\155\120\352\033\260\265\127\261\067\146\130\043
\363\334\017\337\012\207\304\357\206\005\325\070\024\140\231\243
\113\336\006\226\161\054\362\333\266\037\244\357\077\356
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER MULTILINE\_OCTAL

```
\062\062\060\070\063\061\060\060\060\060\060\060\132
```

END

# Trust for "Verisign Class 1 Public Primary Certification Authority - G3"

# Issuer: CN=VeriSign Class 1 Public Primary Certification Authority - G3,OU="(c) 1999 VeriSign, Inc. - For authorized use only",OU=VeriSign Trust Network,O="VeriSign, Inc.",C=US

# Serial Number:00:8b:5b:75:56:84:54:85:0b:00:cf:af:38:48:ce:b1:a4

# Subject: CN=VeriSign Class 1 Public Primary Certification Authority - G3,OU="(c) 1999 VeriSign, Inc. - For authorized use only",OU=VeriSign Trust Network,O="VeriSign, Inc.",C=US

# Not Valid Before: Fri Oct 01 00:00:00 1999

# Not Valid After : Wed Jul 16 23:59:59 2036

# Fingerprint (SHA-256):

CB:B5:AF:18:5E:94:2A:24:02:F9:EA:CB:C0:ED:5B:B8:76:EE:A3:C1:22:36:23:D0:04:47:E4:F3:BA:55:4B:65

# Fingerprint (SHA1): 20:42:85:DC:F7:EB:76:41:95:57:8E:13:6B:D4:B7:D1:E9:8E:46:A5

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Verisign Class 1 Public Primary Certification Authority - G3"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\040\102\205\334\367\353\166\101\225\127\216\023\153\324\267\321
\351\216\106\245
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\261\107\274\030\127\321\030\240\170\055\354\161\350\052\225\163
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END

CKA\_ISSUER

MULTILINE\_OCTAL

```
\060\201\312\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\027\060\025\006\003\125\004\012\023\016\126\145\162\151\123
\151\147\156\054\040\111\156\143\056\061\037\060\035\006\003\125
\004\013\023\026\126\145\162\151\123\151\147\156\040\124\162\165
\163\164\040\116\145\164\167\157\162\153\061\072\060\070\006\003
\125\004\013\023\061\050\143\051\040\061\071\071\071\040\126\145
\162\151\123\151\147\156\054\040\111\156\143\056\040\055\040\106
\157\162\040\141\165\164\150\157\162\151\172\145\144\040\165\163
\145\040\157\156\154\171\061\105\060\103\006\003\125\004\003\023
\074\126\145\162\151\123\151\147\156\040\103\154\141\163\163\040
\061\040\120\165\142\154\151\143\040\120\162\151\155\141\162\171
```

\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101  
\165\164\150\157\162\151\164\171\040\055\040\107\063  
END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL  
\002\021\000\213\133\165\126\204\124\205\013\000\317\257\070\110  
\316\261\244  
END

CKA\_TRUST\_SERVER\_AUTH  
CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST  
CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR  
CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST  
CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#  
# Certificate "Verisign Class 2 Public Primary Certification Authority - G3"  
#  
# Issuer: CN=VeriSign Class 2 Public Primary Certification Authority - G3,OU="(c) 1999 VeriSign, Inc. - For  
authorized use only",OU=VeriSign Trust Network,O="VeriSign, Inc.",C=US  
# Serial Number:61:70:cb:49:8c:5f:98:45:29:e7:b0:a6:d9:50:5b:7a  
# Subject: CN=VeriSign Class 2 Public Primary Certification Authority - G3,OU="(c) 1999 VeriSign, Inc. - For  
authorized use only",OU=VeriSign Trust Network,O="VeriSign, Inc.",C=US  
# Not Valid Before: Fri Oct 01 00:00:00 1999  
# Not Valid After : Wed Jul 16 23:59:59 2036  
# Fingerprint (SHA-256):  
92:A9:D9:83:3F:E1:94:4D:B3:66:E8:BF:AE:7A:95:B6:48:0C:2D:6C:6C:2A:1B:E6:5D:42:36:B6:08:FC:A1:BB  
# Fingerprint (SHA1): 61:EF:43:D7:7F:CA:D4:61:51:BC:98:E0:C3:59:12:AF:9F:EB:63:11  
#

For Email Distrust After: Wed Aug 31 00:00:00 2022  
CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE  
CKA\_TOKEN CK\_BBOOL CK\_TRUE  
CKA\_PRIVATE CK\_BBOOL CK\_FALSE  
CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE  
CKA\_LABEL UTF8 "Verisign Class 2 Public Primary Certification Authority - G3"  
CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509  
CKA\_SUBJECT MULTILINE\_OCTAL

\060\201\312\061\013\060\011\006\003\125\004\006\023\002\125\123  
\061\027\060\025\006\003\125\004\012\023\016\126\145\162\151\123  
\151\147\156\054\040\111\156\143\056\061\037\060\035\006\003\125  
\004\013\023\026\126\145\162\151\123\151\147\156\040\124\162\165  
\163\164\040\116\145\164\167\157\162\153\061\072\060\070\006\003  
\125\004\013\023\061\050\143\051\040\061\071\071\071\040\126\145  
\162\151\123\151\147\156\054\040\111\156\143\056\040\055\040\106  
\157\162\040\141\165\164\150\157\162\151\172\145\144\040\165\163  
\145\040\157\156\154\171\061\105\060\103\006\003\125\004\003\023  
\074\126\145\162\151\123\151\147\156\040\103\154\141\163\163\040  
\062\040\120\165\142\154\151\143\040\120\162\151\155\141\162\171  
\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101  
\165\164\150\157\162\151\164\171\040\055\040\107\063



END

CKA\_ID

UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\312\061\013\060\011\006\003\125\004\006\023\002\125\123  
\061\027\060\025\006\003\125\004\012\023\016\126\145\162\151\123  
\151\147\156\054\040\111\156\143\056\061\037\060\035\006\003\125  
\004\013\023\026\126\145\162\151\123\151\147\156\040\124\162\165  
\163\164\040\116\145\164\167\157\162\153\061\072\060\070\006\003  
\125\004\013\023\061\050\143\051\040\061\071\071\071\040\126\145  
\162\151\123\151\147\156\054\040\111\156\143\056\040\055\040\106  
\157\162\040\141\165\164\150\157\162\151\172\145\144\040\165\163  
\145\040\157\156\154\171\061\105\060\103\006\003\125\004\003\023  
\074\126\145\162\151\123\151\147\156\040\103\154\141\163\163\040  
\062\040\120\165\142\154\151\143\040\120\162\151\155\141\162\171  
\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101  
\165\164\150\157\162\151\164\171\040\055\040\107\063

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\020\141\160\313\111\214\137\230\105\051\347\260\246\331\120  
\133\172

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\004\031\060\202\003\001\002\020\141\160\313\111\214\137  
\230\105\051\347\260\246\331\120\133\172\060\015\006\011\052\206  
\110\206\367\015\001\001\005\005\000\060\201\312\061\013\060\011  
\006\003\125\004\006\023\002\125\123\061\027\060\025\006\003\125  
\004\012\023\016\126\145\162\151\123\151\147\156\054\040\111\156  
\143\056\061\037\060\035\006\003\125\004\013\023\026\126\145\162  
\151\123\151\147\156\040\124\162\165\163\164\040\116\145\164\167  
\157\162\153\061\072\060\070\006\003\125\004\013\023\061\050\143  
\051\040\061\071\071\071\040\126\145\162\151\123\151\147\156\054  
\040\111\156\143\056\040\055\040\106\157\162\040\141\165\164\150  
\157\162\151\172\145\144\040\165\163\145\040\157\156\154\171\061  
\105\060\103\006\003\125\004\003\023\074\126\145\162\151\123\151  
\147\156\040\103\154\141\163\163\040\062\040\120\165\142\154\151  
\143\040\120\162\151\155\141\162\171\040\103\145\162\164\151\146  
\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164  
\171\040\055\040\107\063\060\036\027\015\071\071\061\060\060\061  
\060\060\060\060\060\060\132\027\015\063\066\060\067\061\066\062  
\063\065\071\065\071\132\060\201\312\061\013\060\011\006\003\125  
\004\006\023\002\125\123\061\027\060\025\006\003\125\004\012\023  
\016\126\145\162\151\123\151\147\156\054\040\111\156\143\056\061  
\037\060\035\006\003\125\004\013\023\026\126\145\162\151\123\151  
\147\156\040\124\162\165\163\164\040\116\145\164\167\157\162\153  
\061\072\060\070\006\003\125\004\013\023\061\050\143\051\040\061  
\071\071\071\040\126\145\162\151\123\151\147\156\054\040\111\156

\143\056\040\055\040\106\157\162\040\141\165\164\150\157\162\151  
\172\145\144\040\165\163\145\040\157\156\154\171\061\105\060\103  
\006\003\125\004\003\023\074\126\145\162\151\123\151\147\156\040  
\103\154\141\163\163\040\062\040\120\165\142\154\151\143\040\120  
\162\151\155\141\162\171\040\103\145\162\164\151\146\151\143\141  
\164\151\157\156\040\101\165\164\150\157\162\151\164\171\040\055  
\040\107\063\060\202\001\042\060\015\006\011\052\206\110\206\367  
\015\001\001\001\005\000\003\202\001\017\000\060\202\001\012\002  
\202\001\001\000\257\012\015\302\325\054\333\147\271\055\345\224  
\047\335\245\276\340\260\115\217\263\141\126\074\326\174\303\364  
\315\076\206\313\242\210\342\341\330\244\151\305\265\342\277\301  
\246\107\120\136\106\071\213\325\226\272\265\157\024\277\020\316  
\047\023\236\005\107\233\061\172\023\330\037\331\323\002\067\213  
\255\054\107\360\216\201\006\247\015\060\014\353\367\074\017\040  
\035\334\162\106\356\245\002\310\133\303\311\126\151\114\305\030  
\301\221\173\013\325\023\000\233\274\357\303\110\076\106\140\040  
\205\052\325\220\266\315\213\240\314\062\335\267\375\100\125\262  
\120\034\126\256\314\215\167\115\307\040\115\247\061\166\357\150  
\222\212\220\036\010\201\126\262\255\151\243\122\320\313\034\304  
\043\075\037\231\376\114\350\026\143\216\306\010\216\366\061\366  
\322\372\345\166\335\265\034\222\243\111\315\315\001\315\150\315  
\251\151\272\243\353\035\015\234\244\040\246\301\240\305\321\106  
\114\027\155\322\254\146\077\226\214\340\204\324\066\377\042\131  
\305\371\021\140\250\137\004\175\362\032\366\045\102\141\017\304  
\112\270\076\211\002\003\001\000\001\060\015\006\011\052\206\110  
\206\367\015\001\001\005\005\000\003\202\001\001\000\064\046\025  
\074\300\215\115\103\111\035\275\351\041\222\327\146\234\267\336  
\305\270\320\344\135\137\166\042\300\046\371\204\072\072\371\214  
\265\373\354\140\361\350\316\004\260\310\335\247\003\217\060\363  
\230\337\244\346\244\061\337\323\034\013\106\334\162\040\077\256  
\356\005\074\244\063\077\013\071\254\160\170\163\113\231\053\337  
\060\302\124\260\250\073\125\241\376\026\050\315\102\275\164\156  
\200\333\047\104\247\316\104\135\324\033\220\230\015\036\102\224  
\261\000\054\004\320\164\243\002\005\042\143\143\315\203\265\373  
\301\155\142\153\151\165\375\135\160\101\271\365\277\174\337\276  
\301\062\163\042\041\213\130\201\173\025\221\172\272\343\144\110  
\260\177\373\066\045\332\225\320\361\044\024\027\335\030\200\153  
\106\043\071\124\365\216\142\011\004\035\224\220\246\233\346\045  
\342\102\105\252\270\220\255\276\010\217\251\013\102\030\224\317  
\162\071\341\261\103\340\050\317\267\347\132\154\023\153\111\263  
\377\343\030\174\211\213\063\135\254\063\327\247\371\332\072\125  
\311\130\020\371\252\357\132\266\317\113\113\337\052

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER MULTILINE\_OCTAL

\062\062\060\070\063\061\060\060\060\060\060\060\132

END

# Trust for "Verisign Class 2 Public Primary Certification Authority - G3"

# Issuer: CN=VeriSign Class 2 Public Primary Certification Authority - G3,OU="(c) 1999 VeriSign, Inc. - For authorized use only",OU=VeriSign Trust Network,O="VeriSign, Inc.",C=US

# Serial Number:61:70:cb:49:8c:5f:98:45:29:e7:b0:a6:d9:50:5b:7a

#

Subject: CN=VeriSign Class 2 Public Primary Certification Authority - G3,OU="(c) 1999 VeriSign, Inc. - For authorized use only",OU=VeriSign Trust Network,O="VeriSign, Inc.",C=US

# Not Valid Before: Fri Oct 01 00:00:00 1999

# Not Valid After : Wed Jul 16 23:59:59 2036

# Fingerprint (SHA-256):

92:A9:D9:83:3F:E1:94:4D:B3:66:E8:BF:AE:7A:95:B6:48:0C:2D:6C:6C:2A:1B:E6:5D:42:36:B6:08:FC:A1:BB

# Fingerprint (SHA1): 61:EF:43:D7:7F:CA:D4:61:51:BC:98:E0:C3:59:12:AF:9F:EB:63:11

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Verisign Class 2 Public Primary Certification Authority - G3"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\141\357\103\327\177\312\324\141\121\274\230\340\303\131\022\257  
\237\353\143\021

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\370\276\304\143\042\311\250\106\164\213\270\035\036\112\053\366

END

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\312\061\013\060\011\006\003\125\004\006\023\002\125\123  
\061\027\060\025\006\003\125\004\012\023\016\126\145\162\151\123  
\151\147\156\054\040\111\156\143\056\061\037\060\035\006\003\125  
\004\013\023\026\126\145\162\151\123\151\147\156\040\124\162\165  
\163\164\040\116\145\164\167\157\162\153\061\072\060\070\006\003  
\125\004\013\023\061\050\143\051\040\061\071\071\071\040\126\145  
\162\151\123\151\147\156\054\040\111\156\143\056\040\055\040\106  
\157\162\040\141\165\164\150\157\162\151\172\145\144\040\165\163  
\145\040\157\156\154\171\061\105\060\103\006\003\125\004\003\023  
\074\126\145\162\151\123\151\147\156\040\103\154\141\163\163\040  
\062\040\120\165\142\154\151\143\040\120\162\151\155\141\162\171  
\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101  
\165\164\150\157\162\151\164\171\040\055\040\107\063

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\020\141\160\313\111\214\137\230\105\051\347\260\246\331\120  
\133\172

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION

CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR  
CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR  
CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "Entrust.net Premium 2048 Secure Server CA"

#

# Issuer: CN=Entrust.net Certification Authority (2048),OU=(c) 1999 Entrust.net  
Limited,OU=www.entrust.net/CPS\_2048 incorp. by ref. (limits liab.),O=Entrust.net  
# Serial Number: 946069240 (0x3863def8)

# Subject: CN=Entrust.net Certification Authority (2048),OU=(c) 1999 Entrust.net  
Limited,OU=www.entrust.net/CPS\_2048 incorp. by ref. (limits liab.),O=Entrust.net

# Not Valid Before: Fri Dec 24 17:50:51 1999

# Not Valid After : Tue Jul 24 14:15:12 2029

# Fingerprint (SHA-256):

6D:C4:71:72:E0:1C:BC:B0:BF:62:58:0D:89:5F:E2:B8:AC:9A:D4:F8:73:80:1E:0C:10:B9:C8:37:D2:1E:B1:77

# Fingerprint (SHA1): 50:30:06:09:1D:97:D4:F5:AE:39:F7:CB:E7:92:7D:7D:65:2D:34:31

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL

UTF8 "Entrust.net Premium 2048 Secure Server CA"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\201\264\061\024\060\022\006\003\125\004\012\023\013\105\156  
\164\162\165\163\164\056\156\145\164\061\100\060\076\006\003\125  
\004\013\024\067\167\167\167\056\145\156\164\162\165\163\164\056  
\156\145\164\057\103\120\123\137\062\060\064\070\040\151\156\143  
\157\162\160\056\040\142\171\040\162\145\146\056\040\050\154\151  
\155\151\164\163\040\154\151\141\142\056\051\061\045\060\043\006  
\003\125\004\013\023\034\050\143\051\040\061\071\071\071\040\105  
\156\164\162\165\163\164\056\156\145\164\040\114\151\155\151\164  
\145\144\061\063\060\061\006\003\125\004\003\023\052\105\156\164  
\162\165\163\164\056\156\145\164\040\103\145\162\164\151\146\151  
\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171  
\040\050\062\060\064\070\051

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\264\061\024\060\022\006\003\125\004\012\023\013\105\156  
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\004\013\024\067\167\167\167\056\145\156\164\162\165\163\164\056  
\156\145\164\057\103\120\123\137\062\060\064\070\040\151\156\143  
\157\162\160\056\040\142\171\040\162\145\146\056\040\050\154\151  
\155\151\164\163\040\154\151\141\142\056\051\061\045\060\043\006  
\003\125\004\013\023\034\050\143\051\040\061\071\071\071\040\105  
\156\164\162\165\163\164\056\156\145\164\040\114\151\155\151\164

\145\144\061\063\060\061\006\003\125\004\003\023\052\105\156\164  
\162\165\163\164\056\156\145\164\040\103\145\162\164\151\146\151  
\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171  
\040\050\062\060\064\070\051

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\004\070\143\336\370

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\004\052\060\202\003\022\240\003\002\001\002\002\004\070  
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\005\000\060\201\264\061\024\060\022\006\003\125\004\012\023\013  
\105\156\164\162\165\163\164\056\156\145\164\061\100\060\076\006  
\003\125\004\013\024\067\167\167\167\056\145\156\164\162\165\163  
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\156\143\157\162\160\056\040\142\171\040\162\145\146\056\040\050  
\154\151\155\151\164\163\040\154\151\141\142\056\051\061\045\060  
\043\006\003\125\004\013\023\034\050\143\051\040\061\071\071\071  
\040\105\156\164\162\165\163\164\056\156\145\164\040\114\151\155  
\151\164\145\144\061\063\060\061\006\003\125\004\003\023\052\105  
\156\164\162\165\163\164\056\156\145\164\040\103\145\162\164\151  
\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151  
\164\171\040\050\062\060\064\070\051\060\036\027\015\071\071\061  
\062\062\064\061\067\065\060\065\061\132\027\015\062\071\060\067  
\062\064\061\064\061\065\061\062\132\060\201\264\061\024\060\022  
\006\003\125\004\012\023\013\105\156\164\162\165\163\164\056\156  
\145\164\061\100\060\076\006\003\125\004\013\024\067\167\167\167  
\056\145\156\164\162\165\163\164\056\156\145\164\057\103\120\123  
\137\062\060\064\070\040\151\156\143\157\162\160\056\040\142\171  
\040\162\145\146\056\040\050\154\151\155\151\164\163\040\154\151  
\141\142\056\051\061\045\060\043\006\003\125\004\013\023\034\050  
\143\051\040\061\071\071\071\040\105\156\164\162\165\163\164\056  
\156\145\164\040\114\151\155\151\164\145\144\061\063\060\061\006  
\003\125\004\003\023\052\105\156\164\162\165\163\164\056\156\145  
\164\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040  
\101\165\164\150\157\162\151\164\171\040\050\062\060\064\070\051  
\060\202\001\042\060\015\006\011\052\206\110\206\367\015\001\001  
\001\005\000\003\202\001\017\000\060\202\001\012\002\202\001\001  
\000\255\115\113\251\022\206\262\352\243\040\007\025\026\144\052  
\053\113\321\277\013\112\115\216\355\200\166\245\147\267\170\100  
\300\163\102\310\150\300\333\123\053\335\136\270\166\230\065\223  
\213\032\235\174\023\072\016\037\133\267\036\317\345\044\024\036  
\261\201\251\215\175\270\314\153\113\003\361\002\014\334\253\245  
\100\044\000\177\164\224\241\235\010\051\263\210\013\365\207\167  
\235\125\315\344\303\176\327\152\144\253\205\024\206\225\133\227  
\062\120\157\075\310\272\146\014\343\374\275\270\111\301\166\211  
\111\031\375\300\250\275\211\243\147\057\306\237\274\161\031\140

\270\055\351\054\311\220\166\146\173\224\342\257\170\326\145\123  
\135\074\326\234\262\317\051\003\371\057\244\120\262\324\110\316  
\005\062\125\212\375\262\144\114\016\344\230\007\165\333\177\337  
\271\010\125\140\205\060\051\371\173\110\244\151\206\343\065\077  
\036\206\135\172\172\025\275\357\000\216\025\042\124\027\000\220  
\046\223\274\016\111\150\221\277\370\107\323\235\225\102\301\016  
\115\337\157\046\317\303\030\041\142\146\103\160\326\325\300\007  
\341\002\003\001\000\001\243\102\060\100\060\016\006\003\125\035  
\017\001\001\377\004\004\003\002\001\006\060\017\006\003\125\035  
\023\001\001\377\004\005\060\003\001\001\377\060\035\006\003\125  
\035\016\004\026\004\024\125\344\201\321\021\200\276\330\211\271  
\010\243\061\371\241\044\011\026\271\160\060\015\006\011\052\206  
\110\206\367\015\001\001\005\005\000\003\202\001\001\000\073\233  
\217\126\233\060\347\123\231\174\172\171\247\115\227\327\031\225  
\220\373\006\037\312\063\174\106\143\217\226\146\044\372\100\033  
\041\047\312\346\162\163\362\117\376\061\231\375\310\014\114\150  
\123\306\200\202\023\230\372\266\255\332\135\075\361\316\156\366  
\025\021\224\202\014\356\077\225\257\021\253\017\327\057\336\037  
\003\217\127\054\036\311\273\232\032\104\225\353\030\117\246\037  
\315\175\127\020\057\233\004\011\132\204\265\156\330\035\072\341  
\326\236\321\154\171\136\171\034\024\305\343\320\114\223\073\145  
\074\355\337\075\276\246\345\225\032\303\265\031\303\275\136\133  
\273\377\043\357\150\031\313\022\223\047\134\003\055\157\060\320  
\036\266\032\254\336\132\367\321\252\250\047\246\376\171\201\304  
\171\231\063\127\272\022\260\251\340\102\154\223\312\126\336\376  
\155\204\013\010\213\176\215\352\327\230\041\306\363\347\074\171  
\057\136\234\321\114\025\215\341\354\042\067\314\232\103\013\227  
\334\200\220\215\263\147\233\157\110\010\025\126\317\277\361\053  
\174\136\232\166\351\131\220\305\174\203\065\021\145\121

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "Entrust.net Premium 2048 Secure Server CA"

# Issuer: CN=Entrust.net Certification Authority (2048),OU=(c) 1999 Entrust.net Limited,OU=www.entrust.net/CPS\_2048 incorp. by ref. (limits liab.),O=Entrust.net

# Serial Number: 946069240 (0x3863def8)

# Subject: CN=Entrust.net Certification Authority (2048),OU=(c) 1999 Entrust.net Limited,OU=www.entrust.net/CPS\_2048 incorp. by ref. (limits liab.),O=Entrust.net

# Not Valid Before: Fri Dec 24 17:50:51 1999

# Not Valid After : Tue Jul 24 14:15:12 2029

# Fingerprint (SHA-256):

6D:C4:71:72:E0:1C:BC:B0:BF:62:58:0D:89:5F:E2:B8:AC:9A:D4:F8:73:80:1E:0C:10:B9:C8:37:D2:1E:B1:77

# Fingerprint (SHA1): 50:30:06:09:1D:97:D4:F5:AE:39:F7:CB:E7:92:7D:7D:65:2D:34:31

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN

```

CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Entrust.net Premium 2048 Secure Server CA"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\120\060\006\011\035\227\324\365\256\071\367\313\347\222\175\175
\145\055\064\061
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\356\051\061\274\062\176\232\346\350\265\367\121\264\064\161\220
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\264\061\024\060\022\006\003\125\004\012\023\013\105\156
\164\162\165\163\164\056\156\145\164\061\100\060\076\006\003\125
\004\013\024\067\167\167\167\056\145\156\164\162\165\163\164\056
\156\145\164\057\103\120\123\137\062\060\064\070\040\151\156\143
\157\162\160\056\040\142\171\040\162\145\146\056\040\050\154\151
\155\151\164\163\040\154\151\141\142\056\051\061\045\060\043\006
\003\125\004\013\023\034\050\143\051\040\061\071\071\071\040\105
\156\164\162\165\163\164\056\156\145\164\040\114\151\155\151\164
\145\144\061\063\060\061\006\003\125\004\003\023\052\105\156\164
\162\165\163\164\056\156\145\164\040\103\145\162\164\151\146\151
\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171
\040\050\062\060\064\070\051
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\004\070\143\336\370
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "Baltimore CyberTrust Root"
#
# Issuer: CN=Baltimore CyberTrust Root,OU=CyberTrust,O=Baltimore,C=IE
# Serial Number: 33554617 (0x20000b9)
# Subject: CN=Baltimore CyberTrust Root,OU=CyberTrust,O=Baltimore,C=IE
# Not Valid Before: Fri May 12 18:46:00 2000
# Not Valid After : Mon May 12 23:59:00 2025
# Fingerprint (SHA-256):
16:AF:57:A9:F6:76:B0:AB:12:60:95:AA:5E:BA:DE:F2:2A:B3:11:19:D6:44:AC:95:CD:4B:93:DB:F3:F2:6A:EB
# Fingerprint (SHA1): D4:DE:20:D0:5E:66:FC:53:FE:1A:50:88:2C:78:DB:28:52:CA:E4:74
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN

```

```
CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Baltimore CyberTrust Root"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\132\061\013\060\011\006\003\125\004\006\023\002\111\105\061
\022\060\020\006\003\125\004\012\023\011\102\141\154\164\151\155
\157\162\145\061\023\060\021\006\003\125\004\013\023\012\103\171
\142\145\162\124\162\165\163\164\061\042\060\040\006\003\125\004
\003\023\031\102\141\154\164\151\155\157\162\145\040\103\171\142
\145\162\124\162\165\163\164\040\122\157\157\164
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\132\061\013\060\011\006\003\125\004\006\023\002\111\105\061
\022\060\020\006\003\125\004\012\023\011\102\141\154\164\151\155
\157\162\145\061\023\060\021\006\003\125\004\013\023\012\103\171
\142\145\162\124\162\165\163\164\061\042\060\040\006\003\125\004
\003\023\031\102\141\154\164\151\155\157\162\145\040\103\171\142
\145\162\124\162\165\163\164\040\122\157\157\164
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\004\002\000\000\271
END
CKA_VALUE MULTILINE_OCTAL
\060\202\003\167\060\202\002\137\240\003\002\001\002\002\004\002
\000\000\271\060\015\006\011\052\206\110\206\367\015\001\001\005
\005\000\060\132\061\013\060\011\006\003\125\004\006\023\002\111
\105\061\022\060\020\006\003\125\004\012\023\011\102\141\154\164
\151\155\157\162\145\061\023\060\021\006\003\125\004\013\023\012
\103\171\142\145\162\124\162\165\163\164\061\042\060\040\006\003
\125\004\003\023\031\102\141\154\164\151\155\157\162\145\040\103
\171\142\145\162\124\162\165\163\164\040\122\157\157\164\060\036
\027\015\060\060\060\065\061\062\061\070\064\066\060\060\132\027
\015\062\065\060\065\061\062\062\063\065\071\060\060\132\060\132
\061\013\060\011\006\003\125\004\006\023\002\111\105\061\022\060
\020\006\003\125\004\012\023\011\102\141\154\164\151\155\157\162
\145\061\023\060\021\006\003\125\004\013\023\012\103\171\142\145
\162\124\162\165\163\164\061\042\060\040\006\003\125\004\003\023
\031\102\141\154\164\151\155\157\162\145\040\103\171\142\145\162
\124\162\165\163\164\040\122\157\157\164\060\202\001\042\060\015
\006\011\052\206\110\206\367\015\001\001\001\005\000\003\202\001
\017\000\060\202\001\012\002\202\001\001\000\243\004\273\042\253
\230\075\127\350\046\162\232\265\171\324\051\342\341\350\225\200
\261\260\343\133\216\053\051\232\144\337\241\135\355\260\011\005
\155\333\050\056\316\142\242\142\376\264\210\332\022\353\070\353
```



\041\235\300\101\053\001\122\173\210\167\323\034\217\307\272\271  
\210\265\152\011\347\163\350\021\100\247\321\314\312\142\215\055  
\345\217\013\246\120\322\250\120\303\050\352\365\253\045\207\212  
\232\226\034\251\147\270\077\014\325\367\371\122\023\057\302\033  
\325\160\160\360\217\300\022\312\006\313\232\341\331\312\063\172  
\167\326\370\354\271\361\150\104\102\110\023\322\300\302\244\256  
\136\140\376\266\246\005\374\264\335\007\131\002\324\131\030\230  
\143\365\245\143\340\220\014\175\135\262\006\172\363\205\352\353  
\324\003\256\136\204\076\137\377\025\355\151\274\371\071\066\162  
\165\317\167\122\115\363\311\220\054\271\075\345\311\043\123\077  
\037\044\230\041\134\007\231\051\275\306\072\354\347\156\206\072  
\153\227\164\143\063\275\150\030\061\360\170\215\166\277\374\236  
\216\135\052\206\247\115\220\334\047\032\071\002\003\001\000\001  
\243\105\060\103\060\035\006\003\125\035\016\004\026\004\024\345  
\235\131\060\202\107\130\314\254\372\010\124\066\206\173\072\265  
\004\115\360\060\022\006\003\125\035\023\001\001\377\004\010\060  
\006\001\001\377\002\001\003\060\016\006\003\125\035\017\001\001  
\377\004\004\003\002\001\006\060\015\006\011\052\206\110\206\367  
\015\001\001\005\005\000\003\202\001\001\000\205\014\135\216\344  
\157\121\150\102\005\240\335\273\117\047\045\204\003\275\367\144  
\375\055\327\060\343\244\020\027\353\332\051\051\266\171\077\166  
\366\031\023\043\270\020\012\371\130\244\324\141\160\275\004\141  
\152\022\212\027\325\012\275\305\274\060\174\326\351\014\045\215  
\206\100\117\354\314\243\176\070\306\067\021\117\355\335\150\061  
\216\114\322\263\001\164\356\276\165\136\007\110\032\177\160\377  
\026\134\204\300\171\205\270\005\375\177\276\145\021\243\017\300  
\002\264\370\122\067\071\004\325\251\061\172\030\277\240\052\364  
\022\231\367\243\105\202\343\074\136\365\235\236\265\310\236\174  
\056\310\244\236\116\010\024\113\155\375\160\155\153\032\143\275  
\144\346\037\267\316\360\362\237\056\273\033\267\362\120\210\163  
\222\302\342\343\026\215\232\062\002\253\216\030\335\351\020\021  
\356\176\065\253\220\257\076\060\224\172\320\063\075\247\145\017  
\365\374\216\236\142\317\107\104\054\001\135\273\035\265\062\322  
\107\322\070\056\320\376\201\334\062\152\036\265\356\074\325\374  
\347\201\035\031\303\044\102\352\143\071\251

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "Baltimore CyberTrust Root"

# Issuer: CN=Baltimore CyberTrust Root,OU=CyberTrust,O=Baltimore,C=IE

# Serial Number: 33554617

(0x20000b9)

# Subject: CN=Baltimore CyberTrust Root,OU=CyberTrust,O=Baltimore,C=IE

# Not Valid Before: Fri May 12 18:46:00 2000

# Not Valid After : Mon May 12 23:59:00 2025

```

# Fingerprint (SHA-256):
16:AF:57:A9:F6:76:B0:AB:12:60:95:AA:5E:BA:DE:F2:2A:B3:11:19:D6:44:AC:95:CD:4B:93:DB:F3:F2:6A:EB
# Fingerprint (SHA1): D4:DE:20:D0:5E:66:FC:53:FE:1A:50:88:2C:78:DB:28:52:CA:E4:74
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Baltimore CyberTrust Root"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\324\336\040\320\136\146\374\123\376\032\120\210\054\170\333\050
\122\312\344\164
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\254\266\224\245\234\027\340\327\221\122\233\261\227\006\246\344
END
CKA_ISSUER MULTILINE_OCTAL
\060\132\061\013\060\011\006\003\125\004\006\023\002\111\105\061
\022\060\020\006\003\125\004\012\023\011\102\141\154\164\151\155
\157\162\145\061\023\060\021\006\003\125\004\013\023\012\103\171
\142\145\162\124\162\165\163\164\061\042\060\040\006\003\125\004
\003\023\031\102\141\154\164\151\155\157\162\145\040\103\171\142
\145\162\124\162\165\163\164\040\122\157\157\164
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\004\002\000\000\271
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "Entrust Root Certification Authority"
#
# Issuer: CN=Entrust Root Certification Authority,OU="(c) 2006 Entrust, Inc.",OU=www.entrust.net/CPS is
incorporated by reference,O="Entrust, Inc.",C=US
# Serial Number: 1164660820 (0x456b5054)
# Subject: CN=Entrust Root Certification Authority,OU="(c) 2006 Entrust, Inc.",OU=www.entrust.net/CPS is
incorporated by reference,O="Entrust, Inc.",C=US
# Not Valid Before: Mon Nov 27 20:23:42 2006
# Not Valid After : Fri Nov 27 20:53:42 2026
# Fingerprint (SHA-256):
73:C1:76:43:4F:1B:C6:D5:AD:F4:5B:0E:76:E7:27:28:7C:8D:E5:76:16:C1:E6:E6:14:1A:2B:2C:BC:7D:8E:4C
#
Fingerprint (SHA1): B3:1E:B1:B7:40:E3:6C:84:02:DA:DC:37:D4:4D:F5:D4:67:49:52:F9
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE

```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Entrust Root Certification Authority"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\260\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\026\060\024\006\003\125\004\012\023\015\105\156\164\162\165
\163\164\054\040\111\156\143\056\061\071\060\067\006\003\125\004
\013\023\060\167\167\167\056\145\156\164\162\165\163\164\056\156
\145\164\057\103\120\123\040\151\163\040\151\156\143\157\162\160
\157\162\141\164\145\144\040\142\171\040\162\145\146\145\162\145
\156\143\145\061\037\060\035\006\003\125\004\013\023\026\050\143
\051\040\062\060\060\066\040\105\156\164\162\165\163\164\054\040
\111\156\143\056\061\055\060\053\006\003\125\004\003\023\044\105
\156\164\162\165\163\164\040\122\157\157\164\040\103\145\162\164
\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162
\151\164\171
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\260\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\026\060\024\006\003\125\004\012\023\015\105\156\164\162\165
\163\164\054\040\111\156\143\056\061\071\060\067\006\003\125\004
\013\023\060\167\167\167\056\145\156\164\162\165\163\164\056\156
\145\164\057\103\120\123\040\151\163\040\151\156\143\157\162\160
\157\162\141\164\145\144\040\142\171\040\162\145\146\145\162\145
\156\143\145\061\037\060\035\006\003\125\004\013\023\026\050\143
\051\040\062\060\060\066\040\105\156\164\162\165\163\164\054\040
\111\156\143\056\061\055\060\053\006\003\125\004\003\023\044\105
\156\164\162\165\163\164\040\122\157\157\164\040\103\145\162\164
\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162
\151\164\171
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\004\105\153\120\124
END
CKA_VALUE
MULTILINE_OCTAL
\060\202\004\221\060\202\003\171\240\003\002\001\002\002\004\105
\153\120\124\060\015\006\011\052\206\110\206\367\015\001\001\005
\005\000\060\201\260\061\013\060\011\006\003\125\004\006\023\002
\125\123\061\026\060\024\006\003\125\004\012\023\015\105\156\164
\162\165\163\164\054\040\111\156\143\056\061\071\060\067\006\003
\125\004\013\023\060\167\167\167\056\145\156\164\162\165\163\164
\056\156\145\164\057\103\120\123\040\151\163\040\151\156\143\157
\162\160\157\162\141\164\145\144\040\142\171\040\162\145\146\145
\162\145\156\143\145\061\037\060\035\006\003\125\004\013\023\026
```

\050\143\051\040\062\060\060\066\040\105\156\164\162\165\163\164  
\054\040\111\156\143\056\061\055\060\053\006\003\125\004\003\023  
\044\105\156\164\162\165\163\164\040\122\157\157\164\040\103\145  
\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150  
\157\162\151\164\171\060\036\027\015\060\066\061\061\062\067\062  
\060\062\063\064\062\132\027\015\062\066\061\061\062\067\062\060  
\065\063\064\062\132\060\201\260\061\013\060\011\006\003\125\004  
\006\023\002\125\123\061\026\060\024\006\003\125\004\012\023\015  
\105\156\164\162\165\163\164\054\040\111\156\143\056\061\071\060  
\067\006\003\125\004\013\023\060\167\167\167\056\145\156\164\162  
\165\163\164\056\156\145\164\057\103\120\123\040\151\163\040\151  
\156\143\157\162\160\157\162\141\164\145\144\040\142\171\040\162  
\145\146\145\162\145\156\143\145\061\037\060\035\006\003\125\004  
\013\023\026\050\143\051\040\062\060\060\066\040\105\156\164\162  
\165\163\164\054\040\111\156\143\056\061\055\060\053\006\003\125  
\004\003\023\044\105\156\164\162\165\163\164\040\122\157\157\164  
\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101  
\165\164\150\157\162\151\164\171\060\202\001\042\060\015\006\011  
\052\206\110\206\367\015\001\001\001\005\000\003\202\001\017\000  
\060\202\001\012\002\202\001\001\000\266\225\266\103\102\372\306  
\155\052\157\110\337\224\114\071\127\005\356\303\171\021\101\150  
\066\355\354\376\232\001\217\241\070\050\374\367\020\106\146\056  
\115\036\032\261\032\116\306\321\300\225\210\260\311\377\061\213  
\063\003\333\267\203\173\076\040\204\136\355\262\126\050\247\370  
\340\271\100\161\067\305\313\107\016\227\052\150\300\042\225\142  
\025\333\107\331\365\320\053\377\202\113\311\255\076\336\114\333  
\220\200\120\077\011\212\204\000\354\060\012\075\030\315\373\375  
\052\131\232\043\225\027\054\105\236\037\156\103\171\155\014\134  
\230\376\110\247\305\043\107\134\136\375\156\347\036\264\366\150  
\105\321\206\203\133\242\212\215\261\343\051\200\376\045\161\210  
\255\276\274\217\254\122\226\113\252\121\215\344\023\061\031\350  
\116\115\237\333\254\263\152\325\274\071\124\161\312\172\172\177  
\220\335\175\035\200\331\201\273\131\046\302\021\376\346\223\342  
\367\200\344\145\373\064\067\016\051\200\160\115\257\070\206\056  
\236\177\127\257\236\027\256\353\034\313\050\041\137\266\034\330  
\347\242\004\042\371\323\332\330\313\002\003\001\000\001\243\201  
\260\060\201\255\060\016\006\003\125\035\017\001\001\377\004\004  
\003\002\001\006\060\017\006\003\125\035\023\001\001\377\004\005  
\060\003\001\001\377\060\053\006\003\125\035\020\004\044\060\042  
\200\017\062\060\060\066\061\061\062\067\062\060\062\063\064\062  
\132\201\017\062\060\062\066\061\061\062\067\062\060\065\063\064  
\062\132\060\037\006\003\125\035\043\004\030\060\026\200\024\150  
\220\344\147\244\246\123\200\307\206\146\244\361\367\113\103\373  
\204\275\155\060\035\006\003\125\035\016\004\026\004\024\150\220  
\344\147\244\246\123\200\307\206\146\244\361\367\113\103\373\204  
\275\155\060\035\006\011\052\206\110\206\366\175\007\101\000\004  
\020\060\016\033\010\126\067\056\061\072\064\056\060\003\002\004  
\220\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000

```
\003\202\001\001\000\223\324\060\260\327\003\040\052\320\371\143
\350\221\014\005\040\251\137\031\312\173\162\116\324\261\333\320
\226\373\124\132\031\054\014\010\367\262\274\205\250\235\177\155
\073\122\263\052\333\347\324\204\214\143\366\017\313\046\001\221
\120\154\364\137\024\342\223\164\300\023\236\060\072\120\343\264
\140\305\034\360\042\104\215\161\107\254\310\032\311\351\233\232
\000\140\023\377\160\176\137\021\115\111\033\263\025\122\173\311
\124\332\277\235\225\257\153\232\330\236\351\361\344\103\215\342
\021\104\072\277\257\275\203\102\163\122\213\252\273\247\051\317
\365\144\034\012\115\321\274\252\254\237\052\320\377\177\177\332
\175\352\261\355\060\045\301\204\332\064\322\133\170\203\126\354
\234\066\303\046\342\021\366\147\111\035\222\253\214\373\353\377
\172\356\205\112\247\120\200\360\247\134\112\224\056\137\005\231
\074\122\101\340\315\264\143\317\001\103\272\234\203\334\217\140
\073\363\132\264\264\173\256\332\013\220\070\165\357\201\035\146
\322\367\127\160\066\263\277\374\050\257\161\045\205\133\023\376
\036\177\132\264\074
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "Entrust Root Certification Authority"

# Issuer: CN=Entrust

Root Certification Authority,OU="(c) 2006 Entrust, Inc.",OU=www.entrust.net/CPS is incorporated by reference,O="Entrust, Inc.",C=US

# Serial Number: 1164660820 (0x456b5054)

# Subject: CN=Entrust Root Certification Authority,OU="(c) 2006 Entrust, Inc.",OU=www.entrust.net/CPS is incorporated by reference,O="Entrust, Inc.",C=US

# Not Valid Before: Mon Nov 27 20:23:42 2006

# Not Valid After : Fri Nov 27 20:53:42 2026

# Fingerprint (SHA-256):

73:C1:76:43:4F:1B:C6:D5:AD:F4:5B:0E:76:E7:27:28:7C:8D:E5:76:16:C1:E6:E6:14:1A:2B:2C:BC:7D:8E:4C

# Fingerprint (SHA1): B3:1E:B1:B7:40:E3:6C:84:02:DA:DC:37:D4:4D:F5:D4:67:49:52:F9

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Entrust Root Certification Authority"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\263\036\261\267\100\343\154\204\002\332\334\067\324\115\365\324
\147\111\122\371
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\326\245\303\355\135\335\076\000\301\075\207\222\037\035\077\344
```

END

CKA\_ISSUER

MULTILINE\_OCTAL

\060\201\260\061\013\060\011\006\003\125\004\006\023\002\125\123  
\061\026\060\024\006\003\125\004\012\023\015\105\156\164\162\165  
\163\164\054\040\111\156\143\056\061\071\060\067\006\003\125\004  
\013\023\060\167\167\167\056\145\156\164\162\165\163\164\056\156  
\145\164\057\103\120\123\040\151\163\040\151\156\143\157\162\160  
\157\162\141\164\145\144\040\142\171\040\162\145\146\145\162\145  
\156\143\145\061\037\060\035\006\003\125\004\013\023\026\050\143  
\051\040\062\060\060\066\040\105\156\164\162\165\163\164\054\040  
\111\156\143\056\061\055\060\053\006\003\125\004\003\023\044\105  
\156\164\162\165\163\164\040\122\157\157\164\040\103\145\162\164  
\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162  
\151\164\171

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\004\105\153\120\124

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST

CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "Certum Root CA"

#

# Issuer: CN=Certum CA,O=Unizeto Sp. z o.o.,C=PL

# Serial Number: 65568 (0x10020)

# Subject: CN=Certum CA,O=Unizeto Sp. z o.o.,C=PL

# Not Valid Before: Tue Jun 11 10:46:39 2002

# Not Valid After : Fri Jun 11 10:46:39 2027

# Fingerprint (SHA-256):

D8:E0:FE:BC:1D:B2:E3:8D:00:94:0F:37:D2:7D:41:34:4D:99:3E:73:4B:99:D5:65:6D:97:78:D4:D8:14:36:24

# Fingerprint (SHA1): 62:52:DC:40:F7:11:43:A2:2F:DE:9E:F7:34:8E:06:42:51:B1:81:18

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Certum Root CA"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\076\061\013\060\011\006\003\125\004\006\023\002\120\114\061  
\033\060\031\006\003\125\004\012\023\022\125\156\151\172\145\164  
\157\040\123\160\056\040\172\040\157\056\157\056\061\022\060\020  
\006\003\125\004\003\023\011\103\145\162\164\165\155\040\103\101

END

CKA\_ID

UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\076\061\013\060\011\006\003\125\004\006\023\002\120\114\061  
\033\060\031\006\003\125\004\012\023\022\125\156\151\172\145\164  
\157\040\123\160\056\040\172\040\157\056\157\056\061\022\060\020  
\006\003\125\004\003\023\011\103\145\162\164\165\155\040\103\101

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\003\001\000\040

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\014\060\202\001\364\240\003\002\001\002\002\003\001  
\000\040\060\015\006\011\052\206\110\206\367\015\001\001\005\005  
\000\060\076\061\013\060\011\006\003\125\004\006\023\002\120\114  
\061\033\060\031\006\003\125\004\012\023\022\125\156\151\172\145  
\164\157\040\123\160\056\040\172\040\157\056\157\056\061\022\060  
\020\006\003\125\004\003\023\011\103\145\162\164\165\155\040\103  
\101\060\036\027\015\060\062\060\066\061\061\061\060\064\066\063  
\071\132\027\015\062\067\060\066\061\061\061\060\064\066\063\071  
\132\060\076\061\013\060\011\006\003\125\004\006\023\002\120\114  
\061\033\060\031\006\003\125\004\012\023\022\125\156\151\172\145  
\164\157\040\123\160\056\040\172\040\157\056\157\056\061\022\060  
\020\006\003\125\004\003\023\011\103\145\162\164\165\155\040\103  
\101\060\202\001\042\060\015\006\011\052\206\110\206\367\015\001  
\001\001\005\000\003\202\001\017\000\060\202\001\012\002\202\001  
\001\000\316\261\301\056\323\117\174\315\045\316\030\076\117\304  
\214\157\200\152\163\310\133\121\370\233\322\334\273\000\134\261  
\240\374\165\003\356\201\360\210\356\043\122\351\346\025\063\215  
\254\055\011\305\166\371\053\071\200\211\344\227\113\220\245\250  
\170\370\163\103\173\244\141\260\330\130\314\341\154\146\176\234  
\363\011\136\125\143\204\325\250\357\363\261\056\060\150\263\304  
\074\330\254\156\215\231\132\220\116\064\334\066\232\217\201\210  
\120\267\155\226\102\011\363\327\225\203\015\101\113\260\152\153  
\370\374\017\176\142\237\147\304\355\046\137\020\046\017\010\117  
\360\244\127\050\316\217\270\355\105\366\156\356\045\135\252\156  
\071\276\344\223\057\331\107\240\162\353\372\246\133\257\312\123  
\077\342\016\306\226\126\021\156\367\351\146\251\046\330\177\225  
\123\355\012\205\210\272\117\051\245\102\214\136\266\374\205\040  
\000\252\150\013\241\032\205\001\234\304\106\143\202\210\266\042  
\261\356\376\252\106\131\176\317\065\054\325\266\332\135\367\110  
\063\024\124\266\353\331\157\316\315\210\326\253\033\332\226\073  
\035\131\002\003\001\000\001\243\023\060\021\060\017\006\003\125  
\035\023\001\001\377\004\005\060\003\001\001\377\060\015\006\011  
\052\206\110\206\367\015\001\001\005\005\000\003\202\001\001\000  
\270\215\316\357\347\024\272\317\356\260\104\222\154\264\071\076  
\242\204\156\255\270\041\167\322\324\167\202\207\346\040\101\201  
\356\342\370\021\267\143\321\027\067\276\031\166\044\034\004\032  
\114\353\075\252\147\157\055\324\315\376\145\061\160\305\033\246

```
\002\012\272\140\173\155\130\302\232\111\376\143\062\013\153\343
\072\300\254\253\073\260\350\323\011\121\214\020\203\306\064\340
\305\053\340\032\266\140\024\047\154\062\167\214\274\262\162\230
\317\315\314\077\271\310\044\102\024\326\127\374\346\046\103\251
\035\345\200\220\316\003\124\050\076\367\077\323\370\115\355\152
\012\072\223\023\233\073\024\043\023\143\234\077\321\207\047\171
\345\114\121\343\001\255\205\135\032\073\261\325\163\020\244\323
\362\274\156\144\365\132\126\220\250\307\016\114\164\017\056\161
\073\367\310\107\364\151\157\025\362\021\136\203\036\234\174\122
\256\375\002\332\022\250\131\147\030\333\274\160\335\233\261\151
\355\200\316\211\100\110\152\016\065\312\051\146\025\041\224\054
\350\140\052\233\205\112\100\363\153\212\044\354\006\026\054\163
END
```

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "Certum Root CA"

# Issuer: CN=Certum CA,O=Unizeto Sp. z o.o.,C=PL

# Serial Number: 65568 (0x10020)

# Subject: CN=Certum CA,O=Unizeto Sp. z o.o.,C=PL

# Not Valid Before: Tue Jun 11 10:46:39 2002

# Not Valid After : Fri Jun 11

10:46:39 2027

# Fingerprint (SHA-256):

D8:E0:FE:BC:1D:B2:E3:8D:00:94:0F:37:D2:7D:41:34:4D:99:3E:73:4B:99:D5:65:6D:97:78:D4:D8:14:36:24

# Fingerprint (SHA1): 62:52:DC:40:F7:11:43:A2:2F:DE:9E:F7:34:8E:06:42:51:B1:81:18

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Certum Root CA"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\142\122\334\100\367\021\103\242\057\336\236\367\064\216\006\102

\121\261\201\030

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\054\217\237\146\035\030\220\261\107\046\235\216\206\202\214\251

END

CKA\_ISSUER MULTILINE\_OCTAL

\060\076\061\013\060\011\006\003\125\004\006\023\002\120\114\061

\033\060\031\006\003\125\004\012\023\022\125\156\151\172\145\164

\157\040\123\160\056\040\172\040\157\056\157\056\061\022\060\020

\006\003\125\004\003\023\011\103\145\162\164\165\155\040\103\101

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\003\001\000\040



```

END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION
CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "Comodo AAA Services root"
#
# Issuer: CN=AAA Certificate Services,O=Comodo CA Limited,L=Salford,ST=Greater Manchester,C=GB
# Serial Number: 1 (0x1)
# Subject: CN=AAA Certificate Services,O=Comodo CA Limited,L=Salford,ST=Greater Manchester,C=GB
# Not Valid Before: Thu Jan 01 00:00:00 2004
# Not Valid After : Sun Dec 31 23:59:59 2028
# Fingerprint (SHA-256):
D7:A7:A0:FB:5D:7E:27:31:D7:71:E9:48:4E:BC:DE:F7:1D:5F:0C:3E:0A:29:48:78:2B:C8:3E:E0:EA:69:9E:F4
# Fingerprint (SHA1): D1:EB:23:A4:6D:17:D6:8F:D9:25:64:C2:F1:F1:60:17:64:D8:E3:49
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Comodo AAA Services root"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\173\061\013\060\011\006\003\125\004\006\023\002\107\102\061
\033\060\031\006\003\125\004\010\014\022\107\162\145\141\164\145
\162\040\115\141\156\143\150\145\163\164\145\162\061\020\060\016
\006\003\125\004\007\014\007\123\141\154\146\157\162\144\061\032
\060\030\006\003\125\004\012\014\021\103\157\155\157\144\157\040
\103\101\040\114\151\155\151\164\145\144\061\041\060\037\006\003
\125\004\003\014\030\101\101\101\040\103\145\162\164\151\146\151
\143\141\164\145\040\123\145\162\166\151\143\145\163
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\173\061\013\060\011\006\003\125\004\006\023\002\107\102\061
\033\060\031\006\003\125\004\010\014\022\107\162\145\141\164\145
\162\040\115\141\156\143\150\145\163\164\145\162\061\020\060\016
\006\003\125\004\007\014\007\123\141\154\146\157\162\144\061\032
\060\030\006\003\125\004\012\014\021\103\157\155\157\144\157\040
\103\101\040\114\151\155\151\164\145\144\061\041\060\037\006\003
\125\004\003\014\030\101\101\101\040\103\145\162\164\151\146\151
\143\141\164\145\040\123\145\162\166\151\143\145\163
END
CKA_SERIAL_NUMBER

```

MULTILINE\_OCTAL

\002\001\001

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\004\062\060\202\003\032\240\003\002\001\002\002\001\001  
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060  
\173\061\013\060\011\006\003\125\004\006\023\002\107\102\061\033  
\060\031\006\003\125\004\010\014\022\107\162\145\141\164\145\162  
\040\115\141\156\143\150\145\163\164\145\162\061\020\060\016\006  
\003\125\004\007\014\007\123\141\154\146\157\162\144\061\032\060  
\030\006\003\125\004\012\014\021\103\157\155\157\144\157\040\103  
\101\040\114\151\155\151\164\145\144\061\041\060\037\006\003\125  
\004\003\014\030\101\101\101\040\103\145\162\164\151\146\151\143  
\141\164\145\040\123\145\162\166\151\143\145\163\060\036\027\015  
\060\064\060\061\060\061\060\060\060\060\060\132\027\015\062  
\070\061\062\063\061\062\063\065\071\065\071\132\060\173\061\013  
\060\011\006\003\125\004\006\023\002\107\102\061\033\060\031\006  
\003\125\004\010\014\022\107\162\145\141\164\145\162\040\115\141  
\156\143\150\145\163\164\145\162\061\020\060\016\006\003\125\004  
\007\014\007\123\141\154\146\157\162\144\061\032\060\030\006\003  
\125\004\012\014\021\103\157\155\157\144\157\040\103\101\040\114  
\151\155\151\164\145\144\061\041\060\037\006\003\125\004\003\014  
\030\101\101\101\040\103\145\162\164\151\146\151\143\141\164\145  
\040\123\145\162\166\151\143\145\163\060\202\001\042\060\015\006  
\011\052\206\110\206\367\015\001\001\001\005\000\003\202\001\017  
\000\060\202\001\012\002\202\001\001\000\276\100\235\364\156\341  
\352\166\207\034\115\105\104\216\276\106\310\203\006\235\301\052  
\376\030\037\216\344\002\372\363\253\135\120\212\026\061\013\232  
\006\320\305\160\042\315\111\055\124\143\314\266\156\150\106\013  
\123\352\313\114\044\300\274\162\116\352\361\025\256\364\124\232  
\022\012\303\172\262\063\140\342\332\211\125\363\042\130\363\336  
\334\317\357\203\206\242\214\224\117\237\150\362\230\220\106\204  
\047\307\166\277\343\314\065\054\213\136\007\144\145\202\300\110  
\260\250\221\371\141\237\166\040\120\250\221\307\146\265\353\170  
\142\003\126\360\212\032\023\352\061\243\036\240\231\375\070\366  
\366\047\062\130\157\007\365\153\270\373\024\053\257\267\252\314  
\326\143\137\163\214\332\005\231\250\070\250\313\027\170\066\121  
\254\351\236\364\170\072\215\317\017\331\102\342\230\014\253\057  
\237\016\001\336\357\237\231\111\361\055\337\254\164\115\033\230  
\265\107\305\345\051\321\371\220\030\307\142\234\276\203\307\046  
\173\076\212\045\307\300\335\235\346\065\150\020\040\235\217\330  
\336\322\303\204\234\015\136\350\057\311\002\003\001\000\001\243  
\201\300\060\201\275\060\035\006\003\125\035\016\004\026\004\024  
\240\021\012\043\076\226\361\007\354\342\257\051\357\202\245\177  
\320\060\244\264\060\016\006\003\125\035\017\001\001\377\004\004  
\003\002\001\006\060\017\006\003\125\035\023\001\001\377\004\005  
\060\003\001\001\377\060\173\006\003\125\035\037\004\164\060\162  
\060\070\240\066\240\064\206\062\150\164\164\160\072\057\057\143

```
\162\154\056\143\157\155\157\144\157\143\141\056\143\157\155\057
\101\101\101\103\145\162\164\151\146\151\143\141\164\145\123\145
\162\166\151\143\145\163\056\143\162\154\060\066\240\064\240\062
\206\060\150\164\164\160\072\057\057\143\162\154\056\143\157\155
\157\144\157\056\156\145\164\057\101\101\101\103\145\162\164\151
\146\151\143\141\164\145\123\145\162\166\151\143\145\163\056\143
\162\154\060\015\006\011\052\206\110\206\367\015\001\001\005\005
\000\003\202\001\001\000\010\126\374\002\360\233\350\377\244\372
\326\173\306\104\200\316\117\304\305\366\000\130\314\246\266\274
\024\111\150\004\166\350\346\356\135\354\002\017\140\326\215\120
\030\117\046\116\001\343\346\260\245\356\277\274\164\124\101\277
\375\374\022\270\307\117\132\364\211\140\005\177\140\267\005\112
\363\366\361\302\277\304\271\164\206\266\055\175\153\314\322\363
\106\335\057\306\340\152\303\303\064\003\054\175\226\335\132\302
\016\247\012\231\301\005\213\253\014\057\363\134\072\317\154\067
\125\011\207\336\123\100\154\130\357\374\266\253\145\156\004\366
\033\334\074\340\132\025\306\236\331\361\131\110\060\041\145\003
\154\354\351\041\163\354\233\003\241\340\067\255\240\025\030\217
\372\272\002\316\247\054\251\020\023\054\324\345\010\046\253\042
\227\140\370\220\136\164\324\242\232\123\275\362\251\150\340\242
\156\302\327\154\261\243\017\236\277\353\150\347\126\362\256\362
\343\053\070\072\011\201\265\153\205\327\276\055\355\077\032\267
\262\143\342\365\142\054\202\324\152\000\101\120\361\071\203\237
\225\351\066\226\230\156
```

END

CKA\_NSS\_Mozilla\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "Comodo AAA Services root"

# Issuer: CN=AAA Certificate Services,O=Comodo CA Limited,L=Salford,ST=Greater Manchester,C=GB

# Serial Number: 1 (0x1)

# Subject: CN=AAA Certificate Services,O=Comodo CA Limited,L=Salford,ST=Greater Manchester,C=GB

# Not Valid Before: Thu Jan 01 00:00:00 2004

# Not Valid After : Sun Dec 31 23:59:59 2028

# Fingerprint

(SHA-256):

D7:A7:A0:FB:5D:7E:27:31:D7:71:E9:48:4E:BC:DE:F7:1D:5F:0C:3E:0A:29:48:78:2B:C8:3E:E0:EA:69:9E:F4

# Fingerprint (SHA1): D1:EB:23:A4:6D:17:D6:8F:D9:25:64:C2:F1:F1:60:17:64:D8:E3:49

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Comodo AAA Services root"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\321\353\043\244\155\027\326\217\331\045\144\302\361\361\140\027
```

```
\144\330\343\111
```

```

END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\111\171\004\260\353\207\031\254\107\260\274\021\121\233\164\320
END
CKA_ISSUER MULTILINE_OCTAL
\060\173\061\013\060\011\006\003\125\004\006\023\002\107\102\061
\033\060\031\006\003\125\004\010\014\022\107\162\145\141\164\145
\162\040\115\141\156\143\150\145\163\164\145\162\061\020\060\016
\006\003\125\004\007\014\007\123\141\154\146\157\162\144\061\032
\060\030\006\003\125\004\012\014\021\103\157\155\157\144\157\040
\103\101\040\114\151\155\151\164\145\144\061\041\060\037\006\003
\125\004\003\014\030\101\101\101\040\103\145\162\164\151\146\151
\143\141\164\145\040\123\145\162\166\151\143\145\163
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\001\001
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "QuoVadis Root CA 2"
#
# Issuer: CN=QuoVadis Root CA 2,O=QuoVadis Limited,C=BM
# Serial Number: 1289 (0x509)
# Subject: CN=QuoVadis Root CA 2,O=QuoVadis Limited,C=BM
# Not Valid Before: Fri Nov 24 18:27:00 2006
# Not Valid After : Mon Nov 24 18:23:33 2031
# Fingerprint (SHA-256):
85:A0:DD:7D:D7:20:AD:B7:FF:05:F8:3D:54:2B:20:9D:C7:FF:45:28:F7:D6:77:B1:83:89:FE:A5:E5:C4:9E:86
# Fingerprint (SHA1): CA:3A:FB:CF:12:40:36:4B:44:B2:16:20:88:80:48:39:19:93:7C:F7
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL
CK_FALSE
CKA_LABEL UTF8 "QuoVadis Root CA 2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\105\061\013\060\011\006\003\125\004\006\023\002\102\115\061
\031\060\027\006\003\125\004\012\023\020\121\165\157\126\141\144
\151\163\040\114\151\155\151\164\145\144\061\033\060\031\006\003
\125\004\003\023\022\121\165\157\126\141\144\151\163\040\122\157
\157\164\040\103\101\040\062
END

```

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\105\061\013\060\011\006\003\125\004\006\023\002\102\115\061  
\031\060\027\006\003\125\004\012\023\020\121\165\157\126\141\144  
\151\163\040\114\151\155\151\164\145\144\061\033\060\031\006\003  
\125\004\003\023\022\121\165\157\126\141\144\151\163\040\122\157  
\157\164\040\103\101\040\062

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\002\005\011

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\267\060\202\003\237\240\003\002\001\002\002\002\005  
\011\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000  
\060\105\061\013\060\011\006\003\125\004\006\023\002\102\115\061  
\031\060\027\006\003\125\004\012\023\020\121\165\157\126\141\144  
\151\163\040\114\151\155\151\164\145\144\061\033\060\031\006\003  
\125\004\003\023\022\121\165\157\126\141\144\151\163\040\122\157  
\157\164\040\103\101\040\062\060\036\027\015\060\066\061\061\062  
\064\061\070\062\067\060\060\132\027\015\063\061\061\061\062\064  
\061\070\062\063\063\063\132\060\105\061\013\060\011\006\003\125  
\004\006\023\002\102\115\061\031\060\027\006\003\125\004\012\023  
\020\121\165\157\126\141\144\151\163\040\114\151\155\151\164\145  
\144\061\033\060\031\006\003\125\004\003\023\022\121\165\157\126  
\141\144\151\163\040\122\157\157\164\040\103\101\040\062\060\202  
\002\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005  
\000\003\202\002\017\000\060\202\002\012\002\202\002\001\000\232  
\030\312\113\224\015\000\055\257\003\051\212\360\017\201\310\256  
\114\031\205\035\010\237\253\051\104\205\363\057\201\255\062\036  
\220\106\277\243\206\046\032\036\376\176\034\030\072\134\234\140  
\027\052\072\164\203\063\060\175\141\124\021\313\355\253\340\346  
\322\242\176\365\153\157\030\267\012\013\055\375\351\076\357\012  
\306\263\020\351\334\302\106\027\370\135\375\244\332\377\236\111  
\132\234\346\063\346\044\226\367\077\272\133\053\034\172\065\302  
\326\147\376\253\146\120\213\155\050\140\053\357\327\140\303\307  
\223\274\215\066\221\363\177\370\333\021\023\304\234\167\166\301  
\256\267\002\152\201\172\251\105\203\342\005\346\271\126\301\224  
\067\217\110\161\143\042\354\027\145\007\225\212\113\337\217\306  
\132\012\345\260\343\137\136\153\021\253\014\371\205\353\104\351  
\370\004\163\362\351\376\134\230\214\365\163\257\153\264\176\315  
\324\134\002\053\114\071\341\262\225\225\055\102\207\327\325\263  
\220\103\267\154\023\361\336\335\366\304\370\211\077\321\165\365  
\222\303\221\325\212\210\320\220\354\334\155\336\211\302\145\161  
\226\213\015\003\375\234\277\133\026\254\222\333\352\376\171\174  
\255\353\257\367\026\313\333\315\045\053\345\037\373\232\237\342  
\121\314\072\123\014\110\346\016\275\311\264\166\006\122\346\021  
\023\205\162\143\003\004\340\004\066\053\040\031\002\350\164\247  
\037\266\311\126\146\360\165\045\334\147\301\016\141\140\210\263

\076\321\250\374\243\332\035\260\321\261\043\124\337\104\166\155  
\355\101\330\301\262\042\266\123\034\337\065\035\334\241\167\052  
\061\344\055\365\345\345\333\310\340\377\345\200\327\013\143\240  
\377\063\241\017\272\054\025\025\352\227\263\322\242\265\276\362  
\214\226\036\032\217\035\154\244\141\067\271\206\163\063\327\227  
\226\236\043\175\202\244\114\201\342\241\321\272\147\137\225\007  
\243\047\021\356\026\020\173\274\105\112\114\262\004\322\253\357  
\325\375\014\121\316\120\152\010\061\371\221\332\014\217\144\134  
\003\303\072\213\040\077\156\215\147\075\072\326\376\175\133\210  
\311\136\373\314\141\334\213\063\167\323\104\062\065\011\142\004  
\222\026\020\330\236\047\107\373\073\041\343\370\353\035\133\002  
\003\001\000\001\243\201\260\060\201\255\060\017\006\003\125\035  
\023\001\001\377\004\005\060\003\001\001\377\060\013\006\003\125  
\035\017\004\004\003\002\001\006\060\035\006\003\125\035\016\004  
\026\004\024\032\204\142\274\110\114\063\045\004\324\356\320\366  
\003\304\031\106\321\224\153\060\156\006\003\125\035\043\004\147  
\060\145\200\024\032\204\142\274\110\114\063\045\004\324\356\320  
\366\003\304\031\106\321\224\153\241\111\244\107\060\105\061\013  
\060\011\006\003\125\004\006\023\002\102\115\061\031\060\027\006  
\003\125\004\012\023\020\121\165\157\126\141\144\151\163\040\114  
\151\155\151\164\145\144\061\033\060\031\006\003\125\004\003\023  
\022\121\165\157\126\141\144\151\163\040\122\157\157\164\040\103  
\101\040\062\202\002\005\011\060\015\006\011\052\206\110\206\367  
\015\001\001\005\005\000\003\202\002\001\000\076\012\026\115\237  
\006\133\250\256\161\135\057\005\057\147\346\023\105\203\304\066  
\366\363\300\046\014\015\265\107\144\135\370\264\162\311\106\245  
\003\030\047\125\211\170\175\166\352\226\064\200\027\040\334\347  
\203\370\215\374\007\270\332\137\115\056\147\262\204\375\331\104  
\374\167\120\201\346\174\264\311\015\013\162\123\370\166\007\007  
\101\107\226\014\373\340\202\046\223\125\214\376\042\037\140\145  
\174\137\347\046\263\367\062\220\230\120\324\067\161\125\366\222  
\041\170\367\225\171\372\370\055\046\207\146\126\060\167\246\067  
\170\063\122\020\130\256\077\141\216\362\152\261\357\030\176\112  
\131\143\312\215\242\126\325\247\057\274\126\037\317\071\301\342  
\373\012\250\025\054\175\115\172\143\306\154\227\104\074\322\157  
\303\112\027\012\370\220\322\127\242\031\121\245\055\227\101\332  
\007\117\251\120\332\220\215\224\106\341\076\360\224\375\020\000  
\070\365\073\350\100\341\264\156\126\032\040\314\157\130\215\355  
\056\105\217\326\351\223\077\347\261\054\337\072\326\042\214\334  
\204\273\042\157\320\370\344\306\071\351\004\210\074\303\272\353  
\125\172\155\200\231\044\365\154\001\373\370\227\260\224\133\353  
\375\322\157\361\167\150\015\065\144\043\254\270\125\241\003\321  
\115\102\031\334\370\165\131\126\243\371\250\111\171\370\257\016  
\271\021\240\174\267\152\355\064\320\266\046\142\070\032\207\014  
\370\350\375\056\323\220\177\007\221\052\035\326\176\134\205\203  
\231\260\070\010\077\351\136\371\065\007\344\311\142\156\127\177  
\247\120\225\367\272\310\233\346\216\242\001\305\326\146\277\171  
\141\363\074\034\341\271\202\134\135\240\303\351\330\110\275\031

```
\242\021\024\031\156\262\206\033\150\076\110\067\032\210\267\135
\226\136\234\307\357\047\142\010\342\221\031\134\322\361\041\335
\272\027\102\202\227\161\201\123\061\251\237\366\175\142\277\162
\341\243\223\035\314\212\046\132\011\070\320\316\327\015\200\026
\264\170\245\072\207\114\215\212\245\325\106\227\362\054\020\271
\274\124\042\300\001\120\151\103\236\364\262\357\155\370\354\332
\361\343\261\357\337\221\217\124\052\013\045\301\046\031\304\122
\020\005\145\325\202\020\352\302\061\315\056
```

END

CKA\_NSS\_Mozilla\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "QuoVadis Root CA 2"

# Issuer: CN=QuoVadis Root

CA 2,O=QuoVadis Limited,C=BM

# Serial Number: 1289 (0x509)

# Subject: CN=QuoVadis Root CA 2,O=QuoVadis Limited,C=BM

# Not Valid Before: Fri Nov 24 18:27:00 2006

# Not Valid After : Mon Nov 24 18:23:33 2031

# Fingerprint (SHA-256):

85:A0:DD:7D:D7:20:AD:B7:FF:05:F8:3D:54:2B:20:9D:C7:FF:45:28:F7:D6:77:B1:83:89:FE:A5:E5:C4:9E:86

# Fingerprint (SHA1): CA:3A:FB:CF:12:40:36:4B:44:B2:16:20:88:80:48:39:19:93:7C:F7

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "QuoVadis Root CA 2"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\312\072\373\317\022\100\066\113\104\262\026\040\210\200\110\071
\031\223\174\367
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\136\071\173\335\370\272\354\202\351\254\142\272\014\124\000\053
```

END

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\105\061\013\060\011\006\003\125\004\006\023\002\102\115\061
\031\060\027\006\003\125\004\012\023\020\121\165\157\126\141\144
\151\163\040\114\151\155\151\164\145\144\061\033\060\031\006\003
\125\004\003\023\022\121\165\157\126\141\144\151\163\040\122\157
\157\164\040\103\101\040\062
```

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

```
\002\002\005\011
```

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR  
CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR  
CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "QuoVadis Root CA 3"

#

# Issuer: CN=QuoVadis Root CA 3,O=QuoVadis Limited,C=BM

# Serial Number: 1478 (0x5c6)

# Subject: CN=QuoVadis Root CA 3,O=QuoVadis Limited,C=BM

# Not Valid Before: Fri Nov 24 19:11:23 2006

# Not Valid After : Mon Nov 24 19:06:44 2031

# Fingerprint (SHA-256):

18:F1:FC:7F:20:5D:F8:AD:DD:EB:7F:E0:07:DD:57:E3:AF:37:5A:9C:4D:8D:73:54:6B:F4:F1:FE:D1:E1:8D:35

# Fingerprint (SHA1): 1F:49:14:F7:D8:74:95:1D:DD:AE:02:C0:BE:FD:3A:2D:82:75:51:85

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL

UTF8 "QuoVadis Root CA 3"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\105\061\013\060\011\006\003\125\004\006\023\002\102\115\061  
\031\060\027\006\003\125\004\012\023\020\121\165\157\126\141\144  
\151\163\040\114\151\155\151\164\145\144\061\033\060\031\006\003  
\125\004\003\023\022\121\165\157\126\141\144\151\163\040\122\157  
\157\164\040\103\101\040\063

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\105\061\013\060\011\006\003\125\004\006\023\002\102\115\061  
\031\060\027\006\003\125\004\012\023\020\121\165\157\126\141\144  
\151\163\040\114\151\155\151\164\145\144\061\033\060\031\006\003  
\125\004\003\023\022\121\165\157\126\141\144\151\163\040\122\157  
\157\164\040\103\101\040\063

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\002\005\306

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\006\235\060\202\004\205\240\003\002\001\002\002\002\005  
\306\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000  
\060\105\061\013\060\011\006\003\125\004\006\023\002\102\115\061  
\031\060\027\006\003\125\004\012\023\020\121\165\157\126\141\144  
\151\163\040\114\151\155\151\164\145\144\061\033\060\031\006\003  
\125\004\003\023\022\121\165\157\126\141\144\151\163\040\122\157  
\157\164\040\103\101\040\063\060\036\027\015\060\066\061\061\062



\064\061\071\061\061\062\063\132\027\015\063\061\061\061\062\064  
\061\071\060\066\064\064\132\060\105\061\013\060\011\006\003\125  
\004\006\023\002\102\115\061\031\060\027\006\003\125\004\012\023  
\020\121\165\157\126\141\144\151\163\040\114\151\155\151\164\145  
\144\061\033\060\031\006\003\125\004\003\023\022\121\165\157\126  
\141\144\151\163\040\122\157\157\164\040\103\101\040\063\060\202  
\002\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005  
\000\003\202\002\017\000\060\202\002\012\002\202\002\001\000\314  
\127\102\026\124\234\346\230\323\323\115\356\376\355\307\237\103  
\071\112\145\263\350\026\210\064\333\015\131\221\164\317\222\270  
\004\100\255\002\113\061\253\274\215\221\150\330\040\016\032\001  
\342\032\173\116\027\135\342\212\267\077\231\032\315\353\141\253  
\302\145\246\037\267\267\275\267\217\374\375\160\217\013\240\147  
\276\001\242\131\317\161\346\017\051\166\377\261\126\171\105\053  
\037\236\172\124\350\243\051\065\150\244\001\117\017\244\056\067  
\357\033\277\343\217\020\250\162\253\130\127\347\124\206\310\311  
\363\133\332\054\332\135\216\156\074\243\076\332\373\202\345\335  
\362\134\262\005\063\157\212\066\316\320\023\116\377\277\112\014  
\064\114\246\303\041\275\120\004\125\353\261\273\235\373\105\036  
\144\025\336\125\001\214\002\166\265\313\241\077\102\151\274\057  
\275\150\103\026\126\211\052\067\141\221\375\246\256\116\300\313  
\024\145\224\067\113\222\006\357\004\320\310\234\210\333\013\173  
\201\257\261\075\052\304\145\072\170\266\356\334\200\261\322\323  
\231\234\072\356\153\132\153\263\215\267\325\316\234\302\276\245  
\113\057\026\261\236\150\073\006\157\256\175\237\370\336\354\314  
\051\247\230\243\045\103\057\357\361\137\046\341\210\115\370\136  
\156\327\331\024\156\031\063\151\247\073\204\211\223\304\123\125  
\023\241\121\170\100\370\270\311\242\356\173\272\122\102\203\236  
\024\355\005\122\132\131\126\247\227\374\235\077\012\051\330\334  
\117\221\016\023\274\336\225\244\337\213\231\276\254\233\063\210  
\357\265\201\257\033\306\042\123\310\366\307\356\227\024\260\305  
\174\170\122\310\360\316\156\167\140\204\246\351\052\166\040\355  
\130\001\027\060\223\351\032\213\340\163\143\331\152\222\224\111  
\116\264\255\112\205\304\243\042\060\374\011\355\150\042\163\246  
\210\014\125\041\130\305\341\072\237\052\335\312\341\220\340\331  
\163\253\154\200\270\350\013\144\223\240\234\214\031\377\263\322  
\014\354\221\046\207\212\263\242\341\160\217\054\012\345\315\155  
\150\121\353\332\077\005\177\213\062\346\023\134\153\376\137\100  
\342\042\310\264\264\144\117\326\272\175\110\076\250\151\014\327  
\273\206\161\311\163\270\077\073\235\045\113\332\377\100\353\002  
\003\001\000\001\243\202\001\225\060\202\001\221\060\017\006\003  
\125\035\023\001\001\377\004\005\060\003\001\001\377\060\201\341  
\006\003\125\035\040\004\201\331\060\201\326\060\201\323\006\011  
\053\006\001\004\001\276\130\000\003\060\201\305\060\201\223\006  
\010\053\006\001\005\005\007\002\002\060\201\206\032\201\203\101  
\156\171\040\165\163\145\040\157\146\040\164\150\151\163\040\103  
\145\162\164\151\146\151\143\141\164\145\040\143\157\156\163\164  
\151\164\165\164\145\163\040\141\143\143\145\160\164\141\156\143

\145\040\157\146\040\164\150\145\040\121\165\157\126\141\144\151  
\163\040\122\157\157\164\040\103\101\040\063\040\103\145\162\164  
\151\146\151\143\141\164\145\040\120\157\154\151\143\171\040\057  
\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\120  
\162\141\143\164\151\143\145\040\123\164\141\164\145\155\145\156  
\164\056\060\055\006\010\053\006\001\005\005\007\002\001\026\041  
\150\164\164\160\072\057\057\167\167\167\056\161\165\157\166\141  
\144\151\163\147\154\157\142\141\154\056\143\157\155\057\143\160  
\163\060\013\006\003\125\035\017\004\004\003\002\001\006\060\035  
\006\003\125\035\016\004\026\004\024\362\300\023\340\202\103\076  
\373\356\057\147\062\226\065\134\333\270\313\002\320\060\156\006  
\003\125\035\043\004\147\060\145\200\024\362\300\023\340\202\103  
\076\373\356\057\147\062\226\065\134\333\270\313\002\320\241\111  
\244\107\060\105\061\013\060\011\006\003\125\004\006\023\002\102  
\115\061\031\060\027\006\003\125\004\012\023\020\121\165\157\126  
\141\144\151\163\040\114\151\155\151\164\145\144\061\033\060\031  
\006\003\125\004\003\023\022\121\165\157\126\141\144\151\163\040  
\122\157\157\164\040\103\101\040\063\202\002\005\306\060\015\006  
\011\052\206\110\206\367\015\001\001\005\005\000\003\202\002\001  
\000\117\255\240\054\114\372\300\362\157\367\146\125\253\043\064  
\356\347\051\332\303\133\266\260\203\331\320\320\342\041\373\363  
\140\247\073\135\140\123\047\242\233\366\010\042\052\347\277\240  
\162\345\234\044\152\061\261\220\172\047\333\204\021\211\047\246  
\167\132\070\327\277\254\206\374\356\135\203\274\006\306\321\167  
\153\017\155\044\057\113\172\154\247\007\226\312\343\204\237\255  
\210\213\035\253\026\215\133\146\027\331\026\364\213\200\322\335  
\370\262\166\303\374\070\023\252\014\336\102\151\053\156\363\074  
\353\200\047\333\365\246\104\015\237\132\125\131\013\325\015\122  
\110\305\256\237\362\057\200\305\352\062\120\065\022\227\056\301  
\341\377\361\043\210\121\070\237\362\146\126\166\347\017\121\227  
\245\122\014\115\111\121\225\066\075\277\242\113\014\020\035\206  
\231\114\252\363\162\021\223\344\352\366\233\332\250\135\247\115  
\267\236\002\256\163\000\310\332\043\003\350\371\352\031\164\142  
\000\224\313\042\040\276\224\247\131\265\202\152\276\231\171\172  
\251\362\112\044\122\367\164\375\272\116\346\250\035\002\156\261  
\015\200\104\301\256\323\043\067\137\273\205\174\053\222\056\350  
\176\245\213\335\231\341\277\047\157\055\135\252\173\207\376\012  
\335\113\374\216\365\046\344\156\160\102\156\063\354\061\236\173  
\223\301\344\311\151\032\075\300\153\116\042\155\356\253\130\115  
\306\320\101\301\053\352\117\022\207\136\353\105\330\154\365\230  
\002\323\240\330\125\212\006\231\031\242\240\167\321\060\236\254  
\314\165\356\203\365\260\142\071\317\154\127\342\114\322\221\013  
\016\165\050\033\232\277\375\032\103\361\312\167\373\073\217\141  
\270\151\050\026\102\004\136\160\052\034\041\330\217\341\275\043  
\133\055\164\100\222\331\143\031\015\163\335\151\274\142\107\274  
\340\164\053\262\353\175\276\101\033\265\300\106\305\241\042\313  
\137\116\301\050\222\336\030\272\325\052\050\273\021\213\027\223  
\230\231\140\224\134\043\317\132\047\227\136\013\005\006\223\067

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\036\073\151\066\353\251\236\141\035\217\062\332\216\014\326\164
\076\173\011\044\332\001\167\107\304\073\315\064\214\231\365\312
\341\045\141\063\262\131\033\342\156\327\067\127\266\015\251\022
\332
END
CKA_NSS_MOZILLA_CA_POLICY
CK_BBOOL CK_TRUE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

# Trust for "QuoVadis Root CA 3"
# Issuer: CN=QuoVadis Root CA 3,O=QuoVadis Limited,C=BM
# Serial Number: 1478 (0x5c6)
# Subject:
  CN=QuoVadis Root CA 3,O=QuoVadis Limited,C=BM
# Not Valid Before: Fri Nov 24 19:11:23 2006
# Not Valid After : Mon Nov 24 19:06:44 2031
# Fingerprint (SHA-256):
18:F1:FC:7F:20:5D:F8:AD:DD:EB:7F:E0:07:DD:57:E3:AF:37:5A:9C:4D:8D:73:54:6B:F4:F1:FE:D1:E1:8D:35
# Fingerprint (SHA1): 1F:49:14:F7:D8:74:95:1D:DD:AE:02:C0:BE:FD:3A:2D:82:75:51:85
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "QuoVadis Root CA 3"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\037\111\024\367\330\164\225\035\335\256\002\300\276\375\072\055
\202\165\121\205
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\061\205\074\142\224\227\143\271\252\375\211\116\257\157\340\317
END
CKA_ISSUER MULTILINE_OCTAL
\060\105\061\013\060\011\006\003\125\004\006\023\002\102\115\061
\031\060\027\006\003\125\004\012\023\020\121\165\157\126\141\144
\151\163\040\114\151\155\151\164\145\144\061\033\060\031\006\003
\125\004\003\023\022\121\165\157\126\141\144\151\163\040\122\157
\157\164\040\103\101\040\063
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\002\005\306
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

```

```
#
# Certificate "Security Communication Root CA"
#
# Issuer: OU=Security Communication RootCA1,O=SECOM Trust.net,C=JP
# Serial Number: 0 (0x0)
# Subject: OU=Security Communication RootCA1,O=SECOM Trust.net,C=JP
# Not Valid Before: Tue Sep 30 04:20:49 2003
# Not Valid After : Sat Sep 30 04:20:49 2023
# Fingerprint (SHA-256):
E7:5E:72:ED:9F:56:0E:EC:6E:B4:80:00:73:A4:3F:C3:AD:19:19:5A:39:22:82:01:78:95:97:4A:99:02:6B:6C
# Fingerprint (SHA1): 36:B1:2B:49:F9:81:9E:D7:4C:9E:BC:38:0F:C6:56:8F:5D:AC:B2:F7
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Security Communication
Root CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\120\061\013\060\011\006\003\125\004\006\023\002\112\120\061
\030\060\026\006\003\125\004\012\023\017\123\105\103\117\115\040
\124\162\165\163\164\056\156\145\164\061\047\060\045\006\003\125
\004\013\023\036\123\145\143\165\162\151\164\171\040\103\157\155
\155\165\156\151\143\141\164\151\157\156\040\122\157\157\164\103
\101\061
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\120\061\013\060\011\006\003\125\004\006\023\002\112\120\061
\030\060\026\006\003\125\004\012\023\017\123\105\103\117\115\040
\124\162\165\163\164\056\156\145\164\061\047\060\045\006\003\125
\004\013\023\036\123\145\143\165\162\151\164\171\040\103\157\155
\155\165\156\151\143\141\164\151\157\156\040\122\157\157\164\103
\101\061
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\000
END
CKA_VALUE MULTILINE_OCTAL
\060\202\003\132\060\202\002\102\240\003\002\001\002\002\001\000
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060
\120\061\013\060\011\006\003\125\004\006\023\002\112\120\061\030
\060\026\006\003\125\004\012\023\017\123\105\103\117\115\040\124
\162\165\163\164\056\156\145\164\061\047\060\045\006\003\125\004
\013\023\036\123\145\143\165\162\151\164\171\040\103\157\155\155
\165\156\151\143\141\164\151\157\156\040\122\157\157\164\103\101
\061\060\036\027\015\060\063\060\071\063\060\060\064\062\060\064
\071\132\027\015\062\063\060\071\063\060\060\064\062\060\064\071
```

\132\060\120\061\013\060\011\006\003\125\004\006\023\002\112\120  
\061\030\060\026\006\003\125\004\012\023\017\123\105\103\117\115  
\040\124\162\165\163\164\056\156\145\164\061\047\060\045\006\003  
\125\004\013\023\036\123\145\143\165\162\151\164\171\040\103\157  
\155\155\165\156\151\143\141\164\151\157\156\040\122\157\157\164  
\103\101\061\060\202\001\042\060\015\006\011\052\206\110\206\367  
\015\001\001\001\005\000\003\202\001\017\000\060\202\001\012\002  
\202\001\001\000\263\263\376\177\323\155\261\357\026\174\127\245  
\014\155\166\212\057\113\277\144\373\114\356\212\360\363\051\174  
\365\377\356\052\340\351\351\272\133\144\042\232\232\157\054\072  
\046\151\121\005\231\046\334\325\034\152\161\306\232\175\036\235  
\335\174\154\306\214\147\147\112\076\370\161\260\031\047\251\011  
\014\246\225\277\113\214\014\372\125\230\073\330\350\042\241\113  
\161\070\171\254\227\222\151\263\211\176\352\041\150\006\230\024  
\226\207\322\141\066\274\155\047\126\236\127\356\300\300\126\375  
\062\317\244\331\216\302\043\327\215\250\363\330\045\254\227\344  
\160\070\364\266\072\264\235\073\227\046\103\243\241\274\111\131  
\162\114\043\060\207\001\130\366\116\276\034\150\126\146\257\315  
\101\135\310\263\115\052\125\106\253\037\332\036\342\100\075\333  
\315\175\271\222\200\234\067\335\014\226\144\235\334\042\367\144  
\213\337\141\336\025\224\122\025\240\175\122\311\113\250\041\311  
\306\261\355\313\303\225\140\321\017\360\253\160\370\337\313\115  
\176\354\326\372\253\331\275\177\124\362\245\351\171\372\331\326  
\166\044\050\163\002\003\001\000\001\243\077\060\075\060\035\006  
\003\125\035\016\004\026\004\024\240\163\111\231\150\334\205\133  
\145\343\233\050\057\127\237\275\063\274\007\110\060\013\006\003  
\125\035\017\004\004\003\002\001\006\060\017\006\003\125\035\023  
\001\001\377\004\005\060\003\001\001\377\060\015\006\011\052\206  
\110\206\367\015\001\001\005\005\000\003\202\001\001\000\150\100  
\251\250\273\344\117\135\171\263\005\265\027\263\140\023\353\306  
\222\135\340\321\323\152\376\373\276\233\155\277\307\005\155\131  
\040\304\034\360\267\332\204\130\002\143\372\110\026\357\117\245  
\013\367\112\230\362\077\236\033\255\107\153\143\316\010\107\353  
\122\077\170\234\257\115\256\370\325\117\317\232\230\052\020\101  
\071\122\304\335\331\233\016\357\223\001\256\262\056\312\150\102  
\044\102\154\260\263\072\076\315\351\332\110\304\025\313\351\371  
\007\017\222\120\111\212\335\061\227\137\311\351\067\252\073\131  
\145\227\224\062\311\263\237\076\072\142\130\305\111\255\142\016  
\161\245\062\252\057\306\211\166\103\100\023\023\147\075\242\124  
\045\020\313\361\072\362\331\372\333\111\126\273\246\376\247\101  
\065\303\340\210\141\311\210\307\337\066\020\042\230\131\352\260  
\112\373\126\026\163\156\254\115\367\042\241\117\255\035\172\055  
\105\047\345\060\301\136\362\332\023\313\045\102\121\225\107\003  
\214\154\041\314\164\102\355\123\377\063\213\217\017\127\001\026  
\057\317\246\356\311\160\042\024\275\375\276\154\013\003

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

```

CK_BBOOL CK_TRUE
CKA_NSS_SERVER_DISTRUST_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRUST_AFTER CK_BBOOL CK_FALSE

# Trust for "Security Communication Root CA"
# Issuer: OU=Security Communication RootCA1,O=SECOM Trust.net,C=JP
# Serial Number: 0 (0x0)
# Subject: OU=Security Communication RootCA1,O=SECOM Trust.net,C=JP
# Not Valid Before: Tue Sep 30 04:20:49 2003
# Not Valid After : Sat Sep 30 04:20:49 2023
# Fingerprint (SHA-256):
E7:5E:72:ED:9F:56:0E:EC:6E:B4:80:00:73:A4:3F:C3:AD:19:19:5A:39:22:82:01:78:95:97:4A:99:02:6B:6C
# Fingerprint (SHA1): 36:B1:2B:49:F9:81:9E:D7:4C:9E:BC:38:0F:C6:56:8F:5D:AC:B2:F7
CKA_CLASS
CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Security Communication Root CA"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\066\261\053\111\371\201\236\327\114\236\274\070\017\306\126\217
\135\254\262\367
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\361\274\143\152\124\340\265\047\365\315\347\032\343\115\156\112
END
CKA_ISSUER MULTILINE_OCTAL
\060\120\061\013\060\011\006\003\125\004\006\023\002\112\120\061
\030\060\026\006\003\125\004\012\023\017\123\105\103\117\115\040
\124\162\165\163\164\056\156\145\164\061\047\060\045\006\003\125
\004\013\023\036\123\145\143\165\162\151\164\171\040\103\157\155
\155\165\156\151\143\141\164\151\157\156\040\122\157\157\164\103
\101\061
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\000
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED
CK_BBOOL CK_FALSE

#
# Certificate "Camerfirma Chambers of Commerce Root"
#
# Issuer: CN=Chambers of Commerce Root,OU=http://www.chambersign.org,O=AC Camerfirma SA CIF
A82743287,C=EU

```

```
# Serial Number: 0 (0x0)
# Subject: CN=Chambers of Commerce Root,OU=http://www.chambersign.org,O=AC Camerfirma SA CIF
A82743287,C=EU
# Not Valid Before: Tue Sep 30 16:13:43 2003
# Not Valid After : Wed Sep 30 16:13:44 2037
# Fingerprint (SHA-256):
0C:25:8A:12:A5:67:4A:EF:25:F2:8B:A7:DC:FA:EC:EE:A3:48:E5:41:E6:F5:CC:4E:E6:3B:71:B3:61:60:6A:C3
# Fingerprint (SHA1): 6E:3A:55:A4:19:0C:19:5C:93:84:3C:C0:DB:72:2E:31:30:61:F0:B1
# For Email Distrust After: Mon Mar 01 00:00:00 2021
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Camerfirma Chambers of Commerce Root"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\177\061\013\060\011\006\003\125\004\006\023\002\105\125\061
\047\060\045\006\003\125\004\012\023\036\101\103\040\103\141\155
\145\162\146\151\162\155\141\040\123\101\040\103\111\106\040\101
\070\062\067\064\063\062\070\067\061\043\060\041\006\003\125\004
\013\023\032\150\164\164\160\072\057\057\167\167\167\056\143\150
\141\155\142\145\162\163\151\147\156\056\157\162\147\061\042\060
\040\006\003\125\004\003\023\031\103\150\141\155\142\145\162\163
\040\157\146\040\103\157\155\155\145\162\143\145\040\122\157\157
\164
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\177\061\013\060\011\006\003\125\004\006\023\002\105\125\061
\047\060\045\006\003\125\004\012\023\036\101\103\040\103\141\155
\145\162\146\151\162\155\141\040\123\101\040\103\111\106\040\101
\070\062\067\064\063\062\070\067\061\043\060\041\006\003\125\004
\013\023\032\150\164\164\160\072\057\057\167\167\167\056\143\150
\141\155\142\145\162\163\151\147\156\056\157\162\147\061\042\060
\040\006\003\125\004\003\023\031\103\150\141\155\142\145\162\163
\040\157\146\040\103\157\155\155\145\162\143\145\040\122\157\157
\164
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\001\000
END
CKA_VALUE MULTILINE_OCTAL
\060\202\004\275\060\202\003\245\240\003\002\001\002\002\001\000
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060
\177\061\013\060\011\006\003\125\004\006\023\002\105\125\061\047
\060\045\006\003\125\004\012\023\036\101\103\040\103\141\155\145
```

\162\146\151\162\155\141\040\123\101\040\103\111\106\040\101\070  
\062\067\064\063\062\070\067\061\043\060\041\006\003\125\004\013  
\023\032\150\164\164\160\072\057\057\167\167\167\056\143\150\141  
\155\142\145\162\163\151\147\156\056\157\162\147\061\042\060\040  
\006\003\125\004\003\023\031\103\150\141\155\142\145\162\163\040  
\157\146\040\103\157\155\155\145\162\143\145\040\122\157\157\164  
\060\036\027\015\060\063\060\071\063\060\061\066\061\063\064\063  
\132\027\015\063\067\060\071\063\060\061\066\061\063\064\064\132  
\060\177\061\013\060\011\006\003\125\004\006\023\002\105\125\061  
\047\060\045\006\003\125\004\012\023\036\101\103\040\103\141\155  
\145\162\146\151\162\155\141\040\123\101\040\103\111\106\040\101  
\070\062\067\064\063\062\070\067\061\043\060\041\006\003\125\004  
\013\023\032\150\164\164\160\072\057\057\167\167\167\056\143\150  
\141\155\142\145\162\163\151\147\156\056\157\162\147\061\042\060  
\040\006\003\125\004\003\023\031\103\150\141\155\142\145\162\163  
\040\157\146\040\103\157\155\155\145\162\143\145\040\122\157\157  
\164\060\202\001\040\060\015\006\011\052\206\110\206\367\015\001  
\001\001\005\000\003\202\001\015\000\060\202\001\010\002\202\001  
\001\000\267\066\125\345\245\135\030\060\340\332\211\124\221\374  
\310\307\122\370\057\120\331\357\261\165\163\145\107\175\033\133  
\272\165\305\374\241\210\044\372\057\355\312\010\112\071\124\304  
\121\172\265\332\140\352\070\074\201\262\313\361\273\331\221\043  
\077\110\001\160\165\251\005\052\255\037\161\363\311\124\075\035  
\006\152\100\076\263\014\205\356\134\033\171\302\142\304\270\066  
\216\065\135\001\014\043\004\107\065\252\233\140\116\240\146\075  
\313\046\012\234\100\241\364\135\230\277\161\253\245\000\150\052  
\355\203\172\017\242\024\265\324\042\263\200\260\074\014\132\121  
\151\055\130\030\217\355\231\236\361\256\342\225\346\366\107\250  
\326\014\017\260\130\130\333\303\146\067\236\233\221\124\063\067  
\322\224\034\152\110\311\311\362\245\332\245\014\043\367\043\016  
\234\062\125\136\161\234\204\005\121\232\055\375\346\116\052\064  
\132\336\312\100\067\147\014\124\041\125\167\332\012\014\314\227  
\256\200\334\224\066\112\364\076\316\066\023\036\123\344\254\116  
\072\005\354\333\256\162\234\070\213\320\071\073\211\012\076\167  
\376\165\002\001\003\243\202\001\104\060\202\001\100\060\022\006  
\003\125\035\023\001\001\377\004\010\060\006\001\001\377\002\001  
\014\060\074\006\003\125\035\037\004\065\060\063\060\061\240\057  
\240\055\206\053\150\164\164\160\072\057\057\143\162\154\056\143  
\150\141\155\142\145\162\163\151\147\156\056\157\162\147\057\143  
\150\141\155\142\145\162\163\162\157\157\164\056\143\162\154\060  
\035\006\003\125\035\016\004\026\004\024\343\224\365\261\115\351  
\333\241\051\133\127\213\115\166\006\166\341\321\242\212\060\016  
\006\003\125\035\017\001\001\377\004\004\003\002\001\006\060\021  
\006\011\140\206\110\001\206\370\102\001\001\004\004\003\002\000  
\007\060\047\006\003\125\035\021\004\040\060\036\201\034\143\150  
\141\155\142\145\162\163\162\157\157\164\100\143\150\141\155\142  
\145\162\163\151\147\156\056\157\162\147\060\047\006\003\125\035  
\022\004\040\060\036\201\034\143\150\141\155\142\145\162\163\162



\157\157\164\100\143\150\141\155\142\145\162\163\151\147\156\056  
\157\162\147\060\130\006\003\125\035\040\004\121\060\117\060\115  
\006\013\053\006\001\004\001\201\207\056\012\003\001\060\076\060  
\074\006\010\053\006\001\005\005\007\002\001\026\060\150\164\164  
\160\072\057\057\143\160\163\056\143\150\141\155\142\145\162\163  
\151\147\156\056\157\162\147\057\143\160\163\057\143\150\141\155  
\142\145\162\163\162\157\157\164\056\150\164\155\154\060\015\006  
\011\052\206\110\206\367\015\001\001\005\005\000\003\202\001\001  
\000\014\101\227\302\032\206\300\042\174\237\373\220\363\032\321  
\003\261\357\023\371\041\137\004\234\332\311\245\215\047\154\226  
\207\221\276\101\220\001\162\223\347\036\175\137\366\211\306\135  
\247\100\011\075\254\111\105\105\334\056\215\060\150\262\011\272  
\373\303\057\314\272\013\337\077\167\173\106\175\072\022\044\216  
\226\217\074\005\012\157\322\224\050\035\155\014\300\056\210\042  
\325\330\317\035\023\307\360\110\327\327\005\247\317\307\107\236  
\073\074\064\310\200\117\324\024\273\374\015\120\367\372\263\354  
\102\137\251\335\155\310\364\165\317\173\301\162\046\261\001\034  
\134\054\375\172\116\264\001\305\005\127\271\347\074\252\005\331  
\210\351\007\106\101\316\357\101\201\256\130\337\203\242\256\312  
\327\167\037\347\000\074\235\157\216\344\062\011\035\115\170\064  
\170\064\074\224\233\046\355\117\161\306\031\172\275\040\042\110  
\132\376\113\175\003\267\347\130\276\306\062\116\164\036\150\335  
\250\150\133\263\076\356\142\175\331\200\350\012\165\172\267\356  
\264\145\232\041\220\340\252\320\230\274\070\265\163\074\213\370  
\334

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER MULTILINE\_OCTAL

\062\061\060\063\060\061\060\060\060\060\060\060\132

END

# Trust for "Camerfirma Chambers of Commerce Root"

# Issuer: CN=Chambers of Commerce Root,OU=http://www.chambersign.org,O=AC Camerfirma SA CIF  
A82743287,C=EU

# Serial Number: 0 (0x0)

# Subject: CN=Chambers of Commerce Root,OU=http://www.chambersign.org,O=AC Camerfirma SA CIF  
A82743287,C=EU

# Not Valid Before: Tue Sep 30 16:13:43 2003

# Not Valid After : Wed Sep 30 16:13:44 2037

# Fingerprint (SHA-256):

0C:25:8A:12:A5:67:4A:EF:25:F2:8B:A7:DC:FA:EC:EE:A3:48:E5:41:E6:F5:CC:4E:E6:3B:71:B3:61:60:6A:C3

# Fingerprint (SHA1): 6E:3A:55:A4:19:0C:19:5C:93:84:3C:C0:DB:72:2E:31:30:61:F0:B1

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL

```
CK_FALSE
CKA_LABEL UTF8 "Camerfirma Chambers of Commerce Root"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\156\072\125\244\031\014\031\134\223\204\074\300\333\162\056\061
\060\141\360\261
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\260\001\356\024\331\257\051\030\224\166\216\361\151\063\052\204
END
CKA_ISSUER MULTILINE_OCTAL
\060\177\061\013\060\011\006\003\125\004\006\023\002\105\125\061
\047\060\045\006\003\125\004\012\023\036\101\103\040\103\141\155
\145\162\146\151\162\155\141\040\123\101\040\103\111\106\040\101
\070\062\067\064\063\062\070\067\061\043\060\041\006\003\125\004
\013\023\032\150\164\164\160\072\057\057\167\167\167\056\143\150
\141\155\142\145\162\163\151\147\156\056\157\162\147\061\042\060
\040\006\003\125\004\003\023\031\103\150\141\155\142\145\162\163
\040\157\146\040\103\157\155\155\145\162\143\145\040\122\157\157
\164
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\000
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING
CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "XRamp Global CA Root"
#
# Issuer: CN=XRamp Global Certification Authority,O=XRamp Security Services
Inc,OU=www.xrampsecurity.com,C=US
# Serial Number:50:94:6c:ec:18:ea:d5:9c:4d:d5:97:ef:75:8f:a0:ad
# Subject: CN=XRamp Global Certification Authority,O=XRamp Security Services
Inc,OU=www.xrampsecurity.com,C=US
# Not Valid Before: Mon Nov 01 17:14:04 2004
# Not Valid After : Mon Jan 01 05:37:19 2035
# Fingerprint (SHA-256):
CE:CD:DC:90:50:99:D8:DA:DF:C5:B1:D2:09:B7:37:CB:E2:C1:8C:FB:2C:10:C0:FF:0B:CF:0D:32:86:FC:1A:A2
# Fingerprint (SHA1): B8:01:86:D1:EB:9C:86:A5:41:04:CF:30:54:F3:4C:52:B7:E5:58:C6
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "XRamp Global CA Root"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
```

CKA\_SUBJECT MULTILINE\_OCTAL

\060\201\202\061\013\060\011\006\003\125\004\006\023\002\125\123  
\061\036\060\034\006\003\125\004\013\023\025\167\167\167\056\170  
\162\141\155\160\163\145\143\165\162\151\164\171\056\143\157\155  
\061\044\060\042\006\003\125\004\012\023\033\130\122\141\155\160  
\040\123\145\143\165\162\151\164\171\040\123\145\162\166\151\143  
\145\163\040\111\156\143\061\055\060\053\006\003\125\004\003\023  
\044\130\122\141\155\160\040\107\154\157\142\141\154\040\103\145  
\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150  
\157\162\151\164\171

END

CKA\_ID

UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\202\061\013\060\011\006\003\125\004\006\023\002\125\123  
\061\036\060\034\006\003\125\004\013\023\025\167\167\167\056\170  
\162\141\155\160\163\145\143\165\162\151\164\171\056\143\157\155  
\061\044\060\042\006\003\125\004\012\023\033\130\122\141\155\160  
\040\123\145\143\165\162\151\164\171\040\123\145\162\166\151\143  
\145\163\040\111\156\143\061\055\060\053\006\003\125\004\003\023  
\044\130\122\141\155\160\040\107\154\157\142\141\154\040\103\145  
\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150  
\157\162\151\164\171

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\020\120\224\154\354\030\352\325\234\115\325\227\357\165\217  
\240\255

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\004\060\060\202\003\030\240\003\002\001\002\002\020\120  
\224\154\354\030\352\325\234\115\325\227\357\165\217\240\255\060  
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\201  
\202\061\013\060\011\006\003\125\004\006\023\002\125\123\061\036  
\060\034\006\003\125\004\013\023\025\167\167\167\056\170\162\141  
\155\160\163\145\143\165\162\151\164\171\056\143\157\155\061\044  
\060\042\006\003\125\004\012\023\033\130\122\141\155\160\040\123  
\145\143\165\162\151\164\171\040\123\145\162\166\151\143\145\163  
\040\111\156\143\061\055\060\053\006\003\125\004\003\023\044\130  
\122\141\155\160\040\107\154\157\142\141\154\040\103\145\162\164  
\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162  
\151\164\171\060\036\027\015\060\064\061\061\060\061\061\067\061  
\064\060\064\132\027\015\063\065\060\061\060\061\060\065\063\067  
\061\071\132\060\201\202\061\013\060\011\006\003\125\004\006\023  
\002\125\123\061\036\060\034\006\003\125\004\013\023\025\167\167  
\167\056\170\162\141\155\160\163\145\143\165\162\151\164\171\056  
\143\157\155\061\044\060\042\006\003\125\004\012\023\033\130\122  
\141\155\160\040\123\145\143\165\162\151\164\171\040\123\145\162

\166\151\143\145\163\040\111\156\143\061\055\060\053\006\003\125  
\004\003\023\044\130\122\141\155\160\040\107\154\157\142\141\154  
\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101  
\165\164\150\157\162\151\164\171\060\202\001\042\060\015\006\011  
\052\206\110\206\367\015\001\001\001\005\000\003\202\001\017\000  
\060\202\001\012\002\202\001\001\000\230\044\036\275\025\264\272  
\337\307\214\245\047\266\070\013\151\363\266\116\250\054\056\041  
\035\134\104\337\041\135\176\043\164\376\136\176\264\112\267\246  
\255\037\256\340\006\026\342\233\133\331\147\164\153\135\200\217  
\051\235\206\033\331\234\015\230\155\166\020\050\130\344\145\260  
\177\112\230\171\237\340\303\061\176\200\053\265\214\300\100\073  
\021\206\320\313\242\206\066\140\244\325\060\202\155\331\156\320  
\017\022\004\063\227\137\117\141\132\360\344\371\221\253\347\035  
\073\274\350\317\364\153\055\064\174\342\110\141\034\216\363\141  
\104\314\157\240\112\251\224\260\115\332\347\251\064\172\162\070  
\250\101\314\074\224\021\175\353\310\246\214\267\206\313\312\063  
\073\331\075\067\213\373\172\076\206\054\347\163\327\012\127\254  
\144\233\031\353\364\017\004\010\212\254\003\027\031\144\364\132  
\045\042\215\064\054\262\366\150\035\022\155\323\212\036\024\332  
\304\217\246\342\043\205\325\172\015\275\152\340\351\354\354\027  
\273\102\033\147\252\045\355\105\203\041\374\301\311\174\325\142  
\076\372\362\305\055\323\375\324\145\002\003\001\000\001\243\201  
\237\060\201\234\060\023\006\011\053\006\001\004\001\202\067\024  
\002\004\006\036\004\000\103\000\101\060\013\006\003\125\035\017  
\004\004\003\002\001\206\060\017\006\003\125\035\023\001\001\377  
\004\005\060\003\001\001\377\060\035\006\003\125\035\016\004\026  
\004\024\306\117\242\075\006\143\204\011\234\316\142\344\004\254  
\215\134\265\351\266\033\060\066\006\003\125\035\037\004\057\060  
\055\060\053\240\051\240\047\206\045\150\164\164\160\072\057\057  
\143\162\154\056\170\162\141\155\160\163\145\143\165\162\151\164  
\171\056\143\157\155\057\130\107\103\101\056\143\162\154\060\020  
\006\011\053\006\001\004\001\202\067\025\001\004\003\002\001\001  
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\003  
\202\001\001\000\221\025\071\003\001\033\147\373\112\034\371\012  
\140\133\241\332\115\227\142\371\044\123\047\327\202\144\116\220  
\056\303\111\033\053\232\334\374\250\170\147\065\361\035\360\021  
\275\267\110\343\020\366\015\337\077\322\311\266\252\125\244\110  
\272\002\333\336\131\056\025\133\073\235\026\175\107\327\067\352  
\137\115\166\022\066\273\037\327\241\201\004\106\040\243\054\155  
\251\236\001\176\077\051\316\000\223\337\375\311\222\163\211\211  
\144\236\347\053\344\034\221\054\322\271\316\175\316\157\061\231  
\323\346\276\322\036\220\360\011\024\171\134\043\253\115\322\332  
\041\037\115\231\171\235\341\317\047\237\020\233\034\210\015\260  
\212\144\101\061\270\016\154\220\044\244\233\134\161\217\272\273  
\176\034\033\333\152\200\017\041\274\351\333\246\267\100\364\262  
\213\251\261\344\357\232\032\320\075\151\231\356\250\050\243\341  
\074\263\360\262\021\234\317\174\100\346\335\347\103\175\242\330  
\072\265\251\215\362\064\231\304\324\020\341\006\375\011\204\020

```
\073\356\304\114\364\354\047\174\102\302\164\174\202\212\011\311
\264\003\045\274
END
CKA_NSS_MOZILLA_CA_POLICY
CK_BBOOL CK_TRUE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

# Trust for "XRamp Global CA Root"
# Issuer: CN=XRamp Global Certification Authority,O=XRamp Security Services
Inc,OU=www.xrampsecurity.com,C=US
# Serial Number:50:94:6c:ec:18:ea:d5:9c:4d:d5:97:ef:75:8f:a0:ad
# Subject: CN=XRamp
Global Certification Authority,O=XRamp Security Services Inc,OU=www.xrampsecurity.com,C=US
# Not Valid Before: Mon Nov 01 17:14:04 2004
# Not Valid After : Mon Jan 01 05:37:19 2035
# Fingerprint (SHA-256):
CE:CD:DC:90:50:99:D8:DA:DF:C5:B1:D2:09:B7:37:CB:E2:C1:8C:FB:2C:10:C0:FF:0B:CF:0D:32:86:FC:1A:A2
# Fingerprint (SHA1): B8:01:86:D1:EB:9C:86:A5:41:04:CF:30:54:F3:4C:52:B7:E5:58:C6
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "XRamp Global CA Root"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\270\001\206\321\353\234\206\245\101\004\317\060\124\363\114\122
\267\345\130\306
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\241\013\104\263\312\020\330\000\156\235\017\330\017\222\012\321
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\202\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\036\060\034\006\003\125\004\013\023\025\167\167\167\056\170
\162\141\155\160\163\145\143\165\162\151\164\171\056\143\157\155
\061\044\060\042\006\003\125\004\012\023\033\130\122\141\155\160
\040\123\145\143\165\162\151\164\171\040\123\145\162\166\151\143
\145\163\040\111\156\143\061\055\060\053\006\003\125\004\003\023
\044\130\122\141\155\160\040\107\154\157\142\141\154\040\103\145
\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150
\157\162\151\164\171
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\120\224\154\354\030\352\325\234\115\325\227\357\165\217
\240\255
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
```

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR  
CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR  
CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "Go Daddy Class 2 CA"

#

# Issuer: OU=Go Daddy Class 2 Certification Authority,O="The Go Daddy Group, Inc.",C=US

# Serial Number: 0 (0x0)

# Subject: OU=Go Daddy Class 2 Certification Authority,O="The Go Daddy Group, Inc.",C=US

# Not Valid Before: Tue Jun 29 17:06:20 2004

# Not Valid After : Thu Jun

29 17:06:20 2034

# Fingerprint (SHA-256):

C3:84:6B:F2:4B:9E:93:CA:64:27:4C:0E:C6:7C:1E:CC:5E:02:4F:FC:AC:D2:D7:40:19:35:0E:81:FE:54:6A:E4

# Fingerprint (SHA1): 27:96:BA:E6:3F:18:01:E2:77:26:1B:A0:D7:77:70:02:8F:20:EE:E4

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Go Daddy Class 2 CA"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\143\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\041\060\037\006\003\125\004\012\023\030\124\150\145\040\107\157  
\040\104\141\144\144\171\040\107\162\157\165\160\054\040\111\156  
\143\056\061\061\060\057\006\003\125\004\013\023\050\107\157\040  
\104\141\144\144\171\040\103\154\141\163\163\040\062\040\103\145  
\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150  
\157\162\151\164\171

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\143\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\041\060\037\006\003\125\004\012\023\030\124\150\145\040\107\157  
\040\104\141\144\144\171\040\107\162\157\165\160\054\040\111\156  
\143\056\061\061\060\057\006\003\125\004\013\023\050\107\157\040  
\104\141\144\144\171\040\103\154\141\163\163\040\062\040\103\145  
\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150  
\157\162\151\164\171

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\001\000

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\004\000\060\202\002\350\240\003\002\001\002\002\001\000  
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060

\143\061\013\060\011\006\003\125\004\006\023\002\125\123\061\041  
\060\037\006\003\125\004\012\023\030\124\150\145\040\107\157\040  
\104\141\144\144\171\040\107\162\157\165\160\054\040\111\156\143  
\056\061\061\060\057\006\003\125\004\013\023\050\107\157\040\104  
\141\144\144\171\040\103\154\141\163\163\040\062\040\103\145\162  
\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157  
\162\151\164\171\060\036\027\015\060\064\060\066\062\071\061\067  
\060\066\062\060\132\027\015\063\064\060\066\062\071\061\067\060  
\066\062\060\132\060\143\061\013\060\011\006\003\125\004\006\023  
\002\125\123\061\041\060\037\006\003\125\004\012\023\030\124\150  
\145\040\107\157\040\104\141\144\144\171\040\107\162\157\165\160  
\054\040\111\156\143\056\061\061\060\057\006\003\125\004\013\023  
\050\107\157\040\104\141\144\144\171\040\103\154\141\163\163\040  
\062\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040  
\101\165\164\150\157\162\151\164\171\060\202\001\040\060\015\006  
\011\052\206\110\206\367\015\001\001\001\005\000\003\202\001\015  
\000\060\202\001\010\002\202\001\001\000\336\235\327\352\127\030  
\111\241\133\353\327\137\110\206\352\276\335\377\344\357\147\034  
\364\145\150\263\127\161\240\136\167\273\355\233\111\351\160\200  
\075\126\030\143\010\157\332\362\314\320\077\177\002\124\042\124  
\020\330\262\201\324\300\165\075\113\177\307\167\303\076\170\253  
\032\003\265\040\153\057\152\053\261\305\210\176\304\273\036\260  
\301\330\105\047\157\252\067\130\367\207\046\327\330\055\366\251  
\027\267\037\162\066\116\246\027\077\145\230\222\333\052\156\135  
\242\376\210\340\013\336\177\345\215\025\341\353\313\072\325\342  
\022\242\023\055\330\216\257\137\022\075\240\010\005\010\266\134  
\245\145\070\004\105\231\036\243\140\140\164\305\101\245\162\142  
\033\142\305\037\157\137\032\102\276\002\121\145\250\256\043\030  
\152\374\170\003\251\115\177\200\303\372\253\132\374\241\100\244  
\312\031\026\376\262\310\357\136\163\015\356\167\275\232\366\171  
\230\274\261\007\147\242\025\015\335\240\130\306\104\173\012\076  
\142\050\137\272\101\007\123\130\317\021\176\070\164\305\370\377  
\265\151\220\217\204\164\352\227\033\257\002\001\003\243\201\300  
\060\201\275\060\035\006\003\125\035\016\004\026\004\024\322\304  
\260\322\221\324\114\021\161\263\141\313\075\241\376\335\250\152  
\324\343\060\201\215\006\003\125\035\043\004\201\205\060\201\202  
\200\024\322\304\260\322\221\324\114\021\161\263\141\313\075\241  
\376\335\250\152\324\343\241\147\244\145\060\143\061\013\060\011  
\006\003\125\004\006\023\002\125\123\061\041\060\037\006\003\125  
\004\012\023\030\124\150\145\040\107\157\040\104\141\144\144\171  
\040\107\162\157\165\160\054\040\111\156\143\056\061\061\060\057  
\006\003\125\004\013\023\050\107\157\040\104\141\144\144\171\040  
\103\154\141\163\163\040\062\040\103\145\162\164\151\146\151\143  
\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171\202  
\001\000\060\014\006\003\125\035\023\004\005\060\003\001\001\377  
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\003  
\202\001\001\000\062\113\363\262\312\076\221\374\022\306\241\007  
\214\216\167\240\063\006\024\134\220\036\030\367\010\246\075\012

```
\031\371\207\200\021\156\151\344\226\027\060\377\064\221\143\162
\070\356\314\034\001\243\035\224\050\244\061\366\172\304\124\327
\366\345\061\130\003\242\314\316\142\333\224\105\163\265\277\105
\311\044\265\325\202\002\255\043\171\151\215\270\266\115\316\317
\114\312\063\043\350\034\210\252\235\213\101\156\026\311\040\345
\211\236\315\073\332\160\367\176\231\046\040\024\124\045\253\156
\163\205\346\233\041\235\012\154\202\016\250\370\302\014\372\020
\036\154\226\357\207\015\304\017\141\213\255\356\203\053\225\370
\216\222\204\162\071\353\040\352\203\355\203\315\227\156\010\274
\353\116\046\266\163\053\344\323\366\114\376\046\161\342\141\021
\164\112\377\127\032\207\017\165\110\056\317\121\151\027\240\002
\022\141\225\325\321\100\262\020\114\356\304\254\020\103\246\245
\236\012\325\225\142\232\015\317\210\202\305\062\014\344\053\237
\105\346\015\237\050\234\261\271\052\132\127\255\067\017\257\035
\177\333\275\237
```

END

CKA\_NSS\_Mozilla\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "Go Daddy Class 2 CA"

# Issuer: OU=Go Daddy Class 2 Certification Authority,O="The Go Daddy Group, Inc.",C=US

# Serial Number: 0 (0x0)

# Subject: OU=Go Daddy Class 2 Certification Authority,O="The Go Daddy Group, Inc.",C=US

# Not Valid Before: Tue

Jun 29 17:06:20 2004

# Not Valid After : Thu Jun 29 17:06:20 2034

# Fingerprint (SHA-256):

C3:84:6B:F2:4B:9E:93:CA:64:27:4C:0E:C6:7C:1E:CC:5E:02:4F:FC:AC:D2:D7:40:19:35:0E:81:FE:54:6A:E4

# Fingerprint (SHA1): 27:96:BA:E6:3F:18:01:E2:77:26:1B:A0:D7:77:70:02:8F:20:EE:E4

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Go Daddy Class 2 CA"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\047\226\272\346\077\030\001\342\167\046\033\240\327\167\160\002
\217\040\356\344
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\221\336\006\045\253\332\375\062\027\014\273\045\027\052\204\147
```

END

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\143\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\041\060\037\006\003\125\004\012\023\030\124\150\145\040\107\157
\040\104\141\144\144\171\040\107\162\157\165\160\054\040\111\156
\143\056\061\061\060\057\006\003\125\004\013\023\050\107\157\040
```



\104\141\144\144\171\040\103\154\141\163\163\040\062\040\103\145  
\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150  
\157\162\151\164\171

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\001\000

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "Starfield Class 2 CA"

#

# Issuer: OU=Starfield Class 2 Certification Authority,O="Starfield Technologies, Inc.",C=US

# Serial Number: 0 (0x0)

# Subject: OU=Starfield Class 2 Certification Authority,O="Starfield Technologies, Inc.",C=US

# Not Valid Before: Tue Jun 29 17:39:16 2004

# Not Valid After : Thu Jun 29 17:39:16 2034

# Fingerprint (SHA-256):

14:65:FA:20:53:97:B8:76:FA:A6:F0:A9:95:8E:55:90:E4:0F:CC:7F:AA:4F:B7:C2:C8:67:75:21:FB:5F:B6:58

# Fingerprint (SHA1): AD:7E:1C:28:B0:64:EF:8F:60:03:40:20:14:C3:D0:E3:37:0E:B5:8A

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE

CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Starfield Class 2 CA"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\150\061\013\060\011\006\003\125\004\006\023\002\125\123\061

\045\060\043\006\003\125\004\012\023\034\123\164\141\162\146\151

\145\154\144\040\124\145\143\150\156\157\154\157\147\151\145\163

\054\040\111\156\143\056\061\062\060\060\006\003\125\004\013\023

\051\123\164\141\162\146\151\145\154\144\040\103\154\141\163\163

\040\062\040\103\145\162\164\151\146\151\143\141\164\151\157\156

\040\101\165\164\150\157\162\151\164\171

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\150\061\013\060\011\006\003\125\004\006\023\002\125\123\061

\045\060\043\006\003\125\004\012\023\034\123\164\141\162\146\151

\145\154\144\040\124\145\143\150\156\157\154\157\147\151\145\163

\054\040\111\156\143\056\061\062\060\060\006\003\125\004\013\023

\051\123\164\141\162\146\151\145\154\144\040\103\154\141\163\163

\040\062\040\103\145\162\164\151\146\151\143\141\164\151\157\156

\040\101\165\164\150\157\162\151\164\171  
END  
CKA\_SERIAL\_NUMBER  
MULTILINE\_OCTAL  
\002\001\000  
END  
CKA\_VALUE MULTILINE\_OCTAL  
\060\202\004\017\060\202\002\367\240\003\002\001\002\002\001\000  
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060  
\150\061\013\060\011\006\003\125\004\006\023\002\125\123\061\045  
\060\043\006\003\125\004\012\023\034\123\164\141\162\146\151\145  
\154\144\040\124\145\143\150\156\157\154\157\147\151\145\163\054  
\040\111\156\143\056\061\062\060\060\006\003\125\004\013\023\051  
\123\164\141\162\146\151\145\154\144\040\103\154\141\163\163\040  
\062\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040  
\101\165\164\150\157\162\151\164\171\060\036\027\015\060\064\060  
\066\062\071\061\067\063\071\061\066\132\027\015\063\064\060\066  
\062\071\061\067\063\071\061\066\132\060\150\061\013\060\011\006  
\003\125\004\006\023\002\125\123\061\045\060\043\006\003\125\004  
\012\023\034\123\164\141\162\146\151\145\154\144\040\124\145\143  
\150\156\157\154\157\147\151\145\163\054\040\111\156\143\056\061  
\062\060\060\006\003\125\004\013\023\051\123\164\141\162\146\151  
\145\154\144\040\103\154\141\163\163\040\062\040\103\145\162\164  
\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162  
\151\164\171\060\202\001\040\060\015\006\011\052\206\110\206\367  
\015\001\001\001\005\000\003\202\001\015\000\060\202\001\010\002  
\202\001\001\000\267\062\310\376\351\161\246\004\205\255\014\021  
\144\337\316\115\357\310\003\030\207\077\241\253\373\074\246\237  
\360\303\241\332\324\330\156\053\123\220\373\044\244\076\204\360  
\236\350\137\354\345\047\104\365\050\246\077\173\336\340\052\360  
\310\257\123\057\236\312\005\001\223\036\217\146\034\071\247\115  
\372\132\266\163\004\045\146\353\167\177\347\131\306\112\231\045  
\024\124\353\046\307\363\177\031\325\060\160\217\257\260\106\052  
\377\255\353\051\355\327\237\252\004\207\243\324\371\211\245\064  
\137\333\103\221\202\066\331\146\074\261\270\271\202\375\234\072  
\076\020\310\073\357\006\145\146\172\233\031\030\075\377\161\121  
\074\060\056\137\276\075\167\163\262\135\006\154\303\043\126\232  
\053\205\046\222\034\247\002\263\344\077\015\257\010\171\202\270  
\066\075\352\234\323\065\263\274\151\312\365\314\235\350\375\144  
\215\027\200\063\156\136\112\135\231\311\036\207\264\235\032\300  
\325\156\023\065\043\136\337\233\137\075\357\326\367\166\302\352  
\076\273\170\015\034\102\147\153\004\330\370\326\332\157\213\362  
\104\240\001\253\002\001\003\243\201\305\060\201\302\060\035\006  
\003\125\035\016\004\026\004\024\277\137\267\321\316\335\037\206  
\364\133\125\254\334\327\020\302\016\251\210\347\060\201\222\006  
\003\125\035\043\004\201\212\060\201\207\200\024\277\137\267\321  
\316\335\037\206\364\133\125\254\334\327\020\302\016\251\210\347  
\241\154\244\152\060\150\061\013\060\011\006\003\125\004\006\023

\002\125\123\061\045\060\043\006\003\125\004\012\023\034\123\164  
\141\162\146\151\145\154\144\040\124\145\143\150\156\157\154\157  
\147\151\145\163\054\040\111\156\143\056\061\062\060\060\006\003  
\125\004\013\023\051\123\164\141\162\146\151\145\154\144\040\103  
\154\141\163\163\040\062\040\103\145\162\164\151\146\151\143\141  
\164\151\157\156\040\101\165\164\150\157\162\151\164\171\202\001  
\000\060\014\006\003\125\035\023\004\005\060\003\001\001\377\060  
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\003\202  
\001\001\000\005\235\077\210\235\321\311\032\125\241\254\151\363  
\363\131\332\233\001\207\032\117\127\251\241\171\011\052\333\367  
\057\262\036\314\307\136\152\330\203\207\241\227\357\111\065\076  
\167\006\101\130\142\277\216\130\270\012\147\077\354\263\335\041  
\146\037\311\124\372\162\314\075\114\100\330\201\257\167\236\203  
\172\273\242\307\365\064\027\216\331\021\100\364\374\054\052\115  
\025\177\247\142\135\056\045\323\000\013\040\032\035\150\371\027  
\270\364\275\213\355\050\131\335\115\026\213\027\203\310\262\145  
\307\055\172\245\252\274\123\206\155\335\127\244\312\370\040\101  
\013\150\360\364\373\164\276\126\135\172\171\365\371\035\205\343  
\055\225\276\365\161\220\103\314\215\037\232\000\012\207\051\351  
\125\042\130\000\043\352\343\022\103\051\133\107\010\335\214\101  
\152\145\006\250\345\041\252\101\264\225\041\225\271\175\321\064  
\253\023\326\255\274\334\342\075\071\315\275\076\165\160\241\030  
\131\003\311\042\264\217\234\325\136\052\327\245\266\324\012\155  
\370\267\100\021\106\232\037\171\016\142\277\017\227\354\340\057  
\037\027\224

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "Starfield Class 2 CA"

# Issuer: OU=Starfield Class 2 Certification Authority,O="Starfield Technologies, Inc.",C=US

# Serial Number: 0 (0x0)

# Subject: OU=Starfield Class 2 Certification Authority,O="Starfield Technologies, Inc.",C=US

# Not Valid Before: Tue Jun 29 17:39:16 2004

# Not Valid After : Thu Jun 29 17:39:16 2034

# Fingerprint (SHA-256):

14:65:FA:20:53:97:B8:76:FA:A6:F0:A9:95:8E:55:90:E4:0F:CC:7F:AA:4F:B7:C2:C8:67:75:21:FB:5F:B6:58

#

Fingerprint (SHA1): AD:7E:1C:28:B0:64:EF:8F:60:03:40:20:14:C3:D0:E3:37:0E:B5:8A

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Starfield Class 2 CA"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\255\176\034\050\260\144\357\217\140\003\100\040\024\303\320\343

```

\067\016\265\212
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\062\112\113\273\310\143\151\233\276\164\232\306\335\035\106\044
END
CKA_ISSUER MULTILINE_OCTAL
\060\150\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\045\060\043\006\003\125\004\012\023\034\123\164\141\162\146\151
\145\154\144\040\124\145\143\150\156\157\154\157\147\151\145\163
\054\040\111\156\143\056\061\062\060\060\006\003\125\004\013\023
\051\123\164\141\162\146\151\145\154\144\040\103\154\141\163\163
\040\062\040\103\145\162\164\151\146\151\143\141\164\151\157\156
\040\101\165\164\150\157\162\151\164\171
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\000
END
CKA_TRUST_SERVER_AUTH
CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "DigiCert Assured ID Root CA"
#
# Issuer: CN=DigiCert Assured ID Root CA,OU=www.digicert.com,O=DigiCert Inc,C=US
# Serial Number:0c:e7:e0:e5:17:d8:46:fe:8f:e5:60:fc:1b:f0:30:39
# Subject: CN=DigiCert Assured ID Root CA,OU=www.digicert.com,O=DigiCert Inc,C=US
# Not Valid Before: Fri Nov 10 00:00:00 2006
# Not Valid After : Mon Nov 10 00:00:00 2031
# Fingerprint (SHA-256):
3E:90:99:B5:01:5E:8F:48:6C:00:BC:EA:9D:11:1E:E7:21:FA:BA:35:5A:89:BC:F1:DF:69:56:1E:3D:C6:32:5C
# Fingerprint (SHA1): 05:63:B8:63:0D:62:D7:5A:BB:C8:AB:1E:4B:DF:B5:A8:99:B2:4D:43
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "DigiCert Assured ID Root CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT
MULTILINE_OCTAL
\060\145\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\025\060\023\006\003\125\004\012\023\014\104\151\147\151\103\145
\162\164\040\111\156\143\061\031\060\027\006\003\125\004\013\023
\020\167\167\167\056\144\151\147\151\143\145\162\164\056\143\157
\155\061\044\060\042\006\003\125\004\003\023\033\104\151\147\151
\103\145\162\164\040\101\163\163\165\162\145\144\040\111\104\040

```

\122\157\157\164\040\103\101

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\145\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\025\060\023\006\003\125\004\012\023\014\104\151\147\151\103\145  
\162\164\040\111\156\143\061\031\060\027\006\003\125\004\013\023  
\020\167\167\167\056\144\151\147\151\143\145\162\164\056\143\157  
\155\061\044\060\042\006\003\125\004\003\023\033\104\151\147\151  
\103\145\162\164\040\101\163\163\165\162\145\144\040\111\104\040  
\122\157\157\164\040\103\101

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\014\347\340\345\027\330\106\376\217\345\140\374\033\360  
\060\071

END

CKA\_VALUE

MULTILINE\_OCTAL

\060\202\003\267\060\202\002\237\240\003\002\001\002\002\020\014  
\347\340\345\027\330\106\376\217\345\140\374\033\360\060\071\060  
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\145  
\061\013\060\011\006\003\125\004\006\023\002\125\123\061\025\060  
\023\006\003\125\004\012\023\014\104\151\147\151\103\145\162\164  
\040\111\156\143\061\031\060\027\006\003\125\004\013\023\020\167  
\167\167\056\144\151\147\151\143\145\162\164\056\143\157\155\061  
\044\060\042\006\003\125\004\003\023\033\104\151\147\151\103\145  
\162\164\040\101\163\163\165\162\145\144\040\111\104\040\122\157  
\157\164\040\103\101\060\036\027\015\060\066\061\061\061\060\060  
\060\060\060\060\060\132\027\015\063\061\061\061\061\060\060\060  
\060\060\060\060\132\060\145\061\013\060\011\006\003\125\004\006  
\023\002\125\123\061\025\060\023\006\003\125\004\012\023\014\104  
\151\147\151\103\145\162\164\040\111\156\143\061\031\060\027\006  
\003\125\004\013\023\020\167\167\167\056\144\151\147\151\143\145  
\162\164\056\143\157\155\061\044\060\042\006\003\125\004\003\023  
\033\104\151\147\151\103\145\162\164\040\101\163\163\165\162\145  
\144\040\111\104\040\122\157\157\164\040\103\101\060\202\001\042  
\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003  
\202\001\017\000\060\202\001\012\002\202\001\001\000\255\016\025  
\316\344\103\200\134\261\207\363\267\140\371\161\022\245\256\334  
\046\224\210\252\364\316\365\040\071\050\130\140\014\370\200\332  
\251\025\225\062\141\074\265\261\050\204\212\212\334\237\012\014  
\203\027\172\217\220\254\212\347\171\123\134\061\204\052\366\017  
\230\062\066\166\314\336\335\074\250\242\357\152\373\041\362\122  
\141\337\237\040\327\037\342\261\331\376\030\144\322\022\133\137  
\371\130\030\065\274\107\315\241\066\371\153\177\324\260\070\076  
\301\033\303\214\063\331\330\057\030\376\050\017\263\247\203\326  
\303\156\104\300\141\065\226\026\376\131\234\213\166\155\327\361  
\242\113\015\053\377\013\162\332\236\140\320\216\220\065\306\170

\125\207\040\241\317\345\155\012\310\111\174\061\230\063\154\042  
\351\207\320\062\132\242\272\023\202\021\355\071\027\235\231\072  
\162\241\346\372\244\331\325\027\061\165\256\205\175\042\256\077  
\001\106\206\366\050\171\310\261\332\344\127\027\304\176\034\016  
\260\264\222\246\126\263\275\262\227\355\252\247\360\267\305\250  
\077\225\026\320\377\241\226\353\010\137\030\167\117\002\003\001  
\000\001\243\143\060\141\060\016\006\003\125\035\017\001\001\377  
\004\004\003\002\001\206\060\017\006\003\125\035\023\001\001\377  
\004\005\060\003\001\001\377\060\035\006\003\125\035\016\004\026  
\004\024\105\353\242\257\364\222\313\202\061\055\121\213\247\247  
\041\235\363\155\310\017\060\037\006\003\125\035\043\004\030\060  
\026\200\024\105\353\242\257\364\222\313\202\061\055\121\213\247  
\247\041\235\363\155\310\017\060\015\006\011\052\206\110\206\367  
\015\001\001\005\005\000\003\202\001\001\000\242\016\274\337\342  
\355\360\343\162\163\172\144\224\277\367\162\146\330\062\344\102  
\165\142\256\207\353\362\325\331\336\126\263\237\314\316\024\050  
\271\015\227\140\134\022\114\130\344\323\075\203\111\105\130\227  
\065\151\032\250\107\352\126\306\171\253\022\330\147\201\204\337  
\177\011\074\224\346\270\046\054\040\275\075\263\050\211\367\137  
\377\042\342\227\204\037\351\145\357\207\340\337\301\147\111\263  
\135\353\262\011\052\353\046\355\170\276\175\077\053\363\267\046  
\065\155\137\211\001\266\111\133\237\001\005\233\253\075\045\301  
\314\266\177\302\361\157\206\306\372\144\150\353\201\055\224\353  
\102\267\372\214\036\335\142\361\276\120\147\267\154\275\363\361  
\037\153\014\066\007\026\177\067\174\251\133\155\172\361\022\106  
\140\203\327\047\004\276\113\316\227\276\303\147\052\150\021\337  
\200\347\014\063\146\277\023\015\024\156\363\177\037\143\020\036  
\372\215\033\045\155\154\217\245\267\141\001\261\322\243\046\241  
\020\161\235\255\342\303\371\303\231\121\267\053\007\010\316\056  
\346\120\262\247\372\012\105\057\242\360\362

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER

CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "DigiCert Assured ID Root CA"

# Issuer: CN=DigiCert Assured ID Root CA,OU=www.digicert.com,O=DigiCert Inc,C=US

# Serial Number:0c:e7:e0:e5:17:d8:46:fe:8f:e5:60:fc:1b:f0:30:39

# Subject: CN=DigiCert Assured ID Root CA,OU=www.digicert.com,O=DigiCert Inc,C=US

# Not Valid Before: Fri Nov 10 00:00:00 2006

# Not Valid After : Mon Nov 10 00:00:00 2031

# Fingerprint (SHA-256):

3E:90:99:B5:01:5E:8F:48:6C:00:BC:EA:9D:11:1E:E7:21:FA:BA:35:5A:89:BC:F1:DF:69:56:1E:3D:C6:32:5C

# Fingerprint (SHA1): 05:63:B8:63:0D:62:D7:5A:BB:C8:AB:1E:4B:DF:B5:A8:99:B2:4D:43

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

```

CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "DigiCert Assured ID Root CA"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\005\143\270\143\015\142\327\132\273\310\253\036\113\337\265\250
\231\262\115\103
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\207\316\013\173\052\016\111\000\341\130\161\233\067\250\223\162
END
CKA_ISSUER
MULTILINE_OCTAL
\060\145\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\025\060\023\006\003\125\004\012\023\014\104\151\147\151\103\145
\162\164\040\111\156\143\061\031\060\027\006\003\125\004\013\023
\020\167\167\167\056\144\151\147\151\143\145\162\164\056\143\157
\155\061\044\060\042\006\003\125\004\003\023\033\104\151\147\151
\103\145\162\164\040\101\163\163\165\162\145\144\040\111\104\040
\122\157\157\164\040\103\101
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\014\347\340\345\027\330\106\376\217\345\140\374\033\360
\060\071
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "DigiCert Global Root CA"
#
# Issuer: CN=DigiCert Global Root CA,OU=www.digicert.com,O=DigiCert Inc,C=US
# Serial Number:08:3b:e0:56:90:42:46:b1:a1:75:6a:c9:59:91:c7:4a
#
# Subject: CN=DigiCert Global Root CA,OU=www.digicert.com,O=DigiCert Inc,C=US
# Not Valid Before: Fri Nov 10 00:00:00 2006
# Not Valid After : Mon Nov 10 00:00:00 2031
# Fingerprint (SHA-256):
43:48:A0:E9:44:4C:78:CB:26:5E:05:8D:5E:89:44:B4:D8:4F:96:62:BD:26:DB:25:7F:89:34:A4:43:C7:01:61
# Fingerprint (SHA1): A8:98:5D:3A:65:E5:E5:C4:B2:D7:D6:6D:40:C6:DD:2F:B1:9C:54:36
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "DigiCert Global Root CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL

```

\060\141\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\025\060\023\006\003\125\004\012\023\014\104\151\147\151\103\145  
\162\164\040\111\156\143\061\031\060\027\006\003\125\004\013\023  
\020\167\167\167\056\144\151\147\151\143\145\162\164\056\143\157  
\155\061\040\060\036\006\003\125\004\003\023\027\104\151\147\151  
\103\145\162\164\040\107\154\157\142\141\154\040\122\157\157\164  
\040\103\101

END

CKA\_ID

UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\141\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\025\060\023\006\003\125\004\012\023\014\104\151\147\151\103\145  
\162\164\040\111\156\143\061\031\060\027\006\003\125\004\013\023  
\020\167\167\167\056\144\151\147\151\143\145\162\164\056\143\157  
\155\061\040\060\036\006\003\125\004\003\023\027\104\151\147\151  
\103\145\162\164\040\107\154\157\142\141\154\040\122\157\157\164  
\040\103\101

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\010\073\340\126\220\102\106\261\241\165\152\311\131\221  
\307\112

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\257\060\202\002\227\240\003\002\001\002\002\020\010  
\073\340\126\220\102\106\261\241\165\152\311\131\221\307\112\060  
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\141  
\061\013\060\011\006\003\125\004\006\023\002\125\123\061\025\060  
\023\006\003\125\004\012\023\014\104\151\147\151\103\145\162\164  
\040\111\156\143\061\031\060\027\006\003\125\004\013\023\020\167  
\167\167\056\144\151\147\151\143\145\162\164\056\143\157\155\061  
\040\060\036\006\003\125\004\003\023\027\104\151\147\151\103\145  
\162\164\040\107\154\157\142\141\154\040\122\157\157\164\040\103  
\101\060\036\027\015\060\066\061\061\061\060\060\060\060\060\060  
\060\132\027\015\063\061\061\061\061\060\060\060\060\060\060  
\132\060\141\061\013\060\011\006\003\125\004\006\023\002\125\123  
\061\025\060\023\006\003\125\004\012\023\014\104\151\147\151\103  
\145\162\164\040\111\156\143\061\031\060\027\006\003\125\004\013  
\023\020\167\167\167\056\144\151\147\151\143\145\162\164\056\143  
\157\155\061\040\060\036\006\003\125\004\003\023\027\104\151\147  
\151\103\145\162\164\040\107\154\157\142\141\154\040\122\157\157  
\164\040\103\101\060\202\001\042\060\015\006\011\052\206\110\206  
\367\015\001\001\001\005\000\003\202\001\017\000\060\202\001\012  
\002\202\001\001\000\342\073\341\021\162\336\250\244\323\243\127  
\252\120\242\217\013\167\220\311\242\245\356\022\316\226\133\001  
\011\040\314\001\223\247\116\060\267\123\367\103\304\151\000\127  
\235\342\215\042\335\207\006\100\000\201\011\316\316\033\203\277  
\337\315\073\161\106\342\326\146\307\005\263\166\047\026\217\173



\236\036\225\175\356\267\110\243\010\332\326\257\172\014\071\006  
\145\177\112\135\037\274\027\370\253\276\356\050\327\164\177\172  
\170\231\131\205\150\156\134\043\062\113\277\116\300\350\132\155  
\343\160\277\167\020\277\374\001\366\205\331\250\104\020\130\062  
\251\165\030\325\321\242\276\107\342\047\152\364\232\063\370\111  
\010\140\213\324\137\264\072\204\277\241\252\112\114\175\076\317  
\117\137\154\166\136\240\113\067\221\236\334\042\346\155\316\024  
\032\216\152\313\376\315\263\024\144\027\307\133\051\236\062\277  
\362\356\372\323\013\102\324\253\267\101\062\332\014\324\357\370  
\201\325\273\215\130\077\265\033\350\111\050\242\160\332\061\004  
\335\367\262\026\362\114\012\116\007\250\355\112\075\136\265\177  
\243\220\303\257\047\002\003\001\000\001\243\143\060\141\060\016  
\006\003\125\035\017\001\001\377\004\004\003\002\001\206\060\017  
\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060  
\035\006\003\125\035\016\004\026\004\024\003\336\120\065\126\321  
\114\273\146\360\243\342\033\033\303\227\262\075\321\125\060\037  
\006\003\125\035\043\004\030\060\026\200\024\003\336\120\065\126  
\321\114\273\146\360\243\342\033\033\303\227\262\075\321\125\060  
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\003\202  
\001\001\000\313\234\067\252\110\023\022\012\372\335\104\234\117  
\122\260\364\337\256\004\365\171\171\010\243\044\030\374\113\053  
\204\300\055\271\325\307\376\364\301\037\130\313\270\155\234\172  
\164\347\230\051\253\021\265\343\160\240\241\315\114\210\231\223  
\214\221\160\342\253\017\034\276\223\251\377\143\325\344\007\140  
\323\243\277\235\133\011\361\325\216\343\123\364\216\143\372\077  
\247\333\264\146\337\142\146\326\321\156\101\215\362\055\265\352  
\167\112\237\235\130\342\053\131\300\100\043\355\055\050\202\105  
\076\171\124\222\046\230\340\200\110\250\067\357\360\326\171\140  
\026\336\254\350\016\315\156\254\104\027\070\057\111\332\341\105  
\076\052\271\066\123\317\072\120\006\367\056\350\304\127\111\154  
\141\041\030\325\004\255\170\074\054\072\200\153\247\353\257\025  
\024\351\330\211\301\271\070\154\342\221\154\212\377\144\271\167  
\045\127\060\300\033\044\243\341\334\351\337\107\174\265\264\044  
\010\005\060\354\055\275\013\277\105\277\120\271\251\363\353\230  
\001\022\255\310\210\306\230\064\137\215\012\074\306\351\325\225  
\225\155\336

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "DigiCert Global Root CA"

# Issuer: CN=DigiCert Global Root CA,OU=www.digicert.com,O=DigiCert Inc,C=US

# Serial Number:08:3b:e0:56:90:42:46:b1:a1:75:6a:c9:59:91:c7:4a

# Subject: CN=DigiCert Global Root CA,OU=www.digicert.com,O=DigiCert Inc,C=US

# Not Valid Before: Fri Nov 10 00:00:00 2006

# Not Valid After : Mon Nov 10 00:00:00 2031

```

# Fingerprint (SHA-256):
43:48:A0:E9:44:4C:78:CB:26:5E:05:8D:5E:89:44:B4:D8:4F:96:62:BD:26:DB:25:7F:89:34:A4:43:C7:01:61
#
Fingerprint (SHA1): A8:98:5D:3A:65:E5:E5:C4:B2:D7:D6:6D:40:C6:DD:2F:B1:9C:54:36
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "DigiCert Global Root CA"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\250\230\135\072\145\345\345\304\262\327\326\155\100\306\335\057
\261\234\124\066
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\171\344\251\204\015\175\072\226\327\300\117\342\103\114\211\056
END
CKA_ISSUER MULTILINE_OCTAL
\060\141\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\025\060\023\006\003\125\004\012\023\014\104\151\147\151\103\145
\162\164\040\111\156\143\061\031\060\027\006\003\125\004\013\023
\020\167\167\167\056\144\151\147\151\143\145\162\164\056\143\157
\155\061\040\060\036\006\003\125\004\003\023\027\104\151\147\151
\103\145\162\164\040\107\154\157\142\141\154\040\122\157\157\164
\040\103\101
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\010\073\340\126\220\102\106\261\241\165\152\311\131\221
\307\112
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "DigiCert High Assurance EV Root CA"
#
# Issuer: CN=DigiCert High Assurance EV Root CA,OU=www.digicert.com,O=DigiCert Inc,C=US
# Serial Number:02:ac:5c:26:6a:0b:40:9b:8f:0b:79:f2:ae:46:25:77
# Subject: CN=DigiCert High Assurance EV Root CA,OU=www.digicert.com,O=DigiCert Inc,C=US
# Not Valid Before: Fri Nov 10 00:00:00 2006
# Not Valid After : Mon Nov 10 00:00:00 2031
# Fingerprint (SHA-256):
74:31:E5:F4:C3:C1:CE:46:90:77:4F:0B:61:E0:54:40:88:3B:A9:A0:1E:D0:0B:A6:AB:D7:80:6E:D3:B1:18:CF
# Fingerprint (SHA1): 5F:B7:EE:06:33:E2:59:DB:AD:0C:4C:9A:E6:D3:8F:1A:61:C7:DC:25
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE

```

```
CKA_PRIVATE
CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "DigiCert High Assurance EV Root CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\154\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\025\060\023\006\003\125\004\012\023\014\104\151\147\151\103\145
\162\164\040\111\156\143\061\031\060\027\006\003\125\004\013\023
\020\167\167\167\056\144\151\147\151\143\145\162\164\056\143\157
\155\061\053\060\051\006\003\125\004\003\023\042\104\151\147\151
\103\145\162\164\040\110\151\147\150\040\101\163\163\165\162\141
\156\143\145\040\105\126\040\122\157\157\164\040\103\101
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\154\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\025\060\023\006\003\125\004\012\023\014\104\151\147\151\103\145
\162\164\040\111\156\143\061\031\060\027\006\003\125\004\013\023
\020\167\167\167\056\144\151\147\151\143\145\162\164\056\143\157
\155\061\053\060\051\006\003\125\004\003\023\042\104\151\147\151
\103\145\162\164\040\110\151\147\150\040\101\163\163\165\162\141
\156\143\145\040\105\126\040\122\157\157\164\040\103\101
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\002\254\134\046\152\013\100\233\217\013\171\362\256\106
\045\167
END
CKA_VALUE MULTILINE_OCTAL
\060\202\003\305\060\202\002\255\240\003\002\001\002\002\020\002
\254\134\046\152\013\100\233\217\013\171\362\256\106\045\167\060
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\154
\061\013\060\011\006\003\125\004\006\023\002\125\123\061\025\060
\023\006\003\125\004\012\023\014\104\151\147\151\103\145\162\164
\040\111\156\143\061\031\060\027\006\003\125\004\013\023\020\167
\167\167\056\144\151\147\151\143\145\162\164\056\143\157\155\061
\053\060\051\006\003\125\004\003\023\042\104\151\147\151\103\145
\162\164\040\110\151\147\150\040\101\163\163\165\162\141\156\143
\145\040\105\126\040\122\157\157\164\040\103\101\060\036\027\015
\060\066\061\061\061\060\060\060\060\060\060\060\132\027\015\063
\061\061\061\061\060\060\060\060\060\060\060\132\060\154\061\013
\060\011\006\003\125\004\006\023\002\125\123\061\025\060\023\006
\003\125\004\012\023\014\104\151\147\151\103\145\162\164\040\111
\156\143\061\031\060\027\006\003\125\004\013\023\020\167\167\167
\056\144\151\147\151\143\145\162\164\056\143\157\155\061\053\060
\051\006\003\125\004\003\023\042\104\151\147\151\103\145\162\164
\040\110\151\147\150\040\101\163\163\165\162\141\156\143\145\040
```

\105\126\040\122\157\157\164\040\103\101\060\202\001\042\060\015  
\006\011\052\206\110\206\367\015\001\001\001\005\000\003\202\001  
\017\000\060\202\001\012\002\202\001\001\000\306\314\345\163\346  
\373\324\273\345\055\055\062\246\337\345\201\077\311\315\045\111  
\266\161\052\303\325\224\064\147\242\012\034\260\137\151\246\100  
\261\304\267\262\217\320\230\244\251\101\131\072\323\334\224\326  
\074\333\164\070\244\112\314\115\045\202\367\112\245\123\022\070  
\356\363\111\155\161\221\176\143\266\253\246\137\303\244\204\370  
\117\142\121\276\370\305\354\333\070\222\343\006\345\010\221\014  
\304\050\101\125\373\313\132\211\025\176\161\350\065\277\115\162  
\011\075\276\072\070\120\133\167\061\033\215\263\307\044\105\232  
\247\254\155\000\024\132\004\267\272\023\353\121\012\230\101\101  
\042\116\145\141\207\201\101\120\246\171\134\211\336\031\112\127  
\325\056\346\135\034\123\054\176\230\315\032\006\026\244\150\163  
\320\064\004\023\134\241\161\323\132\174\125\333\136\144\341\067  
\207\060\126\004\345\021\264\051\200\022\361\171\071\210\242\002  
\021\174\047\146\267\210\267\170\362\312\012\250\070\253\012\144  
\302\277\146\135\225\204\301\241\045\036\207\135\032\120\013\040  
\022\314\101\273\156\013\121\070\270\113\313\002\003\001\000\001  
\243\143\060\141\060\016\006\003\125\035\017\001\001\377\004\004  
\003\002\001\206\060\017\006\003\125\035\023\001\001\377\004\005  
\060\003\001\001\377\060\035\006\003\125\035\016\004\026\004\024  
\261\076\303\151\003\370\277\107\001\324\230\046\032\010\002\357  
\143\144\053\303\060\037\006\003\125\035\043\004\030\060\026\200  
\024\261\076\303\151\003\370\277\107\001\324\230\046\032\010\002  
\357\143\144\053\303\060\015\006\011\052\206\110\206\367\015\001  
\001\005\005\000\003\202\001\001\000\034\032\006\227\334\327\234  
\237\074\210\146\006\010\127\041\333\041\107\370\052\147\252\277  
\030\062\166\100\020\127\301\212\363\172\331\021\145\216\065\372  
\236\374\105\265\236\331\114\061\113\270\221\350\103\054\216\263  
\170\316\333\343\123\171\161\326\345\041\224\001\332\125\207\232  
\044\144\366\212\146\314\336\234\067\315\250\064\261\151\233\043  
\310\236\170\042\053\160\103\343\125\107\061\141\031\357\130\305  
\205\057\116\060\366\240\061\026\043\310\347\342\145\026\063\313  
\277\032\033\240\075\370\312\136\213\061\213\140\010\211\055\014  
\006\134\122\267\304\371\012\230\321\025\137\237\022\276\174\066  
\143\070\275\104\244\177\344\046\053\012\304\227\151\015\351\214  
\342\300\020\127\270\310\166\022\221\125\362\110\151\330\274\052  
\002\133\017\104\324\040\061\333\364\272\160\046\135\220\140\236  
\274\113\027\011\057\264\313\036\103\150\311\007\047\301\322\134  
\367\352\041\271\150\022\234\074\234\277\236\374\200\134\233\143  
\315\354\107\252\045\047\147\240\067\363\000\202\175\124\327\251  
\370\351\056\023\243\167\350\037\112

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

```
# Trust for "DigiCert High Assurance EV Root CA"
# Issuer: CN=DigiCert High Assurance EV Root CA,OU=www.digicert.com,O=DigiCert Inc,C=US
# Serial Number:02:ac:5c:26:6a:0b:40:9b:8f:0b:79:f2:ae:46:25:77
# Subject: CN=DigiCert High Assurance EV Root CA,OU=www.digicert.com,O=DigiCert Inc,C=US
# Not Valid Before: Fri Nov 10 00:00:00 2006
# Not Valid After : Mon Nov 10 00:00:00 2031
# Fingerprint (SHA-256):
74:31:E5:F4:C3:C1:CE:46:90:77:4F:0B:61:E0:54:40:88:3B:A9:A0:1E:D0:0B:A6:AB:D7:80:6E:D3:B1:18:CF
# Fingerprint (SHA1): 5F:B7:EE:06:33:E2:59:DB:AD:0C:4C:9A:E6:D3:8F:1A:61:C7:DC:25
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE
CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "DigiCert High Assurance EV Root CA"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\137\267\356\006\063\342\131\333\255\014\114\232\346\323\217\032
\141\307\334\045
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\324\164\336\127\134\071\262\323\234\205\203\305\300\145\111\212
END
CKA_ISSUER MULTILINE_OCTAL
\060\154\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\025\060\023\006\003\125\004\012\023\014\104\151\147\151\103\145
\162\164\040\111\156\143\061\031\060\027\006\003\125\004\013\023
\020\167\167\167\056\144\151\147\151\143\145\162\164\056\143\157
\155\061\053\060\051\006\003\125\004\003\023\042\104\151\147\151
\103\145\162\164\040\110\151\147\150\040\101\163\163\165\162\141
\156\143\145\040\105\126\040\122\157\157\164\040\103\101
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\002\254\134\046\152\013\100\233\217\013\171\362\256\106
\045\167
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION
CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "SwissSign Gold CA - G2"
#
# Issuer: CN=SwissSign Gold CA - G2,O=SwissSign AG,C=CH
# Serial Number:00:bb:40:1c:43:f5:5e:4f:b0
# Subject: CN=SwissSign Gold CA - G2,O=SwissSign AG,C=CH
```

```
# Not Valid Before: Wed Oct 25 08:30:35 2006
# Not Valid After : Sat Oct 25 08:30:35 2036
# Fingerprint (SHA-256):
62:DD:0B:E9:B9:F5:0A:16:3E:A0:F8:E7:5C:05:3B:1E:CA:57:EA:55:C8:68:8F:64:7C:68:81:F2:C8:35:7B:95
# Fingerprint (SHA1): D8:C5:38:8A:B7:30:1B:1B:6E:D4:7A:E6:45:25:3A:6F:9F:1A:27:61
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "SwissSign Gold CA - G2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\105\061\013\060\011\006\003\125\004\006\023\002\103\110\061
\025\060\023\006\003\125\004\012\023\014\123\167\151\163\163\123
\151\147\156\040\101\107\061\037\060\035\006\003\125\004\003\023
\026\123\167\151\163\163\123\151\147\156\040\107\157\154\144\040
\103\101\040\055\040\107\062
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\105\061\013\060\011\006\003\125\004\006\023\002\103\110\061
\025\060\023\006\003\125\004\012\023\014\123\167\151\163\163\123
\151\147\156\040\101\107\061\037\060\035\006\003\125\004\003\023
\026\123\167\151\163\163\123\151\147\156\040\107\157\154\144\040
\103\101\040\055\040\107\062
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\011\000\273\100\034\103\365\136\117\260
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\272\060\202\003\242\240\003\002\001\002\002\011\000
\273\100\034\103\365\136\117\260\060\015\006\011\052\206\110\206
\367\015\001\001\005\005\000\060\105\061\013\060\011\006\003\125
\004\006\023\002\103\110\061\025\060\023\006\003\125\004\012\023
\014\123\167\151\163\163\123\151\147\156\040\101\107\061\037\060
\035\006\003\125\004\003\023\026\123\167\151\163\163\123\151\147
\156\040\107\157\154\144\040\103\101\040\055\040\107\062\060\036
\027\015\060\066\061\060\062\065\060\070\063\060\063\065\132\027
\015\063\066\061\060\062\065\060\070\063\060\063\065\132\060\105
\061\013\060\011\006\003\125\004\006\023\002\103\110\061\025\060
\023\006\003\125\004\012\023\014\123\167\151\163\163\123\151\147
\156\040\101\107\061\037\060\035\006\003\125\004\003\023\026\123
\167\151\163\163\123\151\147\156\040\107\157\154\144\040\103\101
\040\055\040\107\062\060\202\002\042\060\015\006\011\052\206\110
\206\367\015\001\001\001\005\000\003\202\002\017\000\060\202\002
\012\002\202\002\001\000\257\344\356\176\213\044\016\022\156\251
\120\055\026\104\073\222\222\134\312\270\135\204\222\102\023\052
```

\274\145\127\202\100\076\127\044\315\120\213\045\052\267\157\374  
\357\242\320\300\037\002\044\112\023\226\217\043\023\346\050\130  
\000\243\107\307\006\247\204\043\053\273\275\226\053\177\125\314  
\213\301\127\037\016\142\145\017\335\075\126\212\163\332\256\176  
\155\272\201\034\176\102\214\040\065\331\103\115\204\372\204\333  
\122\054\363\016\047\167\013\153\277\021\057\162\170\237\056\330  
\076\346\030\067\132\052\162\371\332\142\220\222\225\312\037\234  
\351\263\074\053\313\363\001\023\277\132\317\301\265\012\140\275  
\335\265\231\144\123\270\240\226\263\157\342\046\167\221\214\340  
\142\020\002\237\064\017\244\325\222\063\121\336\276\215\272\204  
\172\140\074\152\333\237\053\354\336\336\001\077\156\115\345\120  
\206\313\264\257\355\104\100\305\312\132\214\332\322\053\174\250  
\356\276\246\345\012\252\016\245\337\005\122\267\125\307\042\135  
\062\152\227\227\143\023\333\311\333\171\066\173\205\072\112\305  
\122\211\371\044\347\235\167\251\202\377\125\034\245\161\151\053  
\321\002\044\362\263\046\324\153\332\004\125\345\301\012\307\155  
\060\067\220\052\344\236\024\063\136\026\027\125\305\133\265\313  
\064\211\222\361\235\046\217\241\007\324\306\262\170\120\333\014  
\014\013\174\013\214\101\327\271\351\335\214\210\367\243\115\262  
\062\314\330\027\332\315\267\316\146\235\324\375\136\377\275\227  
\076\051\165\347\176\247\142\130\257\045\064\245\101\307\075\274  
\015\120\312\003\003\017\010\132\037\225\163\170\142\277\257\162  
\024\151\016\245\345\003\016\170\216\046\050\102\360\007\013\142  
\040\020\147\071\106\372\251\003\314\004\070\172\146\357\040\203  
\265\214\112\126\216\221\000\374\216\134\202\336\210\240\303\342  
\150\156\175\215\357\074\335\145\364\135\254\121\357\044\200\256  
\252\126\227\157\371\255\175\332\141\077\230\167\074\245\221\266  
\034\214\046\332\145\242\011\155\301\342\124\343\271\312\114\114  
\200\217\167\173\140\232\036\337\266\362\110\036\016\272\116\124  
\155\230\340\341\242\032\242\167\120\317\304\143\222\354\107\031  
\235\353\346\153\316\301\002\003\001\000\001\243\201\254\060\201  
\251\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001  
\006\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001  
\001\377\060\035\006\003\125\035\016\004\026\004\024\133\045\173  
\226\244\145\121\176\270\071\363\300\170\146\136\350\072\347\360  
\356\060\037\006\003\125\035\043\004\030\060\026\200\024\133\045  
\173\226\244\145\121\176\270\071\363\300\170\146\136\350\072\347  
\360\356\060\106\006\003\125\035\040\004\077\060\075\060\073\006  
\011\140\205\164\001\131\001\002\001\001\060\056\060\054\006\010  
\053\006\001\005\005\007\002\001\026\040\150\164\164\160\072\057  
\057\162\145\160\157\163\151\164\157\162\171\056\163\167\151\163  
\163\163\151\147\156\056\143\157\155\057\060\015\006\011\052\206  
\110\206\367\015\001\001\005\005\000\003\202\002\001\000\047\272  
\343\224\174\361\256\300\336\027\346\345\330\325\365\124\260\203  
\364\273\315\136\005\173\117\237\165\146\257\074\350\126\176\374  
\162\170\070\003\331\053\142\033\000\271\370\351\140\315\314\316  
\121\212\307\120\061\156\341\112\176\030\057\151\131\266\075\144  
\201\053\343\203\204\346\042\207\216\175\340\356\002\231\141\270

\036\364\270\053\210\022\026\204\302\061\223\070\226\061\246\271  
\073\123\077\303\044\223\126\133\151\222\354\305\301\273\070\000  
\343\354\027\251\270\334\307\174\001\203\237\062\107\272\122\042  
\064\035\062\172\011\126\247\174\045\066\251\075\113\332\300\202  
\157\012\273\022\310\207\113\047\021\371\036\055\307\223\077\236  
\333\137\046\153\122\331\056\212\361\024\306\104\215\025\251\267  
\277\275\336\246\032\356\256\055\373\110\167\027\376\273\354\257  
\030\365\052\121\360\071\204\227\225\154\156\033\303\053\304\164  
\140\171\045\260\012\047\337\337\136\322\071\317\105\175\102\113  
\337\263\054\036\305\306\135\312\125\072\240\234\151\232\217\332  
\357\262\260\074\237\207\154\022\053\145\160\025\122\061\032\044  
\317\157\061\043\120\037\214\117\217\043\303\164\101\143\034\125  
\250\024\335\076\340\121\120\317\361\033\060\126\016\222\260\202  
\205\330\203\313\042\144\274\055\270\045\325\124\242\270\006\352  
\255\222\244\044\240\301\206\265\112\023\152\107\317\056\013\126  
\225\124\313\316\232\333\152\264\246\262\333\101\010\206\047\167  
\367\152\240\102\154\013\070\316\327\165\120\062\222\302\337\053  
\060\042\110\320\325\101\070\045\135\244\351\135\237\306\224\165  
\320\105\375\060\227\103\217\220\253\012\307\206\163\140\112\151  
\055\336\245\170\327\006\332\152\236\113\076\167\072\040\023\042  
\001\320\277\150\236\143\140\153\065\115\013\155\272\241\075\300  
\223\340\177\043\263\125\255\162\045\116\106\371\322\026\357\260  
\144\301\001\236\351\312\240\152\230\016\317\330\140\362\057\111  
\270\344\102\341\070\065\026\364\310\156\117\367\201\126\350\272  
\243\276\043\257\256\375\157\003\340\002\073\060\166\372\033\155  
\101\317\001\261\351\270\311\146\364\333\046\363\072\244\164\362  
\111\044\133\311\260\320\127\301\372\076\172\341\227\311

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "SwissSign Gold CA - G2"

# Issuer: CN=SwissSign Gold CA - G2,O=SwissSign AG,C=CH

# Serial Number:00:bb:40:1c:43:f5:5e:4f:b0

# Subject: CN=SwissSign Gold CA - G2,O=SwissSign AG,C=CH

# Not Valid Before: Wed Oct 25 08:30:35 2006

# Not Valid

After : Sat Oct 25 08:30:35 2036

# Fingerprint (SHA-256):

62:DD:0B:E9:B9:F5:0A:16:3E:A0:F8:E7:5C:05:3B:1E:CA:57:EA:55:C8:68:8F:64:7C:68:81:F2:C8:35:7B:95

# Fingerprint (SHA1): D8:C5:38:8A:B7:30:1B:1B:6E:D4:7A:E6:45:25:3A:6F:9F:1A:27:61

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "SwissSign Gold CA - G2"



```

CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\330\305\070\212\267\060\033\033\156\324\172\346\105\045\072\157
\237\032\047\141
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\044\167\331\250\221\321\073\372\210\055\302\377\370\315\063\223
END
CKA_ISSUER MULTILINE_OCTAL
\060\105\061\013\060\011\006\003\125\004\006\023\002\103\110\061
\025\060\023\006\003\125\004\012\023\014\123\167\151\163\163\123
\151\147\156\040\101\107\061\037\060\035\006\003\125\004\003\023
\026\123\167\151\163\163\123\151\147\156\040\107\157\154\144\040
\103\101\040\055\040\107\062
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\011\000\273\100\034\103\365\136\117\260
END
CKA_TRUST_SERVER_AUTH
CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "SwissSign Silver CA - G2"
#
# Issuer: CN=SwissSign Silver CA - G2,O=SwissSign AG,C=CH
# Serial Number:4f:1b:d4:2f:54:bb:2f:4b
# Subject: CN=SwissSign Silver CA - G2,O=SwissSign AG,C=CH
# Not Valid Before: Wed Oct 25 08:32:46 2006
# Not Valid After : Sat Oct 25 08:32:46 2036
# Fingerprint (SHA-256):
BE:6C:4D:A2:BB:B9:BA:59:B6:F3:93:97:68:37:42:46:C3:C0:05:99:3F:A9:8F:02:0D:1D:ED:BE:D4:8A:81:D5
# Fingerprint (SHA1): 9B:AA:E5:9F:56:EE:21:CB:43:5A:BE:25:93:DF:A7:F0:40:D1:1D:CB
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "SwissSign Silver CA - G2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\107\061\013\060\011\006\003\125\004\006\023\002\103\110\061
\025\060\023\006\003\125\004\012\023\014\123\167\151\163\163\123
\151\147\156\040\101\107\061\041\060\037\006\003\125\004\003\023
\030\123\167\151\163\163\123\151\147\156\040\123\151\154\166\145
\162\040\103\101\040\055\040\107\062
END
CKA_ID

```

UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\107\061\013\060\011\006\003\125\004\006\023\002\103\110\061  
\025\060\023\006\003\125\004\012\023\014\123\167\151\163\163\123  
\151\147\156\040\101\107\061\041\060\037\006\003\125\004\003\023  
\030\123\167\151\163\163\123\151\147\156\040\123\151\154\166\145  
\162\040\103\101\040\055\040\107\062

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\010\117\033\324\057\124\273\057\113

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\275\060\202\003\245\240\003\002\001\002\002\010\117  
\033\324\057\124\273\057\113\060\015\006\011\052\206\110\206\367  
\015\001\001\005\005\000\060\107\061\013\060\011\006\003\125\004  
\006\023\002\103\110\061\025\060\023\006\003\125\004\012\023\014  
\123\167\151\163\163\123\151\147\156\040\101\107\061\041\060\037  
\006\003\125\004\003\023\030\123\167\151\163\163\123\151\147\156  
\040\123\151\154\166\145\162\040\103\101\040\055\040\107\062\060  
\036\027\015\060\066\061\060\062\065\060\070\063\062\064\066\132  
\027\015\063\066\061\060\062\065\060\070\063\062\064\066\132\060  
\107\061\013\060\011\006\003\125\004\006\023\002\103\110\061\025  
\060\023\006\003\125\004\012\023\014\123\167\151\163\163\123\151  
\147\156\040\101\107\061\041\060\037\006\003\125\004\003\023\030  
\123\167\151\163\163\123\151\147\156\040\123\151\154\166\145\162  
\040\103\101\040\055\040\107\062\060\202\002\042\060\015\006\011  
\052\206\110\206\367\015\001\001\001\005\000\003\202\002\017\000  
\060\202\002\012\002\202\002\001\000\304\361\207\177\323\170\061  
\367\070\311\370\303\231\103\274\307\367\274\067\347\116\161\272  
\113\217\245\163\035\134\156\230\256\003\127\256\070\067\103\057  
\027\075\037\310\316\150\020\301\170\256\031\003\053\020\372\054  
\171\203\366\350\271\150\271\125\362\004\104\247\071\371\374\004  
\213\036\361\242\115\047\371\141\173\272\267\345\242\023\266\353  
\141\076\320\154\321\346\373\372\136\355\035\264\236\240\065\133  
\241\222\313\360\111\222\376\205\012\005\076\346\331\013\342\117  
\273\334\225\067\374\221\351\062\065\042\321\037\072\116\047\205  
\235\260\025\224\062\332\141\015\107\115\140\102\256\222\107\350  
\203\132\120\130\351\212\213\271\135\241\334\335\231\112\037\066  
\147\273\110\344\203\266\067\353\110\072\257\017\147\217\027\007  
\350\004\312\357\152\061\207\324\300\266\371\224\161\173\147\144  
\270\266\221\112\102\173\145\056\060\152\014\365\220\356\225\346  
\362\315\202\354\331\241\112\354\366\262\113\345\105\205\346\155  
\170\223\004\056\234\202\155\066\251\304\061\144\037\206\203\013  
\052\364\065\012\170\311\125\317\101\260\107\351\060\237\231\276  
\141\250\006\204\271\050\172\137\070\331\033\251\070\260\203\177  
\163\301\303\073\110\052\202\017\041\233\270\314\250\065\303\204  
\033\203\263\076\276\244\225\151\001\072\211\000\170\004\331\311  
\364\231\031\253\126\176\133\213\206\071\025\221\244\020\054\011

\062\200\140\263\223\300\052\266\030\013\235\176\215\111\362\020  
\112\177\371\325\106\057\031\222\243\231\247\046\254\273\214\074  
\346\016\274\107\007\334\163\121\361\160\144\057\010\371\264\107  
\035\060\154\104\352\051\067\205\222\150\146\274\203\070\376\173  
\071\056\323\120\360\037\373\136\140\266\251\246\372\047\101\361  
\233\030\162\362\365\204\164\112\311\147\304\124\256\110\144\337  
\214\321\156\260\035\341\007\217\010\036\231\234\161\351\114\330  
\245\367\107\022\037\164\321\121\236\206\363\302\242\043\100\013  
\163\333\113\246\347\163\006\214\301\240\351\301\131\254\106\372  
\346\057\370\317\161\234\106\155\271\304\025\215\070\171\003\105  
\110\357\304\135\327\010\356\207\071\042\206\262\015\017\130\103  
\367\161\251\110\056\375\352\326\037\002\003\001\000\001\243\201  
\254\060\201\251\060\016\006\003\125\035\017\001\001\377\004\004  
\003\002\001\006\060\017\006\003\125\035\023\001\001\377\004\005  
\060\003\001\001\377\060\035\006\003\125\035\016\004\026\004\024  
\027\240\315\301\344\101\266\072\133\073\313\105\235\275\034\302  
\230\372\206\130\060\037\006\003\125\035\043\004\030\060\026\200  
\024\027\240\315\301\344\101\266\072\133\073\313\105\235\275\034  
\302\230\372\206\130\060\106\006\003\125\035\040\004\077\060\075  
\060\073\006\011\140\205\164\001\131\001\003\001\001\060\056\060  
\054\006\010\053\006\001\005\005\007\002\001\026\040\150\164\164  
\160\072\057\057\162\145\160\157\163\151\164\157\162\171\056\163  
\167\151\163\163\163\151\147\156\056\143\157\155\057\060\015\006  
\011\052\206\110\206\367\015\001\001\005\005\000\003\202\002\001  
\000\163\306\201\340\047\322\055\017\340\225\060\342\232\101\177  
\120\054\137\137\142\141\251\206\152\151\030\014\164\111\326\135  
\204\352\101\122\030\157\130\255\120\126\040\152\306\275\050\151  
\130\221\334\221\021\065\251\072\035\274\032\245\140\236\330\037  
\177\105\221\151\331\176\273\170\162\301\006\017\052\316\217\205  
\160\141\254\240\315\013\270\071\051\126\204\062\116\206\273\075  
\304\052\331\327\037\162\356\376\121\241\042\101\261\161\002\143  
\032\202\260\142\253\136\127\022\037\337\313\335\165\240\300\135  
\171\220\214\033\340\120\346\336\061\376\230\173\160\137\245\220  
\330\255\370\002\266\157\323\140\335\100\113\042\305\075\255\072  
\172\237\032\032\107\221\171\063\272\202\334\062\151\003\226\156  
\037\113\360\161\376\343\147\162\240\261\277\134\213\344\372\231  
\042\307\204\271\033\215\043\227\077\355\045\340\317\145\273\365  
\141\004\357\335\036\262\132\101\042\132\241\237\135\054\350\133  
\311\155\251\014\014\170\252\140\306\126\217\001\132\014\150\274  
\151\031\171\304\037\176\227\005\277\305\351\044\121\136\324\325  
\113\123\355\331\043\132\066\003\145\243\301\003\255\101\060\363  
\106\033\205\220\257\145\265\325\261\344\026\133\170\165\035\227  
\172\155\131\251\052\217\173\336\303\207\211\020\231\111\163\170  
\310\075\275\121\065\164\052\325\361\176\151\033\052\273\073\275  
\045\270\232\132\075\162\141\220\146\207\356\014\326\115\324\021  
\164\013\152\376\013\003\374\243\125\127\211\376\112\313\256\133  
\027\005\310\362\215\043\061\123\070\322\055\152\077\202\271\215  
\010\152\367\136\101\164\156\303\021\176\007\254\051\140\221\077

```
\070\312\127\020\015\275\060\057\307\245\346\101\240\332\256\005
\207\232\240\244\145\154\114\011\014\211\272\270\323\271\300\223
\212\060\372\215\345\232\153\025\001\116\147\252\332\142\126\076
\204\010\146\322\304\066\175\247\076\020\374\210\340\324\200\345
\000\275\252\363\116\006\243\172\152\371\142\162\343\011\117\353
\233\016\001\043\361\237\273\174\334\334\154\021\227\045\262\362
\264\143\024\322\006\052\147\214\203\365\316\352\007\330\232\152
\036\354\344\012\273\052\114\353\011\140\071\316\312\142\330\056
\156
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "SwissSign Silver CA - G2"

# Issuer: CN=SwissSign Silver CA - G2,O=SwissSign AG,C=CH

# Serial Number:4f:1b:d4:2f:54:bb:2f:4b

#

Subject: CN=SwissSign Silver CA - G2,O=SwissSign AG,C=CH

# Not Valid Before: Wed Oct 25 08:32:46 2006

# Not Valid After : Sat Oct 25 08:32:46 2036

# Fingerprint (SHA-256):

BE:6C:4D:A2:BB:B9:BA:59:B6:F3:93:97:68:37:42:46:C3:C0:05:99:3F:A9:8F:02:0D:1D:ED:BE:D4:8A:81:D5

# Fingerprint (SHA1): 9B:AA:E5:9F:56:EE:21:CB:43:5A:BE:25:93:DF:A7:F0:40:D1:1D:CB

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "SwissSign Silver CA - G2"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\233\252\345\237\126\356\041\313\103\132\276\045\223\337\247\360
\100\321\035\313
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\340\006\241\311\175\317\311\374\015\300\126\165\226\330\142\023
```

END

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\107\061\013\060\011\006\003\125\004\006\023\002\103\110\061
\025\060\023\006\003\125\004\012\023\014\123\167\151\163\163\123
\151\147\156\040\101\107\061\041\060\037\006\003\125\004\003\023
\030\123\167\151\163\163\123\151\147\156\040\123\151\154\166\145
\162\040\103\101\040\055\040\107\062
```

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

```
\002\010\117\033\324\057\124\273\057\113
```

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR  
CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR  
CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR  
CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "SecureTrust CA"

#

# Issuer: CN=SecureTrust CA,O=SecureTrust Corporation,C=US

# Serial Number:0c:f0:8e:5c:08:16:a5:ad:42:7f:f0:eb:27:18:59:d0

# Subject: CN=SecureTrust CA,O=SecureTrust Corporation,C=US

# Not Valid Before: Tue Nov 07 19:31:18 2006

# Not Valid After : Mon Dec 31 19:40:55 2029

# Fingerprint (SHA-256):

F1:C1:B5:0A:E5:A2:0D:D8:03:0E:C9:F6:BC:24:82:3D:D3:67:B5:25:57:59:B4:E7:1B:61:FC:E9:F7:37:5D:73

# Fingerprint (SHA1): 87:82:C6:C3:04:35:3B:CF:D2:96:92:D2:59:3E:7D:44:D9:34:FF:11

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL

CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "SecureTrust CA"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\110\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\040\060\036\006\003\125\004\012\023\027\123\145\143\165\162\145  
\124\162\165\163\164\040\103\157\162\160\157\162\141\164\151\157  
\156\061\027\060\025\006\003\125\004\003\023\016\123\145\143\165  
\162\145\124\162\165\163\164\040\103\101

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\110\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\040\060\036\006\003\125\004\012\023\027\123\145\143\165\162\145  
\124\162\165\163\164\040\103\157\162\160\157\162\141\164\151\157  
\156\061\027\060\025\006\003\125\004\003\023\016\123\145\143\165  
\162\145\124\162\165\163\164\040\103\101

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\014\360\216\134\010\026\245\255\102\177\360\353\047\030  
\131\320

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\270\060\202\002\240\240\003\002\001\002\002\020\014  
\360\216\134\010\026\245\255\102\177\360\353\047\030\131\320\060  
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\110  
\061\013\060\011\006\003\125\004\006\023\002\125\123\061\040\060  
\036\006\003\125\004\012\023\027\123\145\143\165\162\145\124\162

\165\163\164\040\103\157\162\160\157\162\141\164\151\157\156\061  
\027\060\025\006\003\125\004\003\023\016\123\145\143\165\162\145  
\124\162\165\163\164\040\103\101\060\036\027\015\060\066\061\061  
\060\067\061\071\063\061\061\070\132\027\015\062\071\061\062\063  
\061\061\071\064\060\065\065\132\060\110\061\013\060\011\006\003  
\125\004\006\023\002\125\123\061\040\060\036\006\003\125\004\012  
\023\027\123\145\143\165\162\145\124\162\165\163\164\040\103\157  
\162\160\157\162\141\164\151\157\156\061\027\060\025\006\003\125  
\004\003\023\016\123\145\143\165\162\145\124\162\165\163\164\040  
\103\101\060\202\001\042\060\015\006\011\052\206\110\206\367\015  
\001\001\001\005\000\003\202\001\017\000\060\202\001\012\002\202  
\001\001\000\253\244\201\345\225\315\365\366\024\216\302\117\312  
\324\342\170\225\130\234\101\341\015\231\100\044\027\071\221\063  
\146\351\276\341\203\257\142\134\211\321\374\044\133\141\263\340  
\021\021\101\034\035\156\360\270\273\370\336\247\201\272\246\110  
\306\237\035\275\276\216\251\101\076\270\224\355\051\032\324\216  
\322\003\035\003\357\155\015\147\034\127\327\006\255\312\310\365  
\376\016\257\146\045\110\004\226\013\135\243\272\026\303\010\117  
\321\106\370\024\134\362\310\136\001\231\155\375\210\314\206\250  
\301\157\061\102\154\122\076\150\313\363\031\064\337\273\207\030  
\126\200\046\304\320\334\300\157\337\336\240\302\221\026\240\144  
\021\113\104\274\036\366\347\372\143\336\146\254\166\244\161\243  
\354\066\224\150\172\167\244\261\347\016\057\201\172\342\265\162  
\206\357\242\153\213\360\017\333\323\131\077\272\162\274\104\044  
\234\343\163\263\367\257\127\057\102\046\235\251\164\272\000\122  
\362\113\315\123\174\107\013\066\205\016\146\251\010\227\026\064  
\127\301\146\367\200\343\355\160\124\307\223\340\056\050\025\131  
\207\272\273\002\003\001\000\001\243\201\235\060\201\232\060\023  
\006\011\053\006\001\004\001\202\067\024\002\004\006\036\004\000  
\103\000\101\060\013\006\003\125\035\017\004\004\003\002\001\206  
\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001  
\377\060\035\006\003\125\035\016\004\026\004\024\102\062\266\026  
\372\004\375\376\135\113\172\303\375\367\114\100\035\132\103\257  
\060\064\006\003\125\035\037\004\055\060\053\060\051\240\047\240  
\045\206\043\150\164\164\160\072\057\057\143\162\154\056\163\145  
\143\165\162\145\164\162\165\163\164\056\143\157\155\057\123\124  
\103\101\056\143\162\154\060\020\006\011\053\006\001\004\001\202  
\067\025\001\004\003\002\001\000\060\015\006\011\052\206\110\206  
\367\015\001\001\005\005\000\003\202\001\001\000\060\355\117\112  
\341\130\072\122\162\133\265\246\243\145\030\246\273\121\073\167  
\351\235\352\323\237\134\340\105\145\173\015\312\133\342\160\120  
\262\224\005\024\256\111\307\215\101\007\022\163\224\176\014\043  
\041\375\274\020\177\140\020\132\162\365\230\016\254\354\271\177  
\335\172\157\135\323\034\364\377\210\005\151\102\251\005\161\310  
\267\254\046\350\056\264\214\152\377\161\334\270\261\337\231\274  
\174\041\124\053\344\130\242\273\127\051\256\236\251\243\031\046  
\017\231\056\010\260\357\375\151\317\231\032\011\215\343\247\237  
\053\311\066\064\173\044\263\170\114\225\027\244\006\046\036\266

```
\144\122\066\137\140\147\331\234\305\005\164\013\347\147\043\322
\010\374\210\351\256\213\177\341\060\364\067\176\375\306\062\332
\055\236\104\060\060\154\356\007\336\322\064\374\322\377\100\366
\113\364\146\106\006\124\246\362\062\012\143\046\060\153\233\321
\334\213\107\272\341\271\325\142\320\242\240\364\147\005\170\051
\143\032\157\004\326\370\306\114\243\232\261\067\264\215\345\050
\113\035\236\054\302\270\150\274\355\002\356\061
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "SecureTrust CA"

#

Issuer: CN=SecureTrust CA,O=SecureTrust Corporation,C=US

# Serial Number:0c:f0:8e:5c:08:16:a5:ad:42:7f:f0:eb:27:18:59:d0

# Subject: CN=SecureTrust CA,O=SecureTrust Corporation,C=US

# Not Valid Before: Tue Nov 07 19:31:18 2006

# Not Valid After : Mon Dec 31 19:40:55 2029

# Fingerprint (SHA-256):

F1:C1:B5:0A:E5:A2:0D:D8:03:0E:C9:F6:BC:24:82:3D:D3:67:B5:25:57:59:B4:E7:1B:61:FC:E9:F7:37:5D:73

# Fingerprint (SHA1): 87:82:C6:C3:04:35:3B:CF:D2:96:92:D2:59:3E:7D:44:D9:34:FF:11

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "SecureTrust CA"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\207\202\306\303\004\065\073\317\322\226\222\322\131\076\175\104
\331\064\377\021
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\334\062\303\247\155\045\127\307\150\011\235\352\055\251\242\321
```

END

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\110\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\040\060\036\006\003\125\004\012\023\027\123\145\143\165\162\145
\124\162\165\163\164\040\103\157\162\160\157\162\141\164\151\157
\156\061\027\060\025\006\003\125\004\003\023\016\123\145\143\165
\162\145\124\162\165\163\164\040\103\101
```

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

```
\002\020\014\360\216\134\010\026\245\255\102\177\360\353\047\030
\131\320
```

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST  
CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR  
CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "Secure Global CA"

#

# Issuer: CN=Secure Global CA,O=SecureTrust Corporation,C=US

# Serial Number:07:56:22:a4:e8:d4:8a:89:4d:f4:13:c8:f0:f8:ea:a5

# Subject: CN=Secure Global CA,O=SecureTrust Corporation,C=US

# Not Valid Before: Tue Nov 07 19:42:28 2006

# Not Valid After : Mon Dec 31 19:52:06 2029

# Fingerprint (SHA-256):

42:00:F5:04:3A:C8:59:0E:BB:52:7D:20:9E:D1:50:30:29:FB:CB:D4:1C:A1:B5:06:EC:27:F1:5A:DE:7D:AC:69

# Fingerprint (SHA1): 3A:44:73:5A:E5:81:90:1F:24:86:61:46:1E:3B:9C:C4:5F:F5:3A:1B

CKA\_CLASS

CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Secure Global CA"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\112\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\040\060\036\006\003\125\004\012\023\027\123\145\143\165\162\145  
\124\162\165\163\164\040\103\157\162\160\157\162\141\164\151\157  
\156\061\031\060\027\006\003\125\004\003\023\020\123\145\143\165  
\162\145\040\107\154\157\142\141\154\040\103\101

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\112\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\040\060\036\006\003\125\004\012\023\027\123\145\143\165\162\145  
\124\162\165\163\164\040\103\157\162\160\157\162\141\164\151\157  
\156\061\031\060\027\006\003\125\004\003\023\020\123\145\143\165  
\162\145\040\107\154\157\142\141\154\040\103\101

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\007\126\042\244\350\324\212\211\115\364\023\310\360\370  
\352\245

END

CKA\_VALUE

MULTILINE\_OCTAL

\060\202\003\274\060\202\002\244\240\003\002\001\002\002\020\007  
\126\042\244\350\324\212\211\115\364\023\310\360\370\352\245\060  
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\112  
\061\013\060\011\006\003\125\004\006\023\002\125\123\061\040\060  
\036\006\003\125\004\012\023\027\123\145\143\165\162\145\124\162



\165\163\164\040\103\157\162\160\157\162\141\164\151\157\156\061  
\031\060\027\006\003\125\004\003\023\020\123\145\143\165\162\145  
\040\107\154\157\142\141\154\040\103\101\060\036\027\015\060\066  
\061\061\060\067\061\071\064\062\062\070\132\027\015\062\071\061  
\062\063\061\061\071\065\062\060\066\132\060\112\061\013\060\011  
\006\003\125\004\006\023\002\125\123\061\040\060\036\006\003\125  
\004\012\023\027\123\145\143\165\162\145\124\162\165\163\164\040  
\103\157\162\160\157\162\141\164\151\157\156\061\031\060\027\006  
\003\125\004\003\023\020\123\145\143\165\162\145\040\107\154\157  
\142\141\154\040\103\101\060\202\001\042\060\015\006\011\052\206  
\110\206\367\015\001\001\001\005\000\003\202\001\017\000\060\202  
\001\012\002\202\001\001\000\257\065\056\330\254\154\125\151\006  
\161\345\023\150\044\263\117\330\314\041\107\370\361\140\070\211  
\211\003\351\275\352\136\106\123\011\334\134\365\132\350\367\105  
\052\002\353\061\141\327\051\063\114\316\307\174\012\067\176\017  
\272\062\230\341\035\227\257\217\307\334\311\070\226\363\333\032  
\374\121\355\150\306\320\156\244\174\044\321\256\102\310\226\120  
\143\056\340\376\165\376\230\247\137\111\056\225\343\071\063\144  
\216\036\244\137\220\322\147\074\262\331\376\101\271\125\247\011  
\216\162\005\036\213\335\104\205\202\102\320\111\300\035\140\360  
\321\027\054\225\353\366\245\301\222\243\305\302\247\010\140\015  
\140\004\020\226\171\236\026\064\346\251\266\372\045\105\071\310  
\036\145\371\223\365\252\361\122\334\231\230\075\245\206\032\014  
\065\063\372\113\245\004\006\025\034\061\200\357\252\030\153\302  
\173\327\332\316\371\063\040\325\365\275\152\063\055\201\004\373  
\260\134\324\234\243\342\134\035\343\251\102\165\136\173\324\167  
\357\071\124\272\311\012\030\033\022\231\111\057\210\113\375\120  
\142\321\163\347\217\172\103\002\003\001\000\001\243\201\235\060  
\201\232\060\023\006\011\053\006\001\004\001\202\067\024\002\004  
\006\036\004\000\103\000\101\060\013\006\003\125\035\017\004\004  
\003\002\001\206\060\017\006\003\125\035\023\001\001\377\004\005  
\060\003\001\001\377\060\035\006\003\125\035\016\004\026\004\024  
\257\104\004\302\101\176\110\203\333\116\071\002\354\354\204\172  
\346\316\311\244\060\064\006\003\125\035\037\004\055\060\053\060  
\051\240\047\240\045\206\043\150\164\164\160\072\057\057\143\162  
\154\056\163\145\143\165\162\145\164\162\165\163\164\056\143\157  
\155\057\123\107\103\101\056\143\162\154\060\020\006\011\053\006  
\001\004\001\202\067\025\001\004\003\002\001\000\060\015\006\011  
\052\206\110\206\367\015\001\001\005\005\000\003\202\001\001\000  
\143\032\010\100\175\244\136\123\015\167\330\172\256\037\015\013  
\121\026\003\357\030\174\310\343\257\152\130\223\024\140\221\262  
\204\334\210\116\276\071\212\072\363\346\202\211\135\001\067\263  
\253\044\244\025\016\222\065\132\112\104\136\116\127\372\165\316  
\037\110\316\146\364\074\100\046\222\230\154\033\356\044\106\014  
\027\263\122\245\333\245\221\221\317\067\323\157\347\047\010\072  
\116\031\037\072\247\130\134\027\317\171\077\213\344\247\323\046  
\043\235\046\017\130\151\374\107\176\262\320\215\213\223\277\051  
\117\103\151\164\166\147\113\317\007\214\346\002\367\265\341\264

```
\103\265\113\055\024\237\371\334\046\015\277\246\107\164\006\330
\210\321\072\051\060\204\316\322\071\200\142\033\250\307\127\111
\274\152\125\121\147\025\112\276\065\007\344\325\165\230\067\171
\060\024\333\051\235\154\305\151\314\107\125\242\060\367\314\134
\177\302\303\230\034\153\116\026\200\353\172\170\145\105\242\000
\032\257\014\015\125\144\064\110\270\222\271\361\264\120\051\362
\117\043\037\332\154\254\037\104\341\335\043\170\121\133\307\026
END
```

```
CKA_NSS_MOZILLA_CA_POLICY
CK_BBOOL CK_TRUE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

```
# Trust for "Secure Global CA"
# Issuer: CN=Secure Global CA,O=SecureTrust Corporation,C=US
# Serial Number:07:56:22:a4:e8:d4:8a:89:4d:f4:13:c8:f0:f8:ea:a5
# Subject: CN=Secure Global CA,O=SecureTrust Corporation,C=US
# Not Valid Before: Tue Nov 07 19:42:28 2006
# Not Valid After : Mon Dec 31 19:52:06 2029
# Fingerprint (SHA-256):
42:00:F5:04:3A:C8:59:0E:BB:52:7D:20:9E:D1:50:30:29:FB:CB:D4:1C:A1:B5:06:EC:27:F1:5A:DE:7D:AC:69
# Fingerprint (SHA1): 3A:44:73:5A:E5:81:90:1F:24:86:61:46:1E:3B:9C:C4:5F:F5:3A:1B
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Secure Global CA"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\072\104\163\132\345\201\220\037\044\206\141\106\036\073\234\304
\137\365\072\033
END
```

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\317\364\047\015\324\355\334\145\026\111\155\075\332\277\156\336
END
```

```
CKA_ISSUER
MULTILINE_OCTAL
\060\112\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\040\060\036\006\003\125\004\012\023\027\123\145\143\165\162\145
\124\162\165\163\164\040\103\157\162\160\157\162\141\164\151\157
\156\061\031\060\027\006\003\125\004\003\023\020\123\145\143\165
\162\145\040\107\154\157\142\141\154\040\103\101
END
```

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\007\126\042\244\350\324\212\211\115\364\023\310\360\370
\352\245
END
```

```
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
```

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "COMODO Certification Authority"

#

# Issuer: CN=COMODO Certification Authority,O=COMODO CA Limited,L=Salford,ST=Greater Manchester,C=GB

# Serial Number:4e:81:2d:8a:82:65:e0:0b:02:ee:3e:35:02:46:e5:3d

# Subject: CN=COMODO Certification Authority,O=COMODO CA Limited,L=Salford,ST=Greater Manchester,C=GB

# Not Valid Before: Fri Dec 01 00:00:00 2006

# Not Valid After : Mon Dec 31 23:59:59 2029

# Fingerprint (SHA-256):

0C:2C:D6:3D:F7:80:6F:A3:99:ED:E8:09:11:6B:57:5B:F8:79:89:F0:65:18:F9:80:8C:86:05:03:17:8B:AF:66

# Fingerprint (SHA1): 66:31:BF:9E:F7:4F:9E:B6:C9:D5:A6:0C:BA:6A:BE:D1:F7:BD:EF:7B

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "COMODO Certification Authority"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\201\201\061\013\060\011\006\003\125\004\006\023\002\107\102  
\061\033\060\031\006\003\125\004\010\023\022\107\162\145\141\164  
\145\162\040\115\141\156\143\150\145\163\164\145\162\061\020\060  
\016\006\003\125\004\007\023\007\123\141\154\146\157\162\144\061  
\032\060\030\006\003\125\004\012\023\021\103\117\115\117\104\117  
\040\103\101\040\114\151\155\151\164\145\144\061\047\060\045\006  
\003\125\004\003\023\036\103\117\115\117\104\117\040\103\145\162  
\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157  
\162\151\164\171

END

CKA\_ID

UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\201\061\013\060\011\006\003\125\004\006\023\002\107\102  
\061\033\060\031\006\003\125\004\010\023\022\107\162\145\141\164  
\145\162\040\115\141\156\143\150\145\163\164\145\162\061\020\060  
\016\006\003\125\004\007\023\007\123\141\154\146\157\162\144\061  
\032\060\030\006\003\125\004\012\023\021\103\117\115\117\104\117  
\040\103\101\040\114\151\155\151\164\145\144\061\047\060\045\006  
\003\125\004\003\023\036\103\117\115\117\104\117\040\103\145\162  
\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157  
\162\151\164\171

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\116\201\055\212\202\145\340\013\002\356\076\065\002\106

\345\075

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\004\035\060\202\003\005\240\003\002\001\002\002\020\116  
\201\055\212\202\145\340\013\002\356\076\065\002\106\345\075\060  
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\201  
\201\061\013\060\011\006\003\125\004\006\023\002\107\102\061\033  
\060\031\006\003\125\004\010\023\022\107\162\145\141\164\145\162  
\040\115\141\156\143\150\145\163\164\145\162\061\020\060\016\006  
\003\125\004\007\023\007\123\141\154\146\157\162\144\061\032\060  
\030\006\003\125\004\012\023\021\103\117\115\117\104\117\040\103  
\101\040\114\151\155\151\164\145\144\061\047\060\045\006\003\125  
\004\003\023\036\103\117\115\117\104\117\040\103\145\162\164\151  
\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151  
\164\171\060\036\027\015\060\066\061\062\060\061\060\060\060\060  
\060\060\132\027\015\062\071\061\062\063\061\062\063\065\071\065  
\071\132\060\201\201\061\013\060\011\006\003\125\004\006\023\002  
\107\102\061\033\060\031\006\003\125\004\010\023\022\107\162\145  
\141\164\145\162\040\115\141\156\143\150\145\163\164\145\162\061  
\020\060\016\006\003\125\004\007\023\007\123\141\154\146\157\162  
\144\061\032\060\030\006\003\125\004\012\023\021\103\117\115\117  
\104\117\040\103\101\040\114\151\155\151\164\145\144\061\047\060  
\045\006\003\125\004\003\023\036\103\117\115\117\104\117\040\103  
\145\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164  
\150\157\162\151\164\171\060\202\001\042\060\015\006\011\052\206  
\110\206\367\015\001\001\001\005\000\003\202\001\017\000\060\202  
\001\012\002\202\001\001\000\320\100\213\213\162\343\221\033\367  
\121\301\033\124\004\230\323\251\277\301\346\212\135\073\207\373  
\273\210\316\015\343\057\077\006\226\360\242\051\120\231\256\333  
\073\241\127\260\164\121\161\315\355\102\221\115\101\376\251\310  
\330\152\206\167\104\273\131\146\227\120\136\264\324\054\160\104  
\317\332\067\225\102\151\074\060\304\161\263\122\360\041\115\241  
\330\272\071\174\034\236\243\044\235\362\203\026\230\252\026\174  
\103\233\025\133\267\256\064\221\376\324\142\046\030\106\232\077  
\353\301\371\361\220\127\353\254\172\015\213\333\162\060\152\146  
\325\340\106\243\160\334\150\331\377\004\110\211\167\336\265\351  
\373\147\155\101\351\274\071\275\062\331\142\002\361\261\250\075  
\156\067\234\342\057\342\323\242\046\213\306\270\125\103\210\341  
\043\076\245\322\044\071\152\107\253\000\324\241\263\251\045\376  
\015\077\247\035\272\323\121\301\013\244\332\254\070\357\125\120  
\044\005\145\106\223\064\117\055\215\255\306\324\041\031\322\216  
\312\005\141\161\007\163\107\345\212\031\022\275\004\115\316\116  
\234\245\110\254\273\046\367\002\003\001\000\001\243\201\216\060  
\201\213\060\035\006\003\125\035\016\004\026\004\024\013\130\345  
\213\306\114\025\067\244\100\251\060\251\041\276\107\066\132\126  
\377\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001  
\006\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001  
\001\377\060\111\006\003\125\035\037\004\102\060\100\060\076\240

\074\240\072\206\070\150\164\164\160\072\057\057\143\162\154\056  
\143\157\155\157\144\157\143\141\056\143\157\155\057\103\117\115  
\117\104\117\103\145\162\164\151\146\151\143\141\164\151\157\156  
\101\165\164\150\157\162\151\164\171\056\143\162\154\060\015\006  
\011\052\206\110\206\367\015\001\001\005\005\000\003\202\001\001  
\000\076\230\236\233\366\033\351\327\071\267\170\256\035\162\030  
\111\323\207\344\103\202\353\077\311\252\365\250\265\357\125\174  
\041\122\145\371\325\015\341\154\364\076\214\223\163\221\056\002  
\304\116\007\161\157\300\217\070\141\010\250\036\201\012\300\057  
\040\057\101\213\221\334\110\105\274\361\306\336\272\166\153\063  
\310\000\055\061\106\114\355\347\235\317\210\224\377\063\300\126  
\350\044\206\046\270\330\070\070\337\052\153\335\022\314\307\077  
\107\027\114\242\302\006\226\011\326\333\376\077\074\106\101\337  
\130\342\126\017\074\073\301\034\223\065\331\070\122\254\356\310  
\354\056\060\116\224\065\264\044\037\113\170\151\332\362\002\070  
\314\225\122\223\360\160\045\131\234\040\147\304\356\371\213\127  
\141\364\222\166\175\077\204\215\125\267\350\345\254\325\361\365  
\031\126\246\132\373\220\034\257\223\353\345\034\324\147\227\135  
\004\016\276\013\203\246\027\203\271\060\022\240\305\063\025\005  
\271\015\373\307\005\166\343\330\112\215\374\064\027\243\306\041  
\050\276\060\105\061\036\307\170\276\130\141\070\254\073\342\001  
\145

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "COMODO Certification Authority"

# Issuer: CN=COMODO Certification Authority,O=COMODO CA Limited,L=Salford,ST=Greater Manchester,C=GB

# Serial Number:4e:81:2d:8a:82:65:e0:0b:02:ee:3e:35:02:46:e5:3d

# Subject: CN=COMODO Certification Authority,O=COMODO CA Limited,L=Salford,ST=Greater Manchester,C=GB

# Not Valid Before: Fri Dec 01 00:00:00 2006

# Not Valid After : Mon Dec 31 23:59:59 2029

# Fingerprint (SHA-256):

0C:2C:D6:3D:F7:80:6F:A3:99:ED:E8:09:11:6B:57:5B:F8:79:89:F0:65:18:F9:80:8C:86:05:03:17:8B:AF:66

# Fingerprint (SHA1): 66:31:BF:9E:F7:4F:9E:B6:C9:D5:A6:0C:BA:6A:BE:D1:F7:BD:EF:7B

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE

CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "COMODO Certification Authority"

CKA\_CERT\_SHA1\_HASH MULTILINE OCTAL

\146\061\277\236\367\117\236\266\311\325\246\014\272\152\276\321

\367\275\357\173

```

END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\134\110\334\367\102\162\354\126\224\155\034\314\161\065\200\165
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\201\061\013\060\011\006\003\125\004\006\023\002\107\102
\061\033\060\031\006\003\125\004\010\023\022\107\162\145\141\164
\145\162\040\115\141\156\143\150\145\163\164\145\162\061\020\060
\016\006\003\125\004\007\023\007\123\141\154\146\157\162\144\061
\032\060\030\006\003\125\004\012\023\021\103\117\115\117\104\117
\040\103\101\040\114\151\155\151\164\145\144\061\047\060\045\006
\003\125\004\003\023\036\103\117\115\117\104\117\040\103\145\162
\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157
\162\151\164\171
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\116\201\055\212\202\145\340\013\002\356\076\065\002\106
\345\075
END
CKA_TRUST_SERVER_AUTH CK_TRUST
CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "COMODO ECC Certification Authority"
#
# Issuer: CN=COMODO ECC Certification Authority,O=COMODO CA Limited,L=Salford,ST=Greater
Manchester,C=GB
# Serial Number:1f:47:af:aa:62:00:70:50:54:4c:01:9e:9b:63:99:2a
# Subject: CN=COMODO ECC Certification Authority,O=COMODO CA Limited,L=Salford,ST=Greater
Manchester,C=GB
# Not Valid Before: Thu Mar 06 00:00:00 2008
# Not Valid After : Mon Jan 18 23:59:59 2038
# Fingerprint (SHA-256):
17:93:92:7A:06:14:54:97:89:AD:CE:2F:8F:34:F7:F0:B6:6D:0F:3A:E3:A3:B8:4D:21:EC:15:DB:BA:4F:AD:C7
# Fingerprint (SHA1): 9F:74:4E:9F:2B:4D:BA:EC:0F:31:2C:50:B6:56:3B:8E:2D:93:C3:11
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "COMODO ECC Certification Authority"
CKA_CERTIFICATE_TYPE
CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\205\061\013\060\011\006\003\125\004\006\023\002\107\102
\061\033\060\031\006\003\125\004\010\023\022\107\162\145\141\164

```

\145\162\040\115\141\156\143\150\145\163\164\145\162\061\020\060  
\016\006\003\125\004\007\023\007\123\141\154\146\157\162\144\061  
\032\060\030\006\003\125\004\012\023\021\103\117\115\117\104\117  
\040\103\101\040\114\151\155\151\164\145\144\061\053\060\051\006  
\003\125\004\003\023\042\103\117\115\117\104\117\040\105\103\103  
\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101  
\165\164\150\157\162\151\164\171

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\205\061\013\060\011\006\003\125\004\006\023\002\107\102  
\061\033\060\031\006\003\125\004\010\023\022\107\162\145\141\164  
\145\162\040\115\141\156\143\150\145\163\164\145\162\061\020\060  
\016\006\003\125\004\007\023\007\123\141\154\146\157\162\144\061  
\032\060\030\006\003\125\004\012\023\021\103\117\115\117\104\117  
\040\103\101\040\114\151\155\151\164\145\144\061\053\060\051\006  
\003\125\004\003\023\042\103\117\115\117\104\117\040\105\103\103  
\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101  
\165\164\150\157\162\151\164\171

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\020\037\107\257\252\142\000\160\120\124\114\001\236\233\143  
\231\052

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\002\211\060\202\002\017\240\003\002\001\002\002\020\037  
\107\257\252\142\000\160\120\124\114\001\236\233\143\231\052\060  
\012\006\010\052\206\110\316\075\004\003\003\060\201\205\061\013  
\060\011\006\003\125\004\006\023\002\107\102\061\033\060\031\006  
\003\125\004\010\023\022\107\162\145\141\164\145\162\040\115\141  
\156\143\150\145\163\164\145\162\061\020\060\016\006\003\125\004  
\007\023\007\123\141\154\146\157\162\144\061\032\060\030\006\003  
\125\004\012\023\021\103\117\115\117\104\117\040\103\101\040\114  
\151\155\151\164\145\144\061\053\060\051\006\003\125\004\003\023  
\042\103\117\115\117\104\117\040\105\103\103\040\103\145\162\164  
\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162  
\151\164\171\060\036\027\015\060\070\060\063\060\066\060\060\060  
\060\060\060\132\027\015\063\070\060\061\061\070\062\063\065\071  
\065\071\132\060\201\205\061\013\060\011\006\003\125\004\006\023  
\002\107\102\061\033\060\031\006\003\125\004\010\023\022\107\162  
\145\141\164\145\162\040\115\141\156\143\150\145\163\164\145\162  
\061\020\060\016\006\003\125\004\007\023\007\123\141\154\146\157  
\162\144\061\032\060\030\006\003\125\004\012\023\021\103\117\115  
\117\104\117\040\103\101\040\114\151\155\151\164\145\144\061\053  
\060\051\006\003\125\004\003\023\042\103\117\115\117\104\117\040  
\105\103\103\040\103\145\162\164\151\146\151\143\141\164\151\157  
\156\040\101\165\164\150\157\162\151\164\171\060\166\060\020\006

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\007\052\206\110\316\075\002\001\006\005\053\201\004\000\042\003
\142\000\004\003\107\173\057\165\311\202\025\205\373\165\344\221
\026\324\253\142\231\365\076\122\013\006\316\101\000\177\227\341
\012\044\074\035\001\004\356\075\322\215\011\227\014\340\165\344
\372\373\167\212\052\365\003\140\113\066\213\026\043\026\255\011
\161\364\112\364\050\120\264\376\210\034\156\077\154\057\057\011
\131\133\245\133\013\063\231\342\303\075\211\371\152\054\357\262
\323\006\351\243\102\060\100\060\035\006\003\125\035\016\004\026
\004\024\165\161\247\031\110\031\274\235\235\352\101\107\337\224
\304\110\167\231\323\171\060\016\006\003\125\035\017\001\001\377
\004\004\003\002\001\006\060\017\006\003\125\035\023\001\001\377
\004\005\060\003\001\001\377\060\012\006\010\052\206\110\316\075
\004\003\003\003\150\000\060\145\002\061\000\357\003\133\172\254
\267\170\012\162\267\210\337\377\265\106\024\011\012\372\240\346
\175\010\306\032\207\275\030\250\163\275\046\312\140\014\235\316
\231\237\317\134\017\060\341\276\024\061\352\002\060\024\364\223
\074\111\247\063\172\220\106\107\263\143\175\023\233\116\267\157
\030\067\200\123\376\335\040\340\065\232\066\321\307\001\271\346
\334\335\363\377\035\054\072\026\127\331\222\071\326
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "COMODO ECC Certification Authority"

# Issuer: CN=COMODO ECC Certification Authority,O=COMODO CA Limited,L=Salford,ST=Greater Manchester,C=GB

# Serial Number:1f:47:af:aa:62:00:70:50:54:4c:01:9e:9b:63:99:2a

# Subject: CN=COMODO ECC Certification Authority,O=COMODO CA Limited,L=Salford,ST=Greater Manchester,C=GB

# Not Valid Before: Thu Mar 06 00:00:00 2008

# Not Valid After : Mon Jan 18 23:59:59 2038

# Fingerprint (SHA-256):

17:93:92:7A:06:14:54:97:89:AD:CE:2F:8F:34:F7:F0:B6:6D:0F:3A:E3:A3:B8:4D:21:EC:15:DB:BA:4F:AD:C7

# Fingerprint (SHA1): 9F:74:4E:9F:2B:4D:BA:EC:0F:31:2C:50:B6:56:3B:8E:2D:93:C3:11

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "COMODO ECC Certification Authority"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\237\164\116\237\053\115\272\354\017\061\054\120\266\126\073\216
\055\223\303\021
```

END

CKA\_CERT\_MD5\_HASH

MULTILINE\_OCTAL

```
\174\142\377\164\235\061\123\136\150\112\325\170\252\036\277\043
```



END

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\205\061\013\060\011\006\003\125\004\006\023\002\107\102  
\061\033\060\031\006\003\125\004\010\023\022\107\162\145\141\164  
\145\162\040\115\141\156\143\150\145\163\164\145\162\061\020\060  
\016\006\003\125\004\007\023\007\123\141\154\146\157\162\144\061  
\032\060\030\006\003\125\004\012\023\021\103\117\115\117\104\117  
\040\103\101\040\114\151\155\151\164\145\144\061\053\060\051\006  
\003\125\004\003\023\042\103\117\115\117\104\117\040\105\103\103  
\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101  
\165\164\150\157\162\151\164\171

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\037\107\257\252\142\000\160\120\124\114\001\236\233\143  
\231\052

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_CODE\_SIGNING

CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "OISTE WISeKey Global Root GA CA"

#

# Issuer: CN=OISTE WISeKey Global Root GA CA,OU=OISTE Foundation Endorsed,OU=Copyright (c)  
2005,O=WISeKey,C=CH

# Serial Number:41:3d:72:c7:f4:6b:1f:81:43:7d:f1:d2:28:54:df:9a

# Subject: CN=OISTE WISeKey Global Root GA CA,OU=OISTE Foundation Endorsed,OU=Copyright (c)  
2005,O=WISeKey,C=CH

# Not Valid Before: Sun Dec 11 16:03:44 2005

# Not Valid After : Fri Dec 11 16:09:51 2037

# Fingerprint (SHA-256):

41:C9:23:86:6A:B4:CA:D6:B7:AD:57:80:81:58:2E:02:07:97:A6:CB:DF:4F:FF:78:CE:83:96:B3:89:37:D7:F5

# Fingerprint (SHA1): 59:22:A1:E1:5A:EA:16:35:21:F8:98:39:6A:46:46:B0:44:1B:0F:A9

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "OISTE WISeKey Global Root GA CA"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\201\212\061\013\060\011\006\003\125\004\006\023\002\103\110  
\061\020\060\016\006\003\125\004\012\023\007\127\111\123\145\113  
\145\171\061\033\060\031\006\003\125\004\013\023\022\103\157\160  
\171\162\151\147\150\164\040\050\143\051\040\062\060\060\065\061  
\042\060\040\006\003\125\004\013\023\031\117\111\123\124\105\040  
\106\157\165\156\144\141\164\151\157\156\040\105\156\144\157\162

\163\145\144\061\050\060\046\006\003\125\004\003\023\037\117\111  
\123\124\105\040\127\111\123\145\113\145\171\040\107\154\157\142  
\141\154\040\122\157\157\164\040\107\101\040\103\101

END

CKA\_ID

UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\212\061\013\060\011\006\003\125\004\006\023\002\103\110  
\061\020\060\016\006\003\125\004\012\023\007\127\111\123\145\113  
\145\171\061\033\060\031\006\003\125\004\013\023\022\103\157\160  
\171\162\151\147\150\164\040\050\143\051\040\062\060\060\065\061  
\042\060\040\006\003\125\004\013\023\031\117\111\123\124\105\040  
\106\157\165\156\144\141\164\151\157\156\040\105\156\144\157\162  
\163\145\144\061\050\060\046\006\003\125\004\003\023\037\117\111  
\123\124\105\040\127\111\123\145\113\145\171\040\107\154\157\142  
\141\154\040\122\157\157\164\040\107\101\040\103\101

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\020\101\075\162\307\364\153\037\201\103\175\361\322\050\124  
\337\232

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\361\060\202\002\331\240\003\002\001\002\002\020\101  
\075\162\307\364\153\037\201\103\175\361\322\050\124\337\232\060  
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\201  
\212\061\013\060\011\006\003\125\004\006\023\002\103\110\061\020  
\060\016\006\003\125\004\012\023\007\127\111\123\145\113\145\171  
\061\033\060\031\006\003\125\004\013\023\022\103\157\160\171\162  
\151\147\150\164\040\050\143\051\040\062\060\060\065\061\042\060  
\040\006\003\125\004\013\023\031\117\111\123\124\105\040\106\157  
\165\156\144\141\164\151\157\156\040\105\156\144\157\162\163\145  
\144\061\050\060\046\006\003\125\004\003\023\037\117\111\123\124  
\105\040\127\111\123\145\113\145\171\040\107\154\157\142\141\154  
\040\122\157\157\164\040\107\101\040\103\101\060\036\027\015\060  
\065\061\062\061\061\061\066\060\063\064\064\132\027\015\063\067  
\061\062\061\061\061\066\060\071\065\061\132\060\201\212\061\013  
\060\011\006\003\125\004\006\023\002\103\110\061\020\060\016\006  
\003\125\004\012\023\007\127\111\123\145\113\145\171\061\033\060  
\031\006\003\125\004\013\023\022\103\157\160\171\162\151\147\150  
\164\040\050\143\051\040\062\060\060\065\061\042\060\040\006\003  
\125\004\013\023\031\117\111\123\124\105\040\106\157\165\156\144  
\141\164\151\157\156\040\105\156\144\157\162\163\145\144\061\050  
\060\046\006\003\125\004\003\023\037\117\111\123\124\105\040\127  
\111\123\145\113\145\171\040\107\154\157\142\141\154\040\122\157  
\157\164\040\107\101\040\103\101\060\202\001\042\060\015\006\011  
\052\206\110\206\367\015\001\001\001\005\000\003\202\001\017\000  
\060\202\001\012\002\202\001\001\000\313\117\263\000\233\075\066

\335\371\321\111\152\153\020\111\037\354\330\053\262\306\370\062  
\201\051\103\225\114\232\031\043\041\025\105\336\343\310\034\121  
\125\133\256\223\350\067\377\053\153\351\324\352\276\052\335\250  
\121\053\327\146\303\141\134\140\002\310\365\316\162\173\073\270  
\362\116\145\010\232\315\244\152\031\301\001\273\163\246\327\366  
\303\335\315\274\244\213\265\231\141\270\001\242\243\324\115\324  
\005\075\221\255\370\264\010\161\144\257\160\361\034\153\176\366  
\303\167\235\044\163\173\344\014\214\341\331\066\341\231\213\005  
\231\013\355\105\061\011\312\302\000\333\367\162\240\226\252\225  
\207\320\216\307\266\141\163\015\166\146\214\334\033\264\143\242  
\237\177\223\023\060\361\241\047\333\331\377\054\125\210\221\240  
\340\117\007\260\050\126\214\030\033\227\104\216\211\335\340\027  
\156\347\052\357\217\071\012\061\204\202\330\100\024\111\056\172  
\101\344\247\376\343\144\314\301\131\161\113\054\041\247\133\175  
\340\035\321\056\201\233\303\330\150\367\275\226\033\254\160\261  
\026\024\013\333\140\271\046\001\005\002\003\001\000\001\243\121  
\060\117\060\013\006\003\125\035\017\004\004\003\002\001\206\060  
\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377  
\060\035\006\003\125\035\016\004\026\004\024\263\003\176\256\066  
\274\260\171\321\334\224\046\266\021\276\041\262\151\206\224\060  
\020\006\011\053\006\001\004\001\202\067\025\001\004\003\002\001  
\000\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000  
\003\202\001\001\000\113\241\377\013\207\156\263\371\301\103\261  
\110\363\050\300\035\056\311\011\101\372\224\000\034\244\244\253  
\111\117\217\075\036\357\115\157\275\274\244\366\362\046\060\311  
\020\312\035\210\373\164\031\037\205\105\275\260\154\121\371\066  
\176\333\365\114\062\072\101\117\133\107\317\350\013\055\266\304  
\031\235\164\305\107\306\073\152\017\254\024\333\074\364\163\234  
\251\005\337\000\334\164\170\372\370\065\140\131\002\023\030\174  
\274\373\115\260\040\155\103\273\140\060\172\147\063\134\305\231  
\321\370\055\071\122\163\373\214\252\227\045\134\162\331\010\036  
\253\116\074\343\201\061\237\003\246\373\300\376\051\210\125\332  
\204\325\120\003\266\342\204\243\246\066\252\021\072\001\341\030  
\113\326\104\150\263\075\371\123\164\204\263\106\221\106\226\000  
\267\200\054\266\341\343\020\342\333\242\347\050\217\001\226\142  
\026\076\000\343\034\245\066\201\030\242\114\122\166\300\021\243  
\156\346\035\272\343\132\276\066\123\305\076\165\217\206\151\051  
\130\123\265\234\273\157\237\134\305\030\354\335\057\341\230\311  
\374\276\337\012\015

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "OISTE WISEKey Global Root GA CA"

# Issuer: CN=OISTE WISEKey Global Root GA CA,OU=OISTE Foundation Endorsed,OU=Copyright (c)

2005,O=WISEKey,C=CH

```
# Serial Number:41:3d:72:c7:f4:6b:1f:81:43:7d:f1:d2:28:54:df:9a
# Subject: CN=OISTE WISeKey Global Root GA CA,OU=OISTE Foundation Endorsed,OU=Copyright (c)
2005,O=WISeKey,C=CH
# Not Valid Before: Sun Dec 11 16:03:44 2005
# Not Valid After : Fri
Dec 11 16:09:51 2037
# Fingerprint (SHA-256):
41:C9:23:86:6A:B4:CA:D6:B7:AD:57:80:81:58:2E:02:07:97:A6:CB:DF:4F:FF:78:CE:83:96:B3:89:37:D7:F5
# Fingerprint (SHA1): 59:22:A1:E1:5A:EA:16:35:21:F8:98:39:6A:46:46:B0:44:1B:0F:A9
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "OISTE WISeKey Global Root GA CA"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\131\042\241\341\132\352\026\065\041\370\230\071\152\106\106\260
\104\033\017\251
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\274\154\121\063\247\351\323\146\143\124\025\162\033\041\222\223
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\212\061\013\060\011\006\003\125\004\006\023\002\103\110
\061\020\060\016\006\003\125\004\012\023\007\127\111\123\145\113
\145\171\061\033\060\031\006\003\125\004\013\023\022\103\157\160
\171\162\151\147\150\164\040\050\143\051\040\062\060\060\065\061
\042\060\040\006\003\125\004\013\023\031\117\111\123\124\105\040
\106\157\165\156\144\141\164\151\157\156\040\105\156\144\157\162
\163\145\144\061\050\060\046\006\003\125\004\003\023\037\117\111
\123\124\105\040\127\111\123\145\113\145\171\040\107\154\157\142
\141\154\040\122\157\157\164\040\107\101\040\103\101
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\101\075\162\307\364\153\037\201\103\175\361\322\050\124
\337\232
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "Certigna"
#
# Issuer: CN=Certigna,O=Dhimyotis,C=FR
# Serial Number:00:fe:dc:e3:01:0f:c9:48:ff
# Subject: CN=Certigna,O=Dhimyotis,C=FR
```

```
# Not Valid Before: Fri Jun 29 15:13:05 2007
# Not Valid After : Tue Jun 29 15:13:05 2027
# Fingerprint (SHA-256):
E3:B6:A2:DB:2E:D7:CE:48:84:2F:7A:C5:32:41:C7:B7:1D:54:14:4B:FB:40:C1:1F:3F:1D:0B:42:F5:EE:A1:2D
# Fingerprint (SHA1): B1:2E:13:63:45:86:A4:6F:1A:B2:60:68:37:58:2D:C4:AC:FD:94:97
CKA_CLASS
CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Certigna"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\064\061\013\060\011\006\003\125\004\006\023\002\106\122\061
\022\060\020\006\003\125\004\012\014\011\104\150\151\155\171\157
\164\151\163\061\021\060\017\006\003\125\004\003\014\010\103\145
\162\164\151\147\156\141
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\064\061\013\060\011\006\003\125\004\006\023\002\106\122\061
\022\060\020\006\003\125\004\012\014\011\104\150\151\155\171\157
\164\151\163\061\021\060\017\006\003\125\004\003\014\010\103\145
\162\164\151\147\156\141
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\011\000\376\334\343\001\017\311\110\377
END
CKA_VALUE MULTILINE_OCTAL
\060\202\003\250\060\202\002\220\240\003\002\001\002\002\011\000
\376\334\343\001\017\311\110\377\060\015\006\011\052\206\110\206
\367\015\001\001\005\005\000\060\064\061\013\060\011\006\003\125
\004\006\023\002\106\122\061\022\060\020\006\003\125\004\012\014
\011\104\150\151\155\171\157\164\151\163\061\021\060\017\006\003
\125\004\003\014\010\103\145\162\164\151\147\156\141\060\036\027
\015\060\067\060\066\062\071\061\065\061\063\060\065\132\027\015
\062\067\060\066\062\071\061\065\061\063\060\065\132\060\064\061
\013\060\011\006\003\125\004\006\023\002\106\122\061\022\060\020
\006\003\125\004\012\014\011\104\150\151\155\171\157\164\151\163
\061\021\060\017\006\003\125\004\003\014\010\103\145\162\164\151
\147\156\141\060\202\001\042\060\015\006\011\052\206\110\206\367
\015\001\001\001\005\000\003\202\001\017\000\060\202\001\012\002
\202\001\001\000\310\150\361\311\326\326\263\064\165\046\202\036
\354\264\276\352\134\341\046\355\021\107\141\341\242\174\026\170
\100\041\344\140\236\132\310\143\341\304\261\226\222\377\030\155
\151\043\341\053\142\367\335\342\066\057\221\007\271\110\317\016
\354\171\266\054\347\064\113\160\010\045\243\074\207\033\031\362
\201\007\017\070\220\031\323\021\376\206\264\362\321\136\036\036
```

\226\315\200\154\316\073\061\223\266\362\240\320\251\225\022\175  
\245\232\314\153\310\204\126\212\063\251\347\042\025\123\026\360  
\314\027\354\127\137\351\242\012\230\011\336\343\137\234\157\334  
\110\343\205\013\025\132\246\272\237\254\110\343\011\262\367\364  
\062\336\136\064\276\034\170\135\102\133\316\016\042\217\115\220  
\327\175\062\030\263\013\054\152\277\216\077\024\021\211\040\016  
\167\024\265\075\224\010\207\367\045\036\325\262\140\000\354\157  
\052\050\045\156\052\076\030\143\027\045\077\076\104\040\026\366  
\046\310\045\256\005\112\264\347\143\054\363\214\026\123\176\134  
\373\021\032\010\301\106\142\237\042\270\361\302\215\151\334\372  
\072\130\006\337\002\003\001\000\001\243\201\274\060\201\271\060  
\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377  
\060\035\006\003\125\035\016\004\026\004\024\032\355\376\101\071  
\220\264\044\131\276\001\362\122\325\105\366\132\071\334\021\060  
\144\006\003\125\035\043\004\135\060\133\200\024\032\355\376\101  
\071\220\264\044\131\276\001\362\122\325\105\366\132\071\334\021  
\241\070\244\066\060\064\061\013\060\011\006\003\125\004\006\023  
\002\106\122\061\022\060\020\006\003\125\004\012\014\011\104\150  
\151\155\171\157\164\151\163\061\021\060\017\006\003\125\004\003  
\014\010\103\145\162\164\151\147\156\141\202\011\000\376\334\343  
\001\017\311\110\377\060\016\006\003\125\035\017\001\001\377\004  
\004\003\002\001\006\060\021\006\011\140\206\110\001\206\370\102  
\001\001\004\004\003\002\000\007\060\015\006\011\052\206\110\206  
\367\015\001\001\005\005\000\003\202\001\001\000\205\003\036\222  
\161\366\102\257\341\243\141\236\353\363\300\017\362\245\324\332  
\225\346\326\276\150\066\075\176\156\037\114\212\357\321\017\041  
\155\136\245\122\143\316\022\370\357\052\332\157\353\067\376\023  
\002\307\313\073\076\042\153\332\141\056\177\324\162\075\335\060  
\341\036\114\100\031\214\017\327\234\321\203\060\173\230\131\334  
\175\306\271\014\051\114\241\063\242\353\147\072\145\204\323\226  
\342\355\166\105\160\217\265\053\336\371\043\326\111\156\074\024  
\265\306\237\065\036\120\320\301\217\152\160\104\002\142\313\256  
\035\150\101\247\252\127\350\123\252\007\322\006\366\325\024\006  
\013\221\003\165\054\154\162\265\141\225\232\015\213\271\015\347  
\365\337\124\315\336\346\330\326\011\010\227\143\345\301\056\260  
\267\104\046\300\046\300\257\125\060\236\073\325\066\052\031\004  
\364\134\036\377\317\054\267\377\320\375\207\100\021\325\021\043  
\273\110\300\041\251\244\050\055\375\025\370\260\116\053\364\060  
\133\041\374\021\221\064\276\101\357\173\235\227\165\377\227\225  
\300\226\130\057\352\273\106\327\273\344\331\056

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "Certigna"

# Issuer: CN=Certigna,O=Dhimyotis,C=FR

```

# Serial Number:00:fe:dc:e3:01:0f:c9:48:ff
# Subject: CN=Certigna,O=Dhimyotis,C=FR
# Not Valid Before: Fri Jun 29 15:13:05 2007
#
Not Valid After : Tue Jun 29 15:13:05 2027
# Fingerprint (SHA-256):
E3:B6:A2:DB:2E:D7:CE:48:84:2F:7A:C5:32:41:C7:B7:1D:54:14:4B:FB:40:C1:1F:3F:1D:0B:42:F5:EE:A1:2D
# Fingerprint (SHA1): B1:2E:13:63:45:86:A4:6F:1A:B2:60:68:37:58:2D:C4:AC:FD:94:97
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Certigna"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\261\056\023\143\105\206\244\157\032\262\140\150\067\130\055\304
\254\375\224\227
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\253\127\246\133\175\102\202\031\265\330\130\046\050\136\375\377
END
CKA_ISSUER MULTILINE_OCTAL
\060\064\061\013\060\011\006\003\125\004\006\023\002\106\122\061
\022\060\020\006\003\125\004\012\014\011\104\150\151\155\171\157
\164\151\163\061\021\060\017\006\003\125\004\003\014\010\103\145
\162\164\151\147\156\141
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\011\000\376\334\343\001\017\311\110\377
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION
CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "ePKI Root Certification Authority"
#
# Issuer: OU=ePKI Root Certification Authority,O="Chunghwa Telecom Co., Ltd.",C=TW
# Serial Number: 15:c8:bd:65:47:5c:af:b8:97:00:5e:e4:06:d2:bc:9d
# Subject: OU=ePKI Root Certification Authority,O="Chunghwa Telecom Co., Ltd.",C=TW
# Not Valid Before: Mon Dec 20 02:31:27 2004
# Not Valid After : Wed Dec 20 02:31:27 2034
# Fingerprint (SHA-256):
C0:A6:F4:DC:63:A2:4B:FD:CF:54:EF:2A:6A:08:2A:0A:72:DE:35:80:3E:2F:F5:FF:52:7A:E5:D8:72:06:DF:D5
# Fingerprint (SHA1): 67:65:0D:F1:7E:8E:7E:5B:82:40:A4:F4:56:4B:CF:E2:3D:69:C6:F0
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE

```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "ePKI Root Certification Authority"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT
MULTILINE_OCTAL
\060\136\061\013\060\011\006\003\125\004\006\023\002\124\127\061
\043\060\041\006\003\125\004\012\014\032\103\150\165\156\147\150
\167\141\040\124\145\154\145\143\157\155\040\103\157\056\054\040
\114\164\144\056\061\052\060\050\006\003\125\004\013\014\041\145
\120\113\111\040\122\157\157\164\040\103\145\162\164\151\146\151
\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\136\061\013\060\011\006\003\125\004\006\023\002\124\127\061
\043\060\041\006\003\125\004\012\014\032\103\150\165\156\147\150
\167\141\040\124\145\154\145\143\157\155\040\103\157\056\054\040
\114\164\144\056\061\052\060\050\006\003\125\004\013\014\041\145
\120\113\111\040\122\157\157\164\040\103\145\162\164\151\146\151
\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\025\310\275\145\107\134\257\270\227\000\136\344\006\322
\274\235
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\260\060\202\003\230\240\003\002\001\002\002\020\025
\310\275\145\107\134\257\270\227\000\136\344\006\322\274\235\060
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\136
\061\013\060\011\006\003\125\004\006\023\002\124\127\061\043\060
\041\006\003\125\004\012\014\032\103\150\165\156\147\150\167\141
\040\124\145\154\145\143\157\155\040\103\157\056\054\040\114\164
\144\056\061\052\060\050\006\003\125\004\013\014\041\145\120\113
\111\040\122\157\157\164\040\103\145\162\164\151\146\151\143\141
\164\151\157\156\040\101\165\164\150\157\162\151\164\171\060\036
\027\015\060\064\061\062\062\060\060\062\063\061\062\067\132\027
\015\063\064\061\062\062\060\060\062\063\061\062\067\132\060\136
\061\013\060\011\006\003\125\004\006\023\002\124\127\061\043\060
\041\006\003\125\004\012\014\032\103\150\165\156\147\150\167\141
\040\124\145\154\145\143\157\155\040\103\157\056\054\040\114\164
\144\056\061\052\060\050\006\003\125\004\013\014\041\145\120\113
\111\040\122\157\157\164\040\103\145\162\164\151\146\151\143\141
\164\151\157\156\040\101\165\164\150\157\162\151\164\171\060\202
\002\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005
\000\003\202\002\017\000\060\202\002\012\002\202\002\001\000\341
\045\017\356\215\333\210\063\165\147\315\255\037\175\072\116\155
\235\323\057\024\363\143\164\313\001\041\152\067\352\204\120\007
```



\113\046\133\011\103\154\041\236\152\310\325\003\365\140\151\217  
\314\360\042\344\037\347\367\152\042\061\267\054\025\362\340\376  
\000\152\103\377\207\145\306\265\032\301\247\114\155\042\160\041  
\212\061\362\227\164\211\011\022\046\034\236\312\331\022\242\225  
\074\332\351\147\277\010\240\144\343\326\102\267\105\357\227\364  
\366\365\327\265\112\025\002\130\175\230\130\113\140\274\315\327  
\015\232\023\063\123\321\141\371\172\325\327\170\263\232\063\367  
\000\206\316\035\115\224\070\257\250\354\170\121\160\212\134\020  
\203\121\041\367\021\075\064\206\136\345\110\315\227\201\202\065  
\114\031\354\145\366\153\305\005\241\356\107\023\326\263\041\047  
\224\020\012\331\044\073\272\276\104\023\106\060\077\227\074\330  
\327\327\152\356\073\070\343\053\324\227\016\271\033\347\007\111  
\177\067\052\371\167\170\317\124\355\133\106\235\243\200\016\221  
\103\301\326\133\137\024\272\237\246\215\044\107\100\131\277\162  
\070\262\066\154\067\377\231\321\135\016\131\012\253\151\367\300  
\262\004\105\172\124\000\256\276\123\366\265\347\341\370\074\243  
\061\322\251\376\041\122\144\305\246\147\360\165\007\006\224\024  
\201\125\306\047\344\001\217\027\301\152\161\327\276\113\373\224  
\130\175\176\021\063\261\102\367\142\154\030\326\317\011\150\076  
\177\154\366\036\217\142\255\245\143\333\011\247\037\042\102\101  
\036\157\231\212\076\327\371\077\100\172\171\260\245\001\222\322  
\235\075\010\025\245\020\001\055\263\062\166\250\225\015\263\172  
\232\373\007\020\170\021\157\341\217\307\272\017\045\032\164\052  
\345\034\230\101\231\337\041\207\350\225\006\152\012\263\152\107  
\166\145\366\072\317\217\142\027\031\173\012\050\315\032\322\203  
\036\041\307\054\277\276\377\141\150\267\147\033\273\170\115\215  
\316\147\345\344\301\216\267\043\146\342\235\220\165\064\230\251  
\066\053\212\232\224\271\235\354\314\212\261\370\045\211\134\132  
\266\057\214\037\155\171\044\247\122\150\303\204\065\342\146\215  
\143\016\045\115\325\031\262\346\171\067\247\042\235\124\061\002  
\003\001\000\001\243\152\060\150\060\035\006\003\125\035\016\004  
\026\004\024\036\014\367\266\147\362\341\222\046\011\105\300\125  
\071\056\167\077\102\112\242\060\014\006\003\125\035\023\004\005  
\060\003\001\001\377\060\071\006\004\147\052\007\000\004\061\060  
\057\060\055\002\001\000\060\011\006\005\053\016\003\002\032\005  
\000\060\007\006\005\147\052\003\000\000\004\024\105\260\302\307  
\012\126\174\356\133\170\014\225\371\030\123\301\246\034\330\020  
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\003  
\202\002\001\000\011\263\203\123\131\001\076\225\111\271\361\201  
\272\371\166\040\043\265\047\140\164\324\152\231\064\136\154\000  
\123\331\237\362\246\261\044\007\104\152\052\306\245\216\170\022  
\350\107\331\130\033\023\052\136\171\233\237\012\052\147\246\045  
\077\006\151\126\163\303\212\146\110\373\051\201\127\164\006\312  
\234\352\050\350\070\147\046\053\361\325\265\077\145\223\370\066  
\135\216\215\215\100\040\207\031\352\357\047\300\075\264\071\017  
\045\173\150\120\164\125\234\014\131\175\132\075\101\224\045\122  
\010\340\107\054\025\061\031\325\277\007\125\306\273\022\265\227  
\364\137\203\205\272\161\301\331\154\201\021\166\012\012\260\277

\202\227\367\352\075\372\372\354\055\251\050\224\073\126\335\322  
\121\056\256\300\275\010\025\214\167\122\064\226\326\233\254\323  
\035\216\141\017\065\173\233\256\071\151\013\142\140\100\040\066  
\217\257\373\066\356\055\010\112\035\270\277\233\134\370\352\245  
\033\240\163\246\330\370\156\340\063\004\137\150\252\047\207\355  
\331\301\220\234\355\275\343\152\065\257\143\337\253\030\331\272  
\346\351\112\352\120\212\017\141\223\036\342\055\031\342\060\224  
\065\222\135\016\266\007\257\031\200\217\107\220\121\113\056\115  
\335\205\342\322\012\122\012\027\232\374\032\260\120\002\345\001  
\243\143\067\041\114\104\304\233\121\231\021\016\163\234\006\217  
\124\056\247\050\136\104\071\207\126\055\067\275\205\104\224\341  
\014\113\054\234\303\222\205\064\141\313\017\270\233\112\103\122  
\376\064\072\175\270\351\051\334\166\251\310\060\370\024\161\200  
\306\036\066\110\164\042\101\134\207\202\350\030\161\213\101\211  
\104\347\176\130\133\250\270\215\023\351\247\154\303\107\355\263  
\032\235\142\256\215\202\352\224\236\335\131\020\303\255\335\342  
\115\343\061\325\307\354\350\362\260\376\222\036\026\012\032\374  
\331\363\370\047\266\311\276\035\264\154\144\220\177\364\344\304  
\133\327\067\256\102\016\335\244\032\157\174\210\124\305\026\156  
\341\172\150\056\370\072\277\015\244\074\211\073\170\247\116\143  
\203\004\041\010\147\215\362\202\111\320\133\375\261\315\017\203  
\204\324\076\040\205\367\112\075\053\234\375\052\012\011\115\352  
\201\370\021\234

END

CKA\_NSS\_Mozilla\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER

CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "ePKI Root Certification Authority"

# Issuer: OU=ePKI Root Certification Authority,O="Chunghwa Telecom Co., Ltd.",C=TW

# Serial Number:15:c8:bd:65:47:5c:af:b8:97:00:5e:e4:06:d2:bc:9d

# Subject: OU=ePKI Root Certification Authority,O="Chunghwa Telecom Co., Ltd.",C=TW

# Not Valid Before: Mon Dec 20 02:31:27 2004

# Not Valid After : Wed Dec 20 02:31:27 2034

# Fingerprint (SHA-256):

C0:A6:F4:DC:63:A2:4B:FD:CF:54:EF:2A:6A:08:2A:0A:72:DE:35:80:3E:2F:F5:FF:52:7A:E5:D8:72:06:DF:D5

# Fingerprint (SHA1): 67:65:0D:F1:7E:8E:7E:5B:82:40:A4:F4:56:4B:CF:E2:3D:69:C6:F0

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "ePKI Root Certification Authority"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\147\145\015\361\176\216\176\133\202\100\244\364\126\113\317\342

\075\151\306\360

END

```

CKA_CERT_MD5_HASH MULTILINE_OCTAL
\033\056\000\312\046\006\220\075\255\376\157\025\150\323\153\263
END
CKA_ISSUER
MULTILINE_OCTAL
\060\136\061\013\060\011\006\003\125\004\006\023\002\124\127\061
\043\060\041\006\003\125\004\012\014\032\103\150\165\156\147\150
\167\141\040\124\145\154\145\143\157\155\040\103\157\056\054\040
\114\164\144\056\061\052\060\050\006\003\125\004\013\014\041\145
\120\113\111\040\122\157\157\164\040\103\145\162\164\151\146\151
\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\025\310\275\145\107\134\257\270\227\000\136\344\006\322
\274\235
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "certSIGN ROOT CA"
#
# Issuer: OU=certSIGN ROOT CA,O=certSIGN,C=RO
# Serial Number:20:06:05:16:70:02
# Subject: OU=certSIGN ROOT CA,O=certSIGN,C=RO
# Not Valid Before: Tue Jul 04 17:20:04
2006
# Not Valid After : Fri Jul 04 17:20:04 2031
# Fingerprint (SHA-256):
EA:A9:62:C4:FA:4A:6B:AF:EB:E4:15:19:6D:35:1C:CD:88:8D:4F:53:F3:FA:8A:E6:D7:C4:66:A9:4E:60:42:BB
# Fingerprint (SHA1): FA:B7:EE:36:97:26:62:FB:2D:B0:2A:F6:BF:03:FD:E8:7C:4B:2F:9B
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "certSIGN ROOT CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\073\061\013\060\011\006\003\125\004\006\023\002\122\117\061
\021\060\017\006\003\125\004\012\023\010\143\145\162\164\123\111
\107\116\061\031\060\027\006\003\125\004\013\023\020\143\145\162
\164\123\111\107\116\040\122\117\117\124\040\103\101
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\073\061\013\060\011\006\003\125\004\006\023\002\122\117\061

```

\021\060\017\006\003\125\004\012\023\010\143\145\162\164\123\111  
\107\116\061\031\060\027\006\003\125\004\013\023\020\143\145\162  
\164\123\111\107\116\040\122\117\117\124\040\103\101

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\006\040\006\005\026\160\002

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\070\060\202\002\040\240\003\002\001\002\002\006\040  
\006\005\026\160\002\060\015\006\011\052\206\110\206\367\015\001  
\001\005\005\000\060\073\061\013\060\011\006\003\125\004\006\023  
\002\122\117\061\021\060\017\006\003\125\004\012\023\010\143\145  
\162\164\123\111\107\116\061\031\060\027\006\003\125\004\013\023  
\020\143\145\162\164\123\111\107\116\040\122\117\117\124\040\103  
\101\060\036\027\015\060\066\060\067\060\064\061\067\062\060\060  
\064\132\027\015\063\061\060\067\060\064\061\067\062\060\060\064  
\132\060\073\061\013\060\011\006\003\125\004\006\023\002\122\117  
\061\021\060\017\006\003\125\004\012\023\010\143\145\162\164\123  
\111\107\116\061\031\060\027\006\003\125\004\013\023\020\143\145  
\162\164\123\111\107\116\040\122\117\117\124\040\103\101\060\202  
\001\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005  
\000\003\202\001\017\000\060\202\001\012\002\202\001\001\000\267  
\063\271\176\310\045\112\216\265\333\264\050\033\252\127\220\350  
\321\042\323\144\272\323\223\350\324\254\206\141\100\152\140\127  
\150\124\204\115\274\152\124\002\005\377\337\233\232\052\256\135  
\007\217\112\303\050\177\357\373\053\372\171\361\307\255\360\020  
\123\044\220\213\146\311\250\210\253\257\132\243\000\351\276\272  
\106\356\133\163\173\054\027\202\201\136\142\054\241\002\145\263  
\275\305\053\000\176\304\374\003\063\127\015\355\342\372\316\135  
\105\326\070\315\065\266\262\301\320\234\201\112\252\344\262\001  
\134\035\217\137\231\304\261\255\333\210\041\353\220\010\202\200  
\363\060\243\103\346\220\202\256\125\050\111\355\133\327\251\020  
\070\016\376\217\114\133\233\106\352\101\365\260\010\164\303\320  
\210\063\266\174\327\164\337\334\204\321\103\016\165\071\241\045  
\100\050\352\170\313\016\054\056\071\235\214\213\156\026\034\057  
\046\202\020\342\343\145\224\012\004\300\136\367\135\133\370\020  
\342\320\272\172\113\373\336\067\000\000\032\133\050\343\322\234  
\163\076\062\207\230\241\311\121\057\327\336\254\063\263\117\002  
\003\001\000\001\243\102\060\100\060\017\006\003\125\035\023\001  
\001\377\004\005\060\003\001\001\377\060\016\006\003\125\035\017  
\001\001\377\004\004\003\002\001\306\060\035\006\003\125\035\016  
\004\026\004\024\340\214\233\333\045\111\263\361\174\206\326\262  
\102\207\013\320\153\240\331\344\060\015\006\011\052\206\110\206  
\367\015\001\001\005\005\000\003\202\001\001\000\076\322\034\211  
\056\065\374\370\165\335\346\177\145\210\364\162\114\311\054\327  
\062\116\363\335\031\171\107\275\216\073\133\223\017\120\111\044  
\023\153\024\006\162\357\011\323\241\241\343\100\204\311\347\030

```
\062\164\074\110\156\017\237\113\324\367\036\323\223\206\144\124
\227\143\162\120\325\125\317\372\040\223\002\242\233\303\043\223
\116\026\125\166\240\160\171\155\315\041\037\317\057\055\274\031
\343\210\061\370\131\032\201\011\310\227\246\164\307\140\304\133
\314\127\216\262\165\375\033\002\011\333\131\157\162\223\151\367
\061\101\326\210\070\277\207\262\275\026\171\371\252\344\276\210
\045\335\141\047\043\034\265\061\007\004\066\264\032\220\275\240
\164\161\120\211\155\274\024\343\017\206\256\361\253\076\307\240
\011\314\243\110\321\340\333\144\347\222\265\317\257\162\103\160
\213\371\303\204\074\023\252\176\222\233\127\123\223\372\160\302
\221\016\061\371\233\147\135\351\226\070\136\137\263\163\116\210
\025\147\336\236\166\020\142\040\276\125\151\225\103\000\071\115
\366\356\260\132\116\111\104\124\130\137\102\203
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "certSIGN ROOT CA"

# Issuer: OU=certSIGN ROOT CA,O=certSIGN,C=RO

# Serial Number:20:06:05:16:70:02

# Subject: OU=certSIGN ROOT CA,O=certSIGN,C=RO

# Not Valid Before: Tue Jul 04 17:20:04 2006

# Not Valid After : Fri Jul 04 17:20:04 2031

# Fingerprint (SHA-256):

EA:A9:62:C4:FA:4A:6B:AF:EB:E4:15:19:6D:35:1C:CD:88:8D:4F:53:F3:FA:8A:E6:D7:C4:66:A9:4E:60:42:BB

#

Fingerprint (SHA1): FA:B7:EE:36:97:26:62:FB:2D:B0:2A:F6:BF:03:FD:E8:7C:4B:2F:9B

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "certSIGN ROOT CA"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\372\267\356\066\227\046\142\373\055\260\052\366\277\003\375\350
\174\113\057\233
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\030\230\300\326\351\072\374\371\260\365\014\367\113\001\104\027
```

END

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\073\061\013\060\011\006\003\125\004\006\023\002\122\117\061
\021\060\017\006\003\125\004\012\023\010\143\145\162\164\123\111
\107\116\061\031\060\027\006\003\125\004\013\023\020\143\145\162
\164\123\111\107\116\040\122\117\117\124\040\103\101
```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\006\040\006\005\026\160\002

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR  
CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR  
CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR  
CKA\_TRUST\_STEP\_UP\_APPROVED  
CK\_BBOOL CK\_FALSE

#

# Certificate "NetLock Arany (Class Gold) Ftanúsítvány"

#

# Issuer: CN=NetLock Arany (Class Gold) F..tan..s..tv..ny,OU=Tan..s..tv..nykiad..k (Certification Services),O=NetLock Kft.,L=Budapest,C=HU

# Serial Number:49:41:2c:e4:00:10

# Subject: CN=NetLock Arany (Class Gold) F..tan..s..tv..ny,OU=Tan..s..tv..nykiad..k (Certification Services),O=NetLock Kft.,L=Budapest,C=HU

# Not Valid Before: Thu Dec 11 15:08:21 2008

# Not Valid After : Wed Dec 06 15:08:21 2028

# Fingerprint (SHA-256):

6C:61:DA:C3:A2:DE:F0:31:50:6B:E0:36:D2:A6:FE:40:19:94:FB:D1:3D:F9:C8:D4:66:59:92:74:C4:46:EC:98

# Fingerprint (SHA1): 06:08:3F:59:3F:15:A1:04:A0:69:A4:6B:A9:03:D0:06:B7:97:09:91

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "NetLock Arany (Class Gold) Ftanúsítvány"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\201\247\061\013\060\011\006\003\125\004\006\023\002\110\125  
\061\021\060\017\006\003\125\004\007\014\010\102\165\144\141\160  
\145\163\164\061\025\060\023\006\003\125\004\012\014\014\116\145  
\164\114\157\143\153\040\113\146\164\056\061\067\060\065\006\003  
\125\004\013\014\056\124\141\156\303\272\163\303\255\164\166\303  
\241\156\171\153\151\141\144\303\263\153\040\050\103\145\162\164  
\151\146\151\143\141\164\151\157\156\040\123\145\162\166\151\143  
\145\163\051\061\065\060\063\006\003\125\004\003\014\054\116\145  
\164\114\157\143\153\040\101\162\141\156\171\040\050\103\154\141  
\163\163\040\107\157\154\144\051\040\106\305\221\164\141\156\303  
\272\163\303\255\164\166\303\241\156\171

END

CKA\_ID

UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\247\061\013\060\011\006\003\125\004\006\023\002\110\125  
\061\021\060\017\006\003\125\004\007\014\010\102\165\144\141\160  
\145\163\164\061\025\060\023\006\003\125\004\012\014\014\116\145  
\164\114\157\143\153\040\113\146\164\056\061\067\060\065\006\003  
\125\004\013\014\056\124\141\156\303\272\163\303\255\164\166\303

\241\156\171\153\151\141\144\303\263\153\040\050\103\145\162\164  
\151\146\151\143\141\164\151\157\156\040\123\145\162\166\151\143  
\145\163\051\061\065\060\063\006\003\125\004\003\014\054\116\145  
\164\114\157\143\153\040\101\162\141\156\171\040\050\103\154\141  
\163\163\040\107\157\154\144\051\040\106\305\221\164\141\156\303  
\272\163\303\255\164\166\303\241\156\171

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\006\111\101\054\344\000\020

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\004\025\060\202\002\375\240\003\002\001\002\002\006\111  
\101\054\344\000\020\060\015\006\011\052\206\110\206\367\015\001  
\001\013\005\000\060\201\247\061\013\060\011\006\003\125\004\006  
\023\002\110\125\061\021\060\017\006\003\125\004\007\014\010\102  
\165\144\141\160\145\163\164\061\025\060\023\006\003\125\004\012  
\014\014\116\145\164\114\157\143\153\040\113\146\164\056\061\067  
\060\065\006\003\125\004\013\014\056\124\141\156\303\272\163\303  
\255\164\166\303\241\156\171\153\151\141\144\303\263\153\040\050  
\103\145\162\164\151\146\151\143\141\164\151\157\156\040\123\145  
\162\166\151\143\145\163\051\061\065\060\063\006\003\125\004\003  
\014\054\116\145\164\114\157\143\153\040\101\162\141\156\171\040  
\050\103\154\141\163\163\040\107\157\154\144\051\040\106\305\221  
\164\141\156\303\272\163\303\255\164\166\303\241\156\171\060\036  
\027\015\060\070\061\062\061\061\061\065\060\070\062\061\132\027  
\015\062\070\061\062\060\066\061\065\060\070\062\061\132\060\201  
\247\061\013\060\011\006\003\125\004\006\023\002\110\125\061\021  
\060\017\006\003\125\004\007\014\010\102\165\144\141\160\145\163  
\164\061\025\060\023\006\003\125\004\012\014\014\116\145\164\114  
\157\143\153\040\113\146\164\056\061\067\060\065\006\003\125\004  
\013\014\056\124\141\156\303\272\163\303\255\164\166\303\241\156  
\171\153\151\141\144\303\263\153\040\050\103\145\162\164\151\146  
\151\143\141\164\151\157\156\040\123\145\162\166\151\143\145\163  
\051\061\065\060\063\006\003\125\004\003\014\054\116\145\164\114  
\157\143\153\040\101\162\141\156\171\040\050\103\154\141\163\163  
\040\107\157\154\144\051\040\106\305\221\164\141\156\303\272\163  
\303\255\164\166\303\241\156\171\060\202\001\042\060\015\006\011  
\052\206\110\206\367\015\001\001\001\005\000\003\202\001\017\000  
\060\202\001\012\002\202\001\001\000\304\044\136\163\276\113\155  
\024\303\241\364\343\227\220\156\322\060\105\036\074\356\147\331  
\144\340\032\212\177\312\060\312\203\343\040\301\343\364\072\323  
\224\137\032\174\133\155\277\060\117\204\047\366\237\037\111\274  
\306\231\012\220\362\017\365\177\103\204\067\143\121\213\172\245  
\160\374\172\130\315\216\233\355\303\106\154\204\160\135\332\363  
\001\220\043\374\116\060\251\176\341\047\143\347\355\144\074\240  
\270\311\063\143\376\026\220\377\260\270\375\327\250\300\300\224  
\103\013\266\325\131\246\236\126\320\044\037\160\171\257\333\071

\124\015\145\165\331\025\101\224\001\257\136\354\366\215\361\377  
\255\144\376\040\232\327\134\353\376\246\037\010\144\243\213\166  
\125\255\036\073\050\140\056\207\045\350\252\257\037\306\144\106  
\040\267\160\177\074\336\110\333\226\123\267\071\167\344\032\342  
\307\026\204\166\227\133\057\273\031\025\205\370\151\205\365\231  
\247\251\362\064\247\251\266\246\003\374\157\206\075\124\174\166  
\004\233\153\371\100\135\000\064\307\056\231\165\235\345\210\003  
\252\115\370\003\322\102\166\300\033\002\003\000\250\213\243\105  
\060\103\060\022\006\003\125\035\023\001\001\377\004\010\060\006  
\001\001\377\002\001\004\060\016\006\003\125\035\017\001\001\377  
\004\004\003\002\001\006\060\035\006\003\125\035\016\004\026\004  
\024\314\372\147\223\360\266\270\320\245\300\036\363\123\375\214  
\123\337\203\327\226\060\015\006\011\052\206\110\206\367\015\001  
\001\013\005\000\003\202\001\001\000\253\177\356\034\026\251\234  
\074\121\000\240\300\021\010\005\247\231\346\157\001\210\124\141  
\156\361\271\030\255\112\255\376\201\100\043\224\057\373\165\174  
\057\050\113\142\044\201\202\013\365\141\361\034\156\270\141\070  
\353\201\372\142\241\073\132\142\323\224\145\304\341\346\155\202  
\370\057\045\160\262\041\046\301\162\121\037\214\054\303\204\220  
\303\132\217\272\317\364\247\145\245\353\230\321\373\005\262\106  
\165\025\043\152\157\205\143\060\200\360\325\236\037\051\034\302  
\154\260\120\131\135\220\133\073\250\015\060\317\277\175\177\316  
\361\235\203\275\311\106\156\040\246\371\141\121\272\041\057\173  
\276\245\025\143\241\324\225\207\361\236\271\363\211\363\075\205  
\270\270\333\276\265\271\051\371\332\067\005\000\111\224\003\204  
\104\347\277\103\061\317\165\213\045\321\364\246\144\365\222\366  
\253\005\353\075\351\245\013\066\142\332\314\006\137\066\213\266  
\136\061\270\052\373\136\366\161\337\104\046\236\304\346\015\221  
\264\056\165\225\200\121\152\113\060\246\260\142\241\223\361\233  
\330\316\304\143\165\077\131\107\261

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "NetLock Arany (Class Gold) Ftanúsítvány"

# Issuer:

CN=NetLock Arany (Class Gold) F.tan..s..tv..ny,OU=Tan..s..tv..nykiad..k (Certification Services),O=NetLock Kft.,L=Budapest,C=HU

# Serial Number:49:41:2c:e4:00:10

# Subject: CN=NetLock Arany (Class Gold) F.tan..s..tv..ny,OU=Tan..s..tv..nykiad..k (Certification Services),O=NetLock Kft.,L=Budapest,C=HU

# Not Valid Before: Thu Dec 11 15:08:21 2008

# Not Valid After : Wed Dec 06 15:08:21 2028

# Fingerprint (SHA-256):

6C:61:DA:C3:A2:DE:F0:31:50:6B:E0:36:D2:A6:FE:40:19:94:FB:D1:3D:F9:C8:D4:66:59:92:74:C4:46:EC:98

# Fingerprint (SHA1): 06:08:3F:59:3F:15:A1:04:A0:69:A4:6B:A9:03:D0:06:B7:97:09:91



```

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "NetLock Arany (Class Gold) Ftanúsítvány"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\006\010\077\131\077\025\241\004\240\151\244\153\251\003\320\006
\267\227\011\221
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\305\241\267\377\163\335\326\327\064\062\030\337\374\074\255\210
END
CKA_ISSUER
MULTILINE_OCTAL
\060\201\247\061\013\060\011\006\003\125\004\006\023\002\110\125
\061\021\060\017\006\003\125\004\007\014\010\102\165\144\141\160
\145\163\164\061\025\060\023\006\003\125\004\012\014\014\116\145
\164\114\157\143\153\040\113\146\164\056\061\067\060\065\006\003
\125\004\013\014\056\124\141\156\303\272\163\303\255\164\166\303
\241\156\171\153\151\141\144\303\263\153\040\050\103\145\162\164
\151\146\151\143\141\164\151\157\156\040\123\145\162\166\151\143
\145\163\051\061\065\060\063\006\003\125\004\003\014\054\116\145
\164\114\157\143\153\040\101\162\141\156\171\040\050\103\154\141
\163\163\040\107\157\154\144\051\040\106\305\221\164\141\156\303
\272\163\303\255\164\166\303\241\156\171
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\006\111\101\054\344\000\020
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED
CK_BBOOL CK_FALSE

#
# Certificate "Hongkong Post Root CA 1"
#
# Issuer: CN=Hongkong Post Root CA 1,O=Hongkong Post,C=HK
# Serial Number: 1000 (0x3e8)
# Subject: CN=Hongkong Post Root CA 1,O=Hongkong Post,C=HK
# Not Valid Before: Thu May 15 05:13:14 2003
# Not Valid After : Mon May 15 04:52:29 2023
# Fingerprint (SHA-256):
F9:E6:7D:33:6C:51:00:2A:C0:54:C6:32:02:2D:66:DD:A2:E7:E3:FF:F1:0A:D0:61:ED:31:D8:BB:B4:10:CF:B2
# Fingerprint (SHA1): D6:DA:A8:20:8D:09:D2:15:4D:24:B5:2F:CB:34:6E:B2:58:B2:8A:58
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE

```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Hongkong Post Root CA 1"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\107\061\013\060\011\006\003\125\004\006\023\002\110\113\061
\026\060\024\006\003\125\004\012\023\015\110\157\156\147\153\157
\156\147\040\120\157\163\164\061\040\060\036\006\003\125\004\003
\023\027\110\157\156\147\153\157\156\147\040\120\157\163\164\040
\122\157\157\164\040\103\101\040\061
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\107\061\013\060\011\006\003\125\004\006\023\002\110\113\061
\026\060\024\006\003\125\004\012\023\015\110\157\156\147\153\157
\156\147\040\120\157\163\164\061\040\060\036\006\003\125\004\003
\023\027\110\157\156\147\153\157\156\147\040\120\157\163\164\040
\122\157\157\164\040\103\101\040\061
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\002\003\350
END
CKA_VALUE MULTILINE_OCTAL
\060\202\003\060\060\202\002\030\240\003\002\001\002\002\002\003
\350\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000
\060\107\061\013\060\011\006\003\125\004\006\023\002\110\113\061
\026\060\024\006\003\125\004\012\023\015\110\157\156\147\153\157
\156\147\040\120\157\163\164\061\040\060\036\006\003\125\004\003
\023\027\110\157\156\147\153\157\156\147\040\120\157\163\164\040
\122\157\157\164\040\103\101\040\061\060\036\027\015\060\063\060
\065\061\065\060\065\061\063\061\064\132\027\015\062\063\060\065
\061\065\060\064\065\062\062\071\132\060\107\061\013\060\011\006
\003\125\004\006\023\002\110\113\061\026\060\024\006\003\125\004
\012\023\015\110\157\156\147\153\157\156\147\040\120\157\163\164
\061\040\060\036\006\003\125\004\003\023\027\110\157\156\147\153
\157\156\147\040\120\157\163\164\040\122\157\157\164\040\103\101
\040\061\060\202\001\042\060\015\006\011\052\206\110\206\367\015
\001\001\001\005\000\003\202\001\017\000\060\202\001\012\002\202
\001\001\000\254\377\070\266\351\146\002\111\343\242\264\341\220
\371\100\217\171\371\342\275\171\376\002\275\356\044\222\035\042
\366\332\205\162\151\376\327\077\011\324\335\221\265\002\234\320
\215\132\341\125\303\120\206\271\051\046\302\343\331\240\361\151
\003\050\040\200\105\042\055\126\247\073\124\225\126\042\131\037
\050\337\037\040\075\155\242\066\276\043\240\261\156\265\261\047
\077\071\123\011\352\253\152\350\164\262\302\145\134\216\277\174
\303\170\204\315\236\026\374\365\056\117\040\052\010\237\167\363
\305\036\304\232\122\146\036\110\136\343\020\006\217\042\230\341
```

\145\216\033\135\043\146\073\270\245\062\121\310\206\252\241\251  
\236\177\166\224\302\246\154\267\101\360\325\310\006\070\346\324  
\014\342\363\073\114\155\120\214\304\203\047\301\023\204\131\075  
\236\165\164\266\330\002\136\072\220\172\300\102\066\162\354\152  
\115\334\357\304\000\337\023\030\127\137\046\170\310\326\012\171  
\167\277\367\257\267\166\271\245\013\204\027\135\020\352\157\341  
\253\225\021\137\155\074\243\134\115\203\133\362\263\031\212\200  
\213\013\207\002\003\001\000\001\243\046\060\044\060\022\006\003  
\125\035\023\001\001\377\004\010\060\006\001\001\377\002\001\003  
\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001\306  
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\003  
\202\001\001\000\016\106\325\074\256\342\207\331\136\201\213\002  
\230\101\010\214\114\274\332\333\356\047\033\202\347\152\105\354  
\026\213\117\205\240\363\262\160\275\132\226\272\312\156\155\356  
\106\213\156\347\052\056\226\263\031\063\353\264\237\250\262\067  
\356\230\250\227\266\056\266\147\047\324\246\111\375\034\223\145  
\166\236\102\057\334\042\154\232\117\362\132\025\071\261\161\327  
\053\121\350\155\034\230\300\331\052\364\241\202\173\325\311\101  
\242\043\001\164\070\125\213\017\271\056\147\242\040\004\067\332  
\234\013\323\027\041\340\217\227\171\064\157\204\110\002\040\063  
\033\346\064\104\237\221\160\364\200\136\204\103\302\051\322\154  
\022\024\344\141\215\254\020\220\236\204\120\273\360\226\157\105  
\237\212\363\312\154\117\372\021\072\025\025\106\303\315\037\203  
\133\055\101\022\355\120\147\101\023\075\041\253\224\212\252\116  
\174\301\261\373\247\326\265\047\057\227\253\156\340\035\342\321  
\034\054\037\104\342\374\276\221\241\234\373\326\051\123\163\206  
\237\123\330\103\016\135\326\143\202\161\035\200\164\312\366\342  
\002\153\331\132

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "Hongkong Post Root CA

1"

# Issuer: CN=Hongkong Post Root CA 1,O=Hongkong Post,C=HK

# Serial Number: 1000 (0x3e8)

# Subject: CN=Hongkong Post Root CA 1,O=Hongkong Post,C=HK

# Not Valid Before: Thu May 15 05:13:14 2003

# Not Valid After : Mon May 15 04:52:29 2023

# Fingerprint (SHA-256):

F9:E6:7D:33:6C:51:00:2A:C0:54:C6:32:02:2D:66:DD:A2:E7:E3:FF:F1:0A:D0:61:ED:31:D8:BB:B4:10:CF:B2

# Fingerprint (SHA1): D6:DA:A8:20:8D:09:D2:15:4D:24:B5:2F:CB:34:6E:B2:58:B2:8A:58

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

```

CKA_LABEL UTF8 "Hongkong Post Root CA 1"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\326\332\250\040\215\011\322\025\115\044\265\057\313\064\156\262
\130\262\212\130
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\250\015\157\071\170\271\103\155\167\102\155\230\132\314\043\312
END
CKA_ISSUER MULTILINE_OCTAL
\060\107\061\013\060\011\006\003\125\004\006\023\002\110\113\061
\026\060\024\006\003\125\004\012\023\015\110\157\156\147\153\157
\156\147\040\120\157\163\164\061\040\060\036\006\003\125\004\003
\023\027\110\157\156\147\153\157\156\147\040\120\157\163\164\040
\122\157\157\164\040\103\101\040\061
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\002\003\350
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "SecureSign RootCA11"
#
# Issuer: CN=SecureSign RootCA11,O="Japan Certification Services, Inc.",C=JP
# Serial Number: 1 (0x1)
# Subject: CN=SecureSign RootCA11,O="Japan Certification Services, Inc.",C=JP
# Not Valid Before: Wed Apr 08 04:56:47 2009
# Not Valid After : Sun Apr 08 04:56:47 2029
# Fingerprint (SHA-256):
BF:0F:EE:FB:9E:3A:58:1A:D5:F9:E9:DB:75:89:98:57:43:D2:61:08:5C:4D:31:4F:6F:5D:72:59:AA:42:16:12
# Fingerprint (SHA1): 3B:C4:9F:48:F8:F3:73:A0:9C:1E:BD:F8:5B:B1:C3:65:C7:D8:11:B3
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN
CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "SecureSign RootCA11"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\130\061\013\060\011\006\003\125\004\006\023\002\112\120\061
\053\060\051\006\003\125\004\012\023\042\112\141\160\141\156\040
\103\145\162\164\151\146\151\143\141\164\151\157\156\040\123\145
\162\166\151\143\145\163\054\040\111\156\143\056\061\034\060\032
\006\003\125\004\003\023\023\123\145\143\165\162\145\123\151\147

```

\156\040\122\157\157\164\103\101\061\061  
END  
CKA\_ID UTF8 "0"  
CKA\_ISSUER MULTILINE\_OCTAL  
\060\130\061\013\060\011\006\003\125\004\006\023\002\112\120\061  
\053\060\051\006\003\125\004\012\023\042\112\141\160\141\156\040  
\103\145\162\164\151\146\151\143\141\164\151\157\156\040\123\145  
\162\166\151\143\145\163\054\040\111\156\143\056\061\034\060\032  
\006\003\125\004\003\023\023\123\145\143\165\162\145\123\151\147  
\156\040\122\157\157\164\103\101\061\061  
END  
CKA\_SERIAL\_NUMBER  
MULTILINE\_OCTAL  
\002\001\001  
END  
CKA\_VALUE MULTILINE\_OCTAL  
\060\202\003\155\060\202\002\125\240\003\002\001\002\002\001\001  
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060  
\130\061\013\060\011\006\003\125\004\006\023\002\112\120\061\053  
\060\051\006\003\125\004\012\023\042\112\141\160\141\156\040\103  
\145\162\164\151\146\151\143\141\164\151\157\156\040\123\145\162  
\166\151\143\145\163\054\040\111\156\143\056\061\034\060\032\006  
\003\125\004\003\023\023\123\145\143\165\162\145\123\151\147\156  
\040\122\157\157\164\103\101\061\061\060\036\027\015\060\071\060  
\064\060\070\060\064\065\066\064\067\132\027\015\062\071\060\064  
\060\070\060\064\065\066\064\067\132\060\130\061\013\060\011\006  
\003\125\004\006\023\002\112\120\061\053\060\051\006\003\125\004  
\012\023\042\112\141\160\141\156\040\103\145\162\164\151\146\151  
\143\141\164\151\157\156\040\123\145\162\166\151\143\145\163\054  
\040\111\156\143\056\061\034\060\032\006\003\125\004\003\023\023  
\123\145\143\165\162\145\123\151\147\156\040\122\157\157\164\103  
\101\061\061\060\202\001\042\060\015\006\011\052\206\110\206\367  
\015\001\001\001\005\000\003\202\001\017\000\060\202\001\012\002  
\202\001\001\000\375\167\252\245\034\220\005\073\313\114\233\063  
\213\132\024\105\244\347\220\026\321\337\127\322\041\020\244\027  
\375\337\254\326\037\247\344\333\174\367\354\337\270\003\332\224  
\130\375\135\162\174\214\077\137\001\147\164\025\226\343\002\074  
\207\333\256\313\001\216\302\363\146\306\205\105\364\002\306\072  
\265\142\262\257\372\234\277\244\346\324\200\060\230\363\015\266  
\223\217\251\324\330\066\362\260\374\212\312\054\241\025\063\225  
\061\332\300\033\362\356\142\231\206\143\077\277\335\223\052\203  
\250\166\271\023\037\267\316\116\102\205\217\042\347\056\032\362  
\225\011\262\005\265\104\116\167\241\040\275\251\362\116\012\175  
\120\255\365\005\015\105\117\106\161\375\050\076\123\373\004\330  
\055\327\145\035\112\033\372\317\073\260\061\232\065\156\310\213  
\006\323\000\221\362\224\010\145\114\261\064\006\000\172\211\342  
\360\307\003\131\317\325\326\350\247\062\263\346\230\100\206\305  
\315\047\022\213\314\173\316\267\021\074\142\140\007\043\076\053

```
\100\156\224\200\011\155\266\263\157\167\157\065\010\120\373\002
\207\305\076\211\002\003\001\000\001\243\102\060\100\060\035\006
\003\125\035\016\004\026\004\024\133\370\115\117\262\245\206\324
\072\322\361\143\232\240\276\011\366\127\267\336\060\016\006\003
\125\035\017\001\001\377\004\004\003\002\001\006\060\017\006\003
\125\035\023\001\001\377\004\005\060\003\001\001\377\060\015\006
\011\052\206\110\206\367\015\001\001\005\005\000\003\202\001\001
\000\240\241\070\026\146\056\247\126\037\041\234\006\372\035\355
\271\042\305\070\046\330\116\117\354\243\177\171\336\106\041\241
\207\167\217\007\010\232\262\244\305\257\017\062\230\013\174\146
\051\266\233\175\045\122\111\103\253\114\056\053\156\172\160\257
\026\016\343\002\154\373\102\346\030\235\105\330\125\310\350\073
\335\347\341\364\056\013\034\064\134\154\130\112\373\214\210\120
\137\225\034\277\355\253\042\265\145\263\205\272\236\017\270\255
\345\172\033\212\120\072\035\275\015\274\173\124\120\013\271\102
\257\125\240\030\201\255\145\231\357\276\344\234\277\304\205\253
\101\262\124\157\334\045\315\355\170\342\216\014\215\011\111\335
\143\173\132\151\226\002\041\250\275\122\131\351\175\065\313\310
\122\312\177\201\376\331\153\323\367\021\355\045\337\370\347\371
\244\372\162\227\204\123\015\245\320\062\030\121\166\131\024\154
\017\353\354\137\200\214\165\103\203\303\205\230\377\114\236\055
\015\344\167\203\223\116\265\226\007\213\050\023\233\214\031\215
\101\047\111\100\356\336\346\043\104\071\334\241\042\326\272\003
\362
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "SecureSign RootCA11"

# Issuer: CN=SecureSign RootCA11,O="Japan Certification Services, Inc.",C=JP

# Serial Number: 1 (0x1)

# Subject: CN=SecureSign RootCA11,O="Japan Certification Services, Inc.",C=JP

#

Not Valid Before: Wed Apr 08 04:56:47 2009

# Not Valid After : Sun Apr 08 04:56:47 2029

# Fingerprint (SHA-256):

BF:0F:EE:FB:9E:3A:58:1A:D5:F9:E9:DB:75:89:98:57:43:D2:61:08:5C:4D:31:4F:6F:5D:72:59:AA:42:16:12

# Fingerprint (SHA1): 3B:C4:9F:48:F8:F3:73:A0:9C:1E:BD:F8:5B:B1:C3:65:C7:D8:11:B3

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "SecureSign RootCA11"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\073\304\237\110\370\363\163\240\234\036\275\370\133\261\303\145
```

```
\307\330\021\263
```

```

END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\267\122\164\342\222\264\200\223\362\165\344\314\327\362\352\046
END
CKA_ISSUER MULTILINE_OCTAL
\060\130\061\013\060\011\006\003\125\004\006\023\002\112\120\061
\053\060\051\006\003\125\004\012\023\042\112\141\160\141\156\040
\103\145\162\164\151\146\151\143\141\164\151\157\156\040\123\145
\162\166\151\143\145\163\054\040\111\156\143\056\061\034\060\032
\006\003\125\004\003\023\023\123\145\143\165\162\145\123\151\147
\156\040\122\157\157\164\103\101\061\061
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\001\001
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "Microsec e-Szigno Root CA 2009"
#
# Issuer: E=info@e-szigno.hu,CN=Microsec e-Szigno Root CA 2009,O=Microsec Ltd.,L=Budapest,C=HU
# Serial Number:00:c2:7e:43:04:4e:47:3f:19
# Subject: E=info@e-szigno.hu,CN=Microsec e-Szigno Root CA 2009,O=Microsec Ltd.,L=Budapest,C=HU
# Not Valid Before: Tue Jun 16 11:30:18 2009
# Not Valid After : Sun Dec 30 11:30:18 2029
# Fingerprint (SHA-256):
3C:5F:81:FE:A5:FA:B8:2C:64:BF:A2:EA:EC:AF:CD:E8:E0:77:FC:86:20:A7:CA:E5:37:16:3D:F3:6E:DB:F3:78
# Fingerprint (SHA1): 89:DF:74:FE:5C:F4:0F:4A:80:F9:E3:37:7D:54:DA:91:E1:01:31:8E
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE
CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Microsec e-Szigno Root CA 2009"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\202\061\013\060\011\006\003\125\004\006\023\002\110\125
\061\021\060\017\006\003\125\004\007\014\010\102\165\144\141\160
\145\163\164\061\026\060\024\006\003\125\004\012\014\015\115\151
\143\162\157\163\145\143\040\114\164\144\056\061\047\060\045\006
\003\125\004\003\014\036\115\151\143\162\157\163\145\143\040\145
\055\123\172\151\147\156\157\040\122\157\157\164\040\103\101\040
\062\060\060\071\061\037\060\035\006\011\052\206\110\206\367\015
\001\011\001\026\020\151\156\146\157\100\145\055\163\172\151\147

```

\156\157\056\150\165

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\202\061\013\060\011\006\003\125\004\006\023\002\110\125  
\061\021\060\017\006\003\125\004\007\014\010\102\165\144\141\160  
\145\163\164\061\026\060\024\006\003\125\004\012\014\015\115\151  
\143\162\157\163\145\143\040\114\164\144\056\061\047\060\045\006  
\003\125\004\003\014\036\115\151\143\162\157\163\145\143\040\145  
\055\123\172\151\147\156\157\040\122\157\157\164\040\103\101\040  
\062\060\060\071\061\037\060\035\006\011\052\206\110\206\367\015  
\001\011\001\026\020\151\156\146\157\100\145\055\163\172\151\147  
\156\157\056\150\165

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\011\000\302\176\103\004\116\107\077\031

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\004\012\060\202\002\362\240\003\002\001\002\002\011\000  
\302\176\103\004\116\107\077\031\060\015\006\011\052\206\110\206  
\367\015\001\001\013\005\000\060\201\202\061\013\060\011\006\003  
\125\004\006\023\002\110\125\061\021\060\017\006\003\125\004\007  
\014\010\102\165\144\141\160\145\163\164\061\026\060\024\006\003  
\125\004\012\014\015\115\151\143\162\157\163\145\143\040\114\164  
\144\056\061\047\060\045\006\003\125\004\003\014\036\115\151\143  
\162\157\163\145\143\040\145\055\123\172\151\147\156\157\040\122  
\157\157\164\040\103\101\040\062\060\060\071\061\037\060\035\006  
\011\052\206\110\206\367\015\001\011\001\026\020\151\156\146\157  
\100\145\055\163\172\151\147\156\157\056\150\165\060\036\027\015  
\060\071\060\066\061\066\061\061\063\060\061\070\132\027\015\062  
\071\061\062\063\060\061\061\063\060\061\070\132\060\201\202\061  
\013\060\011\006\003\125\004\006\023\002\110\125\061\021\060\017  
\006\003\125\004\007\014\010\102\165\144\141\160\145\163\164\061  
\026\060\024\006\003\125\004\012\014\015\115\151\143\162\157\163  
\145\143\040\114\164\144\056\061\047\060\045\006\003\125\004\003  
\014\036\115\151\143\162\157\163\145\143\040\145\055\123\172\151  
\147\156\157\040\122\157\157\164\040\103\101\040\062\060\060\071  
\061\037\060\035\006\011\052\206\110\206\367\015\001\011\001\026  
\020\151\156\146\157\100\145\055\163\172\151\147\156\157\056\150  
\165\060\202\001\042\060\015\006\011\052\206\110\206\367\015\001  
\001\001\005\000\003\202\001\017\000\060\202\001\012\002\202\001  
\001\000\351\370\217\363\143\255\332\206\330\247\340\102\373\317  
\221\336\246\046\370\231\245\143\160\255\233\256\312\063\100\175  
\155\226\156\241\016\104\356\341\023\235\224\102\122\232\275\165  
\205\164\054\250\016\035\223\266\030\267\214\054\250\317\373\134  
\161\271\332\354\376\350\176\217\344\057\035\262\250\165\207\330  
\267\241\345\073\317\231\112\106\320\203\031\175\300\241\022\034



\225\155\112\364\330\307\245\115\063\056\205\071\100\165\176\024  
\174\200\022\230\120\307\101\147\270\240\200\141\124\246\154\116  
\037\340\235\016\007\351\311\272\063\347\376\300\125\050\054\002  
\200\247\031\365\236\334\125\123\003\227\173\007\110\377\231\373  
\067\212\044\304\131\314\120\020\143\216\252\251\032\260\204\032  
\206\371\137\273\261\120\156\244\321\012\314\325\161\176\037\247  
\033\174\365\123\156\042\137\313\053\346\324\174\135\256\326\302  
\306\114\345\005\001\331\355\127\374\301\043\171\374\372\310\044  
\203\225\363\265\152\121\001\320\167\326\351\022\241\371\032\203  
\373\202\033\271\260\227\364\166\006\063\103\111\240\377\013\265  
\372\265\002\003\001\000\001\243\201\200\060\176\060\017\006\003  
\125\035\023\001\001\377\004\005\060\003\001\001\377\060\016\006  
\003\125\035\017\001\001\377\004\004\003\002\001\006\060\035\006  
\003\125\035\016\004\026\004\024\313\017\306\337\102\103\314\075  
\313\265\110\043\241\032\172\246\052\273\064\150\060\037\006\003  
\125\035\043\004\030\060\026\200\024\313\017\306\337\102\103\314  
\075\313\265\110\043\241\032\172\246\052\273\064\150\060\033\006  
\003\125\035\021\004\024\060\022\201\020\151\156\146\157\100\145  
\055\163\172\151\147\156\157\056\150\165\060\015\006\011\052\206  
\110\206\367\015\001\001\013\005\000\003\202\001\001\000\311\321  
\016\136\056\325\314\263\174\076\313\374\075\377\015\050\225\223  
\004\310\277\332\315\171\270\103\220\360\244\276\357\362\357\041  
\230\274\324\324\135\006\366\356\102\354\060\154\240\252\251\312  
\361\257\212\372\077\013\163\152\076\352\056\100\176\037\256\124  
\141\171\353\056\010\067\327\043\363\214\237\276\035\261\341\244  
\165\333\240\342\124\024\261\272\034\051\244\030\366\022\272\242  
\024\024\343\061\065\310\100\377\267\340\005\166\127\301\034\131  
\362\370\277\344\355\045\142\134\204\360\176\176\037\263\276\371  
\267\041\021\314\003\001\126\160\247\020\222\036\033\064\201\036  
\255\234\032\303\004\074\355\002\141\326\036\006\363\137\072\207  
\362\053\361\105\207\345\075\254\321\307\127\204\275\153\256\334  
\330\371\266\033\142\160\013\075\066\311\102\362\062\327\172\141  
\346\322\333\075\317\310\251\311\233\334\333\130\104\327\157\070  
\257\177\170\323\243\255\032\165\272\034\301\066\174\217\036\155  
\034\303\165\106\256\065\005\246\366\134\075\041\356\126\360\311  
\202\042\055\172\124\253\160\303\175\042\145\202\160\226

END

CKA\_NSS\_Mozilla\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "Microsec e-Szigno Root CA 2009"

# Issuer: E=info@e-szigno.hu,CN=Microsec e-Szigno Root CA 2009,O=Microsec Ltd.,L=Budapest,C=HU

# Serial Number:00:c2:7e:43:04:4e:47:3f:19

# Subject: E=info@e-szigno.hu,CN=Microsec

e-Szigno Root CA 2009,O=Microsec Ltd.,L=Budapest,C=HU

# Not Valid Before: Tue Jun 16 11:30:18 2009

```

# Not Valid After : Sun Dec 30 11:30:18 2029
# Fingerprint (SHA-256):
3C:5F:81:FE:A5:FA:B8:2C:64:BF:A2:EA:EC:AF:CD:E8:E0:77:FC:86:20:A7:CA:E5:37:16:3D:F3:6E:DB:F3:78
# Fingerprint (SHA1): 89:DF:74:FE:5C:F4:0F:4A:80:F9:E3:37:7D:54:DA:91:E1:01:31:8E
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Microsec e-Szigno Root CA 2009"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\211\337\164\376\134\364\017\112\200\371\343\067\175\124\332\221
\341\001\061\216
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\370\111\364\003\274\104\055\203\276\110\151\175\051\144\374\261
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\202\061\013\060\011\006\003\125\004\006\023\002\110\125
\061\021\060\017\006\003\125\004\007\014\010\102\165\144\141\160
\145\163\164\061\026\060\024\006\003\125\004\012\014\015\115\151
\143\162\157\163\145\143\040\114\164\144\056\061\047\060\045\006
\003\125\004\003\014\036\115\151\143\162\157\163\145\143\040\145
\055\123\172\151\147\156\157\040\122\157\157\164\040\103\101\040
\062\060\060\071\061\037\060\035\006\011\052\206\110\206\367\015
\001\011\001\026\020\151\156\146\157\100\145\055\163\172\151\147
\156\157\056\150\165
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\011\000\302\176\103\004\116\107\077\031
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "GlobalSign Root CA - R3"
#
# Issuer: CN=GlobalSign,O=GlobalSign,OU=GlobalSign Root CA - R3
# Serial Number:04:00:00:00:00:01:21:58:53:08:a2
# Subject: CN=GlobalSign,O=GlobalSign,OU=GlobalSign Root CA - R3
# Not Valid Before: Wed Mar 18 10:00:00 2009
# Not Valid After : Sun Mar 18 10:00:00 2029
# Fingerprint (SHA-256):
CB:B5:22:D7:B7:F1:27:AD:6A:01:13:86:5B:DF:1C:D4:10:2E:7D:07:59:AF:63:5A:7C:F4:72:0D:C9:63:C5:3B
#

```

Fingerprint (SHA1): D6:9B:56:11:48:F0:1C:77:C5:45:78:C1:09:26:DF:5B:85:69:76:AD

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "GlobalSign Root CA - R3"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\114\061\040\060\036\006\003\125\004\013\023\027\107\154\157  
\142\141\154\123\151\147\156\040\122\157\157\164\040\103\101\040  
\055\040\122\063\061\023\060\021\006\003\125\004\012\023\012\107  
\154\157\142\141\154\123\151\147\156\061\023\060\021\006\003\125  
\004\003\023\012\107\154\157\142\141\154\123\151\147\156

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\114\061\040\060\036\006\003\125\004\013\023\027\107\154\157  
\142\141\154\123\151\147\156\040\122\157\157\164\040\103\101\040  
\055\040\122\063\061\023\060\021\006\003\125\004\012\023\012\107  
\154\157\142\141\154\123\151\147\156\061\023\060\021\006\003\125  
\004\003\023\012\107\154\157\142\141\154\123\151\147\156

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\013\004\000\000\000\000\001\041\130\123\010\242

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\137\060\202\002\107\240\003\002\001\002\002\013\004  
\000\000\000\000\001\041\130\123\010\242\060\015\006\011\052\206  
\110\206\367\015\001\001\013\005\000\060\114\061\040\060\036\006  
\003\125\004\013\023\027\107\154\157\142\141\154\123\151\147\156  
\040\122\157\157\164\040\103\101\040\055\040\122\063\061\023\060  
\021\006\003\125\004\012\023\012\107\154\157\142\141\154\123\151  
\147\156\061\023\060\021\006\003\125\004\003\023\012\107\154\157  
\142\141\154\123\151\147\156\060\036\027\015\060\071\060\063\061\070  
\070\061\060\060\060\060\060\132\027\015\062\071\060\063\061\070  
\061\060\060\060\060\060\132\060\114\061\040\060\036\006\003\125  
\004\013\023\027\107\154\157\142\141\154\123\151\147\156\040\122  
\157\157\164\040\103\101\040\055\040\122\063\061\023\060\021\006  
\003\125\004\012\023\012\107\154\157\142\141\154\123\151\147\156  
\061\023\060\021\006\003\125\004\003\023\012\107\154\157\142\141  
\154\123\151\147\156\060\202\001\042\060\015\006\011\052\206\110  
\206\367\015\001\001\001\005\000\003\202\001\017\000\060\202\001  
\012\002\202\001\001\000\314\045\166\220\171\006\170\042\026\365  
\300\203\266\204\312\050\236\375\005\166\021\305\255\210\162\374  
\106\002\103\307\262\212\235\004\137\044\313\056\113\341\140\202  
\106\341\122\253\014\201\107\160\154\335\144\321\353\365\054\243  
\017\202\075\014\053\256\227\327\266\024\206\020\171\273\073\023

\200\167\214\010\341\111\322\152\142\057\037\136\372\226\150\337  
\211\047\225\070\237\006\327\076\311\313\046\131\015\163\336\260  
\310\351\046\016\203\025\306\357\133\213\322\004\140\312\111\246  
\050\366\151\073\366\313\310\050\221\345\235\212\141\127\067\254  
\164\024\334\164\340\072\356\162\057\056\234\373\320\273\277\365  
\075\000\341\006\063\350\202\053\256\123\246\072\026\163\214\335  
\101\016\040\072\300\264\247\241\351\262\117\220\056\062\140\351  
\127\313\271\004\222\150\150\345\070\046\140\165\262\237\167\377  
\221\024\357\256\040\111\374\255\100\025\110\321\002\061\141\031  
\136\270\227\357\255\167\267\144\232\172\277\137\301\023\357\233  
\142\373\015\154\340\124\151\026\251\003\332\156\351\203\223\161  
\166\306\151\205\202\027\002\003\001\000\001\243\102\060\100\060  
\016\006\003\125\035\017\001\001\377\004\004\003\002\001\006\060  
\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377  
\060\035\006\003\125\035\016\004\026\004\024\217\360\113\177\250  
\056\105\044\256\115\120\372\143\232\213\336\342\335\033\274\060  
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\003\202  
\001\001\000\113\100\333\300\120\252\376\310\014\357\367\226\124  
\105\111\273\226\000\011\101\254\263\023\206\206\050\007\063\312  
\153\346\164\271\272\000\055\256\244\012\323\365\361\361\017\212  
\277\163\147\112\203\307\104\173\170\340\257\156\154\157\003\051  
\216\063\071\105\303\216\344\271\127\154\252\374\022\226\354\123  
\306\055\344\044\154\271\224\143\373\334\123\150\147\126\076\203  
\270\317\065\041\303\311\150\376\316\332\302\123\252\314\220\212  
\351\360\135\106\214\225\335\172\130\050\032\057\035\336\315\000  
\067\101\217\355\104\155\327\123\050\227\176\363\147\004\036\025  
\327\212\226\264\323\336\114\047\244\114\033\163\163\166\364\027  
\231\302\037\172\016\343\055\010\255\012\034\054\377\074\253\125  
\016\017\221\176\066\353\303\127\111\276\341\056\055\174\140\213  
\303\101\121\023\043\235\316\367\062\153\224\001\250\231\347\054  
\063\037\072\073\045\322\206\100\316\073\054\206\170\311\141\057  
\024\272\356\333\125\157\337\204\356\005\011\115\275\050\330\162  
\316\323\142\120\145\036\353\222\227\203\061\331\263\265\312\107  
\130\077\137

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "GlobalSign Root CA - R3"

# Issuer: CN=GlobalSign,O=GlobalSign,OU=GlobalSign Root CA - R3

# Serial Number:04:00:00:00:00:01:21:58:53:08:a2

#

Subject: CN=GlobalSign,O=GlobalSign,OU=GlobalSign Root CA - R3

# Not Valid Before: Wed Mar 18 10:00:00 2009

# Not Valid After : Sun Mar 18 10:00:00 2029

# Fingerprint (SHA-256):

```
CB:B5:22:D7:B7:F1:27:AD:6A:01:13:86:5B:DF:1C:D4:10:2E:7D:07:59:AF:63:5A:7C:F4:72:0D:C9:63:C5:3B
# Fingerprint (SHA1): D6:9B:56:11:48:F0:1C:77:C5:45:78:C1:09:26:DF:5B:85:69:76:AD
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "GlobalSign Root CA - R3"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\326\233\126\021\110\360\034\167\305\105\170\301\011\046\337\133
\205\151\166\255
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\305\337\270\111\312\005\023\125\356\055\272\032\303\076\260\050
END
CKA_ISSUER MULTILINE_OCTAL
\060\114\061\040\060\036\006\003\125\004\013\023\027\107\154\157
\142\141\154\123\151\147\156\040\122\157\157\164\040\103\101\040
\055\040\122\063\061\023\060\021\006\003\125\004\012\023\012\107
\154\157\142\141\154\123\151\147\156\061\023\060\021\006\003\125
\004\003\023\012\107\154\157\142\141\154\123\151\147\156
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\013\004\000\000\000\000\001\041\130\123\010\242
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "Autoridad de Certificacion Firmaprofesional CIF A62634068"
#
# Issuer: CN=Autoridad de Certificacion Firmaprofesional CIF A62634068,C=ES
# Serial Number:53:ec:3b:ee:fb:b2:48:5f
# Subject: CN=Autoridad de Certificacion Firmaprofesional CIF A62634068,C=ES
# Not Valid Before: Wed May 20 08:38:15 2009
# Not Valid After : Tue Dec 31 08:38:15 2030
# Fingerprint (SHA-256):
04:04:80:28:BF:1F:28:64:D4:8F:9A:D4:D8:32:94:36:6A:82:88:56:55:3F:3B:14:30:3F:90:14:7F:5D:40:EF
# Fingerprint (SHA1): AE:C5:FB:3F:C8:E1:BF:C4:E5:4F:03:07:5A:9A:E8:00:B7:F7:B6:FA
CKA_CLASS
CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Autoridad de Certificacion Firmaprofesional CIF A62634068"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
```

CKA\_SUBJECT MULTILINE\_OCTAL

\060\121\061\013\060\011\006\003\125\004\006\023\002\105\123\061  
\102\060\100\006\003\125\004\003\014\071\101\165\164\157\162\151  
\144\141\144\040\144\145\040\103\145\162\164\151\146\151\143\141  
\143\151\157\156\040\106\151\162\155\141\160\162\157\146\145\163  
\151\157\156\141\154\040\103\111\106\040\101\066\062\066\063\064  
\060\066\070

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\121\061\013\060\011\006\003\125\004\006\023\002\105\123\061  
\102\060\100\006\003\125\004\003\014\071\101\165\164\157\162\151  
\144\141\144\040\144\145\040\103\145\162\164\151\146\151\143\141  
\143\151\157\156\040\106\151\162\155\141\160\162\157\146\145\163  
\151\157\156\141\154\040\103\111\106\040\101\066\062\066\063\064  
\060\066\070

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\010\123\354\073\356\373\262\110\137

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\006\024\060\202\003\374\240\003\002\001\002\002\010\123  
\354\073\356\373\262\110\137\060\015\006\011\052\206\110\206\367  
\015\001\001\005\005\000\060\121\061\013\060\011\006\003\125\004  
\006\023\002\105\123\061\102\060\100\006\003\125\004\003\014\071  
\101\165\164\157\162\151\144\141\144\040\144\145\040\103\145\162  
\164\151\146\151\143\141\143\151\157\156\040\106\151\162\155\141  
\160\162\157\146\145\163\151\157\156\141\154\040\103\111\106\040  
\101\066\062\066\063\064\060\066\070\060\036\027\015\060\071\060  
\065\062\060\060\070\063\070\061\065\132\027\015\063\060\061\062  
\063\061\060\070\063\070\061\065\132\060\121\061\013\060\011\006  
\003\125\004\006\023\002\105\123\061\102\060\100\006\003\125\004  
\003\014\071\101\165\164\157\162\151\144\141\144\040\144\145\040  
\103\145\162\164\151\146\151\143\141\143\151\157\156\040\106\151  
\162\155\141\160\162\157\146\145\163\151\157\156\141\154\040\103  
\111\106\040\101\066\062\066\063\064\060\066\070\060\202\002\042  
\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003  
\202\002\017\000\060\202\002\012\002\202\002\001\000\312\226\153  
\216\352\370\373\361\242\065\340\177\114\332\340\303\122\327\175  
\266\020\310\002\136\263\103\052\304\117\152\262\312\034\135\050  
\232\170\021\032\151\131\127\257\265\040\102\344\213\017\346\337  
\133\246\003\222\057\365\021\344\142\327\062\161\070\331\004\014  
\161\253\075\121\176\017\007\337\143\005\134\351\277\224\157\301  
\051\202\300\264\332\121\260\301\074\273\255\067\112\134\312\361  
\113\066\016\044\253\277\303\204\167\375\250\120\364\261\347\306  
\057\322\055\131\215\172\012\116\226\151\122\002\252\066\230\354  
\374\372\024\203\014\067\037\311\222\067\177\327\201\055\345\304

\271\340\076\064\376\147\364\076\146\321\323\364\100\317\136\142  
\064\017\160\006\076\040\030\132\316\367\162\033\045\154\223\164  
\024\223\243\163\261\016\252\207\020\043\131\137\040\005\031\107  
\355\150\216\222\022\312\135\374\326\053\262\222\074\040\317\341  
\137\257\040\276\240\166\177\166\345\354\032\206\141\063\076\347  
\173\264\077\240\017\216\242\271\152\157\271\207\046\157\101\154  
\210\246\120\375\152\143\013\365\223\026\033\031\217\262\355\233  
\233\311\220\365\001\014\337\031\075\017\076\070\043\311\057\217  
\014\321\002\376\033\125\326\116\320\215\074\257\117\244\363\376  
\257\052\323\005\235\171\010\241\313\127\061\264\234\310\220\262  
\147\364\030\026\223\072\374\107\330\321\170\226\061\037\272\053  
\014\137\135\231\255\143\211\132\044\040\166\330\337\375\253\116  
\246\042\252\235\136\346\047\212\175\150\051\243\347\212\270\332  
\021\273\027\055\231\235\023\044\106\367\305\342\330\237\216\177  
\307\217\164\155\132\262\350\162\365\254\356\044\020\255\057\024  
\332\377\055\232\106\161\107\276\102\337\273\001\333\364\177\323  
\050\217\061\131\133\323\311\002\246\264\122\312\156\227\373\103  
\305\010\046\157\212\364\273\375\237\050\252\015\325\105\363\023  
\072\035\330\300\170\217\101\147\074\036\224\144\256\173\013\305  
\350\331\001\210\071\032\227\206\144\101\325\073\207\014\156\372  
\017\306\275\110\024\277\071\115\324\236\101\266\217\226\035\143  
\226\223\331\225\006\170\061\150\236\067\006\073\200\211\105\141  
\071\043\307\033\104\243\025\345\034\370\222\060\273\002\003\001  
\000\001\243\201\357\060\201\354\060\022\006\003\125\035\023\001  
\001\377\004\010\060\006\001\001\377\002\001\001\060\016\006\003  
\125\035\017\001\001\377\004\004\003\002\001\006\060\035\006\003  
\125\035\016\004\026\004\024\145\315\353\253\065\036\000\076\176  
\325\164\300\034\264\163\107\016\032\144\057\060\201\246\006\003  
\125\035\040\004\201\236\060\201\233\060\201\230\006\004\125\035  
\040\000\060\201\217\060\057\006\010\053\006\001\005\005\007\002  
\001\026\043\150\164\164\160\072\057\057\167\167\167\056\146\151  
\162\155\141\160\162\157\146\145\163\151\157\156\141\154\056\143  
\157\155\057\143\160\163\060\134\006\010\053\006\001\005\005\007  
\002\002\060\120\036\116\000\120\000\141\000\163\000\145\000\157  
\000\040\000\144\000\145\000\040\000\154\000\141\000\040\000\102  
\000\157\000\156\000\141\000\156\000\157\000\166\000\141\000\040  
\000\064\000\067\000\040\000\102\000\141\000\162\000\143\000\145  
\000\154\000\157\000\156\000\141\000\040\000\060\000\070\000\060  
\000\061\000\067\060\015\006\011\052\206\110\206\367\015\001\001  
\005\005\000\003\202\002\001\000\027\175\240\371\264\335\305\305  
\353\255\113\044\265\241\002\253\335\245\210\112\262\017\125\113  
\053\127\214\073\345\061\335\376\304\062\361\347\133\144\226\066  
\062\030\354\245\062\167\327\343\104\266\300\021\052\200\271\075  
\152\156\174\233\323\255\374\303\326\243\346\144\051\174\321\341  
\070\036\202\053\377\047\145\257\373\026\025\304\056\161\204\345  
\265\377\372\244\107\275\144\062\273\366\045\204\242\047\102\365  
\040\260\302\023\020\021\315\020\025\272\102\220\052\322\104\341  
\226\046\353\061\110\022\375\052\332\311\006\317\164\036\251\113

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\325\207\050\371\171\064\222\076\056\104\350\366\217\117\217\065
\077\045\263\071\334\143\052\220\153\040\137\304\122\022\116\227
\054\052\254\235\227\336\110\362\243\146\333\302\322\203\225\246
\146\247\236\045\017\351\013\063\221\145\012\132\303\331\124\022
\335\257\303\116\016\037\046\136\015\334\263\215\354\325\201\160
\336\322\117\044\005\363\154\116\365\114\111\146\215\321\377\322
\013\045\101\110\376\121\204\306\102\257\200\004\317\320\176\144
\111\344\362\337\242\354\261\114\300\052\035\347\264\261\145\242
\304\274\361\230\364\252\160\007\143\264\270\332\073\114\372\100
\042\060\133\021\246\360\005\016\306\002\003\110\253\206\233\205
\335\333\335\352\242\166\200\163\175\365\234\004\304\105\215\347
\271\034\213\236\352\327\165\321\162\261\336\165\104\347\102\175
\342\127\153\175\334\231\274\075\203\050\352\200\223\215\305\114
\145\301\160\201\270\070\374\103\061\262\366\003\064\107\262\254
\373\042\006\313\036\335\027\107\034\137\146\271\323\032\242\332
\021\261\244\274\043\311\344\276\207\377\271\224\266\370\135\040
\112\324\137\347\275\150\173\145\362\025\036\322\072\251\055\351
\330\153\044\254\227\130\104\107\255\131\030\361\041\145\160\336
\316\064\140\250\100\361\363\074\244\303\050\043\214\376\047\063
\103\100\240\027\074\353\352\073\260\162\246\243\271\112\113\136
\026\110\364\262\274\310\214\222\305\235\237\254\162\066\274\064
\200\064\153\251\213\222\300\270\027\355\354\166\123\365\044\001
\214\263\042\350\113\174\125\306\235\372\243\024\273\145\205\156
\156\117\022\176\012\074\235\225
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "Autoridad de Certificacion Firmaprofesional CIF A62634068"

# Issuer: CN=Autoridad de Certificacion Firmaprofesional CIF A62634068,C=ES

# Serial Number:53:ec:3b:ee:fb:b2:48:5f

# Subject: CN=Autoridad de Certificacion Firmaprofesional CIF A62634068,C=ES

# Not Valid Before: Wed May 20 08:38:15 2009

# Not Valid After : Tue Dec 31 08:38:15 2030

# Fingerprint (SHA-256):

04:04:80:28:BF:1F:28:64:D4:8F:9A:D4:D8:32:94:36:6A:82:88:56:55:3F:3B:14:30:3F:90:14:7F:5D:40:EF

#

Fingerprint (SHA1): AE:C5:FB:3F:C8:E1:BF:C4:E5:4F:03:07:5A:9A:E8:00:B7:F7:B6:FA

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Autoridad de Certificacion Firmaprofesional CIF A62634068"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\256\305\373\077\310\341\277\304\345\117\003\007\132\232\350\000
```

```
\267\367\266\372
```



```

END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\163\072\164\172\354\273\243\226\246\302\344\342\310\233\300\303
END
CKA_ISSUER MULTILINE_OCTAL
\060\121\061\013\060\011\006\003\125\004\006\023\002\105\123\061
\102\060\100\006\003\125\004\003\014\071\101\165\164\157\162\151
\144\141\144\040\144\145\040\103\145\162\164\151\146\151\143\141
\143\151\157\156\040\106\151\162\155\141\160\162\157\146\145\163
\151\157\156\141\154\040\103\111\106\040\101\066\062\066\063\064
\060\066\070
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\010\123\354\073\356\373\262\110\137
END
CKA_TRUST_SERVER_AUTH
CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "Izenpe.com"
#
# Issuer: CN=Izenpe.com,O=IZENPE S.A.,C=ES
# Serial Number:00:b0:b7:5a:16:48:5f:bf:e1:cb:f5:8b:d7:19:e6:7d
# Subject: CN=Izenpe.com,O=IZENPE S.A.,C=ES
# Not Valid Before: Thu Dec 13 13:08:28 2007
# Not Valid After : Sun Dec 13 08:27:25 2037
# Fingerprint (SHA-256):
25:30:CC:8E:98:32:15:02:BA:D9:6F:9B:1F:BA:1B:09:9E:2D:29:9E:0F:45:48:BB:91:4F:36:3B:C0:D4:53:1F
# Fingerprint (SHA1): 2F:78:3D:25:52:18:A7:4A:65:39:71:B5:2C:A2:9C:45:15:6F:E9:19
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Izenpe.com"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\070\061\013\060\011\006\003\125\004\006\023\002\105\123\061
\024\060\022\006\003\125\004\012\014\013\111\132\105\116\120\105
\040\123\056\101\056\061\023\060\021\006\003\125\004\003\014\012
\111\172\145\156\160\145\056\143\157\155
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\070\061\013\060\011\006\003\125\004\006\023\002\105\123\061

```

\024\060\022\006\003\125\004\012\014\013\111\132\105\116\120\105  
\040\123\056\101\056\061\023\060\021\006\003\125\004\003\014\012  
\111\172\145\156\160\145\056\143\157\155

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\000\260\267\132\026\110\137\277\341\313\365\213\327\031  
\346\175

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\361\060\202\003\331\240\003\002\001\002\002\020\000  
\260\267\132\026\110\137\277\341\313\365\213\327\031\346\175\060  
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\070  
\061\013\060\011\006\003\125\004\006\023\002\105\123\061\024\060  
\022\006\003\125\004\012\014\013\111\132\105\116\120\105\040\123  
\056\101\056\061\023\060\021\006\003\125\004\003\014\012\111\172  
\145\156\160\145\056\143\157\155\060\036\027\015\060\067\061\062  
\061\063\061\063\060\070\062\070\132\027\015\063\067\061\062\061  
\063\060\070\062\067\062\065\132\060\070\061\013\060\011\006\003  
\125\004\006\023\002\105\123\061\024\060\022\006\003\125\004\012  
\014\013\111\132\105\116\120\105\040\123\056\101\056\061\023\060  
\021\006\003\125\004\003\014\012\111\172\145\156\160\145\056\143  
\157\155\060\202\002\042\060\015\006\011\052\206\110\206\367\015  
\001\001\001\005\000\003\202\002\017\000\060\202\002\012\002\202  
\002\001\000\311\323\172\312\017\036\254\247\206\350\026\145\152  
\261\302\033\105\062\161\225\331\376\020\133\314\257\347\245\171  
\001\217\211\303\312\362\125\161\367\167\276\167\224\363\162\244  
\054\104\330\236\222\233\024\072\241\347\044\220\012\012\126\216  
\305\330\046\224\341\331\110\341\055\076\332\012\162\335\243\231  
\025\332\201\242\207\364\173\156\046\167\211\130\255\326\353\014  
\262\101\172\163\156\155\333\172\170\101\351\010\210\022\176\207  
\056\146\021\143\154\124\373\074\235\162\300\274\056\377\302\267  
\335\015\166\343\072\327\367\264\150\276\242\365\343\201\156\301  
\106\157\135\215\340\115\306\124\125\211\032\063\061\012\261\127  
\271\243\212\230\303\354\073\064\305\225\101\151\176\165\302\074  
\040\305\141\272\121\107\240\040\220\223\241\220\113\363\116\174  
\205\105\124\232\321\005\046\101\260\265\115\035\063\276\304\003  
\310\045\174\301\160\333\073\364\011\055\124\047\110\254\057\341  
\304\254\076\310\313\222\114\123\071\067\043\354\323\001\371\340  
\011\104\115\115\144\300\341\015\132\207\042\274\255\033\243\376  
\046\265\025\363\247\374\204\031\351\354\241\210\264\104\151\204  
\203\363\211\321\164\006\251\314\013\326\302\336\047\205\120\046  
\312\027\270\311\172\207\126\054\032\001\036\154\276\023\255\020  
\254\265\044\365\070\221\241\326\113\332\361\273\322\336\107\265  
\361\274\201\366\131\153\317\031\123\351\215\025\313\112\313\251  
\157\104\345\033\101\317\341\206\247\312\320\152\237\274\114\215  
\006\063\132\242\205\345\220\065\240\142\134\026\116\360\343\242  
\372\003\032\264\054\161\263\130\054\336\173\013\333\032\017\353  
\336\041\037\006\167\006\003\260\311\357\231\374\300\271\117\013

\206\050\376\322\271\352\343\332\245\303\107\151\022\340\333\360  
\366\031\213\355\173\160\327\002\326\355\207\030\050\054\004\044  
\114\167\344\110\212\032\306\073\232\324\017\312\372\165\322\001  
\100\132\215\171\277\213\317\113\317\252\026\301\225\344\255\114  
\212\076\027\221\324\261\142\345\202\345\200\004\244\003\176\215  
\277\332\177\242\017\227\117\014\323\015\373\327\321\345\162\176  
\034\310\167\377\133\232\017\267\256\005\106\345\361\250\026\354  
\107\244\027\002\003\001\000\001\243\201\366\060\201\363\060\201  
\260\006\003\125\035\021\004\201\250\060\201\245\201\017\151\156  
\146\157\100\151\172\145\156\160\145\056\143\157\155\244\201\221  
\060\201\216\061\107\060\105\006\003\125\004\012\014\076\111\132  
\105\116\120\105\040\123\056\101\056\040\055\040\103\111\106\040  
\101\060\061\063\063\067\062\066\060\055\122\115\145\162\143\056  
\126\151\164\157\162\151\141\055\107\141\163\164\145\151\172\040  
\124\061\060\065\065\040\106\066\062\040\123\070\061\103\060\101  
\006\003\125\004\011\014\072\101\166\144\141\040\144\145\154\040  
\115\145\144\151\164\145\162\162\141\156\145\157\040\105\164\157  
\162\142\151\144\145\141\040\061\064\040\055\040\060\061\060\061  
\060\040\126\151\164\157\162\151\141\055\107\141\163\164\145\151  
\172\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001  
\001\377\060\016\006\003\125\035\017\001\001\377\004\004\003\002  
\001\006\060\035\006\003\125\035\016\004\026\004\024\035\034\145  
\016\250\362\045\173\264\221\317\344\261\261\346\275\125\164\154  
\005\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000  
\003\202\002\001\000\170\246\014\026\112\237\114\210\072\300\313  
\016\245\026\175\237\271\110\137\030\217\015\142\066\366\315\031  
\153\254\253\325\366\221\175\256\161\363\077\263\016\170\205\233  
\225\244\047\041\107\102\112\174\110\072\365\105\174\263\014\216  
\121\170\254\225\023\336\306\375\175\270\032\220\114\253\222\003  
\307\355\102\001\316\017\330\261\372\242\222\341\140\155\256\172  
\153\011\252\306\051\356\150\111\147\060\200\044\172\061\026\071  
\133\176\361\034\056\335\154\011\255\362\061\301\202\116\271\273  
\371\276\277\052\205\077\300\100\243\072\131\374\131\113\074\050  
\044\333\264\025\165\256\015\210\272\056\163\300\275\130\207\345  
\102\362\353\136\356\036\060\042\231\313\067\321\304\041\154\201  
\354\276\155\046\346\034\344\102\040\236\107\260\254\203\131\160  
\054\065\326\257\066\064\264\315\073\370\062\250\357\343\170\211  
\373\215\105\054\332\234\270\176\100\034\141\347\076\242\222\054  
\113\362\315\372\230\266\051\377\363\362\173\251\037\056\240\223  
\127\053\336\205\003\371\151\067\313\236\170\152\005\264\305\061  
\170\211\354\172\247\205\341\271\173\074\336\276\036\171\204\316  
\237\160\016\131\302\065\056\220\052\061\331\344\105\172\101\244  
\056\023\233\064\016\146\173\111\253\144\227\320\106\303\171\235  
\162\120\143\246\230\133\006\275\110\155\330\071\203\160\350\065  
\360\005\321\252\274\343\333\310\002\352\174\375\202\332\302\133  
\122\065\256\230\072\255\272\065\223\043\247\037\110\335\065\106  
\230\262\020\150\344\245\061\302\012\130\056\031\201\020\311\120  
\165\374\352\132\026\316\021\327\356\357\120\210\055\141\377\077

```
\102\163\005\224\103\325\216\074\116\001\072\031\245\037\106\116
\167\320\135\345\201\042\041\207\376\224\175\204\330\223\255\326
\150\103\110\262\333\353\163\044\347\221\177\124\244\266\200\076
\235\243\074\114\162\302\127\304\240\324\314\070\047\316\325\006
\236\242\110\331\351\237\316\202\160\066\223\232\073\337\226\041
\343\131\267\014\332\221\067\360\375\131\132\263\231\310\151\154
\103\046\001\065\143\140\125\211\003\072\165\330\272\112\331\124
\377\356\336\200\330\055\321\070\325\136\055\013\230\175\076\154
\333\374\046\210\307
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "Izenpe.com"

#

Issuer: CN=Izenpe.com,O=IZENPE S.A.,C=ES

# Serial Number:00:b0:b7:5a:16:48:5f:bf:e1:cb:f5:8b:d7:19:e6:7d

# Subject: CN=Izenpe.com,O=IZENPE S.A.,C=ES

# Not Valid Before: Thu Dec 13 13:08:28 2007

# Not Valid After : Sun Dec 13 08:27:25 2037

# Fingerprint (SHA-256):

25:30:CC:8E:98:32:15:02:BA:D9:6F:9B:1F:BA:1B:09:9E:2D:29:9E:0F:45:48:BB:91:4F:36:3B:C0:D4:53:1F

# Fingerprint (SHA1): 2F:78:3D:25:52:18:A7:4A:65:39:71:B5:2C:A2:9C:45:15:6F:E9:19

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Izenpe.com"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\057\170\075\045\122\030\247\112\145\071\161\265\054\242\234\105
\025\157\351\031
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\246\260\315\205\200\332\134\120\064\243\071\220\057\125\147\163
```

END

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\070\061\013\060\011\006\003\125\004\006\023\002\105\123\061
\024\060\022\006\003\125\004\012\014\013\111\132\105\116\120\105
\040\123\056\101\056\061\023\060\021\006\003\125\004\003\014\012
\111\172\145\156\160\145\056\143\157\155
```

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

```
\002\020\000\260\267\132\026\110\137\277\341\313\365\213\327\031
\346\175
```

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR  
CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST  
CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST  
CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "Chambers of Commerce Root - 2008"

#

# Issuer: CN=Chambers of Commerce Root - 2008,O=AC Camerfirma S.A.,serialNumber=A82743287,L=Madrid  
(see current address at www.camerfirma.com/address),C=EU

# Serial Number:00:a3:da:42:7e:a4:b1:ae:da

# Subject: CN=Chambers of Commerce Root - 2008,O=AC Camerfirma S.A.,serialNumber=A82743287,L=Madrid  
(see current address at www.camerfirma.com/address),C=EU

# Not Valid Before: Fri Aug 01 12:29:50 2008

# Not Valid After : Sat Jul 31 12:29:50 2038

# Fingerprint (SHA-256):

06:3E:4A:FA:C4:91:DF:D3:32:F3:08:9B:85:42:E9:46:17:D8:93:D7:FE:94:4E:10:A7:93:7E:E2:9D:96:93:C0

#

Fingerprint (SHA1): 78:6A:74:AC:76:AB:14:7F:9C:6A:30:50:BA:9E:A8:7E:FE:9A:CE:3C

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Chambers of Commerce Root - 2008"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\201\256\061\013\060\011\006\003\125\004\006\023\002\105\125  
\061\103\060\101\006\003\125\004\007\023\072\115\141\144\162\151  
\144\040\050\163\145\145\040\143\165\162\162\145\156\164\040\141  
\144\144\162\145\163\163\040\141\164\040\167\167\167\056\143\141  
\155\145\162\146\151\162\155\141\056\143\157\155\057\141\144\144  
\162\145\163\163\051\061\022\060\020\006\003\125\004\005\023\011  
\101\070\062\067\064\063\062\070\067\061\033\060\031\006\003\125  
\004\012\023\022\101\103\040\103\141\155\145\162\146\151\162\155  
\141\040\123\056\101\056\061\051\060\047\006\003\125\004\003\023  
\040\103\150\141\155\142\145\162\163\040\157\146\040\103\157\155  
\155\145\162\143\145\040\122\157\157\164\040\055\040\062\060\060  
\070

END

CKA\_ID

UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\256\061\013\060\011\006\003\125\004\006\023\002\105\125  
\061\103\060\101\006\003\125\004\007\023\072\115\141\144\162\151  
\144\040\050\163\145\145\040\143\165\162\162\145\156\164\040\141  
\144\144\162\145\163\163\040\141\164\040\167\167\167\056\143\141  
\155\145\162\146\151\162\155\141\056\143\157\155\057\141\144\144  
\162\145\163\163\051\061\022\060\020\006\003\125\004\005\023\011

\101\070\062\067\064\063\062\070\067\061\033\060\031\006\003\125  
\004\012\023\022\101\103\040\103\141\155\145\162\146\151\162\155  
\141\040\123\056\101\056\061\051\060\047\006\003\125\004\003\023  
\040\103\150\141\155\142\145\162\163\040\157\146\040\103\157\155  
\155\145\162\143\145\040\122\157\157\164\040\055\040\062\060\060  
\070

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\011\000\243\332\102\176\244\261\256\332

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\007\117\060\202\005\067\240\003\002\001\002\002\011\000  
\243\332\102\176\244\261\256\332\060\015\006\011\052\206\110\206  
\367\015\001\001\005\005\000\060\201\256\061\013\060\011\006\003  
\125\004\006\023\002\105\125\061\103\060\101\006\003\125\004\007  
\023\072\115\141\144\162\151\144\040\050\163\145\145\040\143\165  
\162\162\145\156\164\040\141\144\144\162\145\163\163\040\141\164  
\040\167\167\167\056\143\141\155\145\162\146\151\162\155\141\056  
\143\157\155\057\141\144\144\162\145\163\163\051\061\022\060\020  
\006\003\125\004\005\023\011\101\070\062\067\064\063\062\070\067  
\061\033\060\031\006\003\125\004\012\023\022\101\103\040\103\141  
\155\145\162\146\151\162\155\141\040\123\056\101\056\061\051\060  
\047\006\003\125\004\003\023\040\103\150\141\155\142\145\162\163  
\040\157\146\040\103\157\155\155\145\162\143\145\040\122\157\157  
\164\040\055\040\062\060\060\070\060\036\027\015\060\070\060\070  
\060\061\061\062\062\071\065\060\132\027\015\063\070\060\067\063  
\061\061\062\062\071\065\060\132\060\201\256\061\013\060\011\006  
\003\125\004\006\023\002\105\125\061\103\060\101\006\003\125\004  
\007\023\072\115\141\144\162\151\144\040\050\163\145\145\040\143  
\165\162\162\145\156\164\040\141\144\144\162\145\163\163\040\141  
\164\040\167\167\167\056\143\141\155\145\162\146\151\162\155\141  
\056\143\157\155\057\141\144\144\162\145\163\163\051\061\022\060  
\020\006\003\125\004\005\023\011\101\070\062\067\064\063\062\070  
\067\061\033\060\031\006\003\125\004\012\023\022\101\103\040\103  
\141\155\145\162\146\151\162\155\141\040\123\056\101\056\061\051  
\060\047\006\003\125\004\003\023\040\103\150\141\155\142\145\162  
\163\040\157\146\040\103\157\155\155\145\162\143\145\040\122\157  
\157\164\040\055\040\062\060\060\070\060\202\002\042\060\015\006  
\011\052\206\110\206\367\015\001\001\001\005\000\003\202\002\017  
\000\060\202\002\012\002\202\002\001\000\257\000\313\160\067\053  
\200\132\112\072\154\170\224\175\243\177\032\037\366\065\325\275  
\333\313\015\104\162\076\046\262\220\122\272\143\073\050\130\157  
\245\263\155\224\246\363\335\144\014\125\366\366\347\362\042\042  
\200\136\341\142\306\266\051\341\201\154\362\277\345\175\062\152  
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CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "Chambers of Commerce Root - 2008"

# Issuer: CN=Chambers of Commerce Root - 2008,O=AC Camerfirma S.A.,serialNumber=A82743287,L=Madrid  
(see current address at [www.camerfirma.com/address](http://www.camerfirma.com/address)),C=EU

# Serial Number:00:a3:da:42:7e:a4:b1:ae:da

#

Subject: CN=Chambers of Commerce Root - 2008,O=AC Camerfirma S.A.,serialNumber=A82743287,L=Madrid  
(see current address at [www.camerfirma.com/address](http://www.camerfirma.com/address)),C=EU

# Not Valid Before: Fri Aug 01 12:29:50 2008

# Not Valid After : Sat Jul 31 12:29:50 2038



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# Fingerprint (SHA-256):
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CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Chambers of Commerce Root - 2008"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\170\152\164\254\166\253\024\177\234\152\060\120\272\236\250\176
\376\232\316\074
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\136\200\236\204\132\016\145\013\027\002\363\125\030\052\076\327
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\155\145\162\146\151\162\155\141\056\143\157\155\057\141\144\144
\162\145\163\163\051\061\022\060\020\006\003\125\004\005\023\011
\101\070\062\067\064\063\062\070\067\061\033\060\031\006\003\125
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\070
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MULTILINE_OCTAL
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CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "Global Chambersign Root - 2008"
#
# Issuer: CN=Global Chambersign
Root - 2008,O=AC Camerfirma S.A.,serialNumber=A82743287,L=Madrid (see current address at
www.camerfirma.com/address),C=EU
# Serial Number:00:c9:cd:d3:e9:d5:7d:23:ce
# Subject: CN=Global Chambersign Root - 2008,O=AC Camerfirma S.A.,serialNumber=A82743287,L=Madrid
(see current address at www.camerfirma.com/address),C=EU
# Not Valid Before: Fri Aug 01 12:31:40 2008

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# Not Valid After : Sat Jul 31 12:31:40 2038

# Fingerprint (SHA-256):

13:63:35:43:93:34:A7:69:80:16:A0:D3:24:DE:72:28:4E:07:9D:7B:52:20:BB:8F:BD:74:78:16:EE:BE:BA:CA

# Fingerprint (SHA1): 4A:BD:EE:EC:95:0D:35:9C:89:AE:C7:52:A1:2C:5B:29:F6:D6:AA:0C

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

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CKA\_LABEL UTF8 "Global Chambersign Root - 2008"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

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END

CKA\_ID

UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

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END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

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\101\070\062\067\064\063\062\070\067\061\033\060\031\006\003\125  
\004\012\023\022\101\103\040\103\141\155\145\162\146\151\162\155  
\141\040\123\056\101\056\061\047\060\045\006\003\125\004\003\023  
\036\107\154\157\142\141\154\040\103\150\141\155\142\145\162\163  
\151\147\156\040\122\157\157\164\040\055\040\062\060\060\070\202  
\011\000\311\315\323\351\325\175\043\316\060\016\006\003\125\035  
\017\001\001\377\004\004\003\002\001\006\060\075\006\003\125\035  
\040\004\066\060\064\060\062\006\004\125\035\040\000\060\052\060  
\050\006\010\053\006\001\005\005\007\002\001\026\034\150\164\164  
\160\072\057\057\160\157\154\151\143\171\056\143\141\155\145\162  
\146\151\162\155\141\056\143\157\155\060\015\006\011\052\206\110  
\206\367\015\001\001\005\005\000\003\202\002\001\000\200\210\177  
\160\336\222\050\331\005\224\106\377\220\127\251\361\057\337\032  
\015\153\372\174\016\034\111\044\171\047\330\106\252\157\051\131  
\122\210\160\022\352\335\075\365\233\123\124\157\341\140\242\250  
\011\271\354\353\131\174\306\065\361\334\030\351\361\147\345\257  
\272\105\340\011\336\312\104\017\302\027\016\167\221\105\172\063  
\137\137\226\054\150\213\301\107\217\230\233\075\300\354\313\365  
\325\202\222\204\065\321\276\066\070\126\162\061\133\107\055\252  
\027\244\143\121\353\012\001\255\177\354\165\236\313\241\037\361  
\177\022\261\271\344\144\177\147\326\043\052\364\270\071\135\230  
\350\041\247\341\275\075\102\032\164\232\160\257\150\154\120\135  
\111\317\377\373\016\135\346\054\107\327\201\072\131\000\265\163  
\153\143\040\366\061\105\010\071\016\364\160\176\100\160\132\077  
\320\153\102\251\164\075\050\057\002\155\165\162\225\011\215\110  
\143\306\306\043\127\222\223\136\065\301\215\371\012\367\054\235  
\142\034\366\255\174\335\246\061\036\266\261\307\176\205\046\372  
\244\152\265\332\143\060\321\357\223\067\262\146\057\175\005\367

```
\347\267\113\230\224\065\300\331\072\051\301\235\262\120\063\035
\112\251\132\246\311\003\357\355\364\347\250\156\212\264\127\204
\353\244\077\320\356\252\252\207\133\143\350\223\342\153\250\324
\270\162\170\153\033\355\071\344\135\313\233\252\207\325\117\116
\000\376\331\152\237\074\061\017\050\002\001\175\230\350\247\260
\242\144\236\171\370\110\362\025\251\314\346\310\104\353\077\170
\231\362\173\161\076\074\361\230\247\305\030\022\077\346\273\050
\063\102\351\105\012\174\155\362\206\171\057\305\202\031\175\011
\211\174\262\124\166\210\256\336\301\363\314\341\156\333\061\326
\223\256\231\240\357\045\152\163\230\211\133\072\056\023\210\036
\277\300\222\224\064\033\343\047\267\213\036\157\102\377\347\351
\067\233\120\035\055\242\371\002\356\313\130\130\072\161\274\150
\343\252\301\257\034\050\037\242\334\043\145\077\201\352\256\231
\323\330\060\317\023\015\117\025\311\204\274\247\110\055\370\060
\043\167\330\106\113\171\155\366\214\355\072\177\140\021\170\364
\351\233\256\325\124\300\164\200\321\013\102\237\301
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "Global Chambersign Root - 2008"

# Issuer: CN=Global Chambersign Root - 2008,O=AC Camerfirma S.A.,serialNumber=A82743287,L=Madrid (see current address at [www.camerfirma.com/address](http://www.camerfirma.com/address)),C=EU

# Serial Number:00:c9:cd:d3:e9:d5:7d:23:ce

# Subject: CN=Global Chambersign Root - 2008,O=AC Camerfirma S.A.,serialNumber=A82743287,L=Madrid (see current address at [www.camerfirma.com/address](http://www.camerfirma.com/address)),C=EU

# Not Valid Before: Fri Aug 01 12:31:40 2008

# Not Valid After : Sat Jul 31 12:31:40 2038

# Fingerprint (SHA-256):

13:63:35:43:93:34:A7:69:80:16:A0:D3:24:DE:72:28:4E:07:9D:7B:52:20:BB:8F:BD:74:78:16:EE:BE:BA:CA

# Fingerprint (SHA1): 4A:BD:EE:EC:95:0D:35:9C:89:AE:C7:52:A1:2C:5B:29:F6:D6:AA:0C

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL

CK\_FALSE

CKA\_LABEL UTF8 "Global Chambersign Root - 2008"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\112\275\356\354\225\015\065\234\211\256\307\122\241\054\133\051
\366\326\252\014
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\236\200\377\170\001\014\056\301\066\275\376\226\220\156\010\363
```

END

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\201\254\061\013\060\011\006\003\125\004\006\023\002\105\125
```

\061\103\060\101\006\003\125\004\007\023\072\115\141\144\162\151  
\144\040\050\163\145\145\040\143\165\162\162\145\156\164\040\141  
\144\144\162\145\163\163\040\141\164\040\167\167\167\056\143\141  
\155\145\162\146\151\162\155\141\056\143\157\155\057\141\144\144  
\162\145\163\163\051\061\022\060\020\006\003\125\004\005\023\011  
\101\070\062\067\064\063\062\070\067\061\033\060\031\006\003\125  
\004\012\023\022\101\103\040\103\141\155\145\162\146\151\162\155  
\141\040\123\056\101\056\061\047\060\045\006\003\125\004\003\023  
\036\107\154\157\142\141\154\040\103\150\141\155\142\145\162\163  
\151\147\156\040\122\157\157\164\040\055\040\062\060\060\070

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\011\000\311\315\323\351\325\175\043\316

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "Go Daddy Root Certificate Authority - G2"

#

# Issuer: CN=Go Daddy Root Certificate Authority - G2,O="GoDaddy.com, Inc.",L=Scottsdale,ST=Arizona,C=US

# Serial Number: 0 (0x0)

# Subject: CN=Go Daddy Root Certificate Authority - G2,O="GoDaddy.com,  
Inc.",L=Scottsdale,ST=Arizona,C=US

# Not Valid Before: Tue Sep 01 00:00:00 2009

# Not Valid After : Thu Dec 31 23:59:59 2037

# Fingerprint (SHA-256):

45:14:0B:32:47:EB:9C:C8:C5:B4:F0:D7:B5:30:91:F7:32:92:08:9E:6E:5A:63:E2:74:9D:D3:AC:A9:19:8E:DA

# Fingerprint (SHA1): 47:BE:AB:C9:22:EA:E8:0E:78:78:34:62:A7:9F:45:C2:54:FD:E6:8B

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE

CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Go Daddy Root Certificate Authority - G2"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\201\203\061\013\060\011\006\003\125\004\006\023\002\125\123  
\061\020\060\016\006\003\125\004\010\023\007\101\162\151\172\157  
\156\141\061\023\060\021\006\003\125\004\007\023\012\123\143\157  
\164\164\163\144\141\154\145\061\032\060\030\006\003\125\004\012  
\023\021\107\157\104\141\144\144\171\056\143\157\155\054\040\111  
\156\143\056\061\061\060\057\006\003\125\004\003\023\050\107\157  
\040\104\141\144\144\171\040\122\157\157\164\040\103\145\162\164  
\151\146\151\143\141\164\145\040\101\165\164\150\157\162\151\164

```
\171\040\055\040\107\062
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\203\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\020\060\016\006\003\125\004\010\023\007\101\162\151\172\157
\156\141\061\023\060\021\006\003\125\004\007\023\012\123\143\157
\164\164\163\144\141\154\145\061\032\060\030\006\003\125\004\012
\023\021\107\157\104\141\144\144\171\056\143\157\155\054\040\111
\156\143\056\061\061\060\057\006\003\125\004\003\023\050\107\157
\040\104\141\144\144\171\040\122\157\157\164\040\103\145\162\164
\151\146\151\143\141\164\145\040\101\165\164\150\157\162\151\164
\171\040\055\040\107\062
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\001\000
END
CKA_VALUE MULTILINE_OCTAL
\060\202\003\305\060\202\002\255\240\003\002\001\002\002\001\000
\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060
\201\203\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\020\060\016\006\003\125\004\010\023\007\101\162\151\172\157\156
\141\061\023\060\021\006\003\125\004\007\023\012\123\143\157\164
\164\163\144\141\154\145\061\032\060\030\006\003\125\004\012\023
\021\107\157\104\141\144\144\171\056\143\157\155\054\040\111\156
\143\056\061\061\060\057\006\003\125\004\003\023\050\107\157\040
\104\141\144\144\171\040\122\157\157\164\040\103\145\162\164\151
\146\151\143\141\164\145\040\101\165\164\150\157\162\151\164\171
\040\055\040\107\062\060\036\027\015\060\071\060\071\060\061\060
\060\060\060\060\060\132\027\015\063\067\061\062\063\061\062\063
\065\071\065\071\132\060\201\203\061\013\060\011\006\003\125\004
\006\023\002\125\123\061\020\060\016\006\003\125\004\010\023\007
\101\162\151\172\157\156\141\061\023\060\021\006\003\125\004\007
\023\012\123\143\157\164\164\163\144\141\154\145\061\032\060\030
\006\003\125\004\012\023\021\107\157\104\141\144\144\171\056\143
\157\155\054\040\111\156\143\056\061\061\060\057\006\003\125\004
\003\023\050\107\157\040\104\141\144\144\171\040\122\157\157\164
\040\103\145\162\164\151\146\151\143\141\164\145\040\101\165\164
\150\157\162\151\164\171\040\055\040\107\062\060\202\001\042\060
\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003\202
\001\017\000\060\202\001\012\002\202\001\001\000\277\161\142\010
\361\372\131\064\367\033\311\030\243\367\200\111\130\351\042\203
\023\246\305\040\103\001\073\204\361\346\205\111\237\047\352\366
\204\033\116\240\264\333\160\230\307\062\001\261\005\076\007\116
\356\364\372\117\057\131\060\042\347\253\031\126\153\342\200\007
\374\363\026\165\200\071\121\173\345\371\065\266\164\116\251\215
\202\023\344\266\077\251\003\203\372\242\276\212\025\152\177\336
```

\013\303\266\031\024\005\312\352\303\250\004\224\073\106\174\062  
\015\363\000\146\042\310\215\151\155\066\214\021\030\267\323\262  
\034\140\264\070\372\002\214\316\323\335\106\007\336\012\076\353  
\135\174\310\174\373\260\053\123\244\222\142\151\121\045\005\141  
\032\104\201\214\054\251\103\226\043\337\254\072\201\232\016\051  
\305\034\251\351\135\036\266\236\236\060\012\071\316\361\210\200  
\373\113\135\314\062\354\205\142\103\045\064\002\126\047\001\221  
\264\073\160\052\077\156\261\350\234\210\001\175\237\324\371\333  
\123\155\140\235\277\054\347\130\253\270\137\106\374\316\304\033  
\003\074\011\353\111\061\134\151\106\263\340\107\002\003\001\000  
\001\243\102\060\100\060\017\006\003\125\035\023\001\001\377\004  
\005\060\003\001\001\377\060\016\006\003\125\035\017\001\001\377  
\004\004\003\002\001\006\060\035\006\003\125\035\016\004\026\004  
\024\072\232\205\007\020\147\050\266\357\366\275\005\101\156\040  
\301\224\332\017\336\060\015\006\011\052\206\110\206\367\015\001  
\001\013\005\000\003\202\001\001\000\231\333\135\171\325\371\227  
\131\147\003\141\361\176\073\006\061\165\055\241\040\216\117\145  
\207\264\367\246\234\274\330\351\057\320\333\132\356\317\164\214  
\163\264\070\102\332\005\173\370\002\165\270\375\245\261\327\256  
\366\327\336\023\313\123\020\176\212\106\321\227\372\267\056\053  
\021\253\220\260\047\200\371\350\237\132\351\067\237\253\344\337  
\154\263\205\027\235\075\331\044\117\171\221\065\326\137\004\353  
\200\203\253\232\002\055\265\020\364\330\220\307\004\163\100\355  
\162\045\240\251\237\354\236\253\150\022\231\127\306\217\022\072  
\011\244\275\104\375\006\025\067\301\233\344\062\243\355\070\350  
\330\144\363\054\176\024\374\002\352\237\315\377\007\150\027\333  
\042\220\070\055\172\215\321\124\361\151\343\137\063\312\172\075  
\173\012\343\312\177\137\071\345\342\165\272\305\166\030\063\316  
\054\360\057\114\255\367\261\347\316\117\250\304\233\112\124\006  
\305\177\175\325\010\017\342\034\376\176\027\270\254\136\366\324  
\026\262\103\011\014\115\366\247\153\264\231\204\145\312\172\210  
\342\342\104\276\134\367\352\034\365

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "Go Daddy Root Certificate Authority - G2"

# Issuer: CN=Go Daddy Root Certificate Authority - G2,O="GoDaddy.com, Inc.",L=Scottsdale,ST=Arizona,C=US

# Serial Number: 0 (0x0)

# Subject: CN=Go Daddy Root Certificate Authority - G2,O="GoDaddy.com, Inc.",L=Scottsdale,ST=Arizona,C=US

# Not Valid Before: Tue Sep 01 00:00:00 2009

# Not Valid After : Thu Dec 31 23:59:59 2037

# Fingerprint (SHA-256):

45:14:0B:32:47:EB:9C:C8:C5:B4:F0:D7:B5:30:91:F7:32:92:08:9E:6E:5A:63:E2:74:9D:D3:AC:A9:19:8E:DA

# Fingerprint



```

(SHA1): 47:BE:AB:C9:22:EA:E8:0E:78:78:34:62:A7:9F:45:C2:54:FD:E6:8B
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Go Daddy Root Certificate Authority - G2"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\107\276\253\311\042\352\350\016\170\170\064\142\247\237\105\302
\124\375\346\213
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\200\072\274\042\301\346\373\215\233\073\047\112\062\033\232\001
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\203\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\020\060\016\006\003\125\004\010\023\007\101\162\151\172\157
\156\141\061\023\060\021\006\003\125\004\007\023\012\123\143\157
\164\164\163\144\141\154\145\061\032\060\030\006\003\125\004\012
\023\021\107\157\104\141\144\144\171\056\143\157\155\054\040\111
\156\143\056\061\061\060\057\006\003\125\004\003\023\050\107\157
\040\104\141\144\144\171\040\122\157\157\164\040\103\145\162\164
\151\146\151\143\141\164\145\040\101\165\164\150\157\162\151\164
\171\040\055\040\107\062
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\001\000
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "Starfield Root Certificate Authority - G2"
#
# Issuer: CN=Starfield Root Certificate Authority - G2,O="Starfield Technologies,
Inc.",L=Scottsdale,ST=Arizona,C=US
# Serial Number: 0 (0x0)
# Subject: CN=Starfield Root Certificate Authority - G2,O="Starfield Technologies,
Inc.",L=Scottsdale,ST=Arizona,C=US
# Not Valid Before: Tue Sep 01 00:00:00 2009
# Not Valid After : Thu Dec 31 23:59:59 2037
# Fingerprint (SHA-256):
2C:E1:CB:0B:F9:D2:F9:E1:02:99:3F:BE:21:51:52:C3:B2:DD:0C:AB:DE:1C:68:E5:31:9B:83:91:54:DB:B7:F5
# Fingerprint (SHA1): B5:1C:06:7C:EE:2B:0C:3D:F8:55:AB:2D:92:F4:FE:39:D4:E7:0F:0E
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN

```

```
CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Starfield Root Certificate Authority - G2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\217\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\020\060\016\006\003\125\004\010\023\007\101\162\151\172\157
\156\141\061\023\060\021\006\003\125\004\007\023\012\123\143\157
\164\164\163\144\141\154\145\061\045\060\043\006\003\125\004\012
\023\034\123\164\141\162\146\151\145\154\144\040\124\145\143\150
\156\157\154\157\147\151\145\163\054\040\111\156\143\056\061\062
\060\060\006\003\125\004\003\023\051\123\164\141\162\146\151\145
\154\144\040\122\157\157\164\040\103\145\162\164\151\146\151\143
\141\164\145\040\101\165\164\150\157\162\151\164\171\040\055\040
\107\062
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\217\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\020\060\016\006\003\125\004\010\023\007\101\162\151\172\157
\156\141\061\023\060\021\006\003\125\004\007\023\012\123\143\157
\164\164\163\144\141\154\145\061\045\060\043\006\003\125\004\012
\023\034\123\164\141\162\146\151\145\154\144\040\124\145\143\150
\156\157\154\157\147\151\145\163\054\040\111\156\143\056\061\062
\060\060\006\003\125\004\003\023\051\123\164\141\162\146\151\145
\154\144\040\122\157\157\164\040\103\145\162\164\151\146\151\143
\141\164\145\040\101\165\164\150\157\162\151\164\171\040\055\040
\107\062
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\001\000
END
CKA_VALUE MULTILINE_OCTAL
\060\202\003\335\060\202\002\305\240\003\002\001\002\002\001\000
\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060
\201\217\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\020\060\016\006\003\125\004\010\023\007\101\162\151\172\157\156
\141\061\023\060\021\006\003\125\004\007\023\012\123\143\157\164
\164\163\144\141\154\145\061\045\060\043\006\003\125\004\012\023
\034\123\164\141\162\146\151\145\154\144\040\124\145\143\150\156
\157\154\157\147\151\145\163\054\040\111\156\143\056\061\062\060
\060\006\003\125\004\003\023\051\123\164\141\162\146\151\145\154
\144\040\122\157\157\164\040\103\145\162\164\151\146\151\143\141
\164\145\040\101\165\164\150\157\162\151\164\171\040\055\040\107
\062\060\036\027\015\060\071\060\071\060\061\060\060\060\060\060
\060\132\027\015\063\067\061\062\063\061\062\063\065\071\065\071
```

\132\060\201\217\061\013\060\011\006\003\125\004\006\023\002\125  
\123\061\020\060\016\006\003\125\004\010\023\007\101\162\151\172  
\157\156\141\061\023\060\021\006\003\125\004\007\023\012\123\143  
\157\164\164\163\144\141\154\145\061\045\060\043\006\003\125\004  
\012\023\034\123\164\141\162\146\151\145\154\144\040\124\145\143  
\150\156\157\154\157\147\151\145\163\054\040\111\156\143\056\061  
\062\060\060\006\003\125\004\003\023\051\123\164\141\162\146\151  
\145\154\144\040\122\157\157\164\040\103\145\162\164\151\146\151  
\143\141\164\145\040\101\165\164\150\157\162\151\164\171\040\055  
\040\107\062\060\202\001\042\060\015\006\011\052\206\110\206\367  
\015\001\001\001\005\000\003\202\001\017\000\060\202\001\012\002  
\202\001\001\000\275\355\301\003\374\366\217\374\002\261\157\133  
\237\110\331\235\171\342\242\267\003\141\126\030\303\107\266\327  
\312\075\065\056\211\103\367\241\151\233\336\212\032\375\023\040  
\234\264\111\167\062\051\126\375\271\354\214\335\042\372\162\334  
\047\141\227\356\366\132\204\354\156\031\271\211\054\334\204\133  
\325\164\373\153\137\305\211\245\020\122\211\106\125\364\270\165  
\034\346\177\344\124\256\113\370\125\162\127\002\031\370\027\161  
\131\353\036\050\007\164\305\235\110\276\154\264\364\244\260\363  
\144\067\171\222\300\354\106\136\177\341\155\123\114\142\257\315  
\037\013\143\273\072\235\373\374\171\000\230\141\164\317\046\202  
\100\143\363\262\162\152\031\015\231\312\324\016\165\314\067\373  
\213\211\301\131\361\142\177\137\263\137\145\060\370\247\267\115  
\166\132\036\166\136\064\300\350\226\126\231\212\263\360\177\244  
\315\275\334\062\061\174\221\317\340\137\021\370\153\252\111\134  
\321\231\224\321\242\343\143\133\011\166\265\126\142\341\113\164  
\035\226\324\046\324\010\004\131\320\230\016\016\346\336\374\303  
\354\037\220\361\002\003\001\000\001\243\102\060\100\060\017\006  
\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060\016  
\006\003\125\035\017\001\001\377\004\004\003\002\001\006\060\035  
\006\003\125\035\016\004\026\004\024\174\014\062\037\247\331\060  
\177\304\175\150\243\142\250\241\316\253\007\133\047\060\015\006  
\011\052\206\110\206\367\015\001\001\013\005\000\003\202\001\001  
\000\021\131\372\045\117\003\157\224\231\073\232\037\202\205\071  
\324\166\005\224\136\341\050\223\155\142\135\011\302\240\250\324  
\260\165\070\361\064\152\235\344\237\212\206\046\121\346\054\321  
\306\055\156\225\040\112\222\001\354\270\212\147\173\061\342\147  
\056\214\225\003\046\056\103\235\112\061\366\016\265\014\273\267  
\342\067\177\042\272\000\243\016\173\122\373\153\273\073\304\323  
\171\121\116\315\220\364\147\007\031\310\074\106\172\015\001\175  
\305\130\347\155\346\205\060\027\232\044\304\020\340\004\367\340  
\362\177\324\252\012\377\102\035\067\355\224\345\144\131\022\040  
\167\070\323\062\076\070\201\165\226\163\372\150\217\261\313\316  
\037\305\354\372\234\176\317\176\261\361\007\055\266\374\277\312  
\244\277\320\227\005\112\274\352\030\050\002\220\275\124\170\011  
\041\161\323\321\175\035\331\026\260\251\141\075\320\012\000\042  
\374\307\173\313\011\144\105\013\073\100\201\367\175\174\062\365  
\230\312\130\216\175\052\356\220\131\163\144\371\066\164\136\045

```

\241\365\146\005\056\177\071\025\251\052\373\120\213\216\205\151
\364
END
CKA_NSS_MOZILLA_CA_POLICY
CK_BBOOL CK_TRUE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

# Trust for "Starfield Root Certificate Authority - G2"
# Issuer: CN=Starfield Root Certificate Authority - G2,O="Starfield Technologies,
Inc.",L=Scottsdale,ST=Arizona,C=US
# Serial Number: 0 (0x0)
# Subject: CN=Starfield Root Certificate Authority - G2,O="Starfield Technologies,
Inc.",L=Scottsdale,ST=Arizona,C=US
#
Not Valid Before: Tue Sep 01 00:00:00 2009
# Not Valid After : Thu Dec 31 23:59:59 2037
# Fingerprint (SHA-256):
2C:E1:CB:0B:F9:D2:F9:E1:02:99:3F:BE:21:51:52:C3:B2:DD:0C:AB:DE:1C:68:E5:31:9B:83:91:54:DB:B7:F5
# Fingerprint (SHA1): B5:1C:06:7C:EE:2B:0C:3D:F8:55:AB:2D:92:F4:FE:39:D4:E7:0F:0E
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Starfield Root Certificate Authority - G2"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\265\034\006\174\356\053\014\075\370\125\253\055\222\364\376\071
\324\347\017\016
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\326\071\201\306\122\176\226\151\374\374\312\146\355\005\362\226
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\217\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\020\060\016\006\003\125\004\010\023\007\101\162\151\172\157
\156\141\061\023\060\021\006\003\125\004\007\023\012\123\143\157
\164\164\163\144\141\154\145\061\045\060\043\006\003\125\004\012
\023\034\123\164\141\162\146\151\145\154\144\040\124\145\143\150
\156\157\154\157\147\151\145\163\054\040\111\156\143\056\061\062
\060\060\006\003\125\004\003\023\051\123\164\141\162\146\151\145
\154\144\040\122\157\157\164\040\103\145\162\164\151\146\151\143
\141\164\145\040\101\165\164\150\157\162\151\164\171\040\055\040
\107\062
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\001\000
END

```

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR  
CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST  
CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR  
CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "Starfield Services Root Certificate Authority - G2"

#

# Issuer: CN=Starfield Services Root Certificate Authority - G2,O="Starfield Technologies,  
Inc.",L=Scottsdale,ST=Arizona,C=US

# Serial Number: 0 (0x0)

# Subject: CN=Starfield Services Root Certificate Authority - G2,O="Starfield Technologies,  
Inc.",L=Scottsdale,ST=Arizona,C=US

# Not Valid Before:

Tue Sep 01 00:00:00 2009

# Not Valid After : Thu Dec 31 23:59:59 2037

# Fingerprint (SHA-256):

56:8D:69:05:A2:C8:87:08:A4:B3:02:51:90:ED:CF:ED:B1:97:4A:60:6A:13:C6:E5:29:0F:CB:2A:E6:3E:DA:B5

# Fingerprint (SHA1): 92:5A:8F:8D:2C:6D:04:E0:66:5F:59:6A:FF:22:D8:63:E8:25:6F:3F

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Starfield Services Root Certificate Authority - G2"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\201\230\061\013\060\011\006\003\125\004\006\023\002\125\123  
\061\020\060\016\006\003\125\004\010\023\007\101\162\151\172\157  
\156\141\061\023\060\021\006\003\125\004\007\023\012\123\143\157  
\164\164\163\144\141\154\145\061\045\060\043\006\003\125\004\012  
\023\034\123\164\141\162\146\151\145\154\144\040\124\145\143\150  
\156\157\154\157\147\151\145\163\054\040\111\156\143\056\061\073  
\060\071\006\003\125\004\003\023\062\123\164\141\162\146\151\145  
\154\144\040\123\145\162\166\151\143\145\163\040\122\157\157\164  
\040\103\145\162\164\151\146\151\143\141\164\145\040\101\165\164  
\150\157\162\151\164\171\040\055\040\107\062

END

CKA\_ID

UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\230\061\013\060\011\006\003\125\004\006\023\002\125\123  
\061\020\060\016\006\003\125\004\010\023\007\101\162\151\172\157  
\156\141\061\023\060\021\006\003\125\004\007\023\012\123\143\157  
\164\164\163\144\141\154\145\061\045\060\043\006\003\125\004\012  
\023\034\123\164\141\162\146\151\145\154\144\040\124\145\143\150  
\156\157\154\157\147\151\145\163\054\040\111\156\143\056\061\073  
\060\071\006\003\125\004\003\023\062\123\164\141\162\146\151\145  
\154\144\040\123\145\162\166\151\143\145\163\040\122\157\157\164

\040\103\145\162\164\151\146\151\143\141\164\145\040\101\165\164  
\150\157\162\151\164\171\040\055\040\107\062

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\001\000

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\357\060\202\002\327\240\003\002\001\002\002\001\000  
\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060  
\201\230\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\020\060\016\006\003\125\004\010\023\007\101\162\151\172\157\156  
\141\061\023\060\021\006\003\125\004\007\023\012\123\143\157\164  
\164\163\144\141\154\145\061\045\060\043\006\003\125\004\012\023  
\034\123\164\141\162\146\151\145\154\144\040\124\145\143\150\156  
\157\154\157\147\151\145\163\054\040\111\156\143\056\061\073\060  
\071\006\003\125\004\003\023\062\123\164\141\162\146\151\145\154  
\144\040\123\145\162\166\151\143\145\163\040\122\157\157\164\040  
\103\145\162\164\151\146\151\143\141\164\145\040\101\165\164\150  
\157\162\151\164\171\040\055\040\107\062\060\036\027\015\060\071  
\060\071\060\061\060\060\060\060\060\060\132\027\015\063\067\061  
\062\063\061\062\063\065\071\065\071\132\060\201\230\061\013\060  
\011\006\003\125\004\006\023\002\125\123\061\020\060\016\006\003  
\125\004\010\023\007\101\162\151\172\157\156\141\061\023\060\021  
\006\003\125\004\007\023\012\123\143\157\164\164\163\144\141\154  
\145\061\045\060\043\006\003\125\004\012\023\034\123\164\141\162  
\146\151\145\154\144\040\124\145\143\150\156\157\154\157\147\151  
\145\163\054\040\111\156\143\056\061\073\060\071\006\003\125\004  
\003\023\062\123\164\141\162\146\151\145\154\144\040\123\145\162  
\166\151\143\145\163\040\122\157\157\164\040\103\145\162\164\151  
\146\151\143\141\164\145\040\101\165\164\150\157\162\151\164\171  
\040\055\040\107\062\060\202\001\042\060\015\006\011\052\206\110  
\206\367\015\001\001\001\005\000\003\202\001\017\000\060\202\001  
\012\002\202\001\001\000\325\014\072\304\052\371\116\342\365\276  
\031\227\137\216\210\123\261\037\077\313\317\237\040\023\155\051  
\072\310\017\175\074\367\153\166\070\143\331\066\140\250\233\136  
\134\000\200\262\057\131\177\366\207\371\045\103\206\347\151\033  
\122\232\220\341\161\343\330\055\015\116\157\366\310\111\331\266  
\363\032\126\256\053\266\164\024\353\317\373\046\343\032\272\035  
\226\056\152\073\130\224\211\107\126\377\045\240\223\160\123\203  
\332\204\164\024\303\147\236\004\150\072\337\216\100\132\035\112  
\116\317\103\221\073\347\126\326\000\160\313\122\356\173\175\256  
\072\347\274\061\371\105\366\302\140\317\023\131\002\053\200\314  
\064\107\337\271\336\220\145\155\002\317\054\221\246\246\347\336  
\205\030\111\174\146\116\243\072\155\251\265\356\064\056\272\015  
\003\270\063\337\107\353\261\153\215\045\331\233\316\201\321\105  
\106\062\226\160\207\336\002\016\111\103\205\266\154\163\273\144  
\352\141\101\254\311\324\124\337\207\057\307\042\262\046\314\237  
\131\124\150\237\374\276\052\057\304\125\034\165\100\140\027\205

```
\002\125\071\213\177\005\002\003\001\000\001\243\102\060\100\060
\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377
\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001\006
\060\035\006\003\125\035\016\004\026\004\024\234\137\000\337\252
\001\327\060\053\070\210\242\270\155\112\234\362\021\221\203\060
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\003\202
\001\001\000\113\066\246\204\167\151\335\073\031\237\147\043\010
\157\016\141\311\375\204\334\137\330\066\201\315\330\033\101\055
\237\140\335\307\032\150\331\321\156\206\341\210\043\317\023\336
\103\317\342\064\263\004\235\037\051\325\277\370\136\310\325\301
\275\356\222\157\062\164\362\221\202\057\275\202\102\172\255\052
\267\040\175\115\274\172\125\022\302\025\352\275\367\152\225\056
\154\164\237\317\034\264\362\305\001\243\205\320\162\076\255\163
\253\013\233\165\014\155\105\267\216\224\254\226\067\265\240\320
\217\025\107\016\343\350\203\335\217\375\357\101\001\167\314\047
\251\142\205\063\362\067\010\357\161\317\167\006\336\310\031\035
\210\100\317\175\106\035\377\036\307\341\316\377\043\333\306\372
\215\125\116\251\002\347\107\021\106\076\364\375\275\173\051\046
\273\251\141\142\067\050\266\055\052\366\020\206\144\311\160\247
\322\255\267\051\160\171\352\074\332\143\045\237\375\150\267\060
\354\160\373\165\212\267\155\140\147\262\036\310\271\351\330\250
\157\002\213\147\015\115\046\127\161\332\040\374\301\112\120\215
\261\050\272
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "Starfield Services Root Certificate Authority - G2"

# Issuer: CN=Starfield Services Root Certificate Authority - G2,O="Starfield Technologies,  
Inc.",L=Scottsdale,ST=Arizona,C=US

# Serial Number: 0 (0x0)

# Subject: CN=Starfield Services Root Certificate Authority - G2,O="Starfield Technologies,  
Inc.",L=Scottsdale,ST=Arizona,C=US

# Not Valid Before: Tue Sep 01 00:00:00 2009

# Not Valid After : Thu Dec 31 23:59:59 2037

# Fingerprint (SHA-256):

56:8D:69:05:A2:C8:87:08:A4:B3:02:51:90:ED:CF:ED:B1:97:4A:60:6A:13:C6:E5:29:0F:CB:2A:E6:3E:DA:B5

# Fingerprint (SHA1): 92:5A:8F:8D:2C:6D:04:E0:66:5F:59:6A:FF:22:D8:63:E8:25:6F:3F

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Starfield Services Root  
Certificate Authority - G2"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\222\132\217\215\054\155\004\340\146\137\131\152\377\042\330\143
```

```

\350\045\157\077
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\027\065\164\257\173\141\034\353\364\371\074\342\356\100\371\242
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\230\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\020\060\016\006\003\125\004\010\023\007\101\162\151\172\157
\156\141\061\023\060\021\006\003\125\004\007\023\012\123\143\157
\164\164\163\144\141\154\145\061\045\060\043\006\003\125\004\012
\023\034\123\164\141\162\146\151\145\154\144\040\124\145\143\150
\156\157\154\157\147\151\145\163\054\040\111\156\143\056\061\073
\060\071\006\003\125\004\003\023\062\123\164\141\162\146\151\145
\154\144\040\123\145\162\166\151\143\145\163\040\122\157\157\164
\040\103\145\162\164\151\146\151\143\141\164\145\040\101\165\164
\150\157\162\151\164\171\040\055\040\107\062
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\000
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION
CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "AffirmTrust Commercial"
#
# Issuer: CN=AffirmTrust Commercial,O=AffirmTrust,C=US
# Serial Number:77:77:06:27:26:a9:b1:7c
# Subject: CN=AffirmTrust Commercial,O=AffirmTrust,C=US
# Not Valid Before: Fri Jan 29 14:06:06 2010
# Not Valid After : Tue Dec 31 14:06:06 2030
# Fingerprint (SHA-256):
03:76:AB:1D:54:C5:F9:80:3C:E4:B2:E2:01:A0:EE:7E:EF:7B:57:B6:36:E8:A9:3C:9B:8D:48:60:C9:6F:5F:A7
# Fingerprint (SHA1): F9:B5:B6:32:45:5F:9C:BE:EC:57:5F:80:DC:E9:6E:2C:C7:B2:78:B7
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "AffirmTrust Commercial"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\104\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\024\060\022\006\003\125\004\012\014\013\101\146\146\151\162\155
\124\162\165\163\164\061\037\060\035\006\003\125\004\003\014\026
\101\146\146\151\162\155\124\162\165\163\164\040\103\157\155\155

```



\145\162\143\151\141\154

END

CKA\_ID

UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\104\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\024\060\022\006\003\125\004\012\014\013\101\146\146\151\162\155  
\124\162\165\163\164\061\037\060\035\006\003\125\004\003\014\026  
\101\146\146\151\162\155\124\162\165\163\164\040\103\157\155\155  
\145\162\143\151\141\154

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\010\167\167\006\047\046\251\261\174

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\114\060\202\002\064\240\003\002\001\002\002\010\167  
\167\006\047\046\251\261\174\060\015\006\011\052\206\110\206\367  
\015\001\001\013\005\000\060\104\061\013\060\011\006\003\125\004  
\006\023\002\125\123\061\024\060\022\006\003\125\004\012\014\013  
\101\146\146\151\162\155\124\162\165\163\164\061\037\060\035\006  
\003\125\004\003\014\026\101\146\146\151\162\155\124\162\165\163  
\164\040\103\157\155\155\145\162\143\151\141\154\060\036\027\015  
\061\060\060\061\062\071\061\064\060\066\060\066\132\027\015\063  
\060\061\062\063\061\061\064\060\066\060\066\132\060\104\061\013  
\060\011\006\003\125\004\006\023\002\125\123\061\024\060\022\006  
\003\125\004\012\014\013\101\146\146\151\162\155\124\162\165\163  
\164\061\037\060\035\006\003\125\004\003\014\026\101\146\146\151  
\162\155\124\162\165\163\164\040\103\157\155\155\145\162\143\151  
\141\154\060\202\001\042\060\015\006\011\052\206\110\206\367\015  
\001\001\001\005\000\003\202\001\017\000\060\202\001\012\002\202  
\001\001\000\366\033\117\147\007\053\241\025\365\006\042\313\037  
\001\262\343\163\105\006\104\111\054\273\111\045\024\326\316\303  
\267\253\054\117\306\101\062\224\127\372\022\247\133\016\342\217  
\037\036\206\031\247\252\265\055\271\137\015\212\302\257\205\065  
\171\062\055\273\034\142\067\362\261\133\112\075\312\315\161\137  
\351\102\276\224\350\310\336\371\042\110\144\306\345\253\306\053  
\155\255\005\360\372\325\013\317\232\345\360\120\244\213\073\107  
\245\043\133\172\172\370\063\077\270\357\231\227\343\040\301\326  
\050\211\317\224\373\271\105\355\343\100\027\021\324\164\360\013  
\061\342\053\046\152\233\114\127\256\254\040\076\272\105\172\005  
\363\275\233\151\025\256\175\116\040\143\304\065\166\072\007\002  
\311\067\375\307\107\356\350\361\166\035\163\025\362\227\244\265  
\310\172\171\331\102\252\053\177\134\376\316\046\117\243\146\201  
\065\257\104\272\124\036\034\060\062\145\235\346\074\223\136\120  
\116\172\343\072\324\156\314\032\373\371\322\067\256\044\052\253  
\127\003\042\050\015\111\165\177\267\050\332\165\277\216\343\334  
\016\171\061\002\003\001\000\001\243\102\060\100\060\035\006\003  
\125\035\016\004\026\004\024\235\223\306\123\213\136\312\257\077

```
\237\036\017\345\231\225\274\044\366\224\217\060\017\006\003\125
\035\023\001\001\377\004\005\060\003\001\001\377\060\016\006\003
\125\035\017\001\001\377\004\004\003\002\001\006\060\015\006\011
\052\206\110\206\367\015\001\001\013\005\000\003\202\001\001\000
\130\254\364\004\016\315\300\015\377\012\375\324\272\026\137\051
\275\173\150\231\130\111\322\264\035\067\115\177\047\175\106\006
\135\103\306\206\056\076\163\262\046\175\117\223\251\266\304\052
\232\253\041\227\024\261\336\214\323\253\211\025\330\153\044\324
\361\026\256\330\244\134\324\177\121\216\355\030\001\261\223\143
\275\274\370\141\200\232\236\261\316\102\160\342\251\175\006\045
\175\047\241\376\157\354\263\036\044\332\343\113\125\032\000\073
\065\264\073\331\327\135\060\375\201\023\211\362\302\006\053\355
\147\304\216\311\103\262\134\153\025\211\002\274\142\374\116\362
\265\063\252\262\157\323\012\242\120\343\366\073\350\056\104\302
\333\146\070\251\063\126\110\361\155\033\063\215\015\214\077\140
\067\235\323\312\155\176\064\176\015\237\162\166\213\033\237\162
\375\122\065\101\105\002\226\057\034\262\232\163\111\041\261\111
\107\105\107\264\357\152\064\021\311\115\232\314\131\267\326\002
\236\132\116\145\265\224\256\033\337\051\260\026\361\277\000\236
\007\072\027\144\265\004\265\043\041\231\012\225\073\227\174\357
END
```

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "AffirmTrust Commercial"

# Issuer: CN=AffirmTrust Commercial,O=AffirmTrust,C=US

# Serial Number:77:77:06:27:26:a9:b1:7c

# Subject: CN=AffirmTrust Commercial,O=AffirmTrust,C=US

# Not Valid Before: Fri Jan 29 14:06:06 2010

# Not Valid After : Tue Dec 31 14:06:06 2030

# Fingerprint (SHA-256):

03:76:AB:1D:54:C5:F9:80:3C:E4:B2:E2:01:A0:EE:7E:EF:7B:57:B6:36:E8:A9:3C:9B:8D:48:60:C9:6F:5F:A7

# Fingerprint (SHA1): F9:B5:B6:32:45:5F:9C:BE:EC:57:5F:80:DC:E9:6E:2C:C7:B2:78:B7

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "AffirmTrust Commercial"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\371\265\266\062\105\137\234\276\354\127\137\200\334\351\156\054
\307\262\170\267
```

END

CKA\_CERT\_MD5\_HASH

MULTILINE\_OCTAL

```
\202\222\272\133\357\315\212\157\246\075\125\371\204\366\326\267
END
```

```

CKA_ISSUER MULTILINE_OCTAL
\060\104\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\024\060\022\006\003\125\004\012\014\013\101\146\146\151\162\155
\124\162\165\163\164\061\037\060\035\006\003\125\004\003\014\026
\101\146\146\151\162\155\124\162\165\163\164\040\103\157\155\155
\145\162\143\151\141\154
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\010\167\167\006\047\046\251\261\174
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "AffirmTrust Networking"
#
# Issuer: CN=AffirmTrust Networking,O=AffirmTrust,C=US
# Serial Number:7c:4f:04:39:1c:d4:99:2d
# Subject: CN=AffirmTrust Networking,O=AffirmTrust,C=US
# Not Valid Before: Fri Jan 29 14:08:24 2010
# Not Valid After : Tue Dec
31 14:08:24 2030
# Fingerprint (SHA-256):
0A:81:EC:5A:92:97:77:F1:45:90:4A:F3:8D:5D:50:9F:66:B5:E2:C5:8F:CD:B5:31:05:8B:0E:17:F3:F0:B4:1B
# Fingerprint (SHA1): 29:36:21:02:8B:20:ED:02:F5:66:C5:32:D1:D6:ED:90:9F:45:00:2F
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "AffirmTrust Networking"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\104\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\024\060\022\006\003\125\004\012\014\013\101\146\146\151\162\155
\124\162\165\163\164\061\037\060\035\006\003\125\004\003\014\026
\101\146\146\151\162\155\124\162\165\163\164\040\116\145\164\167
\157\162\153\151\156\147
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\104\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\024\060\022\006\003\125\004\012\014\013\101\146\146\151\162\155
\124\162\165\163\164\061\037\060\035\006\003\125\004\003\014\026
\101\146\146\151\162\155\124\162\165\163\164\040\116\145\164\167
\157\162\153\151\156\147
END

```

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\010\174\117\004\071\034\324\231\055

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\114\060\202\002\064\240\003\002\001\002\002\010\174  
\117\004\071\034\324\231\055\060\015\006\011\052\206\110\206\367  
\015\001\001\005\005\000\060\104\061\013\060\011\006\003\125\004  
\006\023\002\125\123\061\024\060\022\006\003\125\004\012\014\013  
\101\146\146\151\162\155\124\162\165\163\164\061\037\060\035\006  
\003\125\004\003\014\026\101\146\146\151\162\155\124\162\165\163  
\164\040\116\145\164\167\157\162\153\151\156\147\060\036\027\015  
\061\060\060\061\062\071\061\064\060\070\062\064\132\027\015\063  
\060\061\062\063\061\061\064\060\070\062\064\132\060\104\061\013  
\060\011\006\003\125\004\006\023\002\125\123\061\024\060\022\006  
\003\125\004\012\014\013\101\146\146\151\162\155\124\162\165\163  
\164\061\037\060\035\006\003\125\004\003\014\026\101\146\146\151  
\162\155\124\162\165\163\164\040\116\145\164\167\157\162\153\151  
\156\147\060\202\001\042\060\015\006\011\052\206\110\206\367\015  
\001\001\001\005\000\003\202\001\017\000\060\202\001\012\002\202  
\001\001\000\264\204\314\063\027\056\153\224\154\153\141\122\240  
\353\243\317\171\224\114\345\224\200\231\313\125\144\104\145\217  
\147\144\342\006\343\134\067\111\366\057\233\204\204\036\055\362  
\140\235\060\116\314\204\205\342\054\317\036\236\376\066\253\063  
\167\065\104\330\065\226\032\075\066\350\172\016\330\325\107\241  
\152\151\213\331\374\273\072\256\171\132\325\364\326\161\273\232  
\220\043\153\232\267\210\164\207\014\036\137\271\236\055\372\253  
\123\053\334\273\166\076\223\114\010\010\214\036\242\043\034\324  
\152\255\042\272\231\001\056\155\145\313\276\044\146\125\044\113  
\100\104\261\033\327\341\302\205\300\336\020\077\075\355\270\374  
\361\361\043\123\334\277\145\227\157\331\371\100\161\215\175\275  
\225\324\316\276\240\136\047\043\336\375\246\320\046\016\000\051  
\353\074\106\360\075\140\277\077\120\322\334\046\101\121\236\024  
\067\102\004\243\160\127\250\033\207\355\055\372\173\356\214\012  
\343\251\146\211\031\313\101\371\335\104\066\141\317\342\167\106  
\310\175\366\364\222\201\066\375\333\064\361\162\176\363\014\026  
\275\264\025\002\003\001\000\001\243\102\060\100\060\035\006\003  
\125\035\016\004\026\004\024\007\037\322\347\234\332\302\156\242  
\100\264\260\172\120\020\120\164\304\310\275\060\017\006\003\125  
\035\023\001\001\377\004\005\060\003\001\001\377\060\016\006\003  
\125\035\017\001\001\377\004\004\003\002\001\006\060\015\006\011  
\052\206\110\206\367\015\001\001\005\005\000\003\202\001\001\000  
\211\127\262\026\172\250\302\375\326\331\233\233\064\302\234\264  
\062\024\115\247\244\337\354\276\247\276\370\103\333\221\067\316  
\264\062\056\120\125\032\065\116\166\103\161\040\357\223\167\116  
\025\160\056\207\303\301\035\155\334\313\265\047\324\054\126\321  
\122\123\072\104\322\163\310\304\033\005\145\132\142\222\234\356  
\101\215\061\333\347\064\352\131\041\325\001\172\327\144\270\144

```
\071\315\311\355\257\355\113\003\110\247\240\231\001\200\334\145
\243\066\256\145\131\110\117\202\113\310\145\361\127\035\345\131
\056\012\077\154\330\321\365\345\011\264\154\124\000\012\340\025
\115\207\165\155\267\130\226\132\335\155\322\000\240\364\233\110
\276\303\067\244\272\066\340\174\207\205\227\032\025\242\336\056
\242\133\275\257\030\371\220\120\315\160\131\370\047\147\107\313
\307\240\007\072\175\321\054\135\154\031\072\146\265\175\375\221
\157\202\261\276\010\223\333\024\107\361\242\067\307\105\236\074
\307\167\257\144\250\223\337\366\151\203\202\140\362\111\102\064
\355\132\000\124\205\034\026\066\222\014\134\372\246\255\277\333
END
```

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "AffirmTrust Networking"

# Issuer: CN=AffirmTrust Networking,O=AffirmTrust,C=US

# Serial Number:7c:4f:04:39:1c:d4:99:2d

# Subject: CN=AffirmTrust Networking,O=AffirmTrust,C=US

# Not Valid Before: Fri Jan

29 14:08:24 2010

# Not Valid After : Tue Dec 31 14:08:24 2030

# Fingerprint (SHA-256):

0A:81:EC:5A:92:97:77:F1:45:90:4A:F3:8D:5D:50:9F:66:B5:E2:C5:8F:CD:B5:31:05:8B:0E:17:F3:F0:B4:1B

# Fingerprint (SHA1): 29:36:21:02:8B:20:ED:02:F5:66:C5:32:D1:D6:ED:90:9F:45:00:2F

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "AffirmTrust Networking"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\051\066\041\002\213\040\355\002\365\146\305\062\321\326\355\220
\237\105\000\057
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\102\145\312\276\001\232\232\114\251\214\101\111\315\300\325\177
```

END

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\104\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\024\060\022\006\003\125\004\012\014\013\101\146\146\151\162\155
\124\162\165\163\164\061\037\060\035\006\003\125\004\003\014\026
\101\146\146\151\162\155\124\162\165\163\164\040\116\145\164\167
\157\162\153\151\156\147
```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

```
\002\010\174\117\004\071\034\324\231\055
```

END

```

CKA_TRUST_SERVER_AUTH
CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "AffirmTrust Premium"
#
# Issuer: CN=AffirmTrust Premium,O=AffirmTrust,C=US
# Serial Number:6d:8c:14:46:b1:a6:0a:ee
# Subject: CN=AffirmTrust Premium,O=AffirmTrust,C=US
# Not Valid Before: Fri Jan 29 14:10:36 2010
# Not Valid After : Mon Dec 31 14:10:36 2040
# Fingerprint (SHA-256):
70:A7:3F:7F:37:6B:60:07:42:48:90:45:34:B1:14:82:D5:BF:0E:69:8E:CC:49:8D:F5:25:77:EB:F2:E9:3B:9A
# Fingerprint (SHA1): D8:A6:33:2C:E0:03:6F:B1:85:F6:63:4F:7D:6A:06:65:26:32:28:27
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "AffirmTrust Premium"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\101\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\024\060\022\006\003\125\004\012\014\013\101\146\146\151\162\155
\124\162\165\163\164\061\034\060\032\006\003\125\004\003\014\023
\101\146\146\151\162\155\124\162\165\163\164\040\120\162\145\155
\151\165\155
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\101\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\024\060\022\006\003\125\004\012\014\013\101\146\146\151\162\155
\124\162\165\163\164\061\034\060\032\006\003\125\004\003\014\023
\101\146\146\151\162\155\124\162\165\163\164\040\120\162\145\155
\151\165\155
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\010\155\214\024\106\261\246\012\356
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\106\060\202\003\056\240\003\002\001\002\002\010\155
\214\024\106\261\246\012\356\060\015\006\011\052\206\110\206\367
\015\001\001\014\005\000\060\101\061\013\060\011\006\003\125\004
\006\023\002\125\123\061\024\060\022\006\003\125\004\012\014\013
\101\146\146\151\162\155\124\162\165\163\164\061\034\060\032\006

```

\003\125\004\003\014\023\101\146\146\151\162\155\124\162\165\163  
\164\040\120\162\145\155\151\165\155\060\036\027\015\061\060\060  
\061\062\071\061\064\061\060\063\066\132\027\015\064\060\061\062  
\063\061\061\064\061\060\063\066\132\060\101\061\013\060\011\006  
\003\125\004\006\023\002\125\123\061\024\060\022\006\003\125\004  
\012\014\013\101\146\146\151\162\155\124\162\165\163\164\061\034  
\060\032\006\003\125\004\003\014\023\101\146\146\151\162\155\124  
\162\165\163\164\040\120\162\145\155\151\165\155\060\202\002\042  
\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003  
\202\002\017\000\060\202\002\012\002\202\002\001\000\304\022\337  
\251\137\376\101\335\335\365\237\212\343\366\254\341\074\170\232  
\274\330\360\177\172\240\063\052\334\215\040\133\256\055\157\347  
\223\331\066\160\152\150\317\216\121\243\205\133\147\004\240\020  
\044\157\135\050\202\301\227\127\330\110\051\023\266\341\276\221  
\115\337\205\014\123\030\232\036\044\242\117\217\360\242\205\013  
\313\364\051\177\322\244\130\356\046\115\311\252\250\173\232\331  
\372\070\336\104\127\025\345\370\214\310\331\110\342\015\026\047  
\035\036\310\203\205\045\267\272\252\125\101\314\003\042\113\055  
\221\215\213\346\211\257\146\307\351\377\053\351\074\254\332\322  
\263\303\341\150\234\211\370\172\000\126\336\364\125\225\154\373  
\272\144\335\142\213\337\013\167\062\353\142\314\046\232\233\273  
\252\142\203\114\264\006\172\060\310\051\277\355\006\115\227\271  
\034\304\061\053\325\137\274\123\022\027\234\231\127\051\146\167  
\141\041\061\007\056\045\111\235\030\362\356\363\053\161\214\265  
\272\071\007\111\167\374\357\056\222\220\005\215\055\057\167\173  
\357\103\277\065\273\232\330\371\163\247\054\362\320\127\356\050  
\116\046\137\217\220\150\011\057\270\370\334\006\351\056\232\076  
\121\247\321\042\304\012\247\070\110\154\263\371\377\175\253\206  
\127\343\272\326\205\170\167\272\103\352\110\177\366\330\276\043  
\155\036\277\321\066\154\130\134\361\356\244\031\124\032\365\003  
\322\166\346\341\214\275\074\263\323\110\113\342\310\370\177\222  
\250\166\106\234\102\145\076\244\036\301\007\003\132\106\055\270  
\227\363\267\325\262\125\041\357\272\334\114\000\227\373\024\225  
\047\063\277\350\103\107\106\322\010\231\026\140\073\232\176\322  
\346\355\070\352\354\001\036\074\110\126\111\011\307\114\067\000  
\236\210\016\300\163\341\157\146\351\162\107\060\076\020\345\013  
\003\311\232\102\000\154\305\224\176\141\304\212\337\177\202\032  
\013\131\304\131\062\167\263\274\140\151\126\071\375\264\006\173  
\054\326\144\066\331\275\110\355\204\037\176\245\042\217\052\270  
\102\364\202\267\324\123\220\170\116\055\032\375\201\157\104\327  
\073\001\164\226\102\340\000\342\056\153\352\305\356\162\254\273  
\277\376\352\252\250\370\334\366\262\171\212\266\147\002\003\001  
\000\001\243\102\060\100\060\035\006\003\125\035\016\004\026\004  
\024\235\300\147\246\014\042\331\046\365\105\253\246\145\122\021  
\047\330\105\254\143\060\017\006\003\125\035\023\001\001\377\004  
\005\060\003\001\001\377\060\016\006\003\125\035\017\001\001\377  
\004\004\003\002\001\006\060\015\006\011\052\206\110\206\367\015  
\001\001\014\005\000\003\202\002\001\000\263\127\115\020\142\116

\072\344\254\352\270\034\257\062\043\310\263\111\132\121\234\166  
\050\215\171\252\127\106\027\325\365\122\366\267\104\350\010\104  
\277\030\204\322\013\200\315\305\022\375\000\125\005\141\207\101  
\334\265\044\236\074\304\330\310\373\160\236\057\170\226\203\040  
\066\336\174\017\151\023\210\245\165\066\230\010\246\306\337\254  
\316\343\130\326\267\076\336\272\363\353\064\100\330\242\201\365  
\170\077\057\325\245\374\331\242\324\136\004\016\027\255\376\101  
\360\345\262\162\372\104\202\063\102\350\055\130\367\126\214\142  
\077\272\102\260\234\014\134\176\056\145\046\134\123\117\000\262  
\170\176\241\015\231\055\215\270\035\216\242\304\260\375\140\320  
\060\244\216\310\004\142\251\304\355\065\336\172\227\355\016\070  
\136\222\057\223\160\245\251\234\157\247\175\023\035\176\306\010  
\110\261\136\147\353\121\010\045\351\346\045\153\122\051\221\234  
\322\071\163\010\127\336\231\006\264\133\235\020\006\341\302\000  
\250\270\034\112\002\012\024\320\301\101\312\373\214\065\041\175  
\202\070\362\251\124\221\031\065\223\224\155\152\072\305\262\320  
\273\211\206\223\350\233\311\017\072\247\172\270\241\360\170\106  
\372\374\067\057\345\212\204\363\337\376\004\331\241\150\240\057  
\044\342\011\225\006\325\225\312\341\044\226\353\174\366\223\005  
\273\355\163\351\055\321\165\071\327\347\044\333\330\116\137\103  
\217\236\320\024\071\277\125\160\110\231\127\061\264\234\356\112  
\230\003\226\060\037\140\006\356\033\043\376\201\140\043\032\107  
\142\205\245\314\031\064\200\157\263\254\032\343\237\360\173\110  
\255\325\001\331\147\266\251\162\223\352\055\146\265\262\270\344  
\075\074\262\357\114\214\352\353\007\277\253\065\232\125\206\274  
\030\246\265\250\136\264\203\154\153\151\100\323\237\334\361\303  
\151\153\271\341\155\011\364\361\252\120\166\012\172\175\172\027  
\241\125\226\102\231\061\011\335\140\021\215\005\060\176\346\216  
\106\321\235\024\332\307\027\344\005\226\214\304\044\265\033\317  
\024\007\262\100\370\243\236\101\206\274\004\320\153\226\310\052  
\200\064\375\277\357\006\243\335\130\305\205\075\076\217\376\236  
\051\340\266\270\011\150\031\034\030\103

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "AffirmTrust Premium"

# Issuer: CN=AffirmTrust Premium,O=AffirmTrust,C=US

# Serial Number:6d:8c:14:46:b1:a6:0a:ee

# Subject: CN=AffirmTrust Premium,O=AffirmTrust,C=US

# Not Valid Before: Fri Jan 29 14:10:36 2010

# Not Valid After : Mon Dec 31 14:10:36 2040

# Fingerprint (SHA-256):

70:A7:3F:7F:37:6B:60:07:42:48:90:45:34:B1:14:82:D5:BF:0E:69:8E:CC:49:8D:F5:25:77:EB:F2:E9:3B:9A

# Fingerprint (SHA1): D8:A6:33:2C:E0:03:6F:B1:85:F6:63:4F:7D:6A:06:65:26:32:28:27

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST



```

CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "AffirmTrust Premium"
CKA_CERT_SHA1_HASH
MULTILINE_OCTAL
\330\246\063\054\340\003\157\261\205\366\143\117\175\152\006\145
\046\062\050\047
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\304\135\016\110\266\254\050\060\116\012\274\371\070\026\207\127
END
CKA_ISSUER MULTILINE_OCTAL
\060\101\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\024\060\022\006\003\125\004\012\014\013\101\146\146\151\162\155
\124\162\165\163\164\061\034\060\032\006\003\125\004\003\014\023
\101\146\146\151\162\155\124\162\165\163\164\040\120\162\145\155
\151\165\155
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\010\155\214\024\106\261\246\012\356
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "AffirmTrust Premium ECC"
#
# Issuer: CN=AffirmTrust Premium ECC,O=AffirmTrust,C=US
# Serial Number:74:97:25:8a:c7:3f:7a:54
# Subject: CN=AffirmTrust Premium ECC,O=AffirmTrust,C=US
#
Not Valid Before: Fri Jan 29 14:20:24 2010
# Not Valid After : Mon Dec 31 14:20:24 2040
# Fingerprint (SHA-256):
BD:71:FD:F6:DA:97:E4:CF:62:D1:64:7A:DD:25:81:B0:7D:79:AD:F8:39:7E:B4:EC:BA:9C:5E:84:88:82:14:23
# Fingerprint (SHA1): B8:23:6B:00:2F:1D:16:86:53:01:55:6C:11:A4:37:CA:EB:FF:C3:BB
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "AffirmTrust Premium ECC"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\105\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\024\060\022\006\003\125\004\012\014\013\101\146\146\151\162\155

```

\124\162\165\163\164\061\040\060\036\006\003\125\004\003\014\027  
\101\146\146\151\162\155\124\162\165\163\164\040\120\162\145\155  
\151\165\155\040\105\103\103

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\105\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\024\060\022\006\003\125\004\012\014\013\101\146\146\151\162\155  
\124\162\165\163\164\061\040\060\036\006\003\125\004\003\014\027  
\101\146\146\151\162\155\124\162\165\163\164\040\120\162\145\155  
\151\165\155\040\105\103\103

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\010\164\227\045\212\307\077\172\124

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\001\376\060\202\001\205\240\003\002\001\002\002\010\164  
\227\045\212\307\077\172\124\060\012\006\010\052\206\110\316\075  
\004\003\003\060\105\061\013\060\011\006\003\125\004\006\023\002  
\125\123\061\024\060\022\006\003\125\004\012\014\013\101\146\146  
\151\162\155\124\162\165\163\164\061\040\060\036\006\003\125\004  
\003\014\027\101\146\146\151\162\155\124\162\165\163\164\040\120  
\162\145\155\151\165\155\040\105\103\103\060\036\027\015\061\060  
\060\061\062\071\061\064\062\060\062\064\132\027\015\064\060\061  
\062\063\061\061\064\062\060\062\064\132\060\105\061\013\060\011  
\006\003\125\004\006\023\002\125\123\061\024\060\022\006\003\125  
\004\012\014\013\101\146\146\151\162\155\124\162\165\163\164\061  
\040\060\036\006\003\125\004\003\014\027\101\146\146\151\162\155  
\124\162\165\163\164\040\120\162\145\155\151\165\155\040\105\103  
\103\060\166\060\020\006\007\052\206\110\316\075\002\001\006\005  
\053\201\004\000\042\003\142\000\004\015\060\136\033\025\235\003  
\320\241\171\065\267\072\074\222\172\312\025\034\315\142\363\234  
\046\134\007\075\345\124\372\243\326\314\022\352\364\024\137\350  
\216\031\253\057\056\110\346\254\030\103\170\254\320\067\303\275  
\262\315\054\346\107\342\032\346\143\270\075\056\057\170\304\117  
\333\364\017\244\150\114\125\162\153\225\035\116\030\102\225\170  
\314\067\074\221\342\233\145\053\051\243\102\060\100\060\035\006  
\003\125\035\016\004\026\004\024\232\257\051\172\300\021\065\065  
\046\121\060\000\303\152\376\100\325\256\326\074\060\017\006\003  
\125\035\023\001\001\377\004\005\060\003\001\001\377\060\016\006  
\003\125\035\017\001\001\377\004\004\003\002\001\006\060\012\006  
\010\052\206\110\316\075\004\003\003\003\147\000\060\144\002\060  
\027\011\363\207\210\120\132\257\310\300\102\277\107\137\365\154  
\152\206\340\304\047\164\344\070\123\327\005\177\033\064\343\306  
\057\263\312\011\074\067\235\327\347\270\106\361\375\241\342\161  
\002\060\102\131\207\103\324\121\337\272\323\011\062\132\316\210  
\176\127\075\234\137\102\153\365\007\055\265\360\202\223\371\131

\157\256\144\372\130\345\213\036\343\143\276\265\201\315\157\002

\214\171

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "AffirmTrust Premium ECC"

# Issuer: CN=AffirmTrust Premium ECC,O=AffirmTrust,C=US

# Serial Number:74:97:25:8a:c7:3f:7a:54

# Subject: CN=AffirmTrust Premium ECC,O=AffirmTrust,C=US

# Not Valid Before: Fri Jan 29 14:20:24 2010

# Not Valid After : Mon Dec 31 14:20:24 2040

# Fingerprint (SHA-256):

BD:71:FD:F6:DA:97:E4:CF:62:D1:64:7A:DD:25:81:B0:7D:79:AD:F8:39:7E:B4:EC:BA:9C:5E:84:88:82:14:23

# Fingerprint (SHA1): B8:23:6B:00:2F:1D:16:86:53:01:55:6C:11:A4:37:CA:EB:FF:C3:BB

CKA\_CLASS

CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "AffirmTrust Premium ECC"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\270\043\153\000\057\035\026\206\123\001\125\154\021\244\067\312

\353\377\303\273

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\144\260\011\125\317\261\325\231\342\276\023\253\246\135\352\115

END

CKA\_ISSUER MULTILINE\_OCTAL

\060\105\061\013\060\011\006\003\125\004\006\023\002\125\123\061

\024\060\022\006\003\125\004\012\014\013\101\146\146\151\162\155

\124\162\165\163\164\061\040\060\036\006\003\125\004\003\014\027

\101\146\146\151\162\155\124\162\165\163\164\040\120\162\145\155

\151\165\155\040\105\103\103

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\010\164\227\045\212\307\077\172\124

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED

CK\_BBOOL CK\_FALSE

#

# Certificate "Certum Trusted Network CA"

```
#
# Issuer: CN=Certum Trusted Network CA,OU=Certum Certification Authority,O=Unizeto Technologies
S.A.,C=PL
# Serial Number: 279744 (0x444c0)
# Subject: CN=Certum Trusted Network CA,OU=Certum Certification Authority,O=Unizeto Technologies
S.A.,C=PL
# Not Valid Before: Wed Oct 22 12:07:37 2008
# Not Valid After : Mon Dec 31 12:07:37 2029
# Fingerprint (SHA-256):
5C:58:46:8D:55:F5:8E:49:7E:74:39:82:D2:B5:00:10:B6:D1:65:37:4A:CF:83:A7:D4:A3:2D:B7:68:C4:40:8E
# Fingerprint (SHA1): 07:E0:32:E0:20:B7:2C:3F:19:2F:06:28:A2:59:3A:19:A7:0F:06:9E
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Certum Trusted Network CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\176\061\013\060\011\006\003\125\004\006\023\002\120\114\061
\042\060\040\006\003\125\004\012\023\031\125\156\151\172\145\164
\157\040\124\145\143\150\156\157\154\157\147\151\145\163\040\123
\056\101\056\061\047\060\045\006\003\125\004\013\023\036\103\145
\162\164\165\155\040\103\145\162\164\151\146\151\143\141\164\151
\157\156\040\101\165\164\150\157\162\151\164\171\061\042\060\040
\006\003\125\004\003\023\031\103\145\162\164\165\155\040\124\162
\165\163\164\145\144\040\116\145\164\167\157\162\153\040\103\101
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\176\061\013\060\011\006\003\125\004\006\023\002\120\114\061
\042\060\040\006\003\125\004\012\023\031\125\156\151\172\145\164
\157\040\124\145\143\150\156\157\154\157\147\151\145\163\040\123
\056\101\056\061\047\060\045\006\003\125\004\013\023\036\103\145
\162\164\165\155\040\103\145\162\164\151\146\151\143\141\164\151
\157\156\040\101\165\164\150\157\162\151\164\171\061\042\060\040
\006\003\125\004\003\023\031\103\145\162\164\165\155\040\124\162
\165\163\164\145\144\040\116\145\164\167\157\162\153\040\103\101
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\003\004\104\300
END
CKA_VALUE
MULTILINE_OCTAL
\060\202\003\273\060\202\002\243\240\003\002\001\002\002\003\004
\104\300\060\015\006\011\052\206\110\206\367\015\001\001\005\005
\000\060\176\061\013\060\011\006\003\125\004\006\023\002\120\114
\061\042\060\040\006\003\125\004\012\023\031\125\156\151\172\145
```

\164\157\040\124\145\143\150\156\157\154\157\147\151\145\163\040  
\123\056\101\056\061\047\060\045\006\003\125\004\013\023\036\103  
\145\162\164\165\155\040\103\145\162\164\151\146\151\143\141\164  
\151\157\156\040\101\165\164\150\157\162\151\164\171\061\042\060  
\040\006\003\125\004\003\023\031\103\145\162\164\165\155\040\124  
\162\165\163\164\145\144\040\116\145\164\167\157\162\153\040\103  
\101\060\036\027\015\060\070\061\060\062\062\061\062\060\067\063  
\067\132\027\015\062\071\061\062\063\061\061\062\060\067\063\067  
\132\060\176\061\013\060\011\006\003\125\004\006\023\002\120\114  
\061\042\060\040\006\003\125\004\012\023\031\125\156\151\172\145  
\164\157\040\124\145\143\150\156\157\154\157\147\151\145\163\040  
\123\056\101\056\061\047\060\045\006\003\125\004\013\023\036\103  
\145\162\164\165\155\040\103\145\162\164\151\146\151\143\141\164  
\151\157\156\040\101\165\164\150\157\162\151\164\171\061\042\060  
\040\006\003\125\004\003\023\031\103\145\162\164\165\155\040\124  
\162\165\163\164\145\144\040\116\145\164\167\157\162\153\040\103  
\101\060\202\001\042\060\015\006\011\052\206\110\206\367\015\001  
\001\001\005\000\003\202\001\017\000\060\202\001\012\002\202\001  
\001\000\343\373\175\243\162\272\302\360\311\024\207\365\153\001  
\116\341\156\100\007\272\155\047\135\177\367\133\055\263\132\307  
\121\137\253\244\062\246\141\207\266\156\017\206\322\060\002\227  
\370\327\151\127\241\030\071\135\152\144\171\306\001\131\254\074  
\061\112\070\174\322\004\322\113\050\350\040\137\073\007\242\314  
\115\163\333\363\256\117\307\126\325\132\247\226\211\372\363\253  
\150\324\043\206\131\047\317\011\047\274\254\156\162\203\034\060  
\162\337\340\242\351\322\341\164\165\031\275\052\236\173\025\124  
\004\033\327\103\071\255\125\050\305\342\032\273\364\300\344\256  
\070\111\063\314\166\205\237\071\105\322\244\236\362\022\214\121  
\370\174\344\055\177\365\254\137\353\026\237\261\055\321\272\314  
\221\102\167\114\045\311\220\070\157\333\360\314\373\216\036\227  
\131\076\325\140\116\346\005\050\355\111\171\023\113\272\110\333  
\057\371\162\323\071\312\376\037\330\064\162\365\264\100\317\061  
\001\303\354\336\021\055\027\135\037\270\120\321\136\031\247\151  
\336\007\063\050\312\120\225\371\247\124\313\124\206\120\105\251  
\371\111\002\003\001\000\001\243\102\060\100\060\017\006\003\125  
\035\023\001\001\377\004\005\060\003\001\001\377\060\035\006\003  
\125\035\016\004\026\004\024\010\166\315\313\007\377\044\366\305  
\315\355\273\220\274\342\204\067\106\165\367\060\016\006\003\125  
\035\017\001\001\377\004\004\003\002\001\006\060\015\006\011\052  
\206\110\206\367\015\001\001\005\005\000\003\202\001\001\000\246  
\250\255\042\316\001\075\246\243\377\142\320\110\235\213\136\162  
\260\170\104\343\334\034\257\011\375\043\110\372\275\052\304\271  
\125\004\265\020\243\215\047\336\013\202\143\320\356\336\014\067  
\171\101\133\042\262\260\232\101\134\246\160\340\324\320\167\313  
\043\323\000\340\154\126\057\341\151\015\015\331\252\277\041\201  
\120\331\006\245\250\377\225\067\320\252\376\342\263\365\231\055  
\105\204\212\345\102\011\327\164\002\057\367\211\330\231\351\274  
\047\324\107\215\272\015\106\034\167\317\024\244\034\271\244\061

```
\304\234\050\164\003\064\377\063\031\046\245\351\015\164\267\076
\227\306\166\350\047\226\243\146\335\341\256\362\101\133\312\230
\126\203\163\160\344\206\032\322\061\101\272\057\276\055\023\132
\166\157\116\350\116\201\016\077\133\003\042\240\022\276\146\130
\021\112\313\003\304\264\052\052\055\226\027\340\071\124\274\110
\323\166\047\235\232\055\006\246\311\354\071\322\253\333\237\232
\013\047\002\065\051\261\100\225\347\371\350\234\125\210\031\106
\326\267\064\365\176\316\071\232\331\070\361\121\367\117\054
```

END

CKA\_NSS\_Mozilla\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER

CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "Certum Trusted Network CA"

# Issuer: CN=Certum Trusted Network CA,OU=Certum Certification Authority,O=Unizeto Technologies S.A.,C=PL

# Serial Number: 279744 (0x444c0)

# Subject: CN=Certum Trusted Network CA,OU=Certum Certification Authority,O=Unizeto Technologies S.A.,C=PL

# Not Valid Before: Wed Oct 22 12:07:37 2008

# Not Valid After : Mon Dec 31 12:07:37 2029

# Fingerprint (SHA-256):

5C:58:46:8D:55:F5:8E:49:7E:74:39:82:D2:B5:00:10:B6:D1:65:37:4A:CF:83:A7:D4:A3:2D:B7:68:C4:40:8E

# Fingerprint (SHA1): 07:E0:32:E0:20:B7:2C:3F:19:2F:06:28:A2:59:3A:19:A7:0F:06:9E

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Certum Trusted Network CA"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\007\340\062\340\040\267\054\077\031\057\006\050\242\131\072\031
\247\017\006\236
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\325\351\201\100\305\030\151\374\106\054\211\165\142\017\252\170
```

END

CKA\_ISSUER

MULTILINE\_OCTAL

```
\060\176\061\013\060\011\006\003\125\004\006\023\002\120\114\061
\042\060\040\006\003\125\004\012\023\031\125\156\151\172\145\164
\157\040\124\145\143\150\156\157\154\157\147\151\145\163\040\123
\056\101\056\061\047\060\045\006\003\125\004\013\023\036\103\145
\162\164\165\155\040\103\145\162\164\151\146\151\143\141\164\151
\157\156\040\101\165\164\150\157\162\151\164\171\061\042\060\040
\006\003\125\004\003\023\031\103\145\162\164\165\155\040\124\162
\165\163\164\145\144\040\116\145\164\167\157\162\153\040\103\101
```

```

END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\003\004\104\300
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "TWCA Root Certification Authority"
#
# Issuer: CN=TWCA Root Certification Authority,OU=Root
CA,O=TAIWAN-CA,C=TW
# Serial Number: 1 (0x1)
# Subject: CN=TWCA Root Certification Authority,OU=Root CA,O=TAIWAN-CA,C=TW
# Not Valid Before: Thu Aug 28 07:24:33 2008
# Not Valid After : Tue Dec 31 15:59:59 2030
# Fingerprint (SHA-256):
BF:D8:8F:E1:10:1C:41:AE:3E:80:1B:F8:BE:56:35:0E:E9:BA:D1:A6:B9:BD:51:5E:DC:5C:6D:5B:87:11:AC:44
# Fingerprint (SHA1): CF:9E:87:6D:D3:EB:FC:42:26:97:A3:B5:A3:7A:A0:76:A9:06:23:48
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "TWCA Root Certification Authority"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\137\061\013\060\011\006\003\125\004\006\023\002\124\127\061
\022\060\020\006\003\125\004\012\014\011\124\101\111\127\101\116
\055\103\101\061\020\060\016\006\003\125\004\013\014\007\122\157
\157\164\040\103\101\061\052\060\050\006\003\125\004\003\014\041
\124\127\103\101\040\122\157\157\164\040\103\145\162\164\151\146
\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164
\171
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\137\061\013\060\011\006\003\125\004\006\023\002\124\127\061
\022\060\020\006\003\125\004\012\014\011\124\101\111\127\101\116
\055\103\101\061\020\060\016\006\003\125\004\013\014\007\122\157
\157\164\040\103\101\061\052\060\050\006\003\125\004\003\014\041
\124\127\103\101\040\122\157\157\164\040\103\145\162\164\151\146
\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164
\171
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL

```

\002\001\001

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\173\060\202\002\143\240\003\002\001\002\002\001\001  
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060  
\137\061\013\060\011\006\003\125\004\006\023\002\124\127\061\022  
\060\020\006\003\125\004\012\014\011\124\101\111\127\101\116\055  
\103\101\061\020\060\016\006\003\125\004\013\014\007\122\157\157  
\164\040\103\101\061\052\060\050\006\003\125\004\003\014\041\124  
\127\103\101\040\122\157\157\164\040\103\145\162\164\151\146\151  
\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171  
\060\036\027\015\060\070\060\070\062\070\060\067\062\064\063\063  
\132\027\015\063\060\061\062\063\061\061\065\065\071\065\071\132  
\060\137\061\013\060\011\006\003\125\004\006\023\002\124\127\061  
\022\060\020\006\003\125\004\012\014\011\124\101\111\127\101\116  
\055\103\101\061\020\060\016\006\003\125\004\013\014\007\122\157  
\157\164\040\103\101\061\052\060\050\006\003\125\004\003\014\041  
\124\127\103\101\040\122\157\157\164\040\103\145\162\164\151\146  
\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164  
\171\060\202\001\042\060\015\006\011\052\206\110\206\367\015\001  
\001\001\005\000\003\202\001\017\000\060\202\001\012\002\202\001  
\001\000\260\176\162\270\244\003\224\346\247\336\011\070\221\112  
\021\100\207\247\174\131\144\024\173\265\021\020\335\376\277\325  
\300\273\126\342\205\045\364\065\162\017\370\123\320\101\341\104  
\001\302\264\034\303\061\102\026\107\205\063\042\166\262\012\157  
\017\345\045\120\117\205\206\276\277\230\056\020\147\036\276\021  
\005\206\005\220\304\131\320\174\170\020\260\200\134\267\341\307  
\053\165\313\174\237\256\265\321\235\043\067\143\247\334\102\242  
\055\222\004\033\120\301\173\270\076\033\311\126\004\213\057\122  
\233\255\251\126\351\301\377\255\251\130\207\060\266\201\367\227  
\105\374\031\127\073\053\157\344\107\364\231\105\376\035\361\370  
\227\243\210\035\067\034\134\217\340\166\045\232\120\370\240\124  
\377\104\220\166\043\322\062\306\303\253\006\277\374\373\277\363  
\255\175\222\142\002\133\051\323\065\243\223\232\103\144\140\135  
\262\372\062\377\073\004\257\115\100\152\371\307\343\357\043\375  
\153\313\345\017\213\070\015\356\012\374\376\017\230\237\060\061  
\335\154\122\145\371\213\201\276\042\341\034\130\003\272\221\033  
\211\007\002\003\001\000\001\243\102\060\100\060\016\006\003\125  
\035\017\001\001\377\004\004\003\002\001\006\060\017\006\003\125  
\035\023\001\001\377\004\005\060\003\001\001\377\060\035\006\003  
\125\035\016\004\026\004\024\152\070\133\046\215\336\213\132\362  
\117\172\124\203\031\030\343\010\065\246\272\060\015\006\011\052  
\206\110\206\367\015\001\001\005\005\000\003\202\001\001\000\074  
\325\167\075\332\337\211\272\207\014\010\124\152\040\120\222\276  
\260\101\075\271\046\144\203\012\057\350\100\300\227\050\047\202  
\060\112\311\223\377\152\347\246\000\177\211\102\232\326\021\345  
\123\316\057\314\362\332\005\304\376\342\120\304\072\206\175\314  
\332\176\020\011\073\222\065\052\123\262\376\353\053\005\331\154



```
\135\346\320\357\323\152\146\236\025\050\205\172\350\202\000\254
\036\247\011\151\126\102\323\150\121\030\276\124\232\277\104\101
\272\111\276\040\272\151\134\356\270\167\315\316\154\037\255\203
\226\030\175\016\265\024\071\204\361\050\351\055\243\236\173\036
\172\162\132\203\263\171\157\357\264\374\320\012\245\130\117\106
\337\373\155\171\131\362\204\042\122\256\017\314\373\174\073\347
\152\312\107\141\303\172\370\323\222\004\037\270\040\204\341\066
\124\026\307\100\336\073\212\163\334\337\306\011\114\337\354\332
\377\324\123\102\241\311\362\142\035\042\203\074\227\305\371\031
\142\047\254\145\042\327\323\074\306\345\216\262\123\314\111\316
\274\060\376\173\016\063\220\373\355\322\024\221\037\007\257
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "TWCA Root Certification Authority"

# Issuer: CN=TWCA Root Certification Authority,OU=Root CA,O=TAIWAN-CA,C=TW

# Serial Number: 1 (0x1)

# Subject: CN=TWCA Root Certification Authority,OU=Root CA,O=TAIWAN-CA,C=TW

# Not Valid Before: Thu Aug 28 07:24:33 2008

# Not Valid After : Tue Dec 31 15:59:59 2030

# Fingerprint (SHA-256):

BF:D8:8F:E1:10:1C:41:AE:3E:80:1B:F8:BE:56:35:0E:E9:BA:D1:A6:B9:BD:51:5E:DC:5C:6D:5B:87:11:AC:44

# Fingerprint (SHA1): CF:9E:87:6D:D3:EB:FC:42:26:97:A3:B5:A3:7A:A0:76:A9:06:23:48

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE

CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "TWCA Root Certification Authority"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\317\236\207\155\323\353\374\102\046\227\243\265\243\172\240\166
\251\006\043\110
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\252\010\217\366\371\173\267\362\261\247\036\233\352\352\275\171
```

END

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\137\061\013\060\011\006\003\125\004\006\023\002\124\127\061
\022\060\020\006\003\125\004\012\014\011\124\101\111\127\101\116
\055\103\101\061\020\060\016\006\003\125\004\013\014\007\122\157
\157\164\040\103\101\061\052\060\050\006\003\125\004\003\014\041
\124\127\103\101\040\122\157\157\164\040\103\145\162\164\151\146
\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164
\171
```

END

```

CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\001
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
#
Certificate "Explicitly Distrust DigiNotar Root CA"
#
# Issuer: E=info@diginotar.nl,CN=DigiNotar Root CA,O=DigiNotar,C=NL
# Serial Number:0f:ff:ff:ff:ff:ff:ff:ff:ff:ff:ff:ff:ff:ff:ff:ff
# Subject: E=info@diginotar.nl,CN=DigiNotar Root CA,O=DigiNotar,C=NL
# Not Valid Before: Fri Jul 27 17:19:37 2007
# Not Valid After : Mon Mar 31 18:19:22 2025
# Fingerprint (MD5): 0A:A4:D5:CC:BA:B4:FB:A3:59:E3:E6:01:DD:53:D9:4E
# Fingerprint (SHA1): C1:77:CB:4B:E0:B4:26:8E:F5:C7:CF:45:99:22:B9:B0:CE:BA:21:2F
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Explicitly Distrust DigiNotar Root CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\137\061\013\060\011\006\003\125\004\006\023\002\116\114\061
\022\060\020\006\003\125\004\012\023\011\104\151\147\151\116\157
\164\141\162\061\032\060\030\006\003\125\004\003\023\021\104\151
\147\151\116\157\164\141\162\040\122\157\157\164\040\103\101\061
\040\060\036\006\011\052\206\110\206\367\015\001\011\001\026\021
\151\156\146\157\100\144\151\147\151\156\157\164\141\162\056\156
\154
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\137\061\013\060\011\006\003\125\004\006\023\002\116\114\061
\022\060\020\006\003\125\004\012\023\011\104\151\147\151\116\157
\164\141\162\061\032\060\030\006\003\125\004\003\023\021\104\151
\147\151\116\157\164\141\162\040\122\157\157\164\040\103\101\061
\040\060\036\006\011\052\206\110\206\367\015\001\011\001\026\021
\151\156\146\157\100\144\151\147\151\156\157\164\141\162\056\156
\154
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\017\377\377\377\377\377\377\377\377\377\377\377\377\377
\377\377

```

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\212\060\202\003\162\240\003\002\001\002\002\020\017  
\377\377\377\377\377\377\377\377\377\377\377\377\377\377\060  
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\137  
\061\013\060\011\006\003\125\004\006\023\002\116\114\061\022\060  
\020\006\003\125\004\012\023\011\104\151\147\151\116\157\164\141  
\162\061\032\060\030\006\003\125\004\003\023\021\104\151\147\151  
\116\157\164\141\162\040\122\157\157\164\040\103\101\061\040\060  
\036\006\011\052\206\110\206\367\015\001\011\001\026\021\151\156  
\146\157\100\144\151\147\151\156\157\164\141\162\056\156\154\060  
\036\027\015\060\067\060\067\062\067\061\067\061\071\063\067\132  
\027\015\062\065\060\063\063\061\061\070\061\071\062\062\132\060  
\137\061\013\060\011\006\003\125\004\006\023\002\116\114\061\022  
\060\020\006\003\125\004\012\023\011\104\151\147\151\116\157\164  
\141\162\061\032\060\030\006\003\125\004\003\023\021\104\151\147  
\151\116\157\164\141\162\040\122\157\157\164\040\103\101\061\040  
\060\036\006\011\052\206\110\206\367\015\001\011\001\026\021\151  
\156\146\157\100\144\151\147\151\156\157\164\141\162\056\156\154  
\060\202\002\042\060\015\006\011\052\206\110\206\367\015\001\001  
\001\005\000\003\202\002\017\000\060\202\002\012\002\202\002\001  
\000\254\260\130\301\000\275\330\041\010\013\053\232\376\156\126  
\060\005\237\033\167\220\020\101\134\303\015\207\021\167\216\201  
\361\312\174\351\214\152\355\070\164\065\273\332\337\371\273\300  
\011\067\264\226\163\201\175\063\032\230\071\367\223\157\225\177  
\075\271\261\165\207\272\121\110\350\213\160\076\225\004\305\330  
\266\303\026\331\210\260\261\207\035\160\332\206\264\017\024\213  
\172\317\020\321\164\066\242\022\173\167\206\112\171\346\173\337  
\002\021\150\245\116\206\256\064\130\233\044\023\170\126\042\045  
\036\001\213\113\121\161\373\202\314\131\226\151\210\132\150\123  
\305\271\015\002\067\313\113\274\146\112\220\176\052\013\005\007  
\355\026\137\125\220\165\330\106\311\033\203\342\010\276\361\043  
\314\231\035\326\052\017\203\040\025\130\047\202\056\372\342\042  
\302\111\261\271\001\201\152\235\155\235\100\167\150\166\116\041  
\052\155\204\100\205\116\166\231\174\202\363\363\267\002\131\324  
\046\001\033\216\337\255\123\006\321\256\030\335\342\262\072\313  
\327\210\070\216\254\133\051\271\031\323\230\371\030\003\317\110  
\202\206\146\013\033\151\017\311\353\070\210\172\046\032\005\114  
\222\327\044\324\226\362\254\122\055\243\107\325\122\366\077\376  
\316\204\006\160\246\252\076\242\362\266\126\064\030\127\242\344  
\201\155\347\312\360\152\323\307\221\153\002\203\101\174\025\357  
\153\232\144\136\343\320\074\345\261\353\173\135\206\373\313\346  
\167\111\315\243\145\334\367\271\234\270\344\013\137\223\317\314  
\060\032\062\034\316\034\143\225\245\371\352\341\164\213\236\351  
\053\251\060\173\240\030\037\016\030\013\345\133\251\323\321\154  
\036\007\147\217\221\113\251\212\274\322\146\252\223\001\210\262  
\221\372\061\134\325\246\301\122\010\011\315\012\143\242\323\042  
\246\350\241\331\071\006\227\365\156\215\002\220\214\024\173\077

\200\315\033\234\272\304\130\162\043\257\266\126\237\306\172\102  
\063\051\007\077\202\311\346\037\005\015\315\114\050\066\213\323  
\310\076\034\306\210\357\136\356\211\144\351\035\353\332\211\176  
\062\246\151\321\335\314\210\237\321\320\311\146\041\334\006\147  
\305\224\172\232\155\142\114\175\314\340\144\200\262\236\107\216  
\243\002\003\001\000\001\243\102\060\100\060\017\006\003\125\035  
\023\001\001\377\004\005\060\003\001\001\377\060\016\006\003\125  
\035\017\001\001\377\004\004\003\002\001\006\060\035\006\003\125  
\035\016\004\026\004\024\210\150\277\340\216\065\304\073\070\153  
\142\367\050\073\204\201\310\014\327\115\060\015\006\011\052\206  
\110\206\367\015\001\001\005\005\000\003\202\002\001\000\073\002  
\215\313\074\060\350\156\240\255\362\163\263\137\236\045\023\004  
\005\323\366\343\213\273\013\171\316\123\336\344\226\305\321\257  
\163\274\325\303\320\100\125\174\100\177\315\033\137\011\325\362  
\174\237\150\035\273\135\316\172\071\302\214\326\230\173\305\203  
\125\250\325\175\100\312\340\036\367\211\136\143\135\241\023\302  
\135\212\266\212\174\000\363\043\303\355\205\137\161\166\360\150  
\143\252\105\041\071\110\141\170\066\334\361\103\223\324\045\307  
\362\200\145\341\123\002\165\121\374\172\072\357\067\253\204\050  
\127\014\330\324\324\231\126\154\343\242\376\131\204\264\061\350  
\063\370\144\224\224\121\227\253\071\305\113\355\332\335\200\013  
\157\174\051\015\304\216\212\162\015\347\123\024\262\140\101\075  
\204\221\061\150\075\047\104\333\345\336\364\372\143\105\310\114  
\076\230\365\077\101\272\116\313\067\015\272\146\230\361\335\313  
\237\134\367\124\066\202\153\054\274\023\141\227\102\370\170\273  
\314\310\242\237\312\360\150\275\153\035\262\337\215\157\007\235  
\332\216\147\307\107\036\312\271\277\052\102\221\267\143\123\146  
\361\102\243\341\364\132\115\130\153\265\344\244\063\255\134\160  
\035\334\340\362\353\163\024\221\232\003\301\352\000\145\274\007  
\374\317\022\021\042\054\256\240\275\072\340\242\052\330\131\351  
\051\323\030\065\244\254\021\137\031\265\265\033\377\042\112\134  
\306\172\344\027\357\040\251\247\364\077\255\212\247\232\004\045  
\235\016\312\067\346\120\375\214\102\051\004\232\354\271\317\113  
\162\275\342\010\066\257\043\057\142\345\312\001\323\160\333\174  
\202\043\054\026\061\014\306\066\007\220\172\261\037\147\130\304  
\073\130\131\211\260\214\214\120\263\330\206\313\150\243\304\012  
\347\151\113\040\316\301\036\126\113\225\251\043\150\330\060\330  
\303\353\260\125\121\315\345\375\053\270\365\273\021\237\123\124  
\366\064\031\214\171\011\066\312\141\027\045\027\013\202\230\163  
\014\167\164\303\325\015\307\250\022\114\307\247\124\161\107\056  
\054\032\175\311\343\053\073\110\336\047\204\247\143\066\263\175  
\217\240\144\071\044\015\075\173\207\257\146\134\164\033\113\163  
\262\345\214\360\206\231\270\345\305\337\204\301\267\353

END

#

Trust for Certificate "Explicitly Distrust DigiNotar Root CA"

# Issuer: E=info@diginotar.nl,CN=DigiNotar Root CA,O=DigiNotar,C=NL

```

# Serial Number:0f:ff:ff:ff:ff:ff:ff:ff:ff:ff:ff:ff:ff:ff
# Subject: E=info@diginotar.nl,CN=DigiNotar Root CA,O=DigiNotar,C=NL
# Not Valid Before: Fri Jul 27 17:19:37 2007
# Not Valid After : Mon Mar 31 18:19:22 2025
# Fingerprint (MD5): 0A:A4:D5:CC:BA:B4:FB:A3:59:E3:E6:01:DD:53:D9:4E
# Fingerprint (SHA1): C1:77:CB:4B:E0:B4:26:8E:F5:C7:CF:45:99:22:B9:B0:CE:BA:21:2F
CKA_CLASS
CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Explicitly Distrust DigiNotar Root CA"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\301\167\313\113\340\264\046\216\365\307\317\105\231\042\271\260
\316\272\041\057
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\012\244\325\314\272\264\373\243\131\343\346\001\335\123\331\116
END
CKA_ISSUER MULTILINE_OCTAL
\060\137\061\013\060\011\006\003\125\004\006\023\002\116\114\061
\022\060\020\006\003\125\004\012\023\011\104\151\147\151\116\157
\164\141\162\061\032\060\030\006\003\125\004\003\023\021\104\151
\147\151\116\157\164\141\162\040\122\157\157\164\040\103\101\061
\040\060\036\006\011\052\206\110\206\367\015\001\011\001\026\021
\151\156\146\157\100\144\151\147\151\156\157\164\141\162\056\156
\154
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\017\377\377\377\377\377\377\377\377\377\377\377\377\377
\377\377
END
CKA_TRUST_SERVER_AUTH CK_TRUST
CKT_NSS_NOT_TRUSTED
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_NOT_TRUSTED
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_NOT_TRUSTED
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "Security Communication RootCA2"
#
# Issuer: OU=Security Communication RootCA2,O="SECOM Trust Systems CO.,LTD.",C=JP
# Serial Number: 0 (0x0)
# Subject: OU=Security Communication RootCA2,O="SECOM Trust Systems CO.,LTD.",C=JP
# Not Valid Before: Fri May 29 05:00:39 2009
# Not Valid After : Tue May 29 05:00:39 2029
# Fingerprint (SHA-256):
51:3B:2C:EC:B8:10:D4:CD:E5:DD:85:39:1A:DF:C6:C2:DD:60:D8:7B:B7:36:D2:B5:21:48:4A:A4:7A:0E:BE:F6

```

# Fingerprint (SHA1): 5F:3B:8C:F2:F8:10:B3:7D:78:B4:CE:EC:19:19:C3:73:34:B9:C7:74

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE  
CKA\_TOKEN CK\_BBOOL CK\_TRUE  
CKA\_PRIVATE CK\_BBOOL CK\_FALSE  
CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE  
CKA\_LABEL UTF8 "Security Communication RootCA2"  
CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509  
CKA\_SUBJECT MULTILINE\_OCTAL  
\060\135\061\013\060\011\006\003\125\004\006\023\002\112\120\061  
\045\060\043\006\003\125\004\012\023\034\123\105\103\117\115\040  
\124\162\165\163\164\040\123\171\163\164\145\155\163\040\103\117  
\056\054\114\124\104\056\061\047\060\045\006\003\125\004\013\023  
\036\123\145\143\165\162\151\164\171\040\103\157\155\155\165\156  
\151\143\141\164\151\157\156\040\122\157\157\164\103\101\062  
END

CKA\_ID  
UTF8 "0"  
CKA\_ISSUER MULTILINE\_OCTAL  
\060\135\061\013\060\011\006\003\125\004\006\023\002\112\120\061  
\045\060\043\006\003\125\004\012\023\034\123\105\103\117\115\040  
\124\162\165\163\164\040\123\171\163\164\145\155\163\040\103\117  
\056\054\114\124\104\056\061\047\060\045\006\003\125\004\013\023  
\036\123\145\143\165\162\151\164\171\040\103\157\155\155\165\156  
\151\143\141\164\151\157\156\040\122\157\157\164\103\101\062  
END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL  
\002\001\000  
END

CKA\_VALUE MULTILINE\_OCTAL  
\060\202\003\167\060\202\002\137\240\003\002\001\002\002\001\000  
\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060  
\135\061\013\060\011\006\003\125\004\006\023\002\112\120\061\045  
\060\043\006\003\125\004\012\023\034\123\105\103\117\115\040\124  
\162\165\163\164\040\123\171\163\164\145\155\163\040\103\117\056  
\054\114\124\104\056\061\047\060\045\006\003\125\004\013\023\036  
\123\145\143\165\162\151\164\171\040\103\157\155\155\165\156\151  
\143\141\164\151\157\156\040\122\157\157\164\103\101\062\060\036  
\027\015\060\071\060\065\062\071\060\065\060\060\063\071\132\027  
\015\062\071\060\065\062\071\060\065\060\060\063\071\132\060\135  
\061\013\060\011\006\003\125\004\006\023\002\112\120\061\045\060  
\043\006\003\125\004\012\023\034\123\105\103\117\115\040\124\162  
\165\163\164\040\123\171\163\164\145\155\163\040\103\117\056\054  
\114\124\104\056\061\047\060\045\006\003\125\004\013\023\036\123  
\145\143\165\162\151\164\171\040\103\157\155\155\165\156\151\143  
\141\164\151\157\156\040\122\157\157\164\103\101\062\060\202\001  
\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000  
\003\202\001\017\000\060\202\001\012\002\202\001\001\000\320\025  
\071\122\261\122\263\272\305\131\202\304\135\122\256\072\103\145

\200\113\307\362\226\274\333\066\227\326\246\144\214\250\136\360  
\343\012\034\367\337\227\075\113\256\366\135\354\041\265\101\253  
\315\271\176\166\237\276\371\076\066\064\240\073\301\366\061\021  
\105\164\223\075\127\200\305\371\211\231\312\345\253\152\324\265  
\332\101\220\020\301\326\326\102\211\302\277\364\070\022\225\114  
\124\005\367\066\344\105\203\173\024\145\326\334\014\115\321\336  
\176\014\253\073\304\025\276\072\126\246\132\157\166\151\122\251  
\172\271\310\353\152\232\135\122\320\055\012\153\065\026\011\020  
\204\320\152\312\072\006\000\067\107\344\176\127\117\077\213\353  
\147\270\210\252\305\276\123\125\262\221\304\175\271\260\205\031  
\006\170\056\333\141\032\372\205\365\112\221\241\347\026\325\216  
\242\071\337\224\270\160\037\050\077\213\374\100\136\143\203\074  
\203\052\032\231\153\317\336\131\152\073\374\157\026\327\037\375  
\112\020\353\116\202\026\072\254\047\014\123\361\255\325\044\260  
\153\003\120\301\055\074\026\335\104\064\047\032\165\373\002\003  
\001\000\001\243\102\060\100\060\035\006\003\125\035\016\004\026  
\004\024\012\205\251\167\145\005\230\174\100\201\370\017\227\054  
\070\361\012\354\074\317\060\016\006\003\125\035\017\001\001\377  
\004\004\003\002\001\006\060\017\006\003\125\035\023\001\001\377  
\004\005\060\003\001\001\377\060\015\006\011\052\206\110\206\367  
\015\001\001\013\005\000\003\202\001\001\000\114\072\243\104\254  
\271\105\261\307\223\176\310\013\012\102\337\144\352\034\356\131  
\154\010\272\211\137\152\312\112\225\236\172\217\007\305\332\105  
\162\202\161\016\072\322\314\157\247\264\241\043\273\366\044\237  
\313\027\376\214\246\316\302\322\333\314\215\374\161\374\003\051  
\301\154\135\063\137\144\266\145\073\211\157\030\166\170\365\334  
\242\110\037\031\077\216\223\353\361\372\027\356\315\116\343\004  
\022\125\326\345\344\335\373\076\005\174\342\035\136\306\247\274  
\227\117\150\072\365\351\056\012\103\266\257\127\134\142\150\174  
\267\375\243\212\204\240\254\142\276\053\011\207\064\360\152\001  
\273\233\051\126\074\376\000\067\317\043\154\361\116\252\266\164  
\106\022\154\221\356\064\325\354\232\221\347\104\276\220\061\162  
\325\111\002\366\002\345\364\037\353\174\331\226\125\251\377\354  
\212\371\231\107\377\065\132\002\252\004\313\212\133\207\161\051  
\221\275\244\264\172\015\275\232\365\127\043\000\007\041\027\077  
\112\071\321\005\111\013\247\266\067\201\245\135\214\252\063\136  
\201\050\174\247\175\047\353\000\256\215\067

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "Security Communication RootCA2"

# Issuer: OU=Security Communication RootCA2,O="SECOM Trust Systems CO.,LTD.",C=JP

# Serial Number: 0 (0x0)

# Subject: OU=Security Communication RootCA2,O="SECOM Trust Systems CO.,LTD.",C=JP

# Not Valid Before: Fri May 29 05:00:39 2009

```
# Not Valid After : Tue May 29 05:00:39 2029
# Fingerprint (SHA-256):
51:3B:2C:EC:B8:10:D4:CD:E5:DD:85:39:1A:DF:C6:C2:DD:60:D8:7B:B7:36:D2:B5:21:48:4A:A4:7A:0E:BE:F6
#
Fingerprint (SHA1): 5F:3B:8C:F2:F8:10:B3:7D:78:B4:CE:EC:19:19:C3:73:34:B9:C7:74
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Security Communication RootCA2"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\137\073\214\362\370\020\263\175\170\264\316\354\031\031\303\163
\064\271\307\164
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\154\071\175\244\016\125\131\262\077\326\101\261\022\120\336\103
END
CKA_ISSUER MULTILINE_OCTAL
\060\135\061\013\060\011\006\003\125\004\006\023\002\112\120\061
\045\060\043\006\003\125\004\012\023\034\123\105\103\117\115\040
\124\162\165\163\164\040\123\171\163\164\145\155\163\040\103\117
\056\054\114\124\104\056\061\047\060\045\006\003\125\004\013\023
\036\123\145\143\165\162\151\164\171\040\103\157\155\155\165\156
\151\143\141\164\151\157\156\040\122\157\157\164\103\101\062
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\001\000
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "Actalis Authentication Root CA"
#
# Issuer: CN=Actalis Authentication Root CA,O=Actalis S.p.A./03358520967,L=Milan,C=IT
# Serial Number:57:0a:11:97:42:c4:e3:cc
# Subject: CN=Actalis Authentication Root CA,O=Actalis S.p.A./03358520967,L=Milan,C=IT
# Not Valid Before: Thu Sep 22 11:22:02 2011
# Not Valid After : Sun Sep 22 11:22:02 2030
# Fingerprint (SHA-256):
55:92:60:84:EC:96:3A:64:B9:6E:2A:BE:01:CE:0B:A8:6A:64:FB:FE:BC:C7:AA:B5:AF:C1:55:B3:7F:D7:60:66
# Fingerprint (SHA1): F3:73:B3:87:06:5A:28:84:8A:F2:F3:4A:CE:19:2B:DD:C7:8E:9C:AC
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
```



```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Actalis Authentication Root CA"
CKA_CERTIFICATE_TYPE
  CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\153\061\013\060\011\006\003\125\004\006\023\002\111\124\061
\016\060\014\006\003\125\004\007\014\005\115\151\154\141\156\061
\043\060\041\006\003\125\004\012\014\032\101\143\164\141\154\151
\163\040\123\056\160\056\101\056\057\060\063\063\065\070\065\062
\060\071\066\067\061\047\060\045\006\003\125\004\003\014\036\101
\143\164\141\154\151\163\040\101\165\164\150\145\156\164\151\143
\141\164\151\157\156\040\122\157\157\164\040\103\101
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\153\061\013\060\011\006\003\125\004\006\023\002\111\124\061
\016\060\014\006\003\125\004\007\014\005\115\151\154\141\156\061
\043\060\041\006\003\125\004\012\014\032\101\143\164\141\154\151
\163\040\123\056\160\056\101\056\057\060\063\063\065\070\065\062
\060\071\066\067\061\047\060\045\006\003\125\004\003\014\036\101
\143\164\141\154\151\163\040\101\165\164\150\145\156\164\151\143
\141\164\151\157\156\040\122\157\157\164\040\103\101
END
CKA_SERIAL_NUMBER
  MULTILINE_OCTAL
\002\010\127\012\021\227\102\304\343\314
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\273\060\202\003\243\240\003\002\001\002\002\010\127
\012\021\227\102\304\343\314\060\015\006\011\052\206\110\206\367
\015\001\001\013\005\000\060\153\061\013\060\011\006\003\125\004
\006\023\002\111\124\061\016\060\014\006\003\125\004\007\014\005
\115\151\154\141\156\061\043\060\041\006\003\125\004\012\014\032
\101\143\164\141\154\151\163\040\123\056\160\056\101\056\057\060
\063\063\065\070\065\062\060\071\066\067\061\047\060\045\006\003
\125\004\003\014\036\101\143\164\141\154\151\163\040\101\165\164
\150\145\156\164\151\143\141\164\151\157\156\040\122\157\157\164
\040\103\101\060\036\027\015\061\061\060\071\062\062\061\061\062
\062\060\062\132\027\015\063\060\060\071\062\062\061\061\062\062
\060\062\132\060\153\061\013\060\011\006\003\125\004\006\023\002
\111\124\061\016\060\014\006\003\125\004\007\014\005\115\151\154
\141\156\061\043\060\041\006\003\125\004\012\014\032\101\143\164
\141\154\151\163\040\123\056\160\056\101\056\057\060\063\063\065
\070\065\062\060\071\066\067\061\047\060\045\006\003\125\004\003
\014\036\101\143\164\141\154\151\163\040\101\165\164\150\145\156
\164\151\143\141\164\151\157\156\040\122\157\157\164\040\103\101
\060\202\002\042\060\015\006\011\052\206\110\206\367\015\001\001
\001\005\000\003\202\002\017\000\060\202\002\012\002\202\002\001
```

\000\247\306\304\245\051\244\054\357\345\030\305\260\120\243\157  
\121\073\237\012\132\311\302\110\070\012\302\034\240\030\177\221  
\265\207\271\100\077\335\035\150\037\010\203\325\055\036\210\240  
\370\217\126\217\155\231\002\222\220\026\325\137\010\154\211\327  
\341\254\274\040\302\261\340\203\121\212\151\115\000\226\132\157  
\057\300\104\176\243\016\344\221\315\130\356\334\373\307\036\105  
\107\335\047\271\010\001\237\246\041\035\365\101\055\057\114\375  
\050\255\340\212\255\042\264\126\145\216\206\124\217\223\103\051  
\336\071\106\170\243\060\043\272\315\360\175\023\127\300\135\322  
\203\153\110\114\304\253\237\200\132\133\072\275\311\247\042\077  
\200\047\063\133\016\267\212\014\135\007\067\010\313\154\322\172  
\107\042\104\065\305\314\314\056\216\335\052\355\267\175\146\015  
\137\141\121\042\125\033\343\106\343\343\075\320\065\142\232\333  
\257\024\310\133\241\314\211\033\341\060\046\374\240\233\037\201  
\247\107\037\004\353\243\071\222\006\237\231\323\277\323\352\117  
\120\234\031\376\226\207\036\074\145\366\243\030\044\203\206\020  
\347\124\076\250\072\166\044\117\201\041\305\343\017\002\370\223  
\224\107\040\273\376\324\016\323\150\271\335\304\172\204\202\343  
\123\124\171\335\333\234\322\362\007\233\056\266\274\076\355\205  
\155\357\045\021\362\227\032\102\141\367\112\227\350\213\261\020  
\007\372\145\201\262\242\071\317\367\074\377\030\373\306\361\132  
\213\131\342\002\254\173\222\320\116\024\117\131\105\366\014\136  
\050\137\260\350\077\105\317\317\257\233\157\373\204\323\167\132  
\225\157\254\224\204\236\356\274\300\112\217\112\223\370\104\041  
\342\061\105\141\120\116\020\330\343\065\174\114\031\264\336\005  
\277\243\006\237\310\265\315\344\037\327\027\006\015\172\225\164  
\125\015\150\032\374\020\033\142\144\235\155\340\225\240\303\224  
\007\127\015\024\346\275\005\373\270\237\346\337\213\342\306\347  
\176\226\366\123\305\200\064\120\050\130\360\022\120\161\027\060  
\272\346\170\143\274\364\262\255\233\053\262\376\341\071\214\136  
\272\013\040\224\336\173\203\270\377\343\126\215\267\021\351\073  
\214\362\261\301\135\235\244\013\114\053\331\262\030\365\265\237  
\113\002\003\001\000\001\243\143\060\141\060\035\006\003\125\035  
\016\004\026\004\024\122\330\210\072\310\237\170\146\355\211\363  
\173\070\160\224\311\002\002\066\320\060\017\006\003\125\035\023  
\001\001\377\004\005\060\003\001\001\377\060\037\006\003\125\035  
\043\004\030\060\026\200\024\122\330\210\072\310\237\170\146\355  
\211\363\173\070\160\224\311\002\002\066\320\060\016\006\003\125  
\035\017\001\001\377\004\004\003\002\001\006\060\015\006\011\052  
\206\110\206\367\015\001\001\013\005\000\003\202\002\001\000\013  
\173\162\207\300\140\246\111\114\210\130\346\035\210\367\024\144  
\110\246\330\130\012\016\117\023\065\337\065\035\324\355\006\061  
\310\201\076\152\325\335\073\032\062\356\220\075\021\322\056\364  
\216\303\143\056\043\146\260\147\276\157\266\300\023\071\140\252  
\242\064\045\223\165\122\336\247\235\255\016\207\211\122\161\152  
\026\074\031\035\203\370\232\051\145\276\364\077\232\331\360\363  
\132\207\041\161\200\115\313\340\070\233\077\273\372\340\060\115  
\317\206\323\145\020\031\030\321\227\002\261\053\162\102\150\254

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\240\275\116\132\332\030\277\153\230\201\320\375\232\276\136\025
\110\315\021\025\271\300\051\134\264\350\210\367\076\066\256\267
\142\375\036\142\336\160\170\020\034\110\133\332\274\244\070\272
\147\355\125\076\136\127\337\324\003\100\114\201\244\322\117\143
\247\011\102\011\024\374\000\251\302\200\163\117\056\300\100\331
\021\173\110\352\172\002\300\323\353\050\001\046\130\164\301\300
\163\042\155\223\225\375\071\175\273\052\343\366\202\343\054\227
\137\116\037\221\224\372\376\054\243\330\166\032\270\115\262\070
\117\233\372\035\110\140\171\046\342\363\375\251\320\232\350\160
\217\111\172\326\345\275\012\016\333\055\363\215\277\353\343\244
\175\313\307\225\161\350\332\243\174\305\302\370\164\222\004\033
\206\254\244\042\123\100\266\254\376\114\166\317\373\224\062\300
\065\237\166\077\156\345\220\156\240\246\046\242\270\054\276\321
\053\205\375\247\150\310\272\001\053\261\154\164\035\270\163\225
\347\356\267\307\045\360\000\114\000\262\176\266\013\213\034\363
\300\120\236\045\271\340\010\336\066\146\377\067\245\321\273\124
\144\054\311\047\265\113\222\176\145\377\323\055\341\271\116\274
\177\244\101\041\220\101\167\246\071\037\352\236\343\237\320\146
\157\005\354\252\166\176\277\153\026\240\353\265\307\374\222\124
\057\053\021\047\045\067\170\114\121\152\260\363\314\130\135\024
\361\152\110\025\377\302\007\266\261\215\017\216\134\120\106\263
\075\277\001\230\117\262\131\124\107\076\064\173\170\155\126\223
\056\163\352\146\050\170\315\035\024\277\240\217\057\056\270\056
\216\362\024\212\314\351\265\174\373\154\235\014\245\341\226
```

END

CKA\_NSS\_Mozilla\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "Actalis Authentication Root CA"

# Issuer: CN=Actalis Authentication Root CA,O=Actalis S.p.A./03358520967,L=Milan,C=IT

# Serial Number:57:0a:11:97:42:c4:e3:cc

# Subject: CN=Actalis Authentication Root CA,O=Actalis S.p.A./03358520967,L=Milan,C=IT

# Not Valid Before: Thu Sep 22 11:22:02 2011

# Not Valid After : Sun Sep 22 11:22:02 2030

# Fingerprint (SHA-256):

55:92:60:84:EC:96:3A:64:B9:6E:2A:BE:01:CE:0B:A8:6A:64:FB:FE:BC:C7:AA:B5:AF:C1:55:B3:7F:D7:60:66

# Fingerprint (SHA1): F3:73:B3:87:06:5A:28:84:8A:F2:F3:4A:CE:19:2B:DD:C7:8E:9C:AC

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Actalis Authentication Root CA"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\363\163\263\207\006\132\050\204\212\362\363\112\316\031\053\335
\307\216\234\254
```

END

CKA\_CERT\_MD5\_HASH  
MULTILINE\_OCTAL  
\151\301\015\117\007\243\033\303\376\126\075\004\274\021\366\246  
END

CKA\_ISSUER MULTILINE\_OCTAL  
\060\153\061\013\060\011\006\003\125\004\006\023\002\111\124\061  
\016\060\014\006\003\125\004\007\014\005\115\151\154\141\156\061  
\043\060\041\006\003\125\004\012\014\032\101\143\164\141\154\151  
\163\040\123\056\160\056\101\056\057\060\063\063\065\070\065\062  
\060\071\066\067\061\047\060\045\006\003\125\004\003\014\036\101  
\143\164\141\154\151\163\040\101\165\164\150\145\156\164\151\143  
\141\164\151\157\156\040\122\157\157\164\040\103\101  
END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL  
\002\010\127\012\021\227\102\304\343\314  
END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR  
CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR  
CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR  
CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#  
# Certificate "Buypass Class 2 Root  
CA"  
#  
# Issuer: CN=Buypass Class 2 Root CA,O=Buypass AS-983163327,C=NO  
# Serial Number: 2 (0x2)  
# Subject: CN=Buypass Class 2 Root CA,O=Buypass AS-983163327,C=NO  
# Not Valid Before: Tue Oct 26 08:38:03 2010  
# Not Valid After : Fri Oct 26 08:38:03 2040  
# Fingerprint (SHA-256):  
9A:11:40:25:19:7C:5B:B9:5D:94:E6:3D:55:CD:43:79:08:47:B6:46:B2:3C:DF:11:AD:A4:A0:0E:FF:15:FB:48  
# Fingerprint (SHA1): 49:0A:75:74:DE:87:0A:47:FE:58:EE:F6:C7:6B:EB:C6:0B:12:40:99

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE  
CKA\_TOKEN CK\_BBOOL CK\_TRUE  
CKA\_PRIVATE CK\_BBOOL CK\_FALSE  
CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE  
CKA\_LABEL UTF8 "Buypass Class 2 Root CA"  
CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509  
CKA\_SUBJECT MULTILINE\_OCTAL  
\060\116\061\013\060\011\006\003\125\004\006\023\002\116\117\061  
\035\060\033\006\003\125\004\012\014\024\102\165\171\160\141\163  
\163\040\101\123\055\071\070\063\061\066\063\063\062\067\061\040  
\060\036\006\003\125\004\003\014\027\102\165\171\160\141\163\163  
\040\103\154\141\163\163\040\062\040\122\157\157\164\040\103\101  
END  
CKA\_ID

UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\116\061\013\060\011\006\003\125\004\006\023\002\116\117\061  
\035\060\033\006\003\125\004\012\014\024\102\165\171\160\141\163  
\163\040\101\123\055\071\070\063\061\066\063\063\062\067\061\040  
\060\036\006\003\125\004\003\014\027\102\165\171\160\141\163\163  
\040\103\154\141\163\163\040\062\040\122\157\157\164\040\103\101  
END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\001\002

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\131\060\202\003\101\240\003\002\001\002\002\001\002  
\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060  
\116\061\013\060\011\006\003\125\004\006\023\002\116\117\061\035  
\060\033\006\003\125\004\012\014\024\102\165\171\160\141\163\163  
\040\101\123\055\071\070\063\061\066\063\063\062\067\061\040\060  
\036\006\003\125\004\003\014\027\102\165\171\160\141\163\163\040  
\103\154\141\163\163\040\062\040\122\157\157\164\040\103\101\060  
\036\027\015\061\060\061\060\062\066\060\070\063\070\060\063\132  
\027\015\064\060\061\060\062\066\060\070\063\070\060\063\132\060  
\116\061\013\060\011\006\003\125\004\006\023\002\116\117\061\035  
\060\033\006\003\125\004\012\014\024\102\165\171\160\141\163\163  
\040\101\123\055\071\070\063\061\066\063\063\062\067\061\040\060  
\036\006\003\125\004\003\014\027\102\165\171\160\141\163\163\040  
\103\154\141\163\163\040\062\040\122\157\157\164\040\103\101\060  
\202\002\042\060\015\006\011\052\206\110\206\367\015\001\001\001  
\005\000\003\202\002\017\000\060\202\002\012\002\202\002\001\000  
\327\307\136\367\301\007\324\167\373\103\041\364\364\365\151\344  
\356\062\001\333\243\206\037\344\131\015\272\347\165\203\122\353  
\352\034\141\025\110\273\035\007\312\214\256\260\334\226\235\352  
\303\140\222\206\202\050\163\234\126\006\377\113\144\360\014\052  
\067\111\265\345\317\014\174\356\361\112\273\163\060\145\363\325  
\057\203\266\176\343\347\365\236\253\140\371\323\361\235\222\164  
\212\344\034\226\254\133\200\351\265\364\061\207\243\121\374\307  
\176\241\157\216\123\167\324\227\301\125\063\222\076\030\057\165  
\324\255\206\111\313\225\257\124\006\154\330\006\023\215\133\377  
\341\046\031\131\300\044\272\201\161\171\220\104\120\150\044\224  
\137\270\263\021\361\051\101\141\243\101\313\043\066\325\301\361  
\062\120\020\116\177\364\206\223\354\204\323\216\274\113\277\134  
\001\116\007\075\334\024\212\224\012\244\352\163\373\013\121\350  
\023\007\030\372\016\361\053\321\124\025\175\074\341\367\264\031  
\102\147\142\136\167\340\242\125\354\266\331\151\027\325\072\257  
\104\355\112\305\236\344\172\047\174\345\165\327\252\313\045\347  
\337\153\012\333\017\115\223\116\250\240\315\173\056\362\131\001  
\152\267\015\270\007\201\176\213\070\033\070\346\012\127\231\075  
\356\041\350\243\365\014\026\335\213\354\064\216\234\052\034\000  
\025\027\215\150\203\322\160\237\030\010\315\021\150\325\311\153

\122\315\304\106\217\334\265\363\330\127\163\036\351\224\071\004  
\277\323\336\070\336\264\123\354\151\034\242\176\304\217\344\033  
\160\255\362\242\371\373\367\026\144\146\151\237\111\121\242\342  
\025\030\147\006\112\177\325\154\265\115\263\063\340\141\353\135  
\276\351\230\017\062\327\035\113\074\056\132\001\122\221\011\362  
\337\352\215\330\006\100\143\252\021\344\376\303\067\236\024\122  
\077\364\342\314\362\141\223\321\375\147\153\327\122\256\277\150  
\253\100\103\240\127\065\123\170\360\123\370\141\102\007\144\306  
\327\157\233\114\070\015\143\254\142\257\066\213\242\163\012\015  
\365\041\275\164\252\115\352\162\003\111\333\307\137\035\142\143  
\307\375\335\221\354\063\356\365\155\264\156\060\150\336\310\326  
\046\260\165\136\173\264\007\040\230\241\166\062\270\115\154\117  
\002\003\001\000\001\243\102\060\100\060\017\006\003\125\035\023  
\001\001\377\004\005\060\003\001\001\377\060\035\006\003\125\035  
\016\004\026\004\024\311\200\167\340\142\222\202\365\106\234\363  
\272\367\114\303\336\270\243\255\071\060\016\006\003\125\035\017  
\001\001\377\004\004\003\002\001\006\060\015\006\011\052\206\110  
\206\367\015\001\001\013\005\000\003\202\002\001\000\123\137\041  
\365\272\260\072\122\071\054\222\260\154\000\311\357\316\040\357  
\006\362\226\236\351\244\164\177\172\026\374\267\365\266\373\025  
\033\077\253\246\300\162\135\020\261\161\356\274\117\343\255\254  
\003\155\056\161\056\257\304\343\255\243\275\014\021\247\264\377  
\112\262\173\020\020\037\247\127\101\262\300\256\364\054\131\326  
\107\020\210\363\041\121\051\060\312\140\206\257\106\253\035\355  
\072\133\260\224\336\104\343\101\010\242\301\354\035\326\375\117  
\266\326\107\320\024\013\312\346\312\265\173\167\176\101\037\136  
\203\307\266\214\071\226\260\077\226\201\101\157\140\220\342\350  
\371\373\042\161\331\175\263\075\106\277\264\204\257\220\034\017  
\217\022\152\257\357\356\036\172\256\002\112\212\027\053\166\376  
\254\124\211\044\054\117\077\266\262\247\116\214\250\221\227\373  
\051\306\173\134\055\271\313\146\266\267\250\133\022\121\205\265  
\011\176\142\170\160\376\251\152\140\266\035\016\171\014\375\312  
\352\044\200\162\303\227\077\362\167\253\103\042\012\307\353\266  
\014\204\202\054\200\153\101\212\010\300\353\245\153\337\231\022  
\313\212\325\136\200\014\221\340\046\010\066\110\305\372\070\021  
\065\377\045\203\055\362\172\277\332\375\216\376\245\313\105\054  
\037\304\210\123\256\167\016\331\232\166\305\216\054\035\243\272  
\325\354\062\256\300\252\254\367\321\172\115\353\324\007\342\110  
\367\042\216\260\244\237\152\316\216\262\262\140\364\243\042\320  
\043\353\224\132\172\151\335\017\277\100\127\254\153\131\120\331  
\243\231\341\156\376\215\001\171\047\043\025\336\222\235\173\011  
\115\132\347\113\110\060\132\030\346\012\155\346\217\340\322\273  
\346\337\174\156\041\202\301\150\071\115\264\230\130\146\142\314  
\112\220\136\303\372\047\004\261\171\025\164\231\314\276\255\040  
\336\046\140\034\353\126\121\246\243\352\344\243\077\247\377\141  
\334\361\132\115\154\062\043\103\356\254\250\356\356\112\022\011  
\074\135\161\302\276\171\372\302\207\150\035\013\375\134\151\314  
\006\320\232\175\124\231\052\311\071\032\031\257\113\052\103\363

\143\135\132\130\342\057\343\035\344\251\326\320\012\320\236\277

\327\201\011\361\311\307\046\015\254\230\026\126\240

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "Buypass Class 2 Root CA"

# Issuer: CN=Buypass Class 2 Root CA,O=Buypass AS-983163327,C=NO

# Serial Number: 2 (0x2)

# Subject: CN=Buypass Class 2 Root CA,O=Buypass AS-983163327,C=NO

# Not Valid Before: Tue Oct 26 08:38:03 2010

# Not Valid After : Fri Oct 26 08:38:03 2040

# Fingerprint (SHA-256):

9A:11:40:25:19:7C:5B:B9:5D:94:E6:3D:55:CD:43:79:08:47:B6:46:B2:3C:DF:11:AD:A4:A0:0E:FF:15:FB:48

# Fingerprint (SHA1): 49:0A:75:74:DE:87:0A:47:FE:58:EE:F6:C7:6B:EB:C6:0B:12:40:99

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Buypass Class 2 Root CA"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\111\012\165\164\336\207\012\107\376\130\356\366\307\153\353\306

\013\022\100\231

END

CKA\_CERT\_MD5\_HASH

MULTILINE\_OCTAL

\106\247\322\376\105\373\144\132\250\131\220\233\170\104\233\051

END

CKA\_ISSUER MULTILINE\_OCTAL

\060\116\061\013\060\011\006\003\125\004\006\023\002\116\117\061

\035\060\033\006\003\125\004\012\014\024\102\165\171\160\141\163

\163\040\101\123\055\071\070\063\061\066\063\063\062\067\061\040

\060\036\006\003\125\004\003\014\027\102\165\171\160\141\163\163

\040\103\154\141\163\163\040\062\040\122\157\157\164\040\103\101

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\001\002

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "Buypass Class 3 Root CA"

#

```
# Issuer: CN=Buypass Class 3 Root CA,O=Buypass AS-983163327,C=NO
# Serial Number: 2 (0x2)
# Subject: CN=Buypass Class 3 Root CA,O=Buypass AS-983163327,C=NO
# Not Valid Before: Tue Oct 26 08:28:58 2010
# Not Valid After : Fri Oct 26 08:28:58
2040
# Fingerprint (SHA-256):
ED:F7:EB:BC:A2:7A:2A:38:4D:38:7B:7D:40:10:C6:66:E2:ED:B4:84:3E:4C:29:B4:AE:1D:5B:93:32:E6:B2:4D
# Fingerprint (SHA1): DA:FA:F7:FA:66:84:EC:06:8F:14:50:BD:C7:C2:81:A5:BC:A9:64:57
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Buypass Class 3 Root CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\116\061\013\060\011\006\003\125\004\006\023\002\116\117\061
\035\060\033\006\003\125\004\012\014\024\102\165\171\160\141\163
\163\040\101\123\055\071\070\063\061\066\063\063\062\067\061\040
\060\036\006\003\125\004\003\014\027\102\165\171\160\141\163\163
\040\103\154\141\163\163\040\063\040\122\157\157\164\040\103\101
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\116\061\013\060\011\006\003\125\004\006\023\002\116\117\061
\035\060\033\006\003\125\004\012\014\024\102\165\171\160\141\163
\163\040\101\123\055\071\070\063\061\066\063\063\062\067\061\040
\060\036\006\003\125\004\003\014\027\102\165\171\160\141\163\163
\040\103\154\141\163\163\040\063\040\122\157\157\164\040\103\101
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\001\002
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\131\060\202\003\101\240\003\002\001\002\002\001\002
\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060
\116\061\013\060\011\006\003\125\004\006\023\002\116\117\061\035
\060\033\006\003\125\004\012\014\024\102\165\171\160\141\163\163
\040\101\123\055\071\070\063\061\066\063\063\062\067\061\040\060
\036\006\003\125\004\003\014\027\102\165\171\160\141\163\163\040
\103\154\141\163\163\040\063\040\122\157\157\164\040\103\101\060
\036\027\015\061\060\061\060\062\066\060\070\062\070\065\070\132
\027\015\064\060\061\060\062\066\060\070\062\070\065\070\132\060
\116\061\013\060\011\006\003\125\004\006\023\002\116\117\061\035
\060\033\006\003\125\004\012\014\024\102\165\171\160\141\163\163
\040\101\123\055\071\070\063\061\066\063\063\062\067\061\040\060
\036\006\003\125\004\003\014\027\102\165\171\160\141\163\163\040
```



\103\154\141\163\163\040\063\040\122\157\157\164\040\103\101\060  
\202\002\042\060\015\006\011\052\206\110\206\367\015\001\001\001  
\005\000\003\202\002\017\000\060\202\002\012\002\202\002\001\000  
\245\332\012\225\026\120\343\225\362\136\235\166\061\006\062\172  
\233\361\020\166\270\000\232\265\122\066\315\044\107\260\237\030  
\144\274\232\366\372\325\171\330\220\142\114\042\057\336\070\075  
\326\340\250\351\034\054\333\170\021\351\216\150\121\025\162\307  
\363\063\207\344\240\135\013\134\340\127\007\052\060\365\315\304  
\067\167\050\115\030\221\346\277\325\122\375\161\055\160\076\347  
\306\304\212\343\360\050\013\364\166\230\241\213\207\125\262\072  
\023\374\267\076\047\067\216\042\343\250\117\052\357\140\273\075  
\267\071\303\016\001\107\231\135\022\117\333\103\372\127\241\355  
\371\235\276\021\107\046\133\023\230\253\135\026\212\260\067\034  
\127\235\105\377\210\226\066\277\273\312\007\173\157\207\143\327  
\320\062\152\326\135\154\014\361\263\156\071\342\153\061\056\071  
\000\047\024\336\070\300\354\031\146\206\022\350\235\162\026\023  
\144\122\307\251\067\034\375\202\060\355\204\030\035\364\256\134  
\377\160\023\000\353\261\365\063\172\113\326\125\370\005\215\113  
\151\260\365\263\050\066\134\024\304\121\163\115\153\013\361\064  
\007\333\027\071\327\334\050\173\153\365\237\363\056\301\117\027  
\052\020\363\314\312\350\353\375\153\253\056\232\237\055\202\156  
\004\324\122\001\223\055\075\206\374\176\374\337\357\102\035\246  
\153\357\271\040\306\367\275\240\247\225\375\247\346\211\044\330  
\314\214\064\154\342\043\057\331\022\032\041\271\125\221\157\013  
\221\171\031\014\255\100\210\013\160\342\172\322\016\330\150\110  
\273\202\023\071\020\130\351\330\052\007\306\022\333\130\333\322  
\073\125\020\107\005\025\147\142\176\030\143\246\106\077\011\016  
\124\062\136\277\015\142\172\047\357\200\350\333\331\113\006\132  
\067\132\045\320\010\022\167\324\157\011\120\227\075\310\035\303  
\337\214\105\060\126\306\323\144\253\146\363\300\136\226\234\303  
\304\357\303\174\153\213\072\171\177\263\111\317\075\342\211\237  
\240\060\113\205\271\234\224\044\171\217\175\153\251\105\150\017  
\053\320\361\332\034\313\151\270\312\111\142\155\310\320\143\142  
\335\140\017\130\252\217\241\274\005\245\146\242\317\033\166\262  
\204\144\261\114\071\122\300\060\272\360\214\113\002\260\266\267  
\002\003\001\000\001\243\102\060\100\060\017\006\003\125\035\023  
\001\001\377\004\005\060\003\001\001\377\060\035\006\003\125\035  
\016\004\026\004\024\107\270\315\377\345\157\356\370\262\354\057  
\116\016\371\045\260\216\074\153\303\060\016\006\003\125\035\017  
\001\001\377\004\004\003\002\001\006\060\015\006\011\052\206\110  
\206\367\015\001\001\013\005\000\003\202\002\001\000\000\040\043  
\101\065\004\220\302\100\142\140\357\342\065\114\327\077\254\342  
\064\220\270\241\157\166\372\026\026\244\110\067\054\351\220\302  
\362\074\370\012\237\330\201\345\273\133\332\045\054\244\247\125  
\161\044\062\366\310\013\362\274\152\370\223\254\262\007\302\137  
\237\333\314\310\212\252\276\152\157\341\111\020\314\061\327\200  
\273\273\310\330\242\016\144\127\352\242\365\302\251\061\025\322  
\040\152\354\374\042\001\050\317\206\270\200\036\251\314\021\245

\074\362\026\263\107\235\374\322\200\041\304\313\320\107\160\101  
\241\312\203\031\010\054\155\362\135\167\234\212\024\023\324\066  
\034\222\360\345\006\067\334\246\346\220\233\070\217\134\153\033  
\106\206\103\102\137\076\001\007\123\124\135\145\175\367\212\163  
\241\232\124\132\037\051\103\024\047\302\205\017\265\210\173\032  
\073\224\267\035\140\247\265\234\347\051\151\127\132\233\223\172  
\103\060\033\003\327\142\310\100\246\252\374\144\344\112\327\221  
\123\001\250\040\210\156\234\137\104\271\313\140\201\064\354\157  
\323\175\332\110\137\353\264\220\274\055\251\034\013\254\034\325  
\242\150\040\200\004\326\374\261\217\057\273\112\061\015\112\206  
\034\353\342\066\051\046\365\332\330\304\362\165\141\317\176\256  
\166\143\112\172\100\145\223\207\370\036\200\214\206\345\206\326  
\217\016\374\123\054\140\350\026\141\032\242\076\103\173\315\071  
\140\124\152\365\362\211\046\001\150\203\110\242\063\350\311\004  
\221\262\021\064\021\076\352\320\103\031\037\003\223\220\014\377  
\121\075\127\364\101\156\341\313\240\276\353\311\143\315\155\314  
\344\370\066\252\150\235\355\275\135\227\160\104\015\266\016\065  
\334\341\014\135\273\240\121\224\313\176\026\353\021\057\243\222  
\105\310\114\161\331\274\311\231\122\127\106\057\120\317\275\065  
\151\364\075\025\316\006\245\054\017\076\366\201\272\224\273\303  
\273\277\145\170\322\206\171\377\111\073\032\203\014\360\336\170  
\354\310\362\115\114\032\336\202\051\370\301\132\332\355\356\346  
\047\136\350\105\320\235\034\121\250\150\253\104\343\320\213\152  
\343\370\073\273\334\115\327\144\362\121\276\346\252\253\132\351  
\061\356\006\274\163\277\023\142\012\237\307\271\227

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "Buypass Class 3 Root CA"

#

Issuer: CN=Buypass Class 3 Root CA,O=Buypass AS-983163327,C=NO

# Serial Number: 2 (0x2)

# Subject: CN=Buypass Class 3 Root CA,O=Buypass AS-983163327,C=NO

# Not Valid Before: Tue Oct 26 08:28:58 2010

# Not Valid After : Fri Oct 26 08:28:58 2040

# Fingerprint (SHA-256):

ED:F7:EB:BC:A2:7A:2A:38:4D:38:7B:7D:40:10:C6:66:E2:ED:B4:84:3E:4C:29:B4:AE:1D:5B:93:32:E6:B2:4D

# Fingerprint (SHA1): DA:FA:F7:FA:66:84:EC:06:8F:14:50:BD:C7:C2:81:A5:BC:A9:64:57

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Buypass Class 3 Root CA"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\332\372\367\372\146\204\354\006\217\024\120\275\307\302\201\245

```
\274\251\144\127
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\075\073\030\236\054\144\132\350\325\210\316\016\371\067\302\354
END
CKA_ISSUER MULTILINE_OCTAL
\060\116\061\013\060\011\006\003\125\004\006\023\002\116\117\061
\035\060\033\006\003\125\004\012\014\024\102\165\171\160\141\163
\163\040\101\123\055\071\070\063\061\066\063\063\062\067\061\040
\060\036\006\003\125\004\003\014\027\102\165\171\160\141\163\163
\040\103\154\141\163\163\040\063\040\122\157\157\164\040\103\101
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\001\002
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "T-TeleSec GlobalRoot Class 3"
#
# Issuer: CN=T-TeleSec GlobalRoot Class 3,OU=T-Systems Trust Center,O=T-Systems Enterprise Services
GmbH,C=DE
# Serial Number: 1 (0x1)
# Subject: CN=T-TeleSec GlobalRoot Class 3,OU=T-Systems Trust Center,O=T-Systems Enterprise Services
GmbH,C=DE
# Not Valid Before: Wed Oct 01 10:29:56 2008
# Not Valid After : Sat Oct 01 23:59:59 2033
# Fingerprint (SHA-256):
FD:73:DA:D3:1C:64:4F:F1:B4:3B:EF:0C:CD:DA:96:71:0B:9C:D9:87:5E:CA:7E:31:70:7A:F3:E9:6D:52:2B:BD
# Fingerprint (SHA1):
55:A6:72:3E:CB:F2:EC:CD:C3:23:74:70:19:9D:2A:BE:11:E3:81:D1
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "T-TeleSec GlobalRoot Class 3"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\202\061\013\060\011\006\003\125\004\006\023\002\104\105
\061\053\060\051\006\003\125\004\012\014\042\124\055\123\171\163
\164\145\155\163\040\105\156\164\145\162\160\162\151\163\145\040
\123\145\162\166\151\143\145\163\040\107\155\142\110\061\037\060
\035\006\003\125\004\013\014\026\124\055\123\171\163\164\145\155
\163\040\124\162\165\163\164\040\103\145\156\164\145\162\061\045
```

\060\043\006\003\125\004\003\014\034\124\055\124\145\154\145\123  
\145\143\040\107\154\157\142\141\154\122\157\157\164\040\103\154  
\141\163\163\040\063

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\202\061\013\060\011\006\003\125\004\006\023\002\104\105  
\061\053\060\051\006\003\125\004\012\014\042\124\055\123\171\163  
\164\145\155\163\040\105\156\164\145\162\160\162\151\163\145\040  
\123\145\162\166\151\143\145\163\040\107\155\142\110\061\037\060  
\035\006\003\125\004\013\014\026\124\055\123\171\163\164\145\155  
\163\040\124\162\165\163\164\040\103\145\156\164\145\162\061\045  
\060\043\006\003\125\004\003\014\034\124\055\124\145\154\145\123  
\145\143\040\107\154\157\142\141\154\122\157\157\164\040\103\154  
\141\163\163\040\063

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\001\001

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\303\060\202\002\253\240\003\002\001\002\002\001\001  
\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060  
\201\202\061\013\060\011\006\003\125\004\006\023\002\104\105\061  
\053\060\051\006\003\125\004\012\014\042\124\055\123\171\163\164  
\145\155\163\040\105\156\164\145\162\160\162\151\163\145\040\123  
\145\162\166\151\143\145\163\040\107\155\142\110\061\037\060\035  
\006\003\125\004\013\014\026\124\055\123\171\163\164\145\155\163  
\040\124\162\165\163\164\040\103\145\156\164\145\162\061\045\060  
\043\006\003\125\004\003\014\034\124\055\124\145\154\145\123\145  
\143\040\107\154\157\142\141\154\122\157\157\164\040\103\154\141  
\163\163\040\063\060\036\027\015\060\070\061\060\060\061\061\060  
\062\071\065\066\132\027\015\063\063\061\060\060\061\062\063\065  
\071\065\071\132\060\201\202\061\013\060\011\006\003\125\004\006  
\023\002\104\105\061\053\060\051\006\003\125\004\012\014\042\124  
\055\123\171\163\164\145\155\163\040\105\156\164\145\162\160\162  
\151\163\145\040\123\145\162\166\151\143\145\163\040\107\155\142  
\110\061\037\060\035\006\003\125\004\013\014\026\124\055\123\171  
\163\164\145\155\163\040\124\162\165\163\164\040\103\145\156\164  
\145\162\061\045\060\043\006\003\125\004\003\014\034\124\055\124  
\145\154\145\123\145\143\040\107\154\157\142\141\154\122\157\157  
\164\040\103\154\141\163\163\040\063\060\202\001\042\060\015\006  
\011\052\206\110\206\367\015\001\001\001\005\000\003\202\001\017  
\000\060\202\001\012\002\202\001\001\000\275\165\223\360\142\042  
\157\044\256\340\172\166\254\175\275\331\044\325\270\267\374\315  
\360\102\340\353\170\210\126\136\233\232\124\035\115\014\212\366  
\323\317\160\364\122\265\330\223\004\343\106\206\161\101\112\053  
\360\052\054\125\003\326\110\303\340\071\070\355\362\134\074\077

\104\274\223\075\141\253\116\315\015\276\360\040\047\130\016\104  
\177\004\032\207\245\327\226\024\066\220\320\111\173\241\165\373  
\032\153\163\261\370\316\251\011\054\362\123\325\303\024\104\270  
\206\245\366\213\053\071\332\243\063\124\331\372\162\032\367\042  
\025\034\210\221\153\177\146\345\303\152\200\260\044\363\337\206  
\105\210\375\031\177\165\207\037\037\261\033\012\163\044\133\271  
\145\340\054\124\310\140\323\146\027\077\341\314\124\063\163\221  
\002\072\246\177\173\166\071\242\037\226\266\070\256\265\310\223  
\164\035\236\271\264\345\140\235\057\126\321\340\353\136\133\114  
\022\160\014\154\104\040\253\021\330\364\031\366\322\234\122\067  
\347\372\266\302\061\073\112\324\024\231\255\307\032\365\135\137  
\372\007\270\174\015\037\326\203\036\263\002\003\001\000\001\243  
\102\060\100\060\017\006\003\125\035\023\001\001\377\004\005\060  
\003\001\001\377\060\016\006\003\125\035\017\001\001\377\004\004  
\003\002\001\006\060\035\006\003\125\035\016\004\026\004\024\265  
\003\367\166\073\141\202\152\022\252\030\123\353\003\041\224\277  
\376\316\312\060\015\006\011\052\206\110\206\367\015\001\001\013  
\005\000\003\202\001\001\000\126\075\357\224\325\275\332\163\262  
\130\276\256\220\255\230\047\227\376\001\261\260\122\000\270\115  
\344\033\041\164\033\176\300\356\136\151\052\045\257\134\326\035  
\332\322\171\311\363\227\051\340\206\207\336\004\131\017\361\131  
\324\144\205\113\231\257\045\004\036\311\106\251\227\336\202\262  
\033\160\237\234\366\257\161\061\335\173\005\245\054\323\271\312  
\107\366\312\362\366\347\255\271\110\077\274\026\267\301\155\364  
\352\011\257\354\363\265\347\005\236\246\036\212\123\121\326\223  
\201\314\164\223\366\271\332\246\045\005\164\171\132\176\100\076  
\202\113\046\021\060\156\341\077\101\307\107\000\065\325\365\323  
\367\124\076\201\075\332\111\152\232\263\357\020\075\346\353\157  
\321\310\042\107\313\314\317\001\061\222\331\030\343\042\276\011  
\036\032\076\132\262\344\153\014\124\172\175\103\116\270\211\245  
\173\327\242\075\226\206\314\362\046\064\055\152\222\235\232\032  
\320\060\342\135\116\004\260\137\213\040\176\167\301\075\225\202  
\321\106\232\073\074\170\270\157\241\320\015\144\242\170\036\051  
\116\223\303\244\124\024\133

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "T-TeleSec GlobalRoot Class 3"

# Issuer: CN=T-TeleSec GlobalRoot Class 3,OU=T-Systems Trust Center,O=T-Systems Enterprise Services GmbH,C=DE

# Serial Number: 1 (0x1)

# Subject: CN=T-TeleSec GlobalRoot Class 3,OU=T-Systems Trust Center,O=T-Systems Enterprise Services GmbH,C=DE

# Not Valid Before: Wed Oct 01 10:29:56 2008

# Not Valid After : Sat Oct 01 23:59:59 2033

```

# Fingerprint (SHA-256):
FD:73:DA:D3:1C:64:4F:F1:B4:3B:EF:0C:CD:DA:96:71:0B:9C:D9:87:5E:CA:7E:31:70:7A:F3:E9:6D:52:2B:BD
# Fingerprint (SHA1): 55:A6:72:3E:CB:F2:EC:CD:C3:23:74:70:19:9D:2A:BE:11:E3:81:D1
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "T-TeleSec GlobalRoot Class 3"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\125\246\162\076\313\362\354\315\303\043\164\160\031\235\052\276
\021\343\201\321
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\312\373\100\250\116\071\222\212\035\376\216\057\304\047\352\357
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\202\061\013\060\011\006\003\125\004\006\023\002\104\105
\061\053\060\051\006\003\125\004\012\014\042\124\055\123\171\163
\164\145\155\163\040\105\156\164\145\162\160\162\151\163\145\040
\123\145\162\166\151\143\145\163\040\107\155\142\110\061\037\060
\035\006\003\125\004\013\014\026\124\055\123\171\163\164\145\155
\163\040\124\162\165\163\164\040\103\145\156\164\145\162\061\045
\060\043\006\003\125\004\003\014\034\124\055\124\145\154\145\123
\145\143\040\107\154\157\142\141\154\122\157\157\164\040\103\154
\141\163\163\040\063
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\001\001
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "D-TRUST Root Class 3 CA 2 2009"
#
# Issuer: CN=D-TRUST Root Class 3 CA 2 2009,O=D-Trust GmbH,C=DE
# Serial Number: 623603 (0x983f3)
# Subject: CN=D-TRUST Root Class 3 CA 2 2009,O=D-Trust GmbH,C=DE
# Not Valid Before: Thu Nov 05 08:35:58 2009
# Not Valid After : Mon Nov 05 08:35:58 2029
# Fingerprint (SHA-256):
49:E7:A4:42:AC:F0:EA:62:87:05:00:54:B5:25:64:B6:50:E4:F4:9E:42:E3:48:D6:AA:38:E0:39:E9:57:B1:C1
# Fingerprint (SHA1): 58:E8:AB:B0:36:15:33:FB:80:F7:9B:1B:6D:29:D3:FF:8D:5F:00:F0
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL

```

```
CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "D-TRUST Root Class 3 CA 2 2009"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\115\061\013\060\011\006\003\125\004\006\023\002\104\105\061
\025\060\023\006\003\125\004\012\014\014\104\055\124\162\165\163
\164\040\107\155\142\110\061\047\060\045\006\003\125\004\003\014
\036\104\055\124\122\125\123\124\040\122\157\157\164\040\103\154
\141\163\163\040\063\040\103\101\040\062\040\062\060\060\071
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\115\061\013\060\011\006\003\125\004\006\023\002\104\105\061
\025\060\023\006\003\125\004\012\014\014\104\055\124\162\165\163
\164\040\107\155\142\110\061\047\060\045\006\003\125\004\003\014
\036\104\055\124\122\125\123\124\040\122\157\157\164\040\103\154
\141\163\163\040\063\040\103\101\040\062\040\062\060\060\071
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\003\011\203\363
END
CKA_VALUE MULTILINE_OCTAL
\060\202\004\063\060\202\003\033\240\003\002\001\002\002\003\011
\203\363\060\015\006\011\052\206\110\206\367\015\001\001\013\005
\000\060\115\061\013\060\011\006\003\125\004\006\023\002\104\105
\061\025\060\023\006\003\125\004\012\014\014\104\055\124\162\165
\163\164\040\107\155\142\110\061\047\060\045\006\003\125\004\003
\014\036\104\055\124\122\125\123\124\040\122\157\157\164\040\103
\154\141\163\163\040\063\040\103\101\040\062\040\062\060\060\071
\060\036\027\015\060\071\061\061\060\065\060\070\063\065\065\070
\132\027\015\062\071\061\061\060\065\060\070\063\065\065\070\132
\060\115\061\013\060\011\006\003\125\004\006\023\002\104\105\061
\025\060\023\006\003\125\004\012\014\014\104\055\124\162\165\163
\164\040\107\155\142\110\061\047\060\045\006\003\125\004\003\014
\036\104\055\124\122\125\123\124\040\122\157\157\164\040\103\154
\141\163\163\040\063\040\103\101\040\062\040\062\060\060\071\060
\202\001\042\060\015\006\011\052\206\110\206\367\015\001\001\001
\005\000\003\202\001\017\000\060\202\001\012\002\202\001\001\000
\323\262\112\317\172\107\357\165\233\043\372\072\057\326\120\105
\211\065\072\306\153\333\376\333\000\150\250\340\003\021\035\067
\120\010\237\115\112\150\224\065\263\123\321\224\143\247\040\126
\257\336\121\170\354\052\075\363\110\110\120\076\012\337\106\125
\213\047\155\303\020\115\015\221\122\103\330\207\340\135\116\066
\265\041\312\137\071\100\004\137\133\176\314\243\306\053\251\100
\036\331\066\204\326\110\363\222\036\064\106\040\044\301\244\121
\216\112\032\357\120\077\151\135\031\177\105\303\307\001\217\121
```

\311\043\350\162\256\264\274\126\011\177\022\313\034\261\257\051  
\220\012\311\125\314\017\323\264\032\355\107\065\132\112\355\234  
\163\004\041\320\252\275\014\023\265\000\312\046\154\304\153\014  
\224\132\225\224\332\120\232\361\377\245\053\146\061\244\311\070  
\240\337\035\037\270\011\056\363\247\350\147\122\253\225\037\340  
\106\076\330\244\303\312\132\305\061\200\350\110\232\237\224\151  
\376\031\335\330\163\174\201\312\226\336\216\355\263\062\005\145  
\204\064\346\346\375\127\020\265\137\166\277\057\260\020\015\305  
\002\003\001\000\001\243\202\001\032\060\202\001\026\060\017\006  
\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060\035  
\006\003\125\035\016\004\026\004\024\375\332\024\304\237\060\336  
\041\275\036\102\071\374\253\143\043\111\340\361\204\060\016\006  
\003\125\035\017\001\001\377\004\004\003\002\001\006\060\201\323  
\006\003\125\035\037\004\201\313\060\201\310\060\201\200\240\176  
\240\174\206\172\154\144\141\160\072\057\057\144\151\162\145\143  
\164\157\162\171\056\144\055\164\162\165\163\164\056\156\145\164  
\057\103\116\075\104\055\124\122\125\123\124\045\062\060\122\157  
\157\164\045\062\060\103\154\141\163\163\045\062\060\063\045\062  
\060\103\101\045\062\060\062\045\062\060\062\060\060\071\054\117  
\075\104\055\124\162\165\163\164\045\062\060\107\155\142\110\054  
\103\075\104\105\077\143\145\162\164\151\146\151\143\141\164\145  
\162\145\166\157\143\141\164\151\157\156\154\151\163\164\060\103  
\240\101\240\077\206\075\150\164\164\160\072\057\057\167\167\167  
\056\144\055\164\162\165\163\164\056\156\145\164\057\143\162\154  
\057\144\055\164\162\165\163\164\137\162\157\157\164\137\143\154  
\141\163\163\137\063\137\143\141\137\062\137\062\060\060\071\056  
\143\162\154\060\015\006\011\052\206\110\206\367\015\001\001\013  
\005\000\003\202\001\001\000\177\227\333\060\310\337\244\234\175  
\041\172\200\160\316\024\022\151\210\024\225\140\104\001\254\262  
\351\060\117\233\120\302\146\330\176\215\060\265\160\061\351\342  
\151\307\363\160\333\040\025\206\320\015\360\276\254\001\165\204  
\316\176\237\115\277\267\140\073\234\363\312\035\342\136\150\330  
\243\235\227\345\100\140\322\066\041\376\320\264\270\027\332\164  
\243\177\324\337\260\230\002\254\157\153\153\054\045\044\162\241  
\145\356\045\132\345\346\062\347\362\337\253\111\372\363\220\151  
\043\333\004\331\347\134\130\374\145\324\227\276\314\374\056\012  
\314\045\052\065\004\370\140\221\025\165\075\101\377\043\037\031  
\310\154\353\202\123\004\246\344\114\042\115\215\214\272\316\133  
\163\354\144\124\120\155\321\234\125\373\151\303\066\303\214\274  
\074\205\246\153\012\046\015\340\223\230\140\256\176\306\044\227  
\212\141\137\221\216\146\222\011\207\066\315\213\233\055\076\366  
\121\324\120\324\131\050\275\203\362\314\050\173\123\206\155\330  
\046\210\160\327\352\221\315\076\271\312\300\220\156\132\306\136  
\164\145\327\134\376\243\342

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE



CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "D-TRUST Root Class 3 CA 2 2009"

# Issuer: CN=D-TRUST Root Class 3 CA 2 2009,O=D-Trust GmbH,C=DE

# Serial Number: 623603 (0x983f3)

# Subject: CN=D-TRUST Root Class 3 CA 2 2009,O=D-Trust GmbH,C=DE

# Not Valid Before: Thu Nov 05 08:35:58 2009

# Not Valid After : Mon Nov 05 08:35:58 2029

# Fingerprint (SHA-256):

49:E7:A4:42:AC:F0:EA:62:87:05:00:54:B5:25:64:B6:50:E4:F4:9E:42:E3:48:D6:AA:38:E0:39:E9:57:B1:C1

# Fingerprint (SHA1): 58:E8:AB:B0:36:15:33:FB:80:F7:9B:1B:6D:29:D3:FF:8D:5F:00:F0

CKA\_CLASS

CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "D-TRUST Root Class 3 CA 2 2009"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\130\350\253\260\066\025\063\373\200\367\233\033\155\051\323\377  
\215\137\000\360

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\315\340\045\151\215\107\254\234\211\065\220\367\375\121\075\057  
END

CKA\_ISSUER MULTILINE\_OCTAL

\060\115\061\013\060\011\006\003\125\004\006\023\002\104\105\061  
\025\060\023\006\003\125\004\012\014\014\104\055\124\162\165\163  
\164\040\107\155\142\110\061\047\060\045\006\003\125\004\003\014  
\036\104\055\124\122\125\123\124\040\122\157\157\164\040\103\154  
\141\163\163\040\063\040\103\101\040\062\040\062\060\060\071

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\003\011\203\363

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED

CK\_BBOOL CK\_FALSE

#

# Certificate "D-TRUST Root Class 3 CA 2 EV 2009"

#

# Issuer: CN=D-TRUST Root Class 3 CA 2 EV 2009,O=D-Trust GmbH,C=DE

# Serial Number: 623604 (0x983f4)

# Subject: CN=D-TRUST Root Class 3 CA 2 EV 2009,O=D-Trust GmbH,C=DE

# Not Valid Before: Thu Nov 05 08:50:46 2009

# Not Valid After : Mon Nov 05 08:50:46 2029

```
# Fingerprint (SHA-256):
EE:C5:49:6B:98:8C:E9:86:25:B9:34:09:2E:EC:29:08:BE:D0:B0:F3:16:C2:D4:73:0C:84:EA:F1:F3:D3:48:81
# Fingerprint (SHA1): 96:C9:1B:0B:95:B4:10:98:42:FA:D0:D8:22:79:FE:60:FA:B9:16:83
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "D-TRUST Root Class 3 CA 2 EV 2009"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\120\061\013\060\011\006\003\125\004\006\023\002\104\105\061
\025\060\023\006\003\125\004\012\014\014\104\055\124\162\165\163
\164\040\107\155\142\110\061\052\060\050\006\003\125\004\003\014
\041\104\055\124\122\125\123\124\040\122\157\157\164\040\103\154
\141\163\163\040\063\040\103\101\040\062\040\105\126\040\062\060
\060\071
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\120\061\013\060\011\006\003\125\004\006\023\002\104\105\061
\025\060\023\006\003\125\004\012\014\014\104\055\124\162\165\163
\164\040\107\155\142\110\061\052\060\050\006\003\125\004\003\014
\041\104\055\124\122\125\123\124\040\122\157\157\164\040\103\154
\141\163\163\040\063\040\103\101\040\062\040\105\126\040\062\060
\060\071
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\003\011\203\364
END
CKA_VALUE MULTILINE_OCTAL
\060\202\004\103\060\202\003\053\240\003\002\001\002\002\003\011
\203\364\060\015\006\011\052\206\110\206\367\015\001\001\013\005
\000\060\120\061\013\060\011\006\003\125\004\006\023\002\104\105
\061\025\060\023\006\003\125\004\012\014\014\104\055\124\162\165
\163\164\040\107\155\142\110\061\052\060\050\006\003\125\004\003
\014\041\104\055\124\122\125\123\124\040\122\157\157\164\040\103
\154\141\163\163\040\063\040\103\101\040\062\040\105\126\040\062
\060\060\071\060\036\027\015\060\071\061\061\060\065\060\070\065
\060\064\066\132\027\015\062\071\061\061\060\065\060\070\065\060
\064\066\132\060\120\061\013\060\011\006\003\125\004\006\023\002
\104\105\061\025\060\023\006\003\125\004\012\014\014\104\055\124
\162\165\163\164\040\107\155\142\110\061\052\060\050\006\003\125
\004\003\014\041\104\055\124\122\125\123\124\040\122\157\157\164
\040\103\154\141\163\163\040\063\040\103\101\040\062\040\105\126
\040\062\060\060\071\060\202\001\042\060\015\006\011\052\206\110
\206\367\015\001\001\001\005\000\003\202\001\017\000\060\202\001
\012\002\202\001\001\000\231\361\204\064\160\272\057\267\060\240
```

\216\275\174\004\317\276\142\274\231\375\202\227\322\172\012\147  
\226\070\011\366\020\116\225\042\163\231\215\332\025\055\347\005  
\374\031\163\042\267\216\230\000\274\074\075\254\241\154\373\326  
\171\045\113\255\360\314\144\332\210\076\051\270\017\011\323\064  
\335\063\365\142\321\341\315\031\351\356\030\117\114\130\256\342  
\036\326\014\133\025\132\330\072\270\304\030\144\036\343\063\262  
\265\211\167\116\014\277\331\224\153\023\227\157\022\243\376\231  
\251\004\314\025\354\140\150\066\355\010\173\267\365\277\223\355  
\146\061\203\214\306\161\064\207\116\027\352\257\213\221\215\034  
\126\101\256\042\067\136\067\362\035\331\321\055\015\057\151\121  
\247\276\146\246\212\072\052\275\307\032\261\341\024\360\276\072  
\035\271\317\133\261\152\376\264\261\106\040\242\373\036\073\160  
\357\223\230\175\214\163\226\362\305\357\205\160\255\051\046\374  
\036\004\076\034\240\330\017\313\122\203\142\174\356\213\123\225  
\220\251\127\242\352\141\005\330\371\115\304\047\372\156\255\355  
\371\327\121\367\153\245\002\003\001\000\001\243\202\001\044\060  
\202\001\040\060\017\006\003\125\035\023\001\001\377\004\005\060  
\003\001\001\377\060\035\006\003\125\035\016\004\026\004\024\323  
\224\212\114\142\023\052\031\056\314\257\162\212\175\066\327\232  
\034\334\147\060\016\006\003\125\035\017\001\001\377\004\004\003  
\002\001\006\060\201\335\006\003\125\035\037\004\201\325\060\201  
\322\060\201\207\240\201\204\240\201\201\206\177\154\144\141\160  
\072\057\057\144\151\162\145\143\164\157\162\171\056\144\055\164  
\162\165\163\164\056\156\145\164\057\103\116\075\104\055\124\122  
\125\123\124\045\062\060\122\157\157\164\045\062\060\103\154\141  
\163\163\045\062\060\063\045\062\060\103\101\045\062\060\062\045  
\062\060\105\126\045\062\060\062\060\060\071\054\117\075\104\055  
\124\162\165\163\164\045\062\060\107\155\142\110\054\103\075\104  
\105\077\143\145\162\164\151\146\151\143\141\164\145\162\145\166  
\157\143\141\164\151\157\156\154\151\163\164\060\106\240\104\240  
\102\206\100\150\164\164\160\072\057\057\167\167\167\056\144\055  
\164\162\165\163\164\056\156\145\164\057\143\162\154\057\144\055  
\164\162\165\163\164\137\162\157\157\164\137\143\154\141\163\163  
\137\063\137\143\141\137\062\137\145\166\137\062\060\060\071\056  
\143\162\154\060\015\006\011\052\206\110\206\367\015\001\001\013  
\005\000\003\202\001\001\000\064\355\173\132\074\244\224\210\357  
\032\021\165\007\057\263\376\074\372\036\121\046\353\207\366\051  
\336\340\361\324\306\044\011\351\301\317\125\033\264\060\331\316  
\032\376\006\121\246\025\244\055\357\262\113\277\040\050\045\111  
\321\246\066\167\064\350\144\337\122\261\021\307\163\172\315\071  
\236\302\255\214\161\041\362\132\153\257\337\074\116\125\257\262  
\204\145\024\211\271\167\313\052\061\276\317\243\155\317\157\110  
\224\062\106\157\347\161\214\240\246\204\031\067\007\362\003\105  
\011\053\206\165\174\337\137\151\127\000\333\156\330\246\162\042  
\113\120\324\165\230\126\337\267\030\377\103\103\120\256\172\104  
\173\360\171\121\327\103\075\247\323\201\323\360\311\117\271\332  
\306\227\206\320\202\303\344\102\155\376\260\342\144\116\016\046  
\347\100\064\046\265\010\211\327\010\143\143\070\047\165\036\063

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\352\156\250\335\237\231\117\164\115\201\211\200\113\335\232\227
\051\134\057\276\201\101\271\214\377\352\175\140\006\236\315\327
\075\323\056\243\025\274\250\346\046\345\157\303\334\270\003\041
\352\237\026\361\054\124\265
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "D-TRUST Root Class 3 CA 2 EV 2009"

# Issuer: CN=D-TRUST Root Class 3 CA 2 EV 2009,O=D-Trust GmbH,C=DE

# Serial Number: 623604 (0x983f4)

# Subject: CN=D-TRUST Root Class 3 CA 2 EV 2009,O=D-Trust GmbH,C=DE

# Not Valid Before: Thu Nov 05 08:50:46 2009

# Not Valid After : Mon Nov 05 08:50:46 2029

# Fingerprint (SHA-256):

EE:C5:49:6B:98:8C:E9:86:25:B9:34:09:2E:EC:29:08:BE:D0:B0:F3:16:C2:D4:73:0C:84:EA:F1:F3:D3:48:81

# Fingerprint (SHA1): 96:C9:1B:0B:95:B4:10:98:42:FA:D0:D8:22:79:FE:60:FA:B9:16:83

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "D-TRUST Root Class 3 CA 2 EV 2009"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\226\311\033\013\225\264\020\230\102\372\320\330\042\171\376\140
\372\271\026\203
```

END

CKA\_CERT\_MD5\_HASH

MULTILINE\_OCTAL

```
\252\306\103\054\136\055\315\304\064\300\120\117\021\002\117\266
```

END

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\120\061\013\060\011\006\003\125\004\006\023\002\104\105\061
\025\060\023\006\003\125\004\012\014\014\104\055\124\162\165\163
\164\040\107\155\142\110\061\052\060\050\006\003\125\004\003\014
\041\104\055\124\122\125\123\124\040\122\157\157\164\040\103\154
\141\163\163\040\063\040\103\101\040\062\040\105\126\040\062\060
\060\071
```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

```
\002\003\011\203\364
```

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

```

#
# Certificate "CA Disig Root R2"
#
# Issuer: CN=CA Disig Root R2,O=Disig a.s.,L=Bratislava,C=SK
# Serial Number:00:92:b8:88:db:b0:8a:c1:63
# Subject: CN=CA Disig Root R2,O=Disig a.s.,L=Bratislava,C=SK
# Not Valid Before: Thu
  Jul 19 09:15:30 2012
# Not Valid After : Sat Jul 19 09:15:30 2042
# Fingerprint (SHA-256):
E2:3D:4A:03:6D:7B:70:E9:F5:95:B1:42:20:79:D2:B9:1E:DF:BB:1F:B6:51:A0:63:3E:AA:8A:9D:C5:F8:07:03
# Fingerprint (SHA1): B5:61:EB:EA:A4:DE:E4:25:4B:69:1A:98:A5:57:47:C2:34:C7:D9:71
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "CA Disig Root R2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\122\061\013\060\011\006\003\125\004\006\023\002\123\113\061
\023\060\021\006\003\125\004\007\023\012\102\162\141\164\151\163
\154\141\166\141\061\023\060\021\006\003\125\004\012\023\012\104
\151\163\151\147\040\141\056\163\056\061\031\060\027\006\003\125
\004\003\023\020\103\101\040\104\151\163\151\147\040\122\157\157
\164\040\122\062
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\122\061\013\060\011\006\003\125\004\006\023\002\123\113\061
\023\060\021\006\003\125\004\007\023\012\102\162\141\164\151\163
\154\141\166\141\061\023\060\021\006\003\125\004\012\023\012\104
\151\163\151\147\040\141\056\163\056\061\031\060\027\006\003\125
\004\003\023\020\103\101\040\104\151\163\151\147\040\122\157\157
\164\040\122\062
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\011\000\222\270\210\333\260\212\301\143
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\151\060\202\003\121\240\003\002\001\002\002\011\000
\222\270\210\333\260\212\301\143\060\015\006\011\052\206\110\206
\367\015\001\001\013\005\000\060\122\061\013\060\011\006\003\125
\004\006\023\002\123\113\061\023\060\021\006\003\125\004\007\023
\012\102\162\141\164\151\163\154\141\166\141\061\023\060\021\006
\003\125\004\012\023\012\104\151\163\151\147\040\141\056\163\056
\061\031\060\027\006\003\125\004\003\023\020\103\101\040\104\151
\163\151\147\040\122\157\157\164\040\122\062\060\036\027\015\061

```

\062\060\067\061\071\060\071\061\065\063\060\132\027\015\064\062  
\060\067\061\071\060\071\061\065\063\060\132\060\122\061\013\060  
\011\006\003\125\004\006\023\002\123\113\061\023\060\021\006\003  
\125\004\007\023\012\102\162\141\164\151\163\154\141\166\141\061  
\023\060\021\006\003\125\004\012\023\012\104\151\163\151\147\040  
\141\056\163\056\061\031\060\027\006\003\125\004\003\023\020\103  
\101\040\104\151\163\151\147\040\122\157\157\164\040\122\062\060  
\202\002\042\060\015\006\011\052\206\110\206\367\015\001\001\001  
\005\000\003\202\002\017\000\060\202\002\012\002\202\002\001\000  
\242\243\304\000\011\326\205\135\055\155\024\366\302\303\163\236  
\065\302\161\125\176\201\373\253\106\120\340\301\174\111\170\346  
\253\171\130\074\332\377\174\034\237\330\227\002\170\076\153\101  
\004\351\101\275\276\003\054\105\366\057\144\324\253\135\243\107  
\075\144\233\351\150\232\306\314\033\077\272\276\262\213\064\002  
\056\230\125\031\374\214\157\252\137\332\114\316\115\003\041\243  
\330\322\064\223\126\226\313\114\014\000\026\074\137\032\315\310  
\307\154\246\255\323\061\247\274\350\345\341\146\326\322\373\003  
\264\101\145\311\020\256\016\005\143\306\200\152\151\060\375\322  
\356\220\357\015\047\337\237\225\163\364\341\045\332\154\026\336  
\101\070\064\352\213\374\321\350\004\024\141\055\101\176\254\307  
\167\116\313\121\124\373\136\222\030\033\004\132\150\306\311\304  
\372\267\023\240\230\267\021\053\267\326\127\314\174\236\027\321  
\313\045\376\206\116\044\056\126\014\170\115\236\001\022\246\053  
\247\001\145\156\174\142\035\204\204\337\352\300\153\265\245\052  
\225\203\303\123\021\014\163\035\013\262\106\220\321\102\072\316  
\100\156\225\255\377\306\224\255\156\227\204\216\175\157\236\212  
\200\015\111\155\163\342\173\222\036\303\363\301\363\353\056\005  
\157\331\033\317\067\166\004\310\264\132\344\027\247\313\335\166  
\037\320\031\166\350\054\005\263\326\234\064\330\226\334\141\207  
\221\005\344\104\010\063\301\332\271\010\145\324\256\262\066\015  
\353\272\070\272\014\345\233\236\353\215\146\335\231\317\326\211  
\101\366\004\222\212\051\051\155\153\072\034\347\165\175\002\161  
\016\363\300\347\275\313\031\335\235\140\262\302\146\140\266\261  
\004\356\311\346\206\271\232\146\100\250\347\021\355\201\105\003  
\213\366\147\131\350\301\006\021\275\335\317\200\002\117\145\100  
\170\134\107\120\310\233\346\037\201\173\344\104\250\133\205\232  
\342\336\132\325\307\371\072\104\146\113\344\062\124\174\344\154  
\234\263\016\075\027\242\262\064\022\326\176\262\250\111\273\321  
\172\050\100\276\242\026\037\337\344\067\037\021\163\373\220\012  
\145\103\242\015\174\370\006\001\125\063\175\260\015\270\364\365  
\256\245\102\127\174\066\021\214\173\136\304\003\235\214\171\235  
\002\003\001\000\001\243\102\060\100\060\017\006\003\125\035\023  
\001\001\377\004\005\060\003\001\001\377\060\016\006\003\125\035  
\017\001\001\377\004\004\003\002\001\006\060\035\006\003\125\035  
\016\004\026\004\024\265\231\370\257\260\224\365\343\040\326\012  
\255\316\116\126\244\056\156\102\355\060\015\006\011\052\206\110  
\206\367\015\001\001\013\005\000\003\202\002\001\000\046\006\136  
\160\347\145\063\310\202\156\331\234\027\072\033\172\146\262\001

\366\170\073\151\136\057\352\377\116\371\050\303\230\052\141\114  
\264\044\022\212\175\155\021\024\367\234\265\312\346\274\236\047  
\216\114\031\310\251\275\172\300\327\066\016\155\205\162\156\250  
\306\242\155\366\372\163\143\177\274\156\171\010\034\235\212\237  
\032\212\123\246\330\273\331\065\125\261\021\305\251\003\263\126  
\073\271\204\223\042\136\176\301\366\022\122\213\352\054\147\274  
\376\066\114\365\270\317\321\263\111\222\073\323\051\016\231\033  
\226\367\141\270\073\304\053\266\170\154\264\043\157\360\375\323  
\262\136\165\037\231\225\250\254\366\332\341\305\061\173\373\321  
\106\263\322\274\147\264\142\124\272\011\367\143\260\223\242\232  
\371\351\122\056\213\140\022\253\374\365\140\126\357\020\134\213  
\304\032\102\334\203\133\144\016\313\265\274\326\117\301\174\074  
\156\215\023\155\373\173\353\060\320\334\115\257\305\325\266\245  
\114\133\161\311\350\061\276\350\070\006\110\241\032\342\352\322  
\336\022\071\130\032\377\200\016\202\165\346\267\311\007\154\016  
\357\377\070\361\230\161\304\267\177\016\025\320\045\151\275\042  
\235\053\355\005\366\106\107\254\355\300\360\324\073\342\354\356  
\226\133\220\023\116\036\126\072\353\260\357\226\273\226\043\021  
\272\362\103\206\164\144\225\310\050\165\337\035\065\272\322\067  
\203\070\123\070\066\073\317\154\351\371\153\016\320\373\004\350  
\117\167\327\145\001\170\206\014\172\076\041\142\361\177\143\161  
\014\311\237\104\333\250\047\242\165\276\156\201\076\327\300\353  
\033\230\017\160\134\064\262\212\314\300\205\030\353\156\172\263  
\367\132\241\007\277\251\102\222\363\140\042\227\344\024\241\007  
\233\116\166\300\216\175\375\244\045\307\107\355\377\037\163\254  
\314\303\245\351\157\012\216\233\145\302\120\205\265\243\240\123  
\022\314\125\207\141\363\201\256\020\106\141\275\104\041\270\302  
\075\164\317\176\044\065\372\034\007\016\233\075\042\312\357\061  
\057\214\254\022\275\357\100\050\374\051\147\237\262\023\117\146  
\044\304\123\031\351\036\051\025\357\346\155\260\177\055\147\375  
\363\154\033\165\106\243\345\112\027\351\244\327\013

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "CA Disig Root R2"

# Issuer: CN=CA Disig Root R2,O=Disig a.s.,L=Bratislava,C=SK

# Serial Number:00:92:b8:88:db:b0:8a:c1:63

# Subject: CN=CA Disig Root R2,O=Disig a.s.,L=Bratislava,C=SK

# Not Valid Before: Thu Jul 19 09:15:30 2012

# Not Valid After : Sat Jul 19 09:15:30 2042

# Fingerprint (SHA-256):

E2:3D:4A:03:6D:7B:70:E9:F5:95:B1:42:20:79:D2:B9:1E:DF:BB:1F:B6:51:A0:63:3E:AA:8A:9D:C5:F8:07:03

# Fingerprint (SHA1): B5:61:EB:EA:A4:DE:E4:25:4B:69:1A:98:A5:57:47:C2:34:C7:D9:71

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

```

CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "CA Disig Root R2"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\265\141\353\352\244\336\344\045\113\151\032\230\245\127\107\302
\064\307\331\161
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\046\001\373\330\047\247\027\232\105\124\070\032\103\001\073\003
END
CKA_ISSUER
MULTILINE_OCTAL
\060\122\061\013\060\011\006\003\125\004\006\023\002\123\113\061
\023\060\021\006\003\125\004\007\023\012\102\162\141\164\151\163
\154\141\166\141\061\023\060\021\006\003\125\004\012\023\012\104
\151\163\151\147\040\141\056\163\056\061\031\060\027\006\003\125
\004\003\023\020\103\101\040\104\151\163\151\147\040\122\157\157
\164\040\122\062
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\011\000\222\270\210\333\260\212\301\143
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "ACCVRAIZ1"
#
# Issuer: C=ES,O=ACCV,OU=PKIACCV,CN=ACCVRAIZ1
# Serial Number:5e:c3:b7:a6:43:7f:a4:e0
# Subject: C=ES,O=ACCV,OU=PKIACCV,CN=ACCVRAIZ1
# Not Valid Before: Thu May 05 09:37:37 2011
# Not Valid After : Tue Dec 31 09:37:37 2030
# Fingerprint (SHA-256):
9A:6E:C0:12:E1:A7:DA:9D:BE:34:19:4D:47:8A:D7:C0:DB:18:22:FB:07:1D:F1:29:81:49:6E:D1:04:38:41:13
#
Fingerprint (SHA1): 93:05:7A:88:15:C6:4F:CE:88:2F:FA:91:16:52:28:78:BC:53:64:17
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "ACCVRAIZ1"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\102\061\022\060\020\006\003\125\004\003\014\011\101\103\103
\126\122\101\111\132\061\061\020\060\016\006\003\125\004\013\014

```



```
\007\120\113\111\101\103\103\126\061\015\060\013\006\003\125\004
\012\014\004\101\103\103\126\061\013\060\011\006\003\125\004\006
\023\002\105\123
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\102\061\022\060\020\006\003\125\004\003\014\011\101\103\103
\126\122\101\111\132\061\061\020\060\016\006\003\125\004\013\014
\007\120\113\111\101\103\103\126\061\015\060\013\006\003\125\004
\012\014\004\101\103\103\126\061\013\060\011\006\003\125\004\006
\023\002\105\123
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\010\136\303\267\246\103\177\244\340
END
CKA_VALUE MULTILINE_OCTAL
\060\202\007\323\060\202\005\273\240\003\002\001\002\002\010\136
\303\267\246\103\177\244\340\060\015\006\011\052\206\110\206\367
\015\001\001\005\005\000\060\102\061\022\060\020\006\003\125\004
\003\014\011\101\103\103\126\122\101\111\132\061\061\020\060\016
\006\003\125\004\013\014\007\120\113\111\101\103\103\126\061\015
\060\013\006\003\125\004\012\014\004\101\103\103\126\061\013\060
\011\006\003\125\004\006\023\002\105\123\060\036\027\015\061\061
\060\065\060\065\060\071\063\067\063\067\132\027\015\063\060\061
\062\063\061\060\071\063\067\063\067\132\060\102\061\022\060\020
\006\003\125\004\003\014\011\101\103\103\126\122\101\111\132\061
\061\020\060\016\006\003\125\004\013\014\007\120\113\111\101\103
\103\126\061\015\060\013\006\003\125\004\012\014\004\101\103\103
\126\061\013\060\011\006\003\125\004\006\023\002\105\123\060\202
\002\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005
\000\003\202\002\017\000\060\202\002\012\002\202\002\001\000\233
\251\253\277\141\112\227\257\057\227\146\232\164\137\320\331\226
\375\317\342\344\146\357\037\037\107\063\302\104\243\337\232\336
\037\265\124\335\025\174\151\065\021\157\273\310\014\216\152\030
\036\330\217\331\026\274\020\110\066\134\360\143\263\220\132\134
\044\067\327\243\326\313\011\161\271\361\001\162\204\260\175\333
\115\200\315\374\323\157\311\370\332\266\016\202\322\105\205\250
\033\150\250\075\350\364\104\154\275\241\302\313\003\276\214\076
\023\000\204\337\112\110\300\343\042\012\350\351\067\247\030\114
\261\011\015\043\126\177\004\115\331\027\204\030\245\310\332\100
\224\163\353\316\016\127\074\003\201\072\235\012\241\127\103\151
\254\127\155\171\220\170\345\265\264\073\330\274\114\215\050\241
\247\243\247\272\002\116\045\321\052\256\355\256\003\042\270\153
\040\017\060\050\124\225\177\340\356\316\012\146\235\321\100\055
\156\042\257\235\032\301\005\031\322\157\300\362\237\370\173\263
\002\102\373\120\251\035\055\223\017\043\253\306\301\017\222\377
\320\242\025\365\123\011\161\034\377\105\023\204\346\046\136\370
```

\340\210\034\012\374\026\266\250\163\006\270\360\143\204\002\240  
\306\132\354\347\164\337\160\256\243\203\045\352\326\307\227\207  
\223\247\306\212\212\063\227\140\067\020\076\227\076\156\051\025  
\326\241\017\321\210\054\022\237\157\252\244\306\102\353\101\242  
\343\225\103\323\001\205\155\216\273\073\363\043\066\307\376\073  
\340\241\045\007\110\253\311\211\164\377\010\217\200\277\300\226  
\145\363\356\354\113\150\275\235\210\303\061\263\100\361\350\317  
\366\070\273\234\344\321\177\324\345\130\233\174\372\324\363\016  
\233\165\221\344\272\122\056\031\176\321\365\315\132\031\374\272  
\006\366\373\122\250\113\231\004\335\370\371\264\213\120\243\116  
\142\211\360\207\044\372\203\102\301\207\372\325\055\051\052\132  
\161\172\144\152\327\047\140\143\015\333\316\111\365\215\037\220  
\211\062\027\370\163\103\270\322\132\223\206\141\326\341\165\012  
\352\171\146\166\210\117\161\353\004\045\326\012\132\172\223\345  
\271\113\027\100\017\261\266\271\365\336\117\334\340\263\254\073  
\021\160\140\204\112\103\156\231\040\300\051\161\012\300\145\002  
\003\001\000\001\243\202\002\313\060\202\002\307\060\175\006\010  
\053\006\001\005\005\007\001\001\004\161\060\157\060\114\006\010  
\053\006\001\005\005\007\060\002\206\100\150\164\164\160\072\057  
\057\167\167\167\056\141\143\143\166\056\145\163\057\146\151\154  
\145\141\144\155\151\156\057\101\162\143\150\151\166\157\163\057  
\143\145\162\164\151\146\151\143\141\144\157\163\057\162\141\151  
\172\141\143\143\166\061\056\143\162\164\060\037\006\010\053\006  
\001\005\005\007\060\001\206\023\150\164\164\160\072\057\057\157  
\143\163\160\056\141\143\143\166\056\145\163\060\035\006\003\125  
\035\016\004\026\004\024\322\207\264\343\337\067\047\223\125\366  
\126\352\201\345\066\314\214\036\077\275\060\017\006\003\125\035  
\023\001\001\377\004\005\060\003\001\001\377\060\037\006\003\125  
\035\043\004\030\060\026\200\024\322\207\264\343\337\067\047\223  
\125\366\126\352\201\345\066\314\214\036\077\275\060\202\001\163  
\006\003\125\035\040\004\202\001\152\060\202\001\146\060\202\001  
\142\006\004\125\035\040\000\060\202\001\130\060\202\001\042\006  
\010\053\006\001\005\005\007\002\002\060\202\001\024\036\202\001  
\020\000\101\000\165\000\164\000\157\000\162\000\151\000\144\000  
\141\000\144\000\040\000\144\000\145\000\040\000\103\000\145\000  
\162\000\164\000\151\000\146\000\151\000\143\000\141\000\143\000  
\151\000\363\000\156\000\040\000\122\000\141\000\355\000\172\000  
\040\000\144\000\145\000\040\000\154\000\141\000\040\000\101\000  
\103\000\103\000\126\000\040\000\050\000\101\000\147\000\145\000  
\156\000\143\000\151\000\141\000\040\000\144\000\145\000\040\000  
\124\000\145\000\143\000\156\000\157\000\154\000\157\000\147\000  
\355\000\141\000\040\000\171\000\040\000\103\000\145\000\162\000  
\164\000\151\000\146\000\151\000\143\000\141\000\143\000\151\000  
\363\000\156\000\040\000\105\000\154\000\145\000\143\000\164\000  
\162\000\363\000\156\000\151\000\143\000\141\000\054\000\040\000  
\103\000\111\000\106\000\040\000\121\000\064\000\066\000\060\000  
\061\000\061\000\065\000\066\000\105\000\051\000\056\000\040\000  
\103\000\120\000\123\000\040\000\145\000\156\000\040\000\150\000

\164\000\164\000\160\000\072\000\057\000\057\000\167\000\167\000  
\167\000\056\000\141\000\143\000\143\000\166\000\056\000\145\000  
\163\060\060\006\010\053\006\001\005\005\007\002\001\026\044\150  
\164\164\160\072\057\057\167\167\167\056\141\143\143\166\056\145  
\163\057\154\145\147\151\163\154\141\143\151\157\156\137\143\056  
\150\164\155\060\125\006\003\125\035\037\004\116\060\114\060\112  
\240\110\240\106\206\104\150\164\164\160\072\057\057\167\167\167  
\056\141\143\143\166\056\145\163\057\146\151\154\145\141\144\155  
\151\156\057\101\162\143\150\151\166\157\163\057\143\145\162\164  
\151\146\151\143\141\144\157\163\057\162\141\151\172\141\143\143  
\166\061\137\144\145\162\056\143\162\154\060\016\006\003\125\035  
\017\001\001\377\004\004\003\002\001\006\060\027\006\003\125\035  
\021\004\020\060\016\201\014\141\143\143\166\100\141\143\143\166  
\056\145\163\060\015\006\011\052\206\110\206\367\015\001\001\005  
\005\000\003\202\002\001\000\227\061\002\237\347\375\103\147\110  
\104\024\344\051\207\355\114\050\146\320\217\065\332\115\141\267  
\112\227\115\265\333\220\340\005\056\016\306\171\320\362\227\151  
\017\275\004\107\331\276\333\265\051\332\233\331\256\251\231\325  
\323\074\060\223\365\215\241\250\374\006\215\104\364\312\026\225  
\174\063\334\142\213\250\067\370\047\330\011\055\033\357\310\024  
\047\040\251\144\104\377\056\326\165\252\154\115\140\100\031\111  
\103\124\143\332\342\314\272\146\345\117\104\172\133\331\152\201  
\053\100\325\177\371\001\047\130\054\310\355\110\221\174\077\246  
\000\317\304\051\163\021\066\336\206\031\076\235\356\031\212\033  
\325\260\355\216\075\234\052\300\015\330\075\146\343\074\015\275  
\325\224\134\342\342\247\065\033\004\000\366\077\132\215\352\103  
\275\137\211\035\251\301\260\314\231\342\115\000\012\332\311\047  
\133\347\023\220\134\344\365\063\242\125\155\334\340\011\115\057  
\261\046\133\047\165\000\011\304\142\167\051\010\137\236\131\254  
\266\176\255\237\124\060\042\003\301\036\161\144\376\371\070\012  
\226\030\335\002\024\254\043\313\006\034\036\244\175\215\015\336  
\047\101\350\255\332\025\267\260\043\335\053\250\323\332\045\207  
\355\350\125\104\115\210\364\066\176\204\232\170\254\367\016\126  
\111\016\326\063\045\326\204\120\102\154\040\022\035\052\325\276  
\274\362\160\201\244\160\140\276\005\265\233\236\004\104\276\141  
\043\254\351\245\044\214\021\200\224\132\242\242\271\111\322\301  
\334\321\247\355\061\021\054\236\031\246\356\341\125\341\300\352  
\317\015\204\344\027\267\242\174\245\336\125\045\006\356\314\300  
\207\134\100\332\314\225\077\125\340\065\307\270\204\276\264\135  
\315\172\203\001\162\356\207\346\137\035\256\265\205\306\046\337  
\346\301\232\351\036\002\107\237\052\250\155\251\133\317\354\105  
\167\177\230\047\232\062\135\052\343\204\356\305\230\146\057\226  
\040\035\335\330\303\047\327\260\371\376\331\175\315\320\237\217  
\013\024\130\121\237\057\213\303\070\055\336\350\217\326\215\207  
\244\365\126\103\026\231\054\364\244\126\264\064\270\141\067\311  
\302\130\200\033\240\227\241\374\131\215\351\021\366\321\017\113  
\125\064\106\052\213\206\073

END

```

CKA_NSS_MOZILLA_CA_POLICY
CK_BBOOL CK_TRUE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

# Trust for "ACCVRAIZ1"
# Issuer: C=ES,O=ACCV,OU=PKIACCV,CN=ACCVRAIZ1
# Serial Number:5e:c3:b7:a6:43:7f:a4:e0
# Subject: C=ES,O=ACCV,OU=PKIACCV,CN=ACCVRAIZ1
# Not Valid Before: Thu May 05 09:37:37 2011
# Not Valid After : Tue Dec 31 09:37:37 2030
# Fingerprint (SHA-256):
9A:6E:C0:12:E1:A7:DA:9D:BE:34:19:4D:47:8A:D7:C0:DB:18:22:FB:07:1D:F1:29:81:49:6E:D1:04:38:41:13
# Fingerprint (SHA1): 93:05:7A:88:15:C6:4F:CE:88:2F:FA:91:16:52:28:78:BC:53:64:17
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8
"ACCVRAIZ1"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\223\005\172\210\025\306\117\316\210\057\372\221\026\122\050\170
\274\123\144\027
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\320\240\132\356\005\266\011\224\041\241\175\361\262\051\202\002
END
CKA_ISSUER MULTILINE_OCTAL
\060\102\061\022\060\020\006\003\125\004\003\014\011\101\103\103
\126\122\101\111\132\061\061\020\060\016\006\003\125\004\013\014
\007\120\113\111\101\103\103\126\061\015\060\013\006\003\125\004
\012\014\004\101\103\103\126\061\013\060\011\006\003\125\004\006
\023\002\105\123
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\010\136\303\267\246\103\177\244\340
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "TWCA Global Root CA"
#
# Issuer: CN=TWCA Global Root CA,OU=Root CA,O=TAIWAN-CA,C=TW
# Serial Number: 3262 (0xcbe)
# Subject: CN=TWCA Global

```

```
Root CA,OU=Root CA,O=TAIWAN-CA,C=TW
# Not Valid Before: Wed Jun 27 06:28:33 2012
# Not Valid After : Tue Dec 31 15:59:59 2030
# Fingerprint (SHA-256):
59:76:90:07:F7:68:5D:0F:CD:50:87:2F:9F:95:D5:75:5A:5B:2B:45:7D:81:F3:69:2B:61:0A:98:67:2F:0E:1B
# Fingerprint (SHA1): 9C:BB:48:53:F6:A4:F6:D3:52:A4:E8:32:52:55:60:13:F5:AD:AF:65
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "TWCA Global Root CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\121\061\013\060\011\006\003\125\004\006\023\002\124\127\061
\022\060\020\006\003\125\004\012\023\011\124\101\111\127\101\116
\055\103\101\061\020\060\016\006\003\125\004\013\023\007\122\157
\157\164\040\103\101\061\034\060\032\006\003\125\004\003\023\023
\124\127\103\101\040\107\154\157\142\141\154\040\122\157\157\164
\040\103\101
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\121\061\013\060\011\006\003\125\004\006\023\002\124\127\061
\022\060\020\006\003\125\004\012\023\011\124\101\111\127\101\116
\055\103\101\061\020\060\016\006\003\125\004\013\023\007\122\157
\157\164\040\103\101\061\034\060\032\006\003\125\004\003\023\023
\124\127\103\101\040\107\154\157\142\141\154\040\122\157\157\164
\040\103\101
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\002\014\276
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\101\060\202\003\051\240\003\002\001\002\002\002\014
\276\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000
\060\121\061\013\060\011\006\003\125\004\006\023\002\124\127\061
\022\060\020\006\003\125\004\012\023\011\124\101\111\127\101\116
\055\103\101\061\020\060\016\006\003\125\004\013\023\007\122\157
\157\164\040\103\101\061\034\060\032\006\003\125\004\003\023\023
\124\127\103\101\040\107\154\157\142\141\154\040\122\157\157\164
\040\103\101\060\036\027\015\061\062\060\066\062\067\060\066\062
\070\063\063\132\027\015\063\060\061\062\063\061\061\065\065\071
\065\071\132\060\121\061\013\060\011\006\003\125\004\006\023\002
\124\127\061\022\060\020\006\003\125\004\012\023\011\124\101\111
\127\101\116\055\103\101\061\020\060\016\006\003\125\004\013\023
\007\122\157\157\164\040\103\101\061\034\060\032\006\003\125\004
\003\023\023\124\127\103\101\040\107\154\157\142\141\154\040\122
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\157\157\164\040\103\101\060\202\002\042\060\015\006\011\052\206  
\110\206\367\015\001\001\001\005\000\003\202\002\017\000\060\202  
\002\012\002\202\002\001\000\260\005\333\310\353\214\304\156\212  
\041\357\216\115\234\161\012\037\122\160\355\155\202\234\227\305  
\327\114\116\105\111\313\100\102\265\022\064\154\031\302\164\244  
\061\137\205\002\227\354\103\063\012\123\322\234\214\216\267\270  
\171\333\053\325\152\362\216\146\304\356\053\001\007\222\324\263  
\320\002\337\120\366\125\257\146\016\313\340\107\140\057\053\062  
\071\065\122\072\050\203\370\173\026\306\030\270\142\326\107\045  
\221\316\360\031\022\115\255\143\365\323\077\165\137\051\360\241  
\060\034\052\240\230\246\025\275\356\375\031\066\360\342\221\103  
\217\372\312\326\020\047\111\114\357\335\301\361\205\160\233\312  
\352\250\132\103\374\155\206\157\163\351\067\105\251\360\066\307  
\314\210\165\036\273\154\006\377\233\153\076\027\354\141\252\161  
\174\306\035\242\367\111\351\025\265\074\326\241\141\365\021\367  
\005\157\035\375\021\276\320\060\007\302\051\260\011\116\046\334  
\343\242\250\221\152\037\302\221\105\210\134\345\230\270\161\245  
\025\031\311\174\165\021\314\160\164\117\055\233\035\221\104\375  
\126\050\240\376\273\206\152\310\372\134\013\130\334\306\113\166  
\310\253\042\331\163\017\245\364\132\002\211\077\117\236\042\202  
\356\242\164\123\052\075\123\047\151\035\154\216\062\054\144\000  
\046\143\141\066\116\243\106\267\077\175\263\055\254\155\220\242  
\225\242\316\317\332\202\347\007\064\031\226\351\270\041\252\051  
\176\246\070\276\216\051\112\041\146\171\037\263\303\265\011\147  
\336\326\324\007\106\363\052\332\346\042\067\140\313\201\266\017  
\240\017\351\310\225\177\277\125\221\005\172\317\075\025\300\157  
\336\011\224\001\203\327\064\033\314\100\245\360\270\233\147\325  
\230\221\073\247\204\170\225\046\244\132\010\370\053\164\264\000  
\004\074\337\270\024\216\350\337\251\215\154\147\222\063\035\300  
\267\322\354\222\310\276\011\277\054\051\005\157\002\153\236\357  
\274\277\052\274\133\300\120\217\101\160\161\207\262\115\267\004  
\251\204\243\062\257\256\356\153\027\213\262\261\376\154\341\220  
\214\210\250\227\110\316\310\115\313\363\006\317\137\152\012\102  
\261\036\036\167\057\216\240\346\222\016\006\374\005\042\322\046  
\341\061\121\175\062\334\017\002\003\001\000\001\243\043\060\041  
\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001\006  
\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001  
\377\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000  
\003\202\002\001\000\137\064\201\166\357\226\035\325\345\265\331  
\002\143\204\026\301\256\240\160\121\247\367\114\107\065\310\013  
\327\050\075\211\161\331\252\063\101\352\024\033\154\041\000\300  
\154\102\031\176\237\151\133\040\102\337\242\322\332\304\174\227  
\113\215\260\350\254\310\356\245\151\004\231\012\222\246\253\047  
\056\032\115\201\277\204\324\160\036\255\107\376\375\112\235\063  
\340\362\271\304\105\010\041\012\332\151\151\163\162\015\276\064  
\376\224\213\255\303\036\065\327\242\203\357\345\070\307\245\205  
\037\253\317\064\354\077\050\376\014\361\127\206\116\311\125\367  
\034\324\330\245\175\006\172\157\325\337\020\337\201\116\041\145

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\261\266\341\027\171\225\105\006\316\137\314\334\106\211\143\150
\104\215\223\364\144\160\240\075\235\050\005\303\071\160\270\142
\173\040\375\344\333\351\010\241\270\236\075\011\307\117\373\054
\370\223\166\101\336\122\340\341\127\322\235\003\274\167\236\376
\236\051\136\367\301\121\140\037\336\332\013\262\055\165\267\103
\110\223\347\366\171\306\204\135\200\131\140\224\374\170\230\217
\074\223\121\355\100\220\007\337\144\143\044\313\116\161\005\241
\327\224\032\210\062\361\042\164\042\256\245\246\330\022\151\114
\140\243\002\356\053\354\324\143\222\013\136\276\057\166\153\243
\266\046\274\217\003\330\012\362\114\144\106\275\071\142\345\226
\353\064\143\021\050\314\225\361\255\357\357\334\200\130\110\351
\113\270\352\145\254\351\374\200\265\265\310\105\371\254\301\237
\331\271\352\142\210\216\304\361\113\203\022\255\346\213\204\326
\236\302\353\203\030\237\152\273\033\044\140\063\160\314\354\367
\062\363\134\331\171\175\357\236\244\376\311\043\303\044\356\025
\222\261\075\221\117\046\206\275\146\163\044\023\352\244\256\143
\301\255\175\204\003\074\020\170\206\033\171\343\304\363\362\004
\225\040\256\043\202\304\263\072\000\142\277\346\066\044\341\127
\272\307\036\220\165\325\137\077\225\141\053\301\073\315\345\263
\150\141\320\106\046\251\041\122\151\055\353\056\307\353\167\316
\246\072\265\003\063\117\166\321\347\134\124\001\135\313\170\364
\311\014\277\317\022\216\027\055\043\150\224\347\253\376\251\262
\053\006\320\004\315
```

END

CKA\_NSS\_Mozilla\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL

CK\_FALSE

# Trust for "TWCA Global Root CA"

# Issuer: CN=TWCA Global Root CA,OU=Root CA,O=TAIWAN-CA,C=TW

# Serial Number: 3262 (0xcbe)

# Subject: CN=TWCA Global Root CA,OU=Root CA,O=TAIWAN-CA,C=TW

# Not Valid Before: Wed Jun 27 06:28:33 2012

# Not Valid After : Tue Dec 31 15:59:59 2030

# Fingerprint (SHA-256):

59:76:90:07:F7:68:5D:0F:CD:50:87:2F:9F:95:D5:75:5A:5B:2B:45:7D:81:F3:69:2B:61:0A:98:67:2F:0E:1B

# Fingerprint (SHA1): 9C:BB:48:53:F6:A4:F6:D3:52:A4:E8:32:52:55:60:13:F5:AD:AF:65

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "TWCA Global Root CA"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\234\273\110\123\366\244\366\323\122\244\350\062\122\125\140\023
\365\255\257\145
```

END

```

CKA_CERT_MD5_HASH MULTILINE_OCTAL
\371\003\176\317\346\236\074\163\172\052\220\007\151\377\053\226
END
CKA_ISSUER MULTILINE_OCTAL
\060\121\061\013\060\011\006\003\125\004\006\023\002\124\127\061
\022\060\020\006\003\125\004\012\023\011\124\101\111\127\101\116
\055\103\101\061\020\060\016\006\003\125\004\013\023\007\122\157
\157\164\040\103\101\061\034\060\032\006\003\125\004\003\023\023
\124\127\103\101\040\107\154\157\142\141\154\040\122\157\157\164
\040\103\101
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\002\014\276
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "TeliaSonera Root CA v1"
#
# Issuer: CN=TeliaSonera Root CA v1,O=TeliaSonera
# Serial Number:00:95:be:16:a0:f7:2e:46:f1:7b:39:82:72:fa:8b:cd:96
# Subject: CN=TeliaSonera Root CA v1,O=TeliaSonera
# Not Valid Before: Thu Oct 18 12:00:50 2007
# Not Valid After : Mon Oct 18 12:00:50 2032
# Fingerprint (SHA-256):
DD:69:36:FE:21:F8:F0:77:C1:23:A1:A5:21:C1:22:24:F7:22:55:B7:3E:03:A7:26:06:93:E8:A2:4B:0F:A3:89
# Fingerprint (SHA1): 43:13:BB:96:F1:D5:86:9B:C1:4E:6A:92:F6:CF:F6:34:69:87:82:37
CKA_CLASS
CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "TeliaSonera Root CA v1"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\067\061\024\060\022\006\003\125\004\012\014\013\124\145\154
\151\141\123\157\156\145\162\141\061\037\060\035\006\003\125\004
\003\014\026\124\145\154\151\141\123\157\156\145\162\141\040\122
\157\157\164\040\103\101\040\166\061
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\067\061\024\060\022\006\003\125\004\012\014\013\124\145\154
\151\141\123\157\156\145\162\141\061\037\060\035\006\003\125\004

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\003\014\026\124\145\154\151\141\123\157\156\145\162\141\040\122  
\157\157\164\040\103\101\040\166\061

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\021\000\225\276\026\240\367\056\106\361\173\071\202\162\372  
\213\315\226

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\070\060\202\003\040\240\003\002\001\002\002\021\000  
\225\276\026\240\367\056\106\361\173\071\202\162\372\213\315\226  
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060  
\067\061\024\060\022\006\003\125\004\012\014\013\124\145\154\151  
\141\123\157\156\145\162\141\061\037\060\035\006\003\125\004\003  
\014\026\124\145\154\151\141\123\157\156\145\162\141\040\122\157  
\157\164\040\103\101\040\166\061\060\036\027\015\060\067\061\060  
\061\070\061\062\060\060\065\060\132\027\015\063\062\061\060\061  
\070\061\062\060\060\065\060\132\060\067\061\024\060\022\006\003  
\125\004\012\014\013\124\145\154\151\141\123\157\156\145\162\141  
\061\037\060\035\006\003\125\004\003\014\026\124\145\154\151\141  
\123\157\156\145\162\141\040\122\157\157\164\040\103\101\040\166  
\061\060\202\002\042\060\015\006\011\052\206\110\206\367\015\001  
\001\001\005\000\003\202\002\017\000\060\202\002\012\002\202\002  
\001\000\302\276\353\047\360\041\243\363\151\046\125\176\235\305  
\125\026\221\134\375\357\041\277\123\200\172\055\322\221\214\143  
\061\360\354\044\360\303\245\322\162\174\020\155\364\067\267\345  
\346\174\171\352\214\265\202\213\256\110\266\254\000\334\145\165  
\354\052\115\137\301\207\365\040\145\053\201\250\107\076\211\043  
\225\060\026\220\177\350\127\007\110\347\031\256\277\105\147\261  
\067\033\006\052\376\336\371\254\175\203\373\136\272\344\217\227  
\147\276\113\216\215\144\007\127\070\125\151\064\066\075\023\110  
\357\117\342\323\146\036\244\317\032\267\136\066\063\324\264\006  
\275\030\001\375\167\204\120\000\105\365\214\135\350\043\274\176  
\376\065\341\355\120\173\251\060\215\031\323\011\216\150\147\135  
\277\074\227\030\123\273\051\142\305\312\136\162\301\307\226\324  
\333\055\240\264\037\151\003\354\352\342\120\361\014\074\360\254  
\363\123\055\360\034\365\355\154\071\071\163\200\026\310\122\260  
\043\315\340\076\334\335\074\107\240\273\065\212\342\230\150\213  
\276\345\277\162\356\322\372\245\355\022\355\374\230\030\251\046  
\166\334\050\113\020\040\034\323\177\026\167\055\355\157\200\367  
\111\273\123\005\273\135\150\307\324\310\165\026\077\211\132\213  
\367\027\107\324\114\361\322\211\171\076\115\075\230\250\141\336  
\072\036\322\370\136\003\340\301\311\034\214\323\215\115\323\225  
\066\263\067\137\143\143\233\063\024\360\055\046\153\123\174\211  
\214\062\302\156\354\075\041\000\071\311\241\150\342\120\203\056  
\260\072\053\363\066\240\254\057\344\157\141\302\121\011\071\076  
\213\123\271\273\147\332\334\123\271\166\131\066\235\103\345\040  
\340\075\062\140\205\042\121\267\307\063\273\335\025\057\244\170  
\246\007\173\201\106\066\004\206\335\171\065\307\225\054\073\260

\243\027\065\345\163\037\264\134\131\357\332\352\020\145\173\172  
\320\177\237\263\264\052\067\073\160\213\233\133\271\053\267\354  
\262\121\022\227\123\051\132\324\360\022\020\334\117\002\273\022  
\222\057\142\324\077\151\103\174\015\326\374\130\165\001\210\235  
\130\026\113\336\272\220\377\107\001\211\006\152\366\137\262\220  
\152\263\002\246\002\210\277\263\107\176\052\331\325\372\150\170  
\065\115\002\003\001\000\001\243\077\060\075\060\017\006\003\125  
\035\023\001\001\377\004\005\060\003\001\001\377\060\013\006\003  
\125\035\017\004\004\003\002\001\006\060\035\006\003\125\035\016  
\004\026\004\024\360\217\131\070\000\263\365\217\232\226\014\325  
\353\372\173\252\027\350\023\022\060\015\006\011\052\206\110\206  
\367\015\001\001\005\005\000\003\202\002\001\000\276\344\134\142  
\116\044\364\014\010\377\360\323\014\150\344\223\111\042\077\104  
\047\157\273\155\336\203\146\316\250\314\015\374\365\232\006\345  
\167\024\221\353\235\101\173\231\052\204\345\377\374\041\301\135  
\360\344\037\127\267\165\251\241\137\002\046\377\327\307\367\116  
\336\117\370\367\034\106\300\172\117\100\054\042\065\360\031\261  
\320\153\147\054\260\250\340\300\100\067\065\366\204\134\134\343  
\257\102\170\376\247\311\015\120\352\015\204\166\366\121\357\203  
\123\306\172\377\016\126\111\056\217\172\326\014\346\047\124\343  
\115\012\140\162\142\315\221\007\326\245\277\310\231\153\355\304  
\031\346\253\114\021\070\305\157\061\342\156\111\310\077\166\200  
\046\003\046\051\340\066\366\366\040\123\343\027\160\064\027\235  
\143\150\036\153\354\303\115\206\270\023\060\057\135\106\015\107  
\103\325\033\252\131\016\271\134\215\006\110\255\164\207\137\307  
\374\061\124\101\023\342\307\041\016\236\340\036\015\341\300\173  
\103\205\220\305\212\130\306\145\012\170\127\362\306\043\017\001  
\331\040\113\336\017\373\222\205\165\052\134\163\215\155\173\045  
\221\312\356\105\256\006\113\000\314\323\261\131\120\332\072\210  
\073\051\103\106\136\227\053\124\316\123\157\215\112\347\226\372  
\277\161\016\102\213\174\375\050\240\320\110\312\332\304\201\114  
\273\242\163\223\046\310\353\014\326\046\210\266\300\044\317\273  
\275\133\353\165\175\351\010\216\206\063\054\171\167\011\151\245  
\211\374\263\160\220\207\166\217\323\042\273\102\316\275\163\013  
\040\046\052\320\233\075\160\036\044\154\315\207\166\251\027\226  
\267\317\015\222\373\216\030\251\230\111\321\236\376\140\104\162  
\041\271\031\355\302\365\061\361\071\110\210\220\044\165\124\026  
\255\316\364\370\151\024\144\071\373\243\270\272\160\100\307\047  
\034\277\304\126\123\372\143\145\320\363\034\016\026\365\153\206  
\130\115\030\324\344\015\216\245\235\133\221\334\166\044\120\077  
\306\052\373\331\267\234\265\326\346\320\331\350\031\213\025\161  
\110\255\267\352\330\131\210\324\220\277\026\263\331\351\254\131  
\141\124\310\034\272\312\301\312\341\271\040\114\217\072\223\211  
\245\240\314\277\323\366\165\244\165\226\155\126

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "TeliaSonera Root CA v1"

# Issuer: CN=TeliaSonera Root CA v1,O=TeliaSonera

# Serial Number:00:95:be:16:a0:f7:2e:46:f1:7b:39:82:72:fa:8b:cd:96

# Subject: CN=TeliaSonera Root CA v1,O=TeliaSonera

# Not Valid Before: Thu Oct 18 12:00:50 2007

# Not Valid After : Mon Oct 18 12:00:50 2032

# Fingerprint (SHA-256):

DD:69:36:FE:21:F8:F0:77:C1:23:A1:A5:21:C1:22:24:F7:22:55:B7:3E:03:A7:26:06:93:E8:A2:4B:0F:A3:89

# Fingerprint (SHA1): 43:13:BB:96:F1:D5:86:9B:C1:4E:6A:92:F6:CF:F6:34:69:87:82:37

CKA\_CLASS

CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "TeliaSonera Root CA v1"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\103\023\273\226\361\325\206\233\301\116\152\222\366\317\366\064

\151\207\202\067

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\067\101\111\033\030\126\232\046\365\255\302\146\373\100\245\114

END

CKA\_ISSUER MULTILINE\_OCTAL

\060\067\061\024\060\022\006\003\125\004\012\014\013\124\145\154

\151\141\123\157\156\145\162\141\061\037\060\035\006\003\125\004

\003\014\026\124\145\154\151\141\123\157\156\145\162\141\040\122

\157\157\164\040\103\101\040\166\061

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\021\000\225\276\026\240\367\056\106\361\173\071\202\162\372

\213\315\226

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED

CK\_BBOOL CK\_FALSE

#

# Certificate "E-Tugra Certification Authority"

#

# Issuer: CN=E-Tugra Certification Authority,OU=E-Tugra Sertifikasyon Merkezi,O=E-Tu..ra EBG Bili..im  
Teknolojileri ve Hizmetleri A....,L=Ankara,C=TR

# Serial Number:6a:68:3e:9c:51:9b:cb:53

# Subject: CN=E-Tugra Certification Authority,OU=E-Tugra Sertifikasyon Merkezi,O=E-Tu..ra EBG Bili..im  
Teknolojileri ve Hizmetleri A....,L=Ankara,C=TR

```
# Not Valid Before: Tue Mar 05 12:09:48 2013
# Not Valid After : Fri Mar 03 12:09:48 2023
# Fingerprint (SHA-256):
B0:BF:D5:2B:B0:D7:D9:BD:92:BF:5D:4D:C1:3D:A2:55:C0:2C:54:2F:37:83:65:EA:89:39:11:F5:5E:55:F2:3C
# Fingerprint (SHA1): 51:C6:E7:08:49:06:6E:F3:92:D4:5C:A0:0D:6D:A3:62:8F:C3:52:39
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "E-Tugra Certification Authority"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\262\061\013\060\011\006\003\125\004\006\023\002\124\122
\061\017\060\015\006\003\125\004\007\014\006\101\156\153\141\162
\141\061\100\060\076\006\003\125\004\012\014\067\105\055\124\165
\304\237\162\141\040\105\102\107\040\102\151\154\151\305\237\151
\155\040\124\145\153\156\157\154\157\152\151\154\145\162\151\040
\166\145\040\110\151\172\155\145\164\154\145\162\151\040\101\056
\305\236\056\061\046\060\044\006\003\125\004\013\014\035\105\055
\124\165\147\162\141\040\123\145\162\164\151\146\151\153\141\163
\171\157\156\040\115\145\162\153\145\172\151\061\050\060\046\006
\003\125\004\003\014\037\105\055\124\165\147\162\141\040\103\145
\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150
\157\162\151\164\171
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\262\061\013\060\011\006\003\125\004\006\023\002\124\122
\061\017\060\015\006\003\125\004\007\014\006\101\156\153\141\162
\141\061\100\060\076\006\003\125\004\012\014\067\105\055\124\165
\304\237\162\141\040\105\102\107\040\102\151\154\151\305\237\151
\155\040\124\145\153\156\157\154\157\152\151\154\145\162\151\040
\166\145\040\110\151\172\155\145\164\154\145\162\151\040\101\056
\305\236\056\061\046\060\044\006\003\125\004\013\014\035\105\055
\124\165\147\162\141\040\123\145\162\164\151\146\151\153\141\163
\171\157\156\040\115\145\162\153\145\172\151\061\050\060\046\006
\003\125\004\003\014\037\105\055\124\165\147\162\141\040\103\145
\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150
\157\162\151\164\171
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\010\152\150\076\234\121\233\313\123
END
CKA_VALUE MULTILINE_OCTAL
\060\202\006\113\060\202\004\063\240\003\002\001\002\002\010\152
\150\076\234\121\233\313\123\060\015\006\011\052\206\110\206\367
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\015\001\001\013\005\000\060\201\262\061\013\060\011\006\003\125  
\004\006\023\002\124\122\061\017\060\015\006\003\125\004\007\014  
\006\101\156\153\141\162\141\061\100\060\076\006\003\125\004\012  
\014\067\105\055\124\165\304\237\162\141\040\105\102\107\040\102  
\151\154\151\305\237\151\155\040\124\145\153\156\157\154\157\152  
\151\154\145\162\151\040\166\145\040\110\151\172\155\145\164\154  
\145\162\151\040\101\056\305\236\056\061\046\060\044\006\003\125  
\004\013\014\035\105\055\124\165\147\162\141\040\123\145\162\164  
\151\146\151\153\141\163\171\157\156\040\115\145\162\153\145\172  
\151\061\050\060\046\006\003\125\004\003\014\037\105\055\124\165  
\147\162\141\040\103\145\162\164\151\146\151\143\141\164\151\157  
\156\040\101\165\164\150\157\162\151\164\171\060\036\027\015\061  
\063\060\063\060\065\061\062\060\071\064\070\132\027\015\062\063  
\060\063\060\063\061\062\060\071\064\070\132\060\201\262\061\013  
\060\011\006\003\125\004\006\023\002\124\122\061\017\060\015\006  
\003\125\004\007\014\006\101\156\153\141\162\141\061\100\060\076  
\006\003\125\004\012\014\067\105\055\124\165\304\237\162\141\040  
\105\102\107\040\102\151\154\151\305\237\151\155\040\124\145\153  
\156\157\154\157\152\151\154\145\162\151\040\166\145\040\110\151  
\172\155\145\164\154\145\162\151\040\101\056\305\236\056\061\046  
\060\044\006\003\125\004\013\014\035\105\055\124\165\147\162\141  
\040\123\145\162\164\151\146\151\153\141\163\171\157\156\040\115  
\145\162\153\145\172\151\061\050\060\046\006\003\125\004\003\014  
\037\105\055\124\165\147\162\141\040\103\145\162\164\151\146\151  
\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171  
\060\202\002\042\060\015\006\011\052\206\110\206\367\015\001\001  
\001\005\000\003\202\002\017\000\060\202\002\012\002\202\002\001  
\000\342\365\077\223\005\121\036\205\142\124\136\172\013\365\030  
\007\203\256\176\257\174\367\324\212\153\245\143\103\071\271\113  
\367\303\306\144\211\075\224\056\124\200\122\071\071\007\113\113  
\335\205\007\166\207\314\277\057\225\114\314\175\247\075\274\107  
\017\230\160\370\214\205\036\164\216\222\155\033\100\321\231\015  
\273\165\156\310\251\153\232\300\204\061\257\312\103\313\353\053  
\064\350\217\227\153\001\233\325\016\112\010\252\133\222\164\205  
\103\323\200\256\241\210\133\256\263\352\136\313\026\232\167\104  
\310\241\366\124\150\316\336\217\227\053\272\133\100\002\014\144  
\027\300\265\223\315\341\361\023\146\316\014\171\357\321\221\050  
\253\137\240\022\122\060\163\031\216\217\341\214\007\242\303\273  
\112\360\352\037\025\250\356\045\314\244\106\370\033\042\357\263  
\016\103\272\054\044\270\305\054\134\324\034\370\135\144\275\303  
\223\136\050\247\077\047\361\216\036\323\052\120\005\243\125\331  
\313\347\071\123\300\230\236\214\124\142\213\046\260\367\175\215  
\174\344\306\236\146\102\125\202\107\347\262\130\215\146\367\007  
\174\056\066\346\120\034\077\333\103\044\305\277\206\107\171\263  
\171\034\367\132\364\023\354\154\370\077\342\131\037\225\356\102  
\076\271\255\250\062\205\111\227\106\376\113\061\217\132\313\255  
\164\107\037\351\221\267\337\050\004\042\240\324\017\135\342\171  
\117\352\154\205\206\275\250\246\316\344\372\303\341\263\256\336

\074\121\356\313\023\174\001\177\204\016\135\121\224\236\023\014  
\266\056\245\114\371\071\160\066\157\226\312\056\014\104\125\305  
\312\372\135\002\243\337\326\144\214\132\263\001\012\251\265\012  
\107\027\377\357\221\100\052\216\241\106\072\061\230\345\021\374  
\314\273\111\126\212\374\271\320\141\232\157\145\154\346\303\313  
\076\165\111\376\217\247\342\211\305\147\327\235\106\023\116\061  
\166\073\044\263\236\021\145\206\253\177\357\035\324\370\274\347  
\254\132\134\267\132\107\134\125\316\125\264\042\161\133\133\013  
\360\317\334\240\141\144\352\251\327\150\012\143\247\340\015\077  
\240\257\323\252\322\176\357\121\240\346\121\053\125\222\025\027  
\123\313\267\146\016\146\114\370\371\165\114\220\347\022\160\307  
\105\002\003\001\000\001\243\143\060\141\060\035\006\003\125\035  
\016\004\026\004\024\056\343\333\262\111\320\234\124\171\134\372  
\047\052\376\314\116\322\350\116\124\060\017\006\003\125\035\023  
\001\001\377\004\005\060\003\001\001\377\060\037\006\003\125\035  
\043\004\030\060\026\200\024\056\343\333\262\111\320\234\124\171  
\134\372\047\052\376\314\116\322\350\116\124\060\016\006\003\125  
\035\017\001\001\377\004\004\003\002\001\006\060\015\006\011\052  
\206\110\206\367\015\001\001\013\005\000\003\202\002\001\000\005  
\067\072\364\115\267\105\342\105\165\044\217\266\167\122\350\034  
\330\020\223\145\363\362\131\006\244\076\036\051\354\135\321\320  
\253\174\340\012\220\110\170\355\116\230\003\231\376\050\140\221  
\035\060\035\270\143\174\250\346\065\265\372\323\141\166\346\326  
\007\113\312\151\232\262\204\172\167\223\105\027\025\237\044\320  
\230\023\022\377\273\240\056\375\116\114\207\370\316\134\252\230  
\033\005\340\000\106\112\202\200\245\063\213\050\334\355\070\323  
\337\345\076\351\376\373\131\335\141\204\117\322\124\226\023\141  
\023\076\217\200\151\276\223\107\265\065\103\322\132\273\075\134  
\357\263\102\107\315\073\125\023\006\260\011\333\375\143\366\072  
\210\012\231\157\176\341\316\033\123\152\104\146\043\121\010\173  
\274\133\122\242\375\006\067\070\100\141\217\112\226\270\220\067  
\370\146\307\170\220\000\025\056\213\255\121\065\123\007\250\153  
\150\256\371\116\074\007\046\315\010\005\160\314\071\077\166\275  
\245\323\147\046\001\206\246\123\322\140\073\174\103\177\125\212  
\274\225\032\301\050\071\114\037\103\322\221\364\162\131\212\271  
\126\374\077\264\235\332\160\234\166\132\214\103\120\356\216\060  
\162\115\337\377\111\367\306\251\147\331\155\254\002\021\342\072  
\026\045\247\130\010\313\157\123\101\234\110\070\107\150\063\321  
\327\307\217\324\164\041\324\303\005\220\172\377\316\226\210\261  
\025\051\135\043\253\320\140\241\022\117\336\364\027\315\062\345  
\311\277\310\103\255\375\056\216\361\257\342\364\230\372\022\037  
\040\330\300\247\014\205\305\220\364\073\055\226\046\261\054\276  
\114\253\353\261\322\212\311\333\170\023\017\036\011\235\155\217  
\000\237\002\332\301\372\037\172\172\011\304\112\346\210\052\227  
\237\211\213\375\067\137\137\072\316\070\131\206\113\257\161\013  
\264\330\362\160\117\237\062\023\343\260\247\127\345\332\332\103  
\313\204\064\362\050\304\352\155\364\052\357\301\153\166\332\373  
\176\273\205\074\322\123\302\115\276\161\341\105\321\375\043\147

```
\015\023\165\373\317\145\147\042\235\256\260\011\321\011\377\035
\064\277\376\043\227\067\322\071\372\075\015\006\013\264\333\073
\243\253\157\134\035\266\176\350\263\202\064\355\006\134\044
END
```

```
CKA_NSS_MOZILLA_CA_POLICY
CK_BBOOL CK_TRUE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

```
# Trust for "E-Tugra Certification Authority"
# Issuer: CN=E-Tugra Certification Authority,OU=E-Tugra Sertifikasyon Merkezi,O=E-Tu..ra EBG Bili..im
Teknolojileri ve Hizmetleri A...,L=Ankara,C=TR
# Serial Number:6a:68:3e:9c:51:9b:cb:53
# Subject: CN=E-Tugra Certification Authority,OU=E-Tugra Sertifikasyon Merkezi,O=E-Tu..ra EBG Bili..im
Teknolojileri ve Hizmetleri A...,L=Ankara,C=TR
# Not Valid Before: Tue Mar 05 12:09:48 2013
# Not Valid After : Fri Mar 03 12:09:48 2023
# Fingerprint (SHA-256):
B0:BF:D5:2B:B0:D7:D9:BD:92:BF:5D:4D:C1:3D:A2:55:C0:2C:54:2F:37:83:65:EA:89:39:11:F5:5E:55:F2:3C
# Fingerprint (SHA1): 51:C6:E7:08:49:06:6E:F3:92:D4:5C:A0:0D:6D:A3:62:8F:C3:52:39
```

```
CKA_CLASS CK_OBJECT_CLASS
CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "E-Tugra Certification Authority"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\121\306\347\010\111\006\156\363\222\324\134\240\015\155\243\142
\217\303\122\071
END
```

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\270\241\003\143\260\275\041\161\160\212\157\023\072\273\171\111
END
```

```
CKA_ISSUER MULTILINE_OCTAL
\060\201\262\061\013\060\011\006\003\125\004\006\023\002\124\122
\061\017\060\015\006\003\125\004\007\014\006\101\156\153\141\162
\141\061\100\060\076\006\003\125\004\012\014\067\105\055\124\165
\304\237\162\141\040\105\102\107\040\102\151\154\151\305\237\151
\155\040\124\145\153\156\157\154\157\152\151\154\145\162\151\040
\166\145\040\110\151\172\155\145\164\154\145\162\151\040\101\056
\305\236\056\061\046\060\044\006\003\125\004\013\014\035\105\055
\124\165\147\162\141\040\123\145\162\164\151\146\151\153\141\163
\171\157\156\040\115\145\162\153\145\172\151\061\050\060\046\006
\003\125\004\003\014\037\105\055\124\165\147\162\141\040\103\145
\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150
\157\162\151\164\171
```

```
END
CKA_SERIAL_NUMBER
```

```

MULTILINE_OCTAL
\002\010\152\150\076\234\121\233\313\123
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "T-TeleSec GlobalRoot Class 2"
#
# Issuer: CN=T-TeleSec GlobalRoot Class 2,OU=T-Systems Trust Center,O=T-Systems Enterprise Services
GmbH,C=DE
# Serial Number: 1 (0x1)
# Subject: CN=T-TeleSec GlobalRoot Class 2,OU=T-Systems Trust Center,O=T-Systems Enterprise Services
GmbH,C=DE
# Not Valid Before: Wed Oct 01 10:40:14 2008
# Not Valid After : Sat Oct 01 23:59:59 2033
# Fingerprint (SHA-256):
91:E2:F5:78:8D:58:10:EB:A7:BA:58:73:7D:E1:54:8A:8E:CA:CD:01:45:98:BC:0B:14:3E:04:1B:17:05:25:52
# Fingerprint (SHA1): 59:0D:2D:7D:88:4F:40:2E:61:7E:A5:62:32:17:65:CF:17:D8:94:E9
CKA_CLASS
CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "T-TeleSec GlobalRoot Class 2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\202\061\013\060\011\006\003\125\004\006\023\002\104\105
\061\053\060\051\006\003\125\004\012\014\042\124\055\123\171\163
\164\145\155\163\040\105\156\164\145\162\160\162\151\163\145\040
\123\145\162\166\151\143\145\163\040\107\155\142\110\061\037\060
\035\006\003\125\004\013\014\026\124\055\123\171\163\164\145\155
\163\040\124\162\165\163\164\040\103\145\156\164\145\162\061\045
\060\043\006\003\125\004\003\014\034\124\055\124\145\154\145\123
\145\143\040\107\154\157\142\141\154\122\157\157\164\040\103\154
\141\163\163\040\062
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\202\061\013\060\011\006\003\125\004\006\023\002\104\105
\061\053\060\051\006\003\125\004\012\014\042\124\055\123\171\163
\164\145\155\163\040\105\156\164\145\162\160\162\151\163\145\040
\123\145\162\166\151\143\145\163\040\107\155\142\110\061\037\060
\035\006\003\125\004\013\014\026\124\055\123\171\163\164\145\155
\163\040\124\162\165\163\164\040\103\145\156\164\145\162\061\045
\060\043\006\003\125\004\003\014\034\124\055\124\145\154\145\123

```



\145\143\040\107\154\157\142\141\154\122\157\157\164\040\103\154  
\141\163\163\040\062  
END  
CKA\_SERIAL\_NUMBER  
MULTILINE\_OCTAL  
\002\001\001  
END  
CKA\_VALUE MULTILINE\_OCTAL  
\060\202\003\303\060\202\002\253\240\003\002\001\002\002\001\001  
\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060  
\201\202\061\013\060\011\006\003\125\004\006\023\002\104\105\061  
\053\060\051\006\003\125\004\012\014\042\124\055\123\171\163\164  
\145\155\163\040\105\156\164\145\162\160\162\151\163\145\040\123  
\145\162\166\151\143\145\163\040\107\155\142\110\061\037\060\035  
\006\003\125\004\013\014\026\124\055\123\171\163\164\145\155\163  
\040\124\162\165\163\164\040\103\145\156\164\145\162\061\045\060  
\043\006\003\125\004\003\014\034\124\055\124\145\154\145\123\145  
\143\040\107\154\157\142\141\154\122\157\157\164\040\103\154\141  
\163\163\040\062\060\036\027\015\060\070\061\060\060\061\061\060  
\064\060\061\064\132\027\015\063\063\061\060\060\061\062\063\065  
\071\065\071\132\060\201\202\061\013\060\011\006\003\125\004\006  
\023\002\104\105\061\053\060\051\006\003\125\004\012\014\042\124  
\055\123\171\163\164\145\155\163\040\105\156\164\145\162\160\162  
\151\163\145\040\123\145\162\166\151\143\145\163\040\107\155\142  
\110\061\037\060\035\006\003\125\004\013\014\026\124\055\123\171  
\163\164\145\155\163\040\124\162\165\163\164\040\103\145\156\164  
\145\162\061\045\060\043\006\003\125\004\003\014\034\124\055\124  
\145\154\145\123\145\143\040\107\154\157\142\141\154\122\157\157  
\164\040\103\154\141\163\163\040\062\060\202\001\042\060\015\006  
\011\052\206\110\206\367\015\001\001\001\005\000\003\202\001\017  
\000\060\202\001\012\002\202\001\001\000\252\137\332\033\137\350  
\163\221\345\332\134\364\242\346\107\345\363\150\125\140\005\035  
\002\244\263\233\131\363\036\212\257\064\255\374\015\302\331\110  
\031\356\151\217\311\040\374\041\252\007\031\355\260\134\254\145  
\307\137\355\002\174\173\174\055\033\326\272\271\200\302\030\202  
\026\204\372\146\260\010\306\124\043\201\344\315\271\111\077\366  
\117\156\067\110\050\070\017\305\276\347\150\160\375\071\227\115  
\322\307\230\221\120\252\304\104\263\043\175\071\107\351\122\142  
\326\022\223\136\267\061\226\102\005\373\166\247\036\243\365\302  
\374\351\172\305\154\251\161\117\352\313\170\274\140\257\307\336  
\364\331\313\276\176\063\245\156\224\203\360\064\372\041\253\352  
\216\162\240\077\244\336\060\133\357\206\115\152\225\133\103\104  
\250\020\025\034\345\001\127\305\230\361\346\006\050\221\252\040  
\305\267\123\046\121\103\262\013\021\225\130\341\300\017\166\331  
\300\215\174\201\363\162\160\236\157\376\032\216\331\137\065\306  
\262\157\064\174\276\110\117\342\132\071\327\330\235\170\236\237  
\206\076\003\136\031\213\104\242\325\307\002\003\001\000\001\243  
\102\060\100\060\017\006\003\125\035\023\001\001\377\004\005\060

```
\003\001\001\377\060\016\006\003\125\035\017\001\001\377\004\004
\003\002\001\006\060\035\006\003\125\035\016\004\026\004\024\277
\131\040\066\000\171\240\240\042\153\214\325\362\141\322\270\054
\313\202\112\060\015\006\011\052\206\110\206\367\015\001\001\013
\005\000\003\202\001\001\000\061\003\242\141\013\037\164\350\162
\066\306\155\371\115\236\372\042\250\341\201\126\317\315\273\237
\352\253\221\031\070\257\252\174\025\115\363\266\243\215\245\364
\216\366\104\251\247\350\041\225\255\076\000\142\026\210\360\002
\272\374\141\043\346\063\233\060\172\153\066\142\173\255\004\043
\204\130\145\342\333\053\212\347\045\123\067\142\123\137\274\332
\001\142\051\242\246\047\161\346\072\042\176\301\157\035\225\160
\040\112\007\064\337\352\377\025\200\345\272\327\172\330\133\165
\174\005\172\051\107\176\100\250\061\023\167\315\100\073\264\121
\107\172\056\021\343\107\021\336\235\146\320\213\325\124\146\372
\203\125\352\174\302\051\211\033\351\157\263\316\342\005\204\311
\057\076\170\205\142\156\311\137\301\170\143\164\130\300\110\030
\014\231\071\353\244\314\032\265\171\132\215\025\234\330\024\015
\366\172\007\127\307\042\203\005\055\074\233\045\046\075\030\263
\251\103\174\310\310\253\144\217\016\243\277\234\033\235\060\333
\332\320\031\056\252\074\361\373\063\200\166\344\315\255\031\117
\005\047\216\023\241\156\302
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "T-TeleSec GlobalRoot Class 2"

# Issuer: CN=T-TeleSec GlobalRoot Class 2,OU=T-Systems Trust Center,O=T-Systems Enterprise Services GmbH,C=DE

# Serial Number: 1 (0x1)

# Subject: CN=T-TeleSec GlobalRoot Class 2,OU=T-Systems Trust Center,O=T-Systems Enterprise Services GmbH,C=DE

# Not Valid Before: Wed Oct 01 10:40:14 2008

# Not Valid After : Sat Oct 01 23:59:59 2033

# Fingerprint (SHA-256):

91:E2:F5:78:8D:58:10:EB:A7:BA:58:73:7D:E1:54:8A:8E:CA:CD:01:45:98:BC:0B:14:3E:04:1B:17:05:25:52

#

Fingerprint (SHA1): 59:0D:2D:7D:88:4F:40:2E:61:7E:A5:62:32:17:65:CF:17:D8:94:E9

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "T-TeleSec GlobalRoot Class 2"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\131\015\055\175\210\117\100\056\141\176\245\142\062\027\145\317
\027\330\224\351
```

END

```

CKA_CERT_MD5_HASH MULTILINE_OCTAL
\053\233\236\344\173\154\037\000\162\032\314\301\167\171\337\152
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\202\061\013\060\011\006\003\125\004\006\023\002\104\105
\061\053\060\051\006\003\125\004\012\014\042\124\055\123\171\163
\164\145\155\163\040\105\156\164\145\162\160\162\151\163\145\040
\123\145\162\166\151\143\145\163\040\107\155\142\110\061\037\060
\035\006\003\125\004\013\014\026\124\055\123\171\163\164\145\155
\163\040\124\162\165\163\164\040\103\145\156\164\145\162\061\045
\060\043\006\003\125\004\003\014\034\124\055\124\145\154\145\123
\145\143\040\107\154\157\142\141\154\122\157\157\164\040\103\154
\141\163\163\040\062
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\001\001
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "Atos TrustedRoot 2011"
#
# Issuer: C=DE,O=Atos,CN=Atos TrustedRoot 2011
# Serial Number:5c:33:cb:62:2c:5f:b3:32
# Subject: C=DE,O=Atos,CN=Atos TrustedRoot 2011
# Not Valid Before: Thu Jul 07 14:58:30 2011
# Not Valid After : Tue Dec 31 23:59:59 2030
# Fingerprint (SHA-256):
F3:56:BE:A2:44:B7:A9:1E:B3:5D:53:CA:9A:D7:86:4A:CE:01:8E:2D:35:D5:F8:F9:6D:DF:68:A6:F4:1A:A4:74
# Fingerprint (SHA1): 2B:B1:F5:3E:55:0C:1D:C5:F1:D4:E6:B7:6A:46:4B:55:06:02:AC:21
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL
CK_FALSE
CKA_LABEL UTF8 "Atos TrustedRoot 2011"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\074\061\036\060\034\006\003\125\004\003\014\025\101\164\157
\163\040\124\162\165\163\164\145\144\122\157\157\164\040\062\060
\061\061\061\015\060\013\006\003\125\004\012\014\004\101\164\157
\163\061\013\060\011\006\003\125\004\006\023\002\104\105
END
CKA_ID UTF8 "0"

```

CKA\_ISSUER MULTILINE\_OCTAL

\060\074\061\036\060\034\006\003\125\004\003\014\025\101\164\157  
\163\040\124\162\165\163\164\145\144\122\157\157\164\040\062\060  
\061\061\061\015\060\013\006\003\125\004\012\014\004\101\164\157  
\163\061\013\060\011\006\003\125\004\006\023\002\104\105

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\010\134\063\313\142\054\137\263\062

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\167\060\202\002\137\240\003\002\001\002\002\010\134  
\063\313\142\054\137\263\062\060\015\006\011\052\206\110\206\367  
\015\001\001\013\005\000\060\074\061\036\060\034\006\003\125\004  
\003\014\025\101\164\157\163\040\124\162\165\163\164\145\144\122  
\157\157\164\040\062\060\061\061\061\015\060\013\006\003\125\004  
\012\014\004\101\164\157\163\061\013\060\011\006\003\125\004\006  
\023\002\104\105\060\036\027\015\061\061\060\067\060\067\061\064  
\065\070\063\060\132\027\015\063\060\061\062\063\061\062\063\065  
\071\065\071\132\060\074\061\036\060\034\006\003\125\004\003\014  
\025\101\164\157\163\040\124\162\165\163\164\145\144\122\157\157  
\164\040\062\060\061\061\061\015\060\013\006\003\125\004\012\014  
\004\101\164\157\163\061\013\060\011\006\003\125\004\006\023\002  
\104\105\060\202\001\042\060\015\006\011\052\206\110\206\367\015  
\001\001\001\005\000\003\202\001\017\000\060\202\001\012\002\202  
\001\001\000\225\205\073\227\157\052\073\056\073\317\246\363\051  
\065\276\317\030\254\076\252\331\370\115\240\076\032\107\271\274  
\232\337\362\376\314\076\107\350\172\226\302\044\216\065\364\251  
\014\374\202\375\155\301\162\142\047\275\352\153\353\347\212\314  
\124\076\220\120\317\200\324\225\373\350\265\202\324\024\305\266  
\251\125\045\127\333\261\120\366\260\140\144\131\172\151\317\003  
\267\157\015\276\312\076\157\164\162\352\252\060\052\163\142\276  
\111\221\141\310\021\376\016\003\052\367\152\040\334\002\025\015  
\136\025\152\374\343\202\301\265\305\235\144\011\154\243\131\230  
\007\047\307\033\226\053\141\164\161\154\103\361\367\065\211\020  
\340\236\354\125\241\067\042\242\207\004\005\054\107\175\264\034  
\271\142\051\146\050\312\267\341\223\365\244\224\003\231\271\160  
\205\265\346\110\352\215\120\374\331\336\314\157\007\016\335\013  
\162\235\200\060\026\007\225\077\050\016\375\305\165\117\123\326  
\164\232\264\044\056\216\002\221\317\166\305\233\036\125\164\234  
\170\041\261\360\055\361\013\237\302\325\226\030\037\360\124\042  
\172\214\007\002\003\001\000\001\243\175\060\173\060\035\006\003  
\125\035\016\004\026\004\024\247\245\006\261\054\246\011\140\356  
\321\227\351\160\256\274\073\031\154\333\041\060\017\006\003\125  
\035\023\001\001\377\004\005\060\003\001\001\377\060\037\006\003  
\125\035\043\004\030\060\026\200\024\247\245\006\261\054\246\011  
\140\356\321\227\351\160\256\274\073\031\154\333\041\060\030\006  
\003\125\035\040\004\021\060\017\060\015\006\013\053\006\001\004  
\001\260\055\003\004\001\001\060\016\006\003\125\035\017\001\001

```
\377\004\004\003\002\001\206\060\015\006\011\052\206\110\206\367
\015\001\001\013\005\000\003\202\001\001\000\046\167\064\333\224
\110\206\052\101\235\054\076\006\220\140\304\214\254\013\124\270
\037\271\173\323\007\071\344\372\076\173\262\075\116\355\237\043
\275\227\363\153\134\357\356\375\100\246\337\241\223\241\012\206
\254\357\040\320\171\001\275\170\367\031\330\044\061\064\004\001
\246\272\025\232\303\047\334\330\117\017\314\030\143\377\231\017
\016\221\153\165\026\341\041\374\330\046\307\107\267\246\317\130
\162\161\176\272\341\115\225\107\073\311\257\155\241\264\301\354
\211\366\264\017\070\265\342\144\334\045\317\246\333\353\232\134
\231\241\305\010\336\375\346\332\325\326\132\105\014\304\267\302
\265\024\357\264\021\377\016\025\265\365\365\333\306\275\353\132
\247\360\126\042\251\074\145\124\306\025\250\275\206\236\315\203
\226\150\172\161\201\211\341\013\341\352\021\033\150\010\314\151
\236\354\236\101\236\104\062\046\172\342\207\012\161\075\353\344
\132\244\322\333\305\315\306\336\140\177\271\363\117\104\222\357
\052\267\030\076\247\031\331\013\175\261\067\101\102\260\272\140
\035\362\376\011\021\260\360\207\173\247\235
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "Atos TrustedRoot 2011"

# Issuer: C=DE,O=Atos,CN=Atos TrustedRoot 2011

# Serial Number:5c:33:cb:62:2c:5f:b3:32

# Subject: C=DE,O=Atos,CN=Atos TrustedRoot 2011

# Not Valid Before: Thu Jul 07 14:58:30 2011

# Not Valid After : Tue Dec 31 23:59:59 2030

# Fingerprint (SHA-256):

F3:56:BE:A2:44:B7:A9:1E:B3:5D:53:CA:9A:D7:86:4A:CE:01:8E:2D:35:D5:F8:F9:6D:DF:68:A6:F4:1A:A4:74

# Fingerprint (SHA1): 2B:B1:F5:3E:55:0C:1D:C5:F1:D4:E6:B7:6A:46:4B:55:06:02:AC:21

CKA\_CLASS

CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Atos TrustedRoot 2011"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\053\261\365\076\125\014\035\305\361\324\346\267\152\106\113\125
\006\002\254\041
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\256\271\304\062\113\254\177\135\146\314\167\224\273\052\167\126
```

END

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\074\061\036\060\034\006\003\125\004\003\014\025\101\164\157
```

```
\163\040\124\162\165\163\164\145\144\122\157\157\164\040\062\060
\061\061\061\015\060\013\006\003\125\004\012\014\004\101\164\157
\163\061\013\060\011\006\003\125\004\006\023\002\104\105
END
```

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
```

```
\002\010\134\063\313\142\054\137\263\062
```

```
END
```

```
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
```

```
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
```

```
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
```

```
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
#
```

```
# Certificate
```

```
"QuoVadis Root CA 1 G3"
```

```
#
```

```
# Issuer: CN=QuoVadis Root CA 1 G3,O=QuoVadis Limited,C=BM
```

```
# Serial Number:78:58:5f:2e:ad:2c:19:4b:e3:37:07:35:34:13:28:b5:96:d4:65:93
```

```
# Subject: CN=QuoVadis Root CA 1 G3,O=QuoVadis Limited,C=BM
```

```
# Not Valid Before: Thu Jan 12 17:27:44 2012
```

```
# Not Valid After : Sun Jan 12 17:27:44 2042
```

```
# Fingerprint (SHA-256):
```

```
8A:86:6F:D1:B2:76:B5:7E:57:8E:92:1C:65:82:8A:2B:ED:58:E9:F2:F2:88:05:41:34:B7:F1:F4:BF:C9:CC:74
```

```
# Fingerprint (SHA1): 1B:8E:EA:57:96:29:1A:C9:39:EA:B8:0A:81:1A:73:73:C0:93:79:67
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "QuoVadis Root CA 1 G3"
```

```
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
```

```
CKA_SUBJECT MULTILINE_OCTAL
```

```
\060\110\061\013\060\011\006\003\125\004\006\023\002\102\115\061
\031\060\027\006\003\125\004\012\023\020\121\165\157\126\141\144
\151\163\040\114\151\155\151\164\145\144\061\036\060\034\006\003
\125\004\003\023\025\121\165\157\126\141\144\151\163\040\122\157
\157\164\040\103\101\040\061\040\107\063
```

```
END
```

```
CKA_ID
```

```
UTF8 "0"
```

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\110\061\013\060\011\006\003\125\004\006\023\002\102\115\061
\031\060\027\006\003\125\004\012\023\020\121\165\157\126\141\144
\151\163\040\114\151\155\151\164\145\144\061\036\060\034\006\003
\125\004\003\023\025\121\165\157\126\141\144\151\163\040\122\157
\157\164\040\103\101\040\061\040\107\063
```

```
END
```

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
```

```
\002\024\170\130\137\056\255\054\031\113\343\067\007\065\064\023
```

\050\265\226\324\145\223

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\140\060\202\003\110\240\003\002\001\002\002\024\170  
\130\137\056\255\054\031\113\343\067\007\065\064\023\050\265\226  
\324\145\223\060\015\006\011\052\206\110\206\367\015\001\001\013  
\005\000\060\110\061\013\060\011\006\003\125\004\006\023\002\102  
\115\061\031\060\027\006\003\125\004\012\023\020\121\165\157\126  
\141\144\151\163\040\114\151\155\151\164\145\144\061\036\060\034  
\006\003\125\004\003\023\025\121\165\157\126\141\144\151\163\040  
\122\157\157\164\040\103\101\040\061\040\107\063\060\036\027\015  
\061\062\060\061\061\062\061\067\062\067\064\064\132\027\015\064  
\062\060\061\061\062\061\067\062\067\064\064\132\060\110\061\013  
\060\011\006\003\125\004\006\023\002\102\115\061\031\060\027\006  
\003\125\004\012\023\020\121\165\157\126\141\144\151\163\040\114  
\151\155\151\164\145\144\061\036\060\034\006\003\125\004\003\023  
\025\121\165\157\126\141\144\151\163\040\122\157\157\164\040\103  
\101\040\061\040\107\063\060\202\002\042\060\015\006\011\052\206  
\110\206\367\015\001\001\001\005\000\003\202\002\017\000\060\202  
\002\012\002\202\002\001\000\240\276\120\020\216\351\362\154\100  
\264\004\234\205\271\061\312\334\055\344\021\251\004\074\033\125  
\301\347\130\060\035\044\264\303\357\205\336\214\054\341\301\075  
\337\202\346\117\255\107\207\154\354\133\111\301\112\325\273\217  
\354\207\254\177\202\232\206\354\075\003\231\122\001\322\065\236  
\254\332\360\123\311\146\074\324\254\002\001\332\044\323\073\250  
\002\106\257\244\034\343\370\163\130\166\267\366\016\220\015\265  
\360\317\314\372\371\306\114\345\303\206\060\012\215\027\176\065  
\353\305\337\273\016\234\300\215\207\343\210\070\205\147\372\076  
\307\253\340\023\234\005\030\230\317\223\365\261\222\264\374\043  
\323\317\325\304\047\111\340\236\074\233\010\243\213\135\052\041  
\340\374\071\252\123\332\175\176\317\032\011\123\274\135\005\004  
\317\241\112\217\213\166\202\015\241\370\322\307\024\167\133\220  
\066\007\201\233\076\006\372\122\136\143\305\246\000\376\245\351  
\122\033\122\265\222\071\162\003\011\142\275\260\140\026\156\246  
\335\045\302\003\146\335\363\004\321\100\342\116\213\206\364\157  
\345\203\240\047\204\136\004\301\365\220\275\060\075\304\357\250  
\151\274\070\233\244\244\226\321\142\332\151\300\001\226\256\313  
\304\121\064\352\014\252\377\041\216\131\217\112\134\344\141\232  
\247\322\351\052\170\215\121\075\072\025\356\242\131\216\251\134  
\336\305\371\220\042\345\210\105\161\335\221\231\154\172\237\075  
\075\230\174\136\366\276\026\150\240\136\256\013\043\374\132\017  
\252\042\166\055\311\241\020\035\344\323\104\043\220\210\237\306  
\052\346\327\365\232\263\130\036\057\060\211\010\033\124\242\265  
\230\043\354\010\167\034\225\135\141\321\313\211\234\137\242\112  
\221\232\357\041\252\111\026\010\250\275\141\050\061\311\164\255  
\205\366\331\305\261\213\321\345\020\062\115\137\213\040\072\074  
\111\037\063\205\131\015\333\313\011\165\103\151\163\373\153\161  
\175\360\337\304\114\175\306\243\056\310\225\171\313\163\242\216

\116\115\044\373\136\344\004\276\162\033\246\047\055\111\132\231  
\172\327\134\011\040\267\177\224\271\117\361\015\034\136\210\102  
\033\021\267\347\221\333\236\154\364\152\337\214\006\230\003\255  
\314\050\357\245\107\363\123\002\003\001\000\001\243\102\060\100  
\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001  
\377\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001  
\006\060\035\006\003\125\035\016\004\026\004\024\243\227\326\363  
\136\242\020\341\253\105\237\074\027\144\074\356\001\160\234\314  
\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\003  
\202\002\001\000\030\372\133\165\374\076\172\307\137\167\307\312  
\337\317\137\303\022\304\100\135\324\062\252\270\152\327\325\025  
\025\106\230\043\245\346\220\133\030\231\114\343\255\102\243\202  
\061\066\210\315\351\373\304\004\226\110\213\001\307\215\001\317  
\133\063\006\226\106\146\164\035\117\355\301\266\271\264\015\141  
\314\143\176\327\056\167\214\226\034\052\043\150\153\205\127\166  
\160\063\023\376\341\117\246\043\167\030\372\032\214\350\275\145  
\311\317\077\364\311\027\334\353\307\274\300\004\056\055\106\057  
\151\146\303\033\217\376\354\076\323\312\224\277\166\012\045\015  
\251\173\002\034\251\320\073\137\013\300\201\072\075\144\341\277  
\247\055\116\275\115\304\330\051\306\042\030\320\305\254\162\002  
\202\077\252\072\242\072\042\227\061\335\010\143\303\165\024\271  
\140\050\055\133\150\340\026\251\146\202\043\121\365\353\123\330  
\061\233\173\351\267\235\113\353\210\026\317\371\135\070\212\111  
\060\217\355\361\353\031\364\167\032\061\030\115\147\124\154\057  
\157\145\371\333\075\354\041\354\136\364\364\213\312\140\145\124  
\321\161\144\364\371\246\243\201\063\066\063\161\360\244\170\137  
\116\255\203\041\336\064\111\215\350\131\254\235\362\166\132\066  
\362\023\364\257\340\011\307\141\052\154\367\340\235\256\273\206  
\112\050\157\056\356\264\171\315\220\063\303\263\166\372\365\360  
\154\235\001\220\372\236\220\366\234\162\317\107\332\303\037\344  
\065\040\123\362\124\321\337\141\203\246\002\342\045\070\336\205  
\062\055\136\163\220\122\135\102\304\316\075\113\341\371\031\204  
\035\325\242\120\314\101\373\101\024\303\275\326\311\132\243\143  
\146\002\200\275\005\072\073\107\234\354\000\046\114\365\210\121  
\277\250\043\177\030\007\260\013\355\213\046\241\144\323\141\112  
\353\134\237\336\263\257\147\003\263\037\335\155\135\151\150\151  
\253\136\072\354\174\151\274\307\073\205\116\236\025\271\264\025  
\117\303\225\172\130\327\311\154\351\154\271\363\051\143\136\264  
\054\360\055\075\355\132\145\340\251\133\100\302\110\231\201\155  
\236\037\006\052\074\022\264\213\017\233\242\044\360\246\215\326  
\172\340\113\266\144\226\143\225\204\302\112\315\034\056\044\207  
\063\140\345\303

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE



```
# Trust for "QuoVadis Root CA 1 G3"
# Issuer: CN=QuoVadis Root CA 1 G3,O=QuoVadis Limited,C=BM
# Serial Number:78:58:5f:2e:ad:2c:19:4b:e3:37:07:35:34:13:28:b5:96:d4:65:93
# Subject: CN=QuoVadis Root CA 1 G3,O=QuoVadis Limited,C=BM
# Not Valid Before: Thu Jan 12 17:27:44 2012
# Not Valid After : Sun Jan 12 17:27:44 2042
# Fingerprint (SHA-256):
8A:86:6F:D1:B2:76:B5:7E:57:8E:92:1C:65:82:8A:2B:ED:58:E9:F2:F2:88:05:41:34:B7:F1:F4:BF:C9:CC:74
# Fingerprint (SHA1): 1B:8E:EA:57:96:29:1A:C9:39:EA:B8:0A:81:1A:73:73:C0:93:79:67
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "QuoVadis
Root CA 1 G3"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\033\216\352\127\226\051\032\311\071\352\270\012\201\032\163\163
\300\223\171\147
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\244\274\133\077\376\067\232\372\144\360\342\372\005\075\013\253
END
CKA_ISSUER MULTILINE_OCTAL
\060\110\061\013\060\011\006\003\125\004\006\023\002\102\115\061
\031\060\027\006\003\125\004\012\023\020\121\165\157\126\141\144
\151\163\040\114\151\155\151\164\145\144\061\036\060\034\006\003
\125\004\003\023\025\121\165\157\126\141\144\151\163\040\122\157
\157\164\040\103\101\040\061\040\107\063
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\024\170\130\137\056\255\054\031\113\343\067\007\065\064\023
\050\265\226\324\145\223
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
#
# Certificate "QuoVadis Root CA 2 G3"
#
# Issuer: CN=QuoVadis Root CA
2 G3,O=QuoVadis Limited,C=BM
# Serial Number:44:57:34:24:5b:81:89:9b:35:f2:ce:b8:2b:3b:5b:a7:26:f0:75:28
# Subject: CN=QuoVadis Root CA 2 G3,O=QuoVadis Limited,C=BM
# Not Valid Before: Thu Jan 12 18:59:32 2012
# Not Valid After : Sun Jan 12 18:59:32 2042
# Fingerprint (SHA-256):
```

8F:E4:FB:0A:F9:3A:4D:0D:67:DB:0B:EB:B2:3E:37:C7:1B:F3:25:DC:BC:DD:24:0E:A0:4D:AF:58:B4:7E:18:40

# Fingerprint (SHA1): 09:3C:61:F3:8B:8B:DC:7D:55:DF:75:38:02:05:00:E1:25:F5:C8:36

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "QuoVadis Root CA 2 G3"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\110\061\013\060\011\006\003\125\004\006\023\002\102\115\061  
\031\060\027\006\003\125\004\012\023\020\121\165\157\126\141\144  
\151\163\040\114\151\155\151\164\145\144\061\036\060\034\006\003  
\125\004\003\023\025\121\165\157\126\141\144\151\163\040\122\157  
\157\164\040\103\101\040\062\040\107\063

END

CKA\_ID

UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\110\061\013\060\011\006\003\125\004\006\023\002\102\115\061  
\031\060\027\006\003\125\004\012\023\020\121\165\157\126\141\144  
\151\163\040\114\151\155\151\164\145\144\061\036\060\034\006\003  
\125\004\003\023\025\121\165\157\126\141\144\151\163\040\122\157  
\157\164\040\103\101\040\062\040\107\063

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

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CKA\_VALUE MULTILINE\_OCTAL

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\133\366\131\031\210\336\125\210\067\121\013\170\134\012\036\243  
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\346\057\037\021\332\123\200\054\205\236\253\065\020\333\042\137
\152\305\136\227\123\362\062\002\011\060\243\130\360\015\001\325
\162\306\261\174\151\173\303\365\066\105\314\141\156\136\114\224
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END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "QuoVadis Root CA 2 G3"

# Issuer: CN=QuoVadis Root CA 2 G3,O=QuoVadis Limited,C=BM

# Serial Number:44:57:34:24:5b:81:89:9b:35:f2:ce:b8:2b:3b:5b:a7:26:f0:75:28

# Subject: CN=QuoVadis Root CA 2 G3,O=QuoVadis Limited,C=BM

# Not Valid Before: Thu Jan 12 18:59:32 2012

# Not Valid After : Sun Jan 12 18:59:32 2042

# Fingerprint (SHA-256):

8F:E4:FB:0A:F9:3A:4D:0D:67:DB:0B:EB:B2:3E:37:C7:1B:F3:25:DC:BC:DD:24:0E:A0:4D:AF:58:B4:7E:18:40

# Fingerprint (SHA1): 09:3C:61:F3:8B:8B:DC:7D:55:DF:75:38:02:05:00:E1:25:F5:C8:36

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "QuoVadis Root CA 2 G3"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

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\011\074\141\363\213\213\334\175\125\337\165\070\002\005\000\341
\045\365\310\066
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END

CKA\_CERT\_MD5\_HASH

MULTILINE\_OCTAL

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END

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CKA_ISSUER MULTILINE_OCTAL
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\151\163\040\114\151\155\151\164\145\144\061\036\060\034\006\003
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\157\164\040\103\101\040\062\040\107\063
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\024\104\127\064\044\133\201\211\233\065\362\316\270\053\073
\133\247\046\360\165\050
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "QuoVadis Root CA 3 G3"
#
# Issuer: CN=QuoVadis Root CA 3 G3,O=QuoVadis Limited,C=BM
# Serial Number:2e:f5:9b:02:28:a7:db:7a:ff:d5:a3:a9:ee:bd:03:a0:cf:12:6a:1d
#
# Subject: CN=QuoVadis Root CA 3 G3,O=QuoVadis Limited,C=BM
# Not Valid Before: Thu Jan 12 20:26:32 2012
# Not Valid After : Sun Jan 12 20:26:32 2042
# Fingerprint (SHA-256):
88:EF:81:DE:20:2E:B0:18:45:2E:43:F8:64:72:5C:EA:5F:BD:1F:C2:D9:D2:05:73:07:09:C5:D8:B8:69:0F:46
# Fingerprint (SHA1): 48:12:BD:92:3C:A8:C4:39:06:E7:30:6D:27:96:E6:A4:CF:22:2E:7D
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "QuoVadis Root CA 3 G3"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\110\061\013\060\011\006\003\125\004\006\023\002\102\115\061
\031\060\027\006\003\125\004\012\023\020\121\165\157\126\141\144
\151\163\040\114\151\155\151\164\145\144\061\036\060\034\006\003
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END
CKA_ID UTF8 "0"
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END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

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END

CKA\_NSS\_MOZILLA\_CA\_POLICY

```

CK_BBOOL CK_TRUE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

# Trust for "QuoVadis Root CA 3 G3"
# Issuer: CN=QuoVadis Root CA 3 G3,O=QuoVadis Limited,C=BM
# Serial Number:2e:f5:9b:02:28:a7:db:7a:ff:d5:a3:a9:ee:bd:03:a0:cf:12:6a:1d
# Subject: CN=QuoVadis Root CA 3 G3,O=QuoVadis Limited,C=BM
# Not Valid Before: Thu Jan 12 20:26:32 2012
# Not Valid After : Sun Jan 12 20:26:32 2042
# Fingerprint (SHA-256):
88:EF:81:DE:20:2E:B0:18:45:2E:43:F8:64:72:5C:EA:5F:BD:1F:C2:D9:D2:05:73:07:09:C5:D8:B8:69:0F:46
# Fingerprint (SHA1): 48:12:BD:92:3C:A8:C4:39:06:E7:30:6D:27:96:E6:A4:CF:22:2E:7D
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "QuoVadis Root CA 3 G3"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\110\022\275\222\074\250\304\071\006\347\060\155\047\226\346\244
\317\042\056\175
END
CKA_CERT_MD5_HASH
MULTILINE_OCTAL
\337\175\271\255\124\157\150\241\337\211\127\003\227\103\260\327
END
CKA_ISSUER MULTILINE_OCTAL
\060\110\061\013\060\011\006\003\125\004\006\023\002\102\115\061
\031\060\027\006\003\125\004\012\023\020\121\165\157\126\141\144
\151\163\040\114\151\155\151\164\145\144\061\036\060\034\006\003
\125\004\003\023\025\121\165\157\126\141\144\151\163\040\122\157
\157\164\040\103\101\040\063\040\107\063
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\024\056\365\233\002\050\247\333\172\377\325\243\251\356\275
\003\240\317\022\152\035
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "DigiCert Assured ID Root G2"
#
# Issuer: CN=DigiCert Assured ID Root G2,OU=www.digicert.com,O=DigiCert Inc,C=US
# Serial Number:0b:93:1c:3a:d6:39:67:ea:67:23:bf:c3:af:9a:f4:4b
# Subject:

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CN=DigiCert Assured ID Root G2,OU=www.digicert.com,O=DigiCert Inc,C=US
# Not Valid Before: Thu Aug 01 12:00:00 2013
# Not Valid After : Fri Jan 15 12:00:00 2038
# Fingerprint (SHA-256):
7D:05:EB:B6:82:33:9F:8C:94:51:EE:09:4E:EB:FE:FA:79:53:A1:14:ED:B2:F4:49:49:45:2F:AB:7D:2F:C1:85
# Fingerprint (SHA1): A1:4B:48:D9:43:EE:0A:0E:40:90:4F:3C:E0:A4:C0:91:93:51:5D:3F
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "DigiCert Assured ID Root G2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\145\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\025\060\023\006\003\125\004\012\023\014\104\151\147\151\103\145
\162\164\040\111\156\143\061\031\060\027\006\003\125\004\013\023
\020\167\167\167\056\144\151\147\151\143\145\162\164\056\143\157
\155\061\044\060\042\006\003\125\004\003\023\033\104\151\147\151
\103\145\162\164\040\101\163\163\165\162\145\144\040\111\104\040
\122\157\157\164\040\107\062
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\145\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\025\060\023\006\003\125\004\012\023\014\104\151\147\151\103\145
\162\164\040\111\156\143\061\031\060\027\006\003\125\004\013\023
\020\167\167\167\056\144\151\147\151\143\145\162\164\056\143\157
\155\061\044\060\042\006\003\125\004\003\023\033\104\151\147\151
\103\145\162\164\040\101\163\163\165\162\145\144\040\111\104\040
\122\157\157\164\040\107\062
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\013\223\034\072\326\071\147\352\147\043\277\303\257\232
\364\113
END
CKA_VALUE MULTILINE_OCTAL
\060\202\003\226\060\202\002\176\240\003\002\001\002\002\020\013
\223\034\072\326\071\147\352\147\043\277\303\257\232\364\113\060
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\145
\061\013\060\011\006\003\125\004\006\023\002\125\123\061\025\060
\023\006\003\125\004\012\023\014\104\151\147\151\103\145\162\164
\040\111\156\143\061\031\060\027\006\003\125\004\013\023\020\167
\167\167\056\144\151\147\151\143\145\162\164\056\143\157\155\061
\044\060\042\006\003\125\004\003\023\033\104\151\147\151\103\145
\162\164\040\101\163\163\165\162\145\144\040\111\104\040\122\157
\157\164\040\107\062\060\036\027\015\061\063\060\070\060\061\061
\062\060\060\060\060\132\027\015\063\070\060\061\061\065\061\062
```

\060\060\060\060\132\060\145\061\013\060\011\006\003\125\004\006  
\023\002\125\123\061\025\060\023\006\003\125\004\012\023\014\104  
\151\147\151\103\145\162\164\040\111\156\143\061\031\060\027\006  
\003\125\004\013\023\020\167\167\167\056\144\151\147\151\143\145  
\162\164\056\143\157\155\061\044\060\042\006\003\125\004\003\023  
\033\104\151\147\151\103\145\162\164\040\101\163\163\165\162\145  
\144\040\111\104\040\122\157\157\164\040\107\062\060\202\001\042  
\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003  
\202\001\017\000\060\202\001\012\002\202\001\001\000\331\347\050  
\057\122\077\066\162\111\210\223\064\363\370\152\036\061\124\200  
\237\255\124\101\265\107\337\226\250\324\257\200\055\271\012\317  
\165\375\211\245\175\044\372\343\042\014\053\274\225\027\013\063  
\277\031\115\101\006\220\000\275\014\115\020\376\007\265\347\034  
\156\042\125\061\145\227\275\323\027\322\036\142\363\333\352\154  
\120\214\077\204\014\226\317\267\313\003\340\312\155\241\024\114  
\033\211\335\355\000\260\122\174\257\221\154\261\070\023\321\351  
\022\010\300\000\260\034\053\021\332\167\160\066\233\256\316\171  
\207\334\202\160\346\011\164\160\125\151\257\243\150\237\277\335  
\266\171\263\362\235\160\051\125\364\253\377\225\141\363\311\100  
\157\035\321\276\223\273\323\210\052\273\235\277\162\132\126\161  
\073\077\324\363\321\012\376\050\357\243\356\331\231\257\003\323  
\217\140\267\362\222\241\261\275\211\211\037\060\315\303\246\056  
\142\063\256\026\002\167\104\132\347\201\012\074\247\104\056\171  
\270\077\004\274\134\240\207\341\033\257\121\216\315\354\054\372  
\370\376\155\360\072\174\252\213\344\147\225\061\215\002\003\001  
\000\001\243\102\060\100\060\017\006\003\125\035\023\001\001\377  
\004\005\060\003\001\001\377\060\016\006\003\125\035\017\001\001  
\377\004\004\003\002\001\206\060\035\006\003\125\035\016\004\026  
\004\024\316\303\112\271\231\125\362\270\333\140\277\251\176\275  
\126\265\227\066\247\326\060\015\006\011\052\206\110\206\367\015  
\001\001\013\005\000\003\202\001\001\000\312\245\125\214\343\310  
\101\156\151\047\247\165\021\357\074\206\066\157\322\235\306\170  
\070\035\151\226\242\222\151\056\070\154\233\175\004\324\211\245  
\261\061\067\212\311\041\314\253\154\315\213\034\232\326\277\110  
\322\062\146\301\212\300\363\057\072\357\300\343\324\221\206\321  
\120\343\003\333\163\167\157\112\071\123\355\336\046\307\265\175  
\257\053\102\321\165\142\343\112\053\002\307\120\113\340\151\342  
\226\154\016\104\146\020\104\217\255\005\353\370\171\254\246\033  
\350\067\064\235\123\311\141\252\242\122\257\112\160\026\206\302  
\072\310\261\023\160\066\330\317\356\364\012\064\325\133\114\375  
\007\234\242\272\331\001\162\134\363\115\301\335\016\261\034\015  
\304\143\276\255\364\024\373\211\354\242\101\016\114\314\310\127  
\100\320\156\003\252\315\014\216\211\231\231\154\360\074\060\257  
\070\337\157\274\243\276\051\040\047\253\164\377\023\042\170\336  
\227\122\125\036\203\265\124\040\003\356\256\300\117\126\336\067  
\314\303\177\252\004\047\273\323\167\270\142\333\027\174\234\050  
\042\023\163\154\317\046\365\212\051\347

END

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CKA_NSS_Mozilla_CA_POLICY
CK_BBOOL CK_TRUE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

# Trust for "DigiCert Assured ID Root G2"
# Issuer: CN=DigiCert Assured ID Root G2,OU=www.digicert.com,O=DigiCert Inc,C=US
# Serial Number:0b:93:1c:3a:d6:39:67:ea:67:23:bf:c3:af:9a:f4:4b
# Subject: CN=DigiCert Assured ID Root G2,OU=www.digicert.com,O=DigiCert Inc,C=US
# Not Valid Before: Thu Aug 01 12:00:00 2013
# Not Valid After : Fri Jan 15 12:00:00 2038
# Fingerprint (SHA-256):
7D:05:EB:B6:82:33:9F:8C:94:51:EE:09:4E:EB:FE:FA:79:53:A1:14:ED:B2:F4:49:49:45:2F:AB:7D:2F:C1:85
#
Fingerprint (SHA1): A1:4B:48:D9:43:EE:0A:0E:40:90:4F:3C:E0:A4:C0:91:93:51:5D:3F
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "DigiCert Assured ID Root G2"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\241\113\110\331\103\356\012\016\100\220\117\074\340\244\300\221
\223\121\135\077
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\222\070\271\370\143\044\202\145\054\127\063\346\376\201\217\235
END
CKA_ISSUER MULTILINE_OCTAL
\060\145\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\025\060\023\006\003\125\004\012\023\014\104\151\147\151\103\145
\162\164\040\111\156\143\061\031\060\027\006\003\125\004\013\023
\020\167\167\167\056\144\151\147\151\143\145\162\164\056\143\157
\155\061\044\060\042\006\003\125\004\003\023\033\104\151\147\151
\103\145\162\164\040\101\163\163\165\162\145\144\040\111\104\040
\122\157\157\164\040\107\062
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\013\223\034\072\326\071\147\352\147\043\277\303\257\232
\364\113
END
CKA_TRUST_SERVER_AUTH
CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "DigiCert Assured ID Root G3"

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#
# Issuer: CN=DigiCert Assured ID Root G3,OU=www.digicert.com,O=DigiCert Inc,C=US
# Serial Number:0b:a1:5a:fa:1d:df:a0:b5:49:44:af:cd:24:a0:6c:ec
# Subject: CN=DigiCert Assured ID Root G3,OU=www.digicert.com,O=DigiCert Inc,C=US
# Not Valid Before: Thu Aug 01 12:00:00 2013
# Not Valid After : Fri Jan 15 12:00:00 2038
# Fingerprint (SHA-256):
7E:37:CB:8B:4C:47:09:0C:AB:36:55:1B:A6:F4:5D:B8:40:68:0F:BA:16:6A:95:2D:B1:00:71:7F:43:05:3F:C2
# Fingerprint (SHA1): F5:17:A2:4F:9A:48:C6:C9:F8:A2:00:26:9F:DC:0F:48:2C:AB:30:89
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL
UTF8 "DigiCert Assured ID Root G3"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\145\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\025\060\023\006\003\125\004\012\023\014\104\151\147\151\103\145
\162\164\040\111\156\143\061\031\060\027\006\003\125\004\013\023
\020\167\167\167\056\144\151\147\151\143\145\162\164\056\143\157
\155\061\044\060\042\006\003\125\004\003\023\033\104\151\147\151
\103\145\162\164\040\101\163\163\165\162\145\144\040\111\104\040
\122\157\157\164\040\107\063
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\145\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\025\060\023\006\003\125\004\012\023\014\104\151\147\151\103\145
\162\164\040\111\156\143\061\031\060\027\006\003\125\004\013\023
\020\167\167\167\056\144\151\147\151\143\145\162\164\056\143\157
\155\061\044\060\042\006\003\125\004\003\023\033\104\151\147\151
\103\145\162\164\040\101\163\163\165\162\145\144\040\111\104\040
\122\157\157\164\040\107\063
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\013\241\132\372\035\337\240\265\111\104\257\315\044\240
\154\354
END
CKA_VALUE MULTILINE_OCTAL
\060\202\002\106\060\202\001\315\240\003\002\001\002\002\020\013
\241\132\372\035\337\240\265\111\104\257\315\044\240\154\354\060
\012\006\010\052\206\110\316\075\004\003\003\060\145\061\013\060
\011\006\003\125\004\006\023\002\125\123\061\025\060\023\006\003
\125\004\012\023\014\104\151\147\151\103\145\162\164\040\111\156
\143\061\031\060\027\006\003\125\004\013\023\020\167\167\167\056
\144\151\147\151\143\145\162\164\056\143\157\155\061\044\060\042

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\006\003\125\004\003\023\033\104\151\147\151\103\145\162\164\040  
\101\163\163\165\162\145\144\040\111\104\040\122\157\157\164\040  
\107\063\060\036\027\015\061\063\060\070\060\061\061\062\060\060  
\060\060\132\027\015\063\070\060\061\061\065\061\062\060\060\060  
\060\132\060\145\061\013\060\011\006\003\125\004\006\023\002\125  
\123\061\025\060\023\006\003\125\004\012\023\014\104\151\147\151  
\103\145\162\164\040\111\156\143\061\031\060\027\006\003\125\004  
\013\023\020\167\167\167\056\144\151\147\151\143\145\162\164\056  
\143\157\155\061\044\060\042\006\003\125\004\003\023\033\104\151  
\147\151\103\145\162\164\040\101\163\163\165\162\145\144\040\111  
\104\040\122\157\157\164\040\107\063\060\166\060\020\006\007\052  
\206\110\316\075\002\001\006\005\053\201\004\000\042\003\142\000  
\004\031\347\274\254\104\145\355\315\270\077\130\373\215\261\127  
\251\104\055\005\025\362\357\013\377\020\164\237\265\142\122\137  
\146\176\037\345\334\033\105\171\013\314\306\123\012\235\215\135  
\002\331\251\131\336\002\132\366\225\052\016\215\070\112\212\111  
\306\274\306\003\070\007\137\125\332\176\011\156\342\177\136\320  
\105\040\017\131\166\020\326\240\044\360\055\336\066\362\154\051  
\071\243\102\060\100\060\017\006\003\125\035\023\001\001\377\004  
\005\060\003\001\001\377\060\016\006\003\125\035\017\001\001\377  
\004\004\003\002\001\206\060\035\006\003\125\035\016\004\026\004  
\024\313\320\275\251\341\230\005\121\241\115\067\242\203\171\316  
\215\035\052\344\204\060\012\006\010\052\206\110\316\075\004\003  
\003\003\147\000\060\144\002\060\045\244\201\105\002\153\022\113  
\165\164\117\310\043\343\160\362\165\162\336\174\211\360\317\221  
\162\141\236\136\020\222\131\126\271\203\307\020\347\070\351\130  
\046\066\175\325\344\064\206\071\002\060\174\066\123\360\060\345  
\142\143\072\231\342\266\243\073\233\064\372\036\332\020\222\161  
\136\221\023\247\335\244\156\222\314\062\326\365\041\146\307\057  
\352\226\143\152\145\105\222\225\001\264

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "DigiCert Assured ID Root G3"

# Issuer: CN=DigiCert Assured ID Root G3,OU=www.digicert.com,O=DigiCert Inc,C=US

# Serial Number:0b:a1:5a:fa:1d:df:a0:b5:49:44:af:cd:24:a0:6c:ec

# Subject: CN=DigiCert Assured ID Root G3,OU=www.digicert.com,O=DigiCert Inc,C=US

# Not Valid Before: Thu Aug 01 12:00:00 2013

# Not Valid After : Fri

Jan 15 12:00:00 2038

# Fingerprint (SHA-256):

7E:37:CB:8B:4C:47:09:0C:AB:36:55:1B:A6:F4:5D:B8:40:68:0F:BA:16:6A:95:2D:B1:00:71:7F:43:05:3F:C2

# Fingerprint (SHA1): F5:17:A2:4F:9A:48:C6:C9:F8:A2:00:26:9F:DC:0F:48:2C:AB:30:89

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

```

CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "DigiCert Assured ID Root G3"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\365\027\242\117\232\110\306\311\370\242\000\046\237\334\017\110
\054\253\060\211
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\174\177\145\061\014\201\337\215\272\076\231\342\134\255\156\373
END
CKA_ISSUER MULTILINE_OCTAL
\060\145\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\025\060\023\006\003\125\004\012\023\014\104\151\147\151\103\145
\162\164\040\111\156\143\061\031\060\027\006\003\125\004\013\023
\020\167\167\167\056\144\151\147\151\143\145\162\164\056\143\157
\155\061\044\060\042\006\003\125\004\003\023\033\104\151\147\151
\103\145\162\164\040\101\163\163\165\162\145\144\040\111\104\040
\122\157\157\164\040\107\063
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\013\241\132\372\035\337\240\265\111\104\257\315\044\240
\154\354
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "DigiCert Global Root G2"
#
# Issuer: CN=DigiCert Global Root G2,OU=www.digicert.com,O=DigiCert Inc,C=US
# Serial Number:03:3a:f1:e6:a7:11:a9:a0:bb:28:64:b1:1d:09:fa:e5
# Subject: CN=DigiCert Global Root G2,OU=www.digicert.com,O=DigiCert Inc,C=US
# Not Valid Before: Thu Aug 01 12:00:00 2013
# Not Valid After : Fri Jan 15 12:00:00 2038
# Fingerprint (SHA-256):
CB:3C:CB:B7:60:31:E5:E0:13:8F:8D:D3:9A:23:F9:DE:47:FF:C3:5E:43:C1:14:4C:EA:27:D4:6A:5A:B1:CB:5F
# Fingerprint (SHA1): DF:3C:24:F9:BF:D6:66:76:1B:26:80:73:FE:06:D1:CC:8D:4F:82:A4
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN
CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "DigiCert Global Root G2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL

```

\060\141\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\025\060\023\006\003\125\004\012\023\014\104\151\147\151\103\145  
\162\164\040\111\156\143\061\031\060\027\006\003\125\004\013\023  
\020\167\167\167\056\144\151\147\151\143\145\162\164\056\143\157  
\155\061\040\060\036\006\003\125\004\003\023\027\104\151\147\151  
\103\145\162\164\040\107\154\157\142\141\154\040\122\157\157\164  
\040\107\062

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\141\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\025\060\023\006\003\125\004\012\023\014\104\151\147\151\103\145  
\162\164\040\111\156\143\061\031\060\027\006\003\125\004\013\023  
\020\167\167\167\056\144\151\147\151\143\145\162\164\056\143\157  
\155\061\040\060\036\006\003\125\004\003\023\027\104\151\147\151  
\103\145\162\164\040\107\154\157\142\141\154\040\122\157\157\164  
\040\107\062

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\020\003\072\361\346\247\021\251\240\273\050\144\261\035\011  
\372\345

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\216\060\202\002\166\240\003\002\001\002\002\020\003  
\072\361\346\247\021\251\240\273\050\144\261\035\011\372\345\060  
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\141  
\061\013\060\011\006\003\125\004\006\023\002\125\123\061\025\060  
\023\006\003\125\004\012\023\014\104\151\147\151\103\145\162\164  
\040\111\156\143\061\031\060\027\006\003\125\004\013\023\020\167  
\167\167\056\144\151\147\151\143\145\162\164\056\143\157\155\061  
\040\060\036\006\003\125\004\003\023\027\104\151\147\151\103\145  
\162\164\040\107\154\157\142\141\154\040\122\157\157\164\040\107  
\062\060\036\027\015\061\063\060\070\060\061\061\062\060\060\060  
\060\132\027\015\063\070\060\061\061\065\061\062\060\060\060\060  
\132\060\141\061\013\060\011\006\003\125\004\006\023\002\125\123  
\061\025\060\023\006\003\125\004\012\023\014\104\151\147\151\103  
\145\162\164\040\111\156\143\061\031\060\027\006\003\125\004\013  
\023\020\167\167\167\056\144\151\147\151\143\145\162\164\056\143  
\157\155\061\040\060\036\006\003\125\004\003\023\027\104\151\147  
\151\103\145\162\164\040\107\154\157\142\141\154\040\122\157\157  
\164\040\107\062\060\202\001\042\060\015\006\011\052\206\110\206  
\367\015\001\001\001\005\000\003\202\001\017\000\060\202\001\012  
\002\202\001\001\000\273\067\315\064\334\173\153\311\262\150\220  
\255\112\165\377\106\272\041\012\010\215\365\031\124\311\373\210  
\333\363\256\362\072\211\221\074\172\346\253\006\032\153\317\254  
\055\350\136\011\044\104\272\142\232\176\326\243\250\176\340\124  
\165\040\005\254\120\267\234\143\032\154\060\334\332\037\031\261

\327\036\336\375\327\340\313\224\203\067\256\354\037\103\116\335  
\173\054\322\275\056\245\057\344\251\270\255\072\324\231\244\266  
\045\351\233\153\000\140\222\140\377\117\041\111\030\367\147\220  
\253\141\006\234\217\362\272\351\264\351\222\062\153\265\363\127  
\350\135\033\315\214\035\253\225\004\225\111\363\065\055\226\343  
\111\155\335\167\343\373\111\113\264\254\125\007\251\217\225\263  
\264\043\273\114\155\105\360\366\251\262\225\060\264\375\114\125  
\214\047\112\127\024\174\202\235\315\163\222\323\026\112\006\014  
\214\120\321\217\036\011\276\027\241\346\041\312\375\203\345\020  
\274\203\245\012\304\147\050\366\163\024\024\075\106\166\303\207  
\024\211\041\064\115\257\017\105\014\246\111\241\272\273\234\305  
\261\063\203\051\205\002\003\001\000\001\243\102\060\100\060\017  
\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060  
\016\006\003\125\035\017\001\001\377\004\004\003\002\001\206\060  
\035\006\003\125\035\016\004\026\004\024\116\042\124\040\030\225  
\346\343\156\346\017\372\372\271\022\355\006\027\217\071\060\015  
\006\011\052\206\110\206\367\015\001\001\013\005\000\003\202\001  
\001\000\140\147\050\224\157\016\110\143\353\061\335\352\147\030  
\325\211\175\074\305\213\112\177\351\276\333\053\027\337\260\137  
\163\167\052\062\023\071\201\147\102\204\043\362\105\147\065\354  
\210\277\370\217\260\141\014\064\244\256\040\114\204\306\333\370  
\065\341\166\331\337\246\102\273\307\104\010\206\177\066\164\044  
\132\332\154\015\024\131\065\275\362\111\335\266\037\311\263\015  
\107\052\075\231\057\273\134\273\265\324\040\341\231\137\123\106  
\025\333\150\233\360\363\060\325\076\061\342\215\204\236\343\212  
\332\332\226\076\065\023\245\137\360\371\160\120\160\107\101\021  
\127\031\116\300\217\256\006\304\225\023\027\057\033\045\237\165  
\362\261\216\231\241\157\023\261\101\161\376\210\052\310\117\020  
\040\125\327\363\024\105\345\340\104\364\352\207\225\062\223\016  
\376\123\106\372\054\235\377\213\042\271\113\331\011\105\244\336  
\244\270\232\130\335\033\175\122\237\216\131\103\210\201\244\236  
\046\325\157\255\335\015\306\067\175\355\003\222\033\345\167\137  
\166\356\074\215\304\135\126\133\242\331\146\156\263\065\067\345  
\062\266

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER

CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "DigiCert Global Root G2"

# Issuer: CN=DigiCert Global Root G2,OU=www.digicert.com,O=DigiCert Inc,C=US

# Serial Number:03:3a:f1:e6:a7:11:a9:a0:bb:28:64:b1:1d:09:fa:e5

# Subject: CN=DigiCert Global Root G2,OU=www.digicert.com,O=DigiCert Inc,C=US

# Not Valid Before: Thu Aug 01 12:00:00 2013

# Not Valid After : Fri Jan 15 12:00:00 2038

# Fingerprint (SHA-256):



```
CB:3C:CB:B7:60:31:E5:E0:13:8F:8D:D3:9A:23:F9:DE:47:FF:C3:5E:43:C1:14:4C:EA:27:D4:6A:5A:B1:CB:5F
# Fingerprint (SHA1): DF:3C:24:F9:BF:D6:66:76:1B:26:80:73:FE:06:D1:CC:8D:4F:82:A4
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "DigiCert Global Root G2"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\337\074\044\371\277\326\146\166\033\046\200\163\376\006\321\314
\215\117\202\244
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\344\246\212\310\124\254\122\102\106\012\375\162\110\033\052\104
END
CKA_ISSUER
MULTILINE_OCTAL
\060\141\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\025\060\023\006\003\125\004\012\023\014\104\151\147\151\103\145
\162\164\040\111\156\143\061\031\060\027\006\003\125\004\013\023
\020\167\167\167\056\144\151\147\151\143\145\162\164\056\143\157
\155\061\040\060\036\006\003\125\004\003\023\027\104\151\147\151
\103\145\162\164\040\107\154\157\142\141\154\040\122\157\157\164
\040\107\062
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\003\072\361\346\247\021\251\240\273\050\144\261\035\011
\372\345
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "DigiCert Global Root G3"
#
# Issuer: CN=DigiCert Global Root G3,OU=www.digicert.com,O=DigiCert Inc,C=US
# Serial Number:05:55:56:bc:f2:5e:a4:35:35:c3:a4:0f:d5:ab:45:72
# Subject: CN=DigiCert Global
Root G3,OU=www.digicert.com,O=DigiCert Inc,C=US
# Not Valid Before: Thu Aug 01 12:00:00 2013
# Not Valid After : Fri Jan 15 12:00:00 2038
# Fingerprint (SHA-256):
31:AD:66:48:F8:10:41:38:C7:38:F3:9E:A4:32:01:33:39:3E:3A:18:CC:02:29:6E:F9:7C:2A:C9:EF:67:31:D0
# Fingerprint (SHA1): 7E:04:DE:89:6A:3E:66:6D:00:E6:87:D3:3F:FA:D9:3B:E8:3D:34:9E
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "DigiCert Global Root G3"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\141\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\025\060\023\006\003\125\004\012\023\014\104\151\147\151\103\145
\162\164\040\111\156\143\061\031\060\027\006\003\125\004\013\023
\020\167\167\167\056\144\151\147\151\143\145\162\164\056\143\157
\155\061\040\060\036\006\003\125\004\003\023\027\104\151\147\151
\103\145\162\164\040\107\154\157\142\141\154\040\122\157\157\164
\040\107\063
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\141\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\025\060\023\006\003\125\004\012\023\014\104\151\147\151\103\145
\162\164\040\111\156\143\061\031\060\027\006\003\125\004\013\023
\020\167\167\167\056\144\151\147\151\143\145\162\164\056\143\157
\155\061\040\060\036\006\003\125\004\003\023\027\104\151\147\151
\103\145\162\164\040\107\154\157\142\141\154\040\122\157\157\164
\040\107\063
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\005\125\126\274\362\136\244\065\065\303\244\017\325\253
\105\162
END
CKA_VALUE MULTILINE_OCTAL
\060\202\002\077\060\202\001\305\240\003\002\001\002\002\020\005
\125\126\274\362\136\244\065\065\303\244\017\325\253\105\162\060
\012\006\010\052\206\110\316\075\004\003\003\060\141\061\013\060
\011\006\003\125\004\006\023\002\125\123\061\025\060\023\006\003
\125\004\012\023\014\104\151\147\151\103\145\162\164\040\111\156
\143\061\031\060\027\006\003\125\004\013\023\020\167\167\167\056
\144\151\147\151\143\145\162\164\056\143\157\155\061\040\060\036
\006\003\125\004\003\023\027\104\151\147\151\103\145\162\164\040
\107\154\157\142\141\154\040\122\157\157\164\040\107\063\060\036
\027\015\061\063\060\070\060\061\061\062\060\060\060\060\132\027
\015\063\070\060\061\061\065\061\062\060\060\060\060\132\060\141
\061\013\060\011\006\003\125\004\006\023\002\125\123\061\025\060
\023\006\003\125\004\012\023\014\104\151\147\151\103\145\162\164
\040\111\156\143\061\031\060\027\006\003\125\004\013\023\020\167
\167\167\056\144\151\147\151\143\145\162\164\056\143\157\155\061
\040\060\036\006\003\125\004\003\023\027\104\151\147\151\103\145
\162\164\040\107\154\157\142\141\154\040\122\157\157\164\040\107
\063\060\166\060\020\006\007\052\206\110\316\075\002\001\006\005
\053\201\004\000\042\003\142\000\004\335\247\331\273\212\270\013
\373\013\177\041\322\360\276\276\163\363\063\135\032\274\064\352
```

```
\336\306\233\274\320\225\366\360\314\320\013\272\141\133\121\106
\176\236\055\237\356\216\143\014\027\354\007\160\365\317\204\056
\100\203\234\350\077\101\155\073\255\323\244\024\131\066\170\235
\003\103\356\020\023\154\162\336\256\210\247\241\153\265\103\316
\147\334\043\377\003\034\243\342\076\243\102\060\100\060\017\006
\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060\016
\006\003\125\035\017\001\001\377\004\004\003\002\001\206\060\035
\006\003\125\035\016\004\026\004\024\263\333\110\244\371\241\305
\330\256\066\101\314\021\143\151\142\051\274\113\306\060\012\006
\010\052\206\110\316\075\004\003\003\003\150\000\060\145\002\061
\000\255\274\362\154\077\022\112\321\055\071\303\012\011\227\163
\364\210\066\214\210\047\273\346\210\215\120\205\247\143\371\236
\062\336\146\223\017\361\314\261\011\217\335\154\253\372\153\177
\240\002\060\071\146\133\302\144\215\270\236\120\334\250\325\111
\242\355\307\334\321\111\177\027\001\270\310\206\217\116\214\210
\053\250\232\251\212\305\321\000\275\370\124\342\232\345\133\174
\263\047\027
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER

CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "DigiCert Global Root G3"

# Issuer: CN=DigiCert Global Root G3,OU=www.digicert.com,O=DigiCert Inc,C=US

# Serial Number:05:55:56:bc:f2:5e:a4:35:35:c3:a4:0f:d5:ab:45:72

# Subject: CN=DigiCert Global Root G3,OU=www.digicert.com,O=DigiCert Inc,C=US

# Not Valid Before: Thu Aug 01 12:00:00 2013

# Not Valid After : Fri Jan 15 12:00:00 2038

# Fingerprint (SHA-256):

31:AD:66:48:F8:10:41:38:C7:38:F3:9E:A4:32:01:33:39:3E:3A:18:CC:02:29:6E:F9:7C:2A:C9:EF:67:31:D0

# Fingerprint (SHA1): 7E:04:DE:89:6A:3E:66:6D:00:E6:87:D3:3F:FA:D9:3B:E8:3D:34:9E

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "DigiCert Global Root G3"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\176\004\336\211\152\076\146\155\000\346\207\323\077\372\331\073
\350\075\064\236
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\365\135\244\120\245\373\050\176\036\017\015\314\226\127\126\312
```

END

CKA\_ISSUER

MULTILINE\_OCTAL

```
\060\141\061\013\060\011\006\003\125\004\006\023\002\125\123\061
```

```
\025\060\023\006\003\125\004\012\023\014\104\151\147\151\103\145
\162\164\040\111\156\143\061\031\060\027\006\003\125\004\013\023
\020\167\167\167\056\144\151\147\151\143\145\162\164\056\143\157
\155\061\040\060\036\006\003\125\004\003\023\027\104\151\147\151
\103\145\162\164\040\107\154\157\142\141\154\040\122\157\157\164
\040\107\063
```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

```
\002\020\005\125\126\274\362\136\244\065\065\303\244\017\325\253
\105\162
```

END

```
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

#

# Certificate "DigiCert Trusted Root G4"

#

# Issuer: CN=DigiCert Trusted Root G4,OU=www.digicert.com,O=DigiCert Inc,C=US

# Serial Number:05:9b:1b:57:9e:8e:21:32:e2:39:07:bd:a7:77:75:5c

# Subject: CN=DigiCert

Trusted Root G4,OU=www.digicert.com,O=DigiCert Inc,C=US

# Not Valid Before: Thu Aug 01 12:00:00 2013

# Not Valid After : Fri Jan 15 12:00:00 2038

# Fingerprint (SHA-256):

55:2F:7B:DC:F1:A7:AF:9E:6C:E6:72:01:7F:4F:12:AB:F7:72:40:C7:8E:76:1A:C2:03:D1:D9:D2:0A:C8:99:88

# Fingerprint (SHA1): DD:FB:16:CD:49:31:C9:73:A2:03:7D:3F:C8:3A:4D:7D:77:5D:05:E4

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "DigiCert Trusted Root G4"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

```
\060\142\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\025\060\023\006\003\125\004\012\023\014\104\151\147\151\103\145
\162\164\040\111\156\143\061\031\060\027\006\003\125\004\013\023
\020\167\167\167\056\144\151\147\151\143\145\162\164\056\143\157
\155\061\041\060\037\006\003\125\004\003\023\030\104\151\147\151
\103\145\162\164\040\124\162\165\163\164\145\144\040\122\157\157
\164\040\107\064
```

END

CKA\_ID

UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\142\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\025\060\023\006\003\125\004\012\023\014\104\151\147\151\103\145
```

\162\164\040\111\156\143\061\031\060\027\006\003\125\004\013\023  
\020\167\167\167\056\144\151\147\151\143\145\162\164\056\143\157  
\155\061\041\060\037\006\003\125\004\003\023\030\104\151\147\151  
\103\145\162\164\040\124\162\165\163\164\145\144\040\122\157\157  
\164\040\107\064

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\005\233\033\127\236\216\041\062\342\071\007\275\247\167  
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END

CKA\_VALUE MULTILINE\_OCTAL

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END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "DigiCert Trusted Root G4"

# Issuer: CN=DigiCert Trusted Root G4,OU=www.digicert.com,O=DigiCert Inc,C=US

# Serial Number:05:9b:1b:57:9e:8e:21:32:e2:39:07:bd:a7:77:75:5c

# Subject: CN=DigiCert Trusted Root G4,OU=www.digicert.com,O=DigiCert Inc,C=US

# Not Valid Before: Thu Aug 01 12:00:00 2013

# Not Valid After : Fri Jan 15 12:00:00 2038

# Fingerprint (SHA-256):

55:2F:7B:DC:F1:A7:AF:9E:6C:E6:72:01:7F:4F:12:AB:F7:72:40:C7:8E:76:1A:C2:03:D1:D9:D2:0A:C8:99:88

#

Fingerprint (SHA1): DD:FB:16:CD:49:31:C9:73:A2:03:7D:3F:C8:3A:4D:7D:77:5D:05:E4

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "DigiCert Trusted Root G4"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

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\167\135\005\344
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END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

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END

CKA\_ISSUER MULTILINE\_OCTAL

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\020\167\167\167\056\144\151\147\151\143\145\162\164\056\143\157
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CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

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END

CKA\_TRUST\_SERVER\_AUTH

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CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "COMODO RSA Certification Authority"
#
# Issuer: CN=COMODO RSA Certification Authority,O=COMODO CA Limited,L=Salford,ST=Greater
Manchester,C=GB
# Serial Number:4c:aa:f9:ca:db:63:6f:e0:1f:f7:4e:d8:5b:03:86:9d
# Subject: CN=COMODO RSA Certification Authority,O=COMODO CA Limited,L=Salford,ST=Greater
Manchester,C=GB
# Not Valid Before: Tue Jan 19 00:00:00 2010
# Not Valid After : Mon Jan 18 23:59:59 2038
# Fingerprint (SHA-256):
52:F0:E1:C4:E5:8E:C6:29:29:1B:60:31:7F:07:46:71:B8:5D:7E:A8:0D:5B:07:27:34:63:53:4B:32:B4:02:34
# Fingerprint (SHA1): AF:E5:D2:44:A8:D1:19:42:30:FF:47:9F:E2:F8:97:BB:CD:7A:8C:B4
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE
CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "COMODO RSA Certification Authority"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
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\145\162\040\115\141\156\143\150\145\163\164\145\162\061\020\060
\016\006\003\125\004\007\023\007\123\141\154\146\157\162\144\061
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CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

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\156\201\306\205\362\251\244\055\347\364\245\044\020\107\203\312  
\315\364\215\171\130\261\006\233\347\032\052\331\235\001\327\224  
\175\355\003\112\312\360\333\350\251\001\076\365\126\231\311\036  
\216\111\075\273\345\011\271\340\117\111\222\075\026\202\100\314  
\314\131\306\346\072\355\022\056\151\074\154\225\261\375\252\035  
\173\177\206\276\036\016\062\106\373\373\023\217\165\177\114\213  
\113\106\143\376\000\064\100\160\301\303\271\241\335\246\160\342  
\004\263\101\274\351\200\221\352\144\234\172\341\042\003\251\234  
\156\157\016\145\117\154\207\207\136\363\156\240\371\165\245\233  
\100\350\123\262\047\235\112\271\300\167\041\215\377\207\362\336  
\274\214\357\027\337\267\111\013\321\362\156\060\013\032\016\116  
\166\355\021\374\365\351\126\262\175\277\307\155\012\223\214\245

```
\320\300\266\035\276\072\116\224\242\327\156\154\013\302\212\174
\372\040\363\304\344\345\315\015\250\313\221\222\261\174\205\354
\265\024\151\146\016\202\347\315\316\310\055\246\121\177\041\301
\065\123\205\006\112\135\237\255\273\033\137\164
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "COMODO RSA Certification Authority"

# Issuer: CN=COMODO RSA Certification Authority,O=COMODO CA Limited,L=Salford,ST=Greater Manchester,C=GB

# Serial Number:4c:aa:f9:ca:db:63:6f:e0:1f:f7:4e:d8:5b:03:86:9d

# Subject: CN=COMODO RSA Certification Authority,O=COMODO CA Limited,L=Salford,ST=Greater Manchester,C=GB

# Not Valid Before: Tue Jan 19 00:00:00 2010

# Not Valid After : Mon Jan 18 23:59:59 2038

# Fingerprint (SHA-256):

52:F0:E1:C4:E5:8E:C6:29:29:1B:60:31:7F:07:46:71:B8:5D:7E:A8:0D:5B:07:27:34:63:53:4B:32:B4:02:34

# Fingerprint (SHA1): AF:E5:D2:44:A8:D1:19:42:30:FF:47:9F:E2:F8:97:BB:CD:7A:8C:B4

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "COMODO RSA Certification Authority"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\257\345\322\104\250\321\031\102\060\377\107\237\342\370\227\273
\315\172\214\264
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\033\061\260\161\100\066\314\024\066\221\255\304\076\375\354\030
```

END

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\201\205\061\013\060\011\006\003\125\004\006\023\002\107\102
\061\033\060\031\006\003\125\004\010\023\022\107\162\145\141\164
\145\162\040\115\141\156\143\150\145\163\164\145\162\061\020\060
\016\006\003\125\004\007\023\007\123\141\154\146\157\162\144\061
\032\060\030\006\003\125\004\012\023\021\103\117\115\117\104\117
\040\103\101\040\114\151\155\151\164\145\144\061\053\060\051\006
\003\125\004\003\023\042\103\117\115\117\104\117\040\122\123\101
\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101
\165\164\150\157\162\151\164\171
```

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

```
\002\020\114\252\371\312\333\143\157\340\037\367\116\330\133\003
\206\235
```

```

END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "USERTrust RSA Certification Authority"
#
# Issuer: CN=USERTrust RSA Certification Authority,O=The USERTRUST Network,L=Jersey City,ST=New
Jersey,C=US
# Serial Number:01:fd:6d:30:fc:a3:ca:51:a8:1b:bc:64:0e:35:03:2d
# Subject: CN=USERTrust RSA Certification Authority,O=The USERTRUST Network,L=Jersey City,ST=New
Jersey,C=US
# Not Valid Before: Mon
Feb 01 00:00:00 2010
# Not Valid After : Mon Jan 18 23:59:59 2038
# Fingerprint (SHA-256):
E7:93:C9:B0:2F:D8:AA:13:E2:1C:31:22:8A:CC:B0:81:19:64:3B:74:9C:89:89:64:B1:74:6D:46:C3:D4:CB:D2
# Fingerprint (SHA1): 2B:8F:1B:57:33:0D:BB:A2:D0:7A:6C:51:F7:0E:E9:0D:DA:B9:AD:8E
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "USERTrust RSA Certification Authority"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\210\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\023\060\021\006\003\125\004\010\023\012\116\145\167\040\112
\145\162\163\145\171\061\024\060\022\006\003\125\004\007\023\013
\112\145\162\163\145\171\040\103\151\164\171\061\036\060\034\006
\003\125\004\012\023\025\124\150\145\040\125\123\105\122\124\122
\125\123\124\040\116\145\164\167\157\162\153\061\056\060\054\006
\003\125\004\003\023\045\125\123\105\122\124\162\165\163\164\040
\122\123\101\040\103\145\162\164\151\146\151\143\141\164\151\157
\156\040\101\165\164\150\157\162\151\164\171
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\210\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\023\060\021\006\003\125\004\010\023\012\116\145\167\040\112
\145\162\163\145\171\061\024\060\022\006\003\125\004\007\023\013
\112\145\162\163\145\171\040\103\151\164\171\061\036\060\034\006
\003\125\004\012\023\025\124\150\145\040\125\123\105\122\124\122
\125\123\124\040\116\145\164\167\157\162\153\061\056\060\054\006
\003\125\004\003\023\045\125\123\105\122\124\162\165\163\164\040
\122\123\101\040\103\145\162\164\151\146\151\143\141\164\151\157

```

\156\040\101\165\164\150\157\162\151\164\171  
END  
CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL  
\002\020\001\375\155\060\374\243\312\121\250\033\274\144\016\065  
\003\055  
END  
CKA\_VALUE MULTILINE\_OCTAL  
\060\202\005\336\060\202\003\306\240\003\002\001\002\002\020\001  
\375\155\060\374\243\312\121\250\033\274\144\016\065\003\055\060  
\015\006\011\052\206\110\206\367\015\001\001\014\005\000\060\201  
\210\061\013\060\011\006\003\125\004\006\023\002\125\123\061\023  
\060\021\006\003\125\004\010\023\012\116\145\167\040\112\145\162  
\163\145\171\061\024\060\022\006\003\125\004\007\023\013\112\145  
\162\163\145\171\040\103\151\164\171\061\036\060\034\006\003\125  
\004\012\023\025\124\150\145\040\125\123\105\122\124\122\125\123  
\124\040\116\145\164\167\157\162\153\061\056\060\054\006\003\125  
\004\003\023\045\125\123\105\122\124\162\165\163\164\040\122\123  
\101\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040  
\101\165\164\150\157\162\151\164\171\060\036\027\015\061\060\060  
\062\060\061\060\060\060\060\060\060\132\027\015\063\070\060\061  
\061\070\062\063\065\071\065\071\132\060\201\210\061\013\060\011  
\006\003\125\004\006\023\002\125\123\061\023\060\021\006\003\125  
\004\010\023\012\116\145\167\040\112\145\162\163\145\171\061\024  
\060\022\006\003\125\004\007\023\013\112\145\162\163\145\171\040  
\103\151\164\171\061\036\060\034\006\003\125\004\012\023\025\124  
\150\145\040\125\123\105\122\124\122\125\123\124\040\116\145\164  
\167\157\162\153\061\056\060\054\006\003\125\004\003\023\045\125  
\123\105\122\124\162\165\163\164\040\122\123\101\040\103\145\162  
\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157  
\162\151\164\171\060\202\002\042\060\015\006\011\052\206\110\206  
\367\015\001\001\001\005\000\003\202\002\017\000\060\202\002\012  
\002\202\002\001\000\200\022\145\027\066\016\303\333\010\263\320  
\254\127\015\166\355\315\047\323\114\255\120\203\141\342\252\040  
\115\011\055\144\011\334\316\211\237\314\075\251\354\366\317\301  
\334\361\323\261\326\173\067\050\021\053\107\332\071\306\274\072  
\031\264\137\246\275\175\235\243\143\102\266\166\362\251\073\053  
\221\370\342\157\320\354\026\040\220\011\076\342\350\164\311\030  
\264\221\324\142\144\333\177\243\006\361\210\030\152\220\042\074  
\274\376\023\360\207\024\173\366\344\037\216\324\344\121\306\021  
\147\106\010\121\313\206\024\124\077\274\063\376\176\154\234\377  
\026\235\030\275\121\216\065\246\247\146\310\162\147\333\041\146  
\261\324\233\170\003\300\120\072\350\314\360\334\274\236\114\376  
\257\005\226\065\037\127\132\267\377\316\371\075\267\054\266\366  
\124\335\310\347\022\072\115\256\114\212\267\134\232\264\267\040  
\075\312\177\042\064\256\176\073\150\146\001\104\347\001\116\106  
\123\233\063\140\367\224\276\123\067\220\163\103\363\062\303\123  
\357\333\252\376\164\116\151\307\153\214\140\223\336\304\307\014  
\337\341\062\256\314\223\073\121\170\225\147\213\356\075\126\376

\014\320\151\017\033\017\363\045\046\153\063\155\367\156\107\372  
\163\103\345\176\016\245\146\261\051\174\062\204\143\125\211\304  
\015\301\223\124\060\031\023\254\323\175\067\247\353\135\072\154  
\065\134\333\101\327\022\332\251\111\013\337\330\200\212\011\223  
\142\216\265\146\317\045\210\315\204\270\261\077\244\071\017\331  
\002\236\353\022\114\225\174\363\153\005\251\136\026\203\314\270  
\147\342\350\023\235\314\133\202\323\114\263\355\133\377\336\345  
\163\254\043\073\055\000\277\065\125\164\011\111\330\111\130\032  
\177\222\066\346\121\222\016\363\046\175\034\115\027\274\311\354  
\103\046\320\277\101\137\100\251\104\104\364\231\347\127\207\236  
\120\037\127\124\250\076\375\164\143\057\261\120\145\011\346\130  
\102\056\103\032\114\264\360\045\107\131\372\004\036\223\324\046  
\106\112\120\201\262\336\276\170\267\374\147\025\341\311\127\204  
\036\017\143\326\351\142\272\326\137\125\056\352\134\306\050\010  
\004\045\071\270\016\053\251\362\114\227\034\007\077\015\122\365  
\355\357\057\202\017\002\003\001\000\001\243\102\060\100\060\035  
\006\003\125\035\016\004\026\004\024\123\171\277\132\252\053\112  
\317\124\200\341\330\233\300\235\362\262\003\146\313\060\016\006  
\003\125\035\017\001\001\377\004\004\003\002\001\006\060\017\006  
\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060\015  
\006\011\052\206\110\206\367\015\001\001\014\005\000\003\202\002  
\001\000\134\324\174\015\317\367\001\175\101\231\145\014\163\305  
\122\237\313\370\317\231\006\177\033\332\103\025\237\236\002\125  
\127\226\024\361\122\074\047\207\224\050\355\037\072\001\067\242  
\166\374\123\120\300\204\233\306\153\116\272\214\041\117\242\216  
\125\142\221\363\151\025\330\274\210\343\304\252\013\375\357\250  
\351\113\125\052\006\040\155\125\170\051\031\356\137\060\134\113  
\044\021\125\377\044\232\156\136\052\053\356\013\115\237\177\367  
\001\070\224\024\225\103\007\011\373\140\251\356\034\253\022\214  
\240\232\136\247\230\152\131\155\213\077\010\373\310\321\105\257  
\030\025\144\220\022\017\163\050\056\305\342\044\116\374\130\354  
\360\364\105\376\042\263\353\057\216\322\331\105\141\005\301\227  
\157\250\166\162\217\213\214\066\257\277\015\005\316\161\215\346  
\246\157\037\154\246\161\142\305\330\320\203\162\014\361\147\021  
\211\014\234\023\114\162\064\337\274\325\161\337\252\161\335\341  
\271\154\214\074\022\135\145\332\275\127\022\266\103\153\377\345  
\336\115\146\021\121\317\231\256\354\027\266\350\161\221\214\336  
\111\376\335\065\161\242\025\047\224\034\317\141\343\046\273\157  
\243\147\045\041\135\346\335\035\013\056\150\033\073\202\257\354  
\203\147\205\324\230\121\164\261\271\231\200\211\377\177\170\031  
\134\171\112\140\056\222\100\256\114\067\052\054\311\307\142\310  
\016\135\367\066\133\312\340\045\045\001\264\335\032\007\234\167  
\000\077\320\334\325\354\075\324\372\273\077\314\205\326\157\177  
\251\055\337\271\002\367\365\227\232\265\065\332\303\147\260\207  
\112\251\050\236\043\216\377\134\047\153\341\260\117\363\007\356  
\000\056\324\131\207\313\122\101\225\352\364\107\327\356\144\101  
\125\174\215\131\002\225\335\142\235\302\271\356\132\050\164\204  
\245\233\267\220\307\014\007\337\365\211\066\164\062\326\050\301

```
\260\260\013\340\234\114\303\034\326\374\343\151\265\107\106\201
\057\242\202\253\323\143\104\160\304\215\377\055\063\272\255\217
\173\265\160\210\256\076\031\317\100\050\330\374\310\220\273\135
\231\042\365\122\346\130\305\037\210\061\103\356\210\035\327\306
\216\074\103\152\035\247\030\336\175\075\026\361\142\371\312\220
\250\375
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "USERTrust RSA Certification Authority"

# Issuer: CN=USERTrust RSA Certification Authority,O=The USERTRUST Network,L=Jersey City,ST=New Jersey,C=US

# Serial Number:01:fd:6d:30:fc:a3:ca:51:a8:1b:bc:64:0e:35:03:2d

# Subject: CN=USERTrust RSA Certification Authority,O=The USERTRUST Network,L=Jersey City,ST=New Jersey,C=US

# Not Valid Before: Mon Feb 01 00:00:00 2010

# Not Valid After : Mon Jan 18 23:59:59 2038

# Fingerprint (SHA-256):

E7:93:C9:B0:2F:D8:AA:13:E2:1C:31:22:8A:CC:B0:81:19:64:3B:74:9C:89:89:64:B1:74:6D:46:C3:D4:CB:D2

# Fingerprint (SHA1): 2B:8F:1B:57:33:0D:BB:A2:D0:7A:6C:51:F7:0E:E9:0D:DA:B9:AD:8E

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "USERTrust RSA Certification Authority"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\053\217\033\127\063\015\273\242\320\172\154\121\367\016\351\015
\332\271\255\216
```

END

CKA\_CERT\_MD5\_HASH

MULTILINE\_OCTAL

```
\033\376\151\321\221\267\031\063\243\162\250\017\341\125\345\265
```

END

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\201\210\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\023\060\021\006\003\125\004\010\023\012\116\145\167\040\112
\145\162\163\145\171\061\024\060\022\006\003\125\004\007\023\013
\112\145\162\163\145\171\040\103\151\164\171\061\036\060\034\006
\003\125\004\012\023\025\124\150\145\040\125\123\105\122\124\122
\125\123\124\040\116\145\164\167\157\162\153\061\056\060\054\006
\003\125\004\003\023\045\125\123\105\122\124\162\165\163\164\040
\122\123\101\040\103\145\162\164\151\146\151\143\141\164\151\157
\156\040\101\165\164\150\157\162\151\164\171
```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\001\375\155\060\374\243\312\121\250\033\274\144\016\065

\003\055

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_CODE\_SIGNING

CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "USERTrust ECC Certification Authority"

#

# Issuer: CN=USERTrust ECC Certification Authority,O=The USERTRUST Network,L=Jersey City,ST=New Jersey,C=US

# Serial Number:5c:8b:99:c5:5a:94:c5:d2:71:56:de:cd:89:80:cc:26

# Subject: CN=USERTrust ECC Certification Authority,O=The USERTRUST Network,L=Jersey City,ST=New Jersey,C=US

# Not Valid Before: Mon Feb 01 00:00:00 2010

# Not Valid After : Mon Jan 18 23:59:59 2038

# Fingerprint (SHA-256):

4F:F4:60:D5:4B:9C:86:DA:BF:BC:FC:57:12:E0:40:0D:2B:ED:3F:BC:4D:4F:BD:AA:86:E0:6A:DC:D2:A9:AD:7A

# Fingerprint (SHA1): D1:CB:CA:5D:B2:D5:2A:7F:69:3B:67:4D:E5:F0:5A:1D:0C:95:7D:F0

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "USERTrust ECC Certification Authority"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\201\210\061\013\060\011\006\003\125\004\006\023\002\125\123

\061\023\060\021\006\003\125\004\010\023\012\116\145\167\040\112

\145\162\163\145\171\061\024\060\022\006\003\125\004\007\023\013

\112\145\162\163\145\171\040\103\151\164\171\061\036\060\034\006

\003\125\004\012\023\025\124\150\145\040\125\123\105\122\124\122

\125\123\124\040\116\145\164\167\157\162\153\061\056\060\054\006

\003\125\004\003\023\045\125\123\105\122\124\162\165\163\164\040

\105\103\103\040\103\145\162\164\151\146\151\143\141\164\151\157

\156\040\101\165\164\150\157\162\151\164\171

END

CKA\_ID

UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\210\061\013\060\011\006\003\125\004\006\023\002\125\123

\061\023\060\021\006\003\125\004\010\023\012\116\145\167\040\112

\145\162\163\145\171\061\024\060\022\006\003\125\004\007\023\013

\112\145\162\163\145\171\040\103\151\164\171\061\036\060\034\006

\003\125\004\012\023\025\124\150\145\040\125\123\105\122\124\122

\125\123\124\040\116\145\164\167\157\162\153\061\056\060\054\006



\003\125\004\003\023\045\125\123\105\122\124\162\165\163\164\040  
\105\103\103\040\103\145\162\164\151\146\151\143\141\164\151\157  
\156\040\101\165\164\150\157\162\151\164\171

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\020\134\213\231\305\132\224\305\322\161\126\336\315\211\200  
\314\046

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\002\217\060\202\002\025\240\003\002\001\002\002\020\134  
\213\231\305\132\224\305\322\161\126\336\315\211\200\314\046\060  
\012\006\010\052\206\110\316\075\004\003\003\060\201\210\061\013  
\060\011\006\003\125\004\006\023\002\125\123\061\023\060\021\006  
\003\125\004\010\023\012\116\145\167\040\112\145\162\163\145\171  
\061\024\060\022\006\003\125\004\007\023\013\112\145\162\163\145  
\171\040\103\151\164\171\061\036\060\034\006\003\125\004\012\023  
\025\124\150\145\040\125\123\105\122\124\122\125\123\124\040\116  
\145\164\167\157\162\153\061\056\060\054\006\003\125\004\003\023  
\045\125\123\105\122\124\162\165\163\164\040\105\103\103\040\103  
\145\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164  
\150\157\162\151\164\171\060\036\027\015\061\060\060\062\060\061  
\060\060\060\060\060\060\132\027\015\063\070\060\061\061\070\062  
\063\065\071\065\071\132\060\201\210\061\013\060\011\006\003\125  
\004\006\023\002\125\123\061\023\060\021\006\003\125\004\010\023  
\012\116\145\167\040\112\145\162\163\145\171\061\024\060\022\006  
\003\125\004\007\023\013\112\145\162\163\145\171\040\103\151\164  
\171\061\036\060\034\006\003\125\004\012\023\025\124\150\145\040  
\125\123\105\122\124\122\125\123\124\040\116\145\164\167\157\162  
\153\061\056\060\054\006\003\125\004\003\023\045\125\123\105\122  
\124\162\165\163\164\040\105\103\103\040\103\145\162\164\151\146  
\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164  
\171\060\166\060\020\006\007\052\206\110\316\075\002\001\006\005  
\053\201\004\000\042\003\142\000\004\032\254\124\132\251\371\150  
\043\347\172\325\044\157\123\306\132\330\113\253\306\325\266\321  
\346\163\161\256\335\234\326\014\141\375\333\240\211\003\270\005  
\024\354\127\316\356\135\077\342\041\263\316\367\324\212\171\340  
\243\203\176\055\227\320\141\304\361\231\334\045\221\143\253\177  
\060\243\264\160\342\307\241\063\234\363\277\056\134\123\261\137  
\263\175\062\177\212\064\343\171\171\243\102\060\100\060\035\006  
\003\125\035\016\004\026\004\024\072\341\011\206\324\317\031\302  
\226\166\164\111\166\334\340\065\306\143\143\232\060\016\006\003  
\125\035\017\001\001\377\004\004\003\002\001\006\060\017\006\003  
\125\035\023\001\001\377\004\005\060\003\001\001\377\060\012\006  
\010\052\206\110\316\075\004\003\003\003\150\000\060\145\002\060  
\066\147\241\026\010\334\344\227\000\101\035\116\276\341\143\001  
\317\073\252\102\021\144\240\235\224\071\002\021\171\134\173\035  
\372\144\271\356\026\102\263\277\212\302\011\304\354\344\261\115

```
\002\061\000\351\052\141\107\214\122\112\113\116\030\160\366\326
\104\326\156\365\203\272\155\130\275\044\331\126\110\352\357\304
\242\106\201\210\152\072\106\321\251\233\115\311\141\332\321\135
\127\152\030
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "USERTrust ECC Certification Authority"

# Issuer: CN=USERTrust ECC Certification Authority,O=The USERTRUST Network,L=Jersey City,ST=New Jersey,C=US

# Serial Number:5c:8b:99:c5:5a:94:c5:d2:71:56:de:cd:89:80:cc:26

# Subject: CN=USERTrust ECC Certification Authority,O=The USERTRUST Network,L=Jersey City,ST=New Jersey,C=US

# Not Valid Before: Mon Feb 01 00:00:00 2010

# Not Valid After : Mon Jan 18 23:59:59 2038

# Fingerprint (SHA-256):

4F:F4:60:D5:4B:9C:86:DA:BF:BC:FC:57:12:E0:40:0D:2B:ED:3F:BC:4D:4F:BD:AA:86:E0:6A:DC:D2:A9:AD:7A

# Fingerprint (SHA1): D1:CB:CA:5D:B2:D5:2A:7F:69:3B:67:4D:E5:F0:5A:1D:0C:95:7D:F0

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "USERTrust ECC Certification Authority"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\321\313\312\135\262\325\052\177\151\073\147\115\345\360\132\035
\014\225\175\360
```

END

CKA\_CERT\_MD5\_HASH

MULTILINE\_OCTAL

```
\372\150\274\331\265\177\255\375\311\035\006\203\050\314\044\301
```

END

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\201\210\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\023\060\021\006\003\125\004\010\023\012\116\145\167\040\112
\145\162\163\145\171\061\024\060\022\006\003\125\004\007\023\013
\112\145\162\163\145\171\040\103\151\164\171\061\036\060\034\006
\003\125\004\012\023\025\124\150\145\040\125\123\105\122\124\122
\125\123\124\040\116\145\164\167\157\162\153\061\056\060\054\006
\003\125\004\003\023\045\125\123\105\122\124\162\165\163\164\040
\105\103\103\040\103\145\162\164\151\146\151\143\141\164\151\157
\156\040\101\165\164\150\157\162\151\164\171
```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

```
\002\020\134\213\231\305\132\224\305\322\161\126\336\315\211\200
\314\046
```

```

END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING
CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "GlobalSign ECC Root CA - R5"
#
# Issuer: CN=GlobalSign,O=GlobalSign,OU=GlobalSign ECC Root CA - R5
# Serial Number:60:59:49:e0:26:2e:bb:55:f9:0a:77:8a:71:f9:4a:d8:6c
# Subject: CN=GlobalSign,O=GlobalSign,OU=GlobalSign ECC Root CA - R5
# Not Valid Before: Tue Nov 13 00:00:00 2012
# Not Valid After : Tue Jan 19 03:14:07 2038
# Fingerprint (SHA-256):
17:9F:BC:14:8A:3D:D0:0F:D2:4E:A1:34:58:CC:43:BF:A7:F5:9C:81:82:D7:83:A5:13:F6:EB:EC:10:0C:89:24
# Fingerprint (SHA1): 1F:24:C6:30:CD:A4:18:EF:20:69:FF:AD:4F:DD:5F:46:3A:1B:69:AA
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "GlobalSign ECC Root CA - R5"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\120\061\044\060\042\006\003\125\004\013\023\033\107\154\157
\142\141\154\123\151\147\156\040\105\103\103\040\122\157\157\164
\040\103\101\040\055\040\122\065\061\023\060\021\006\003\125\004
\012\023\012\107\154\157\142\141\154\123\151\147\156\061\023\060
\021\006\003\125\004\003\023\012\107\154\157\142\141\154\123\151
\147\156
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\120\061\044\060\042\006\003\125\004\013\023\033\107\154\157
\142\141\154\123\151\147\156\040\105\103\103\040\122\157\157\164
\040\103\101\040\055\040\122\065\061\023\060\021\006\003\125\004
\012\023\012\107\154\157\142\141\154\123\151\147\156\061\023\060
\021\006\003\125\004\003\023\012\107\154\157\142\141\154\123\151
\147\156
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\021\140\131\111\340\046\056\273\125\371\012\167\212\161\371
\112\330\154
END
CKA_VALUE MULTILINE_OCTAL
\060\202\002\036\060\202\001\244\240\003\002\001\002\002\021\140

```

\131\111\340\046\056\273\125\371\012\167\212\161\371\112\330\154  
\060\012\006\010\052\206\110\316\075\004\003\003\060\120\061\044  
\060\042\006\003\125\004\013\023\033\107\154\157\142\141\154\123  
\151\147\156\040\105\103\103\040\122\157\157\164\040\103\101\040  
\055\040\122\065\061\023\060\021\006\003\125\004\012\023\012\107  
\154\157\142\141\154\123\151\147\156\061\023\060\021\006\003\125  
\004\003\023\012\107\154\157\142\141\154\123\151\147\156\060\036  
\027\015\061\062\061\061\061\063\060\060\060\060\060\132\027  
\015\063\070\060\061\061\071\060\063\061\064\060\067\132\060\120  
\061\044\060\042\006\003\125\004\013\023\033\107\154\157\142\141  
\154\123\151\147\156\040\105\103\103\040\122\157\157\164\040\103  
\101\040\055\040\122\065\061\023\060\021\006\003\125\004\012\023  
\012\107\154\157\142\141\154\123\151\147\156\061\023\060\021\006  
\003\125\004\003\023\012\107\154\157\142\141\154\123\151\147\156  
\060\166\060\020\006\007\052\206\110\316\075\002\001\006\005\053  
\201\004\000\042\003\142\000\004\107\105\016\226\373\175\135\277  
\351\071\321\041\370\237\013\266\325\173\036\222\072\110\131\034  
\360\142\061\055\300\172\050\376\032\247\134\263\266\314\227\347  
\105\324\130\372\321\167\155\103\242\300\207\145\064\012\037\172  
\335\353\074\063\241\305\235\115\244\157\101\225\070\177\311\036  
\204\353\321\236\111\222\207\224\207\014\072\205\112\146\237\235  
\131\223\115\227\141\006\206\112\243\102\060\100\060\016\006\003  
\125\035\017\001\001\377\004\004\003\002\001\006\060\017\006\003  
\125\035\023\001\001\377\004\005\060\003\001\001\377\060\035\006  
\003\125\035\016\004\026\004\024\075\346\051\110\233\352\007\312  
\041\104\112\046\336\156\336\322\203\320\237\131\060\012\006\010  
\052\206\110\316\075\004\003\003\003\150\000\060\145\002\061\000  
\345\151\022\311\156\333\306\061\272\011\101\341\227\370\373\375  
\232\342\175\022\311\355\174\144\323\313\005\045\213\126\331\240  
\347\136\135\116\013\203\234\133\166\051\240\011\046\041\152\142  
\002\060\161\322\265\217\134\352\073\341\170\011\205\250\165\222  
\073\310\134\375\110\357\015\164\042\250\010\342\156\305\111\316  
\307\014\274\247\141\151\361\367\073\341\052\313\371\053\363\146  
\220\067

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "GlobalSign ECC Root CA - R5"

# Issuer: CN=GlobalSign,O=GlobalSign,OU=GlobalSign ECC Root CA - R5

# Serial Number:60:59:49:e0:26:2e:bb:55:f9:0a:77:8a:71:f9:4a:d8:6c

# Subject: CN=GlobalSign,O=GlobalSign,OU=GlobalSign ECC Root CA - R5

# Not Valid Before: Tue Nov 13 00:00:00 2012

# Not Valid After : Tue Jan 19 03:14:07 2038

# Fingerprint (SHA-256):

17:9F:BC:14:8A:3D:D0:0F:D2:4E:A1:34:58:CC:43:BF:A7:F5:9C:81:82:D7:83:A5:13:F6:EB:EC:10:0C:89:24

```

# Fingerprint (SHA1): 1F:24:C6:30:CD:A4:18:EF:20:69:FF:AD:4F:DD:5F:46:3A:1B:69:AA
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "GlobalSign ECC Root CA - R5"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\037\044\306\060\315\244\030\357\040\151\377\255\117\335\137\106
\072\033\151\252
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\237\255\073\034\002\036\212\272\027\164\070\201\014\242\274\010
END
CKA_ISSUER
MULTILINE_OCTAL
\060\120\061\044\060\042\006\003\125\004\013\023\033\107\154\157
\142\141\154\123\151\147\156\040\105\103\103\040\122\157\157\164
\040\103\101\040\055\040\122\065\061\023\060\021\006\003\125\004
\012\023\012\107\154\157\142\141\154\123\151\147\156\061\023\060
\021\006\003\125\004\003\023\012\107\154\157\142\141\154\123\151
\147\156
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\021\140\131\111\340\046\056\273\125\371\012\167\212\161\371
\112\330\154
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "Staat der Nederlanden Root CA - G3"
#
# Issuer: CN=Staat der Nederlanden Root CA - G3,O=Staat der Nederlanden,C=NL
# Serial Number: 10003001 (0x98a239)
# Subject: CN=Staat der Nederlanden Root CA - G3,O=Staat der Nederlanden,C=NL
#
Not Valid Before: Thu Nov 14 11:28:42 2013
# Not Valid After : Mon Nov 13 23:00:00 2028
# Fingerprint (SHA-256):
3C:4F:B0:B9:5A:B8:B3:00:32:F4:32:B8:6F:53:5F:E1:72:C1:85:D0:FD:39:86:58:37:CF:36:18:7F:A6:F4:28
# Fingerprint (SHA1): D8:EB:6B:41:51:92:59:E0:F3:E7:85:00:C0:3D:B6:88:97:C9:EE:FC
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Staat der Nederlanden Root CA - G3"

```

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\132\061\013\060\011\006\003\125\004\006\023\002\116\114\061  
\036\060\034\006\003\125\004\012\014\025\123\164\141\141\164\040  
\144\145\162\040\116\145\144\145\162\154\141\156\144\145\156\061  
\053\060\051\006\003\125\004\003\014\042\123\164\141\141\164\040  
\144\145\162\040\116\145\144\145\162\154\141\156\144\145\156\040  
\122\157\157\164\040\103\101\040\055\040\107\063

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\132\061\013\060\011\006\003\125\004\006\023\002\116\114\061  
\036\060\034\006\003\125\004\012\014\025\123\164\141\141\164\040  
\144\145\162\040\116\145\144\145\162\154\141\156\144\145\156\061  
\053\060\051\006\003\125\004\003\014\042\123\164\141\141\164\040  
\144\145\162\040\116\145\144\145\162\154\141\156\144\145\156\040  
\122\157\157\164\040\103\101\040\055\040\107\063

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\004\000\230\242\071

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\164\060\202\003\134\240\003\002\001\002\002\004\000  
\230\242\071\060\015\006\011\052\206\110\206\367\015\001\001\013  
\005\000\060\132\061\013\060\011\006\003\125\004\006\023\002\116  
\114\061\036\060\034\006\003\125\004\012\014\025\123\164\141\141  
\164\040\144\145\162\040\116\145\144\145\162\154\141\156\144\145  
\156\061\053\060\051\006\003\125\004\003\014\042\123\164\141\141  
\164\040\144\145\162\040\116\145\144\145\162\154\141\156\144\145  
\156\040\122\157\157\164\040\103\101\040\055\040\107\063\060\036  
\027\015\061\063\061\061\061\064\061\061\062\070\064\062\132\027  
\015\062\070\061\061\061\063\062\063\060\060\060\060\132\060\132  
\061\013\060\011\006\003\125\004\006\023\002\116\114\061\036\060  
\034\006\003\125\004\012\014\025\123\164\141\141\164\040\144\145  
\162\040\116\145\144\145\162\154\141\156\144\145\156\061\053\060  
\051\006\003\125\004\003\014\042\123\164\141\141\164\040\144\145  
\162\040\116\145\144\145\162\154\141\156\144\145\156\040\122\157  
\157\164\040\103\101\040\055\040\107\063\060\202\002\042\060\015  
\006\011\052\206\110\206\367\015\001\001\001\005\000\003\202\002  
\017\000\060\202\002\012\002\202\002\001\000\276\062\242\124\017  
\160\373\054\134\131\353\154\304\244\121\350\205\052\263\314\112  
\064\362\260\137\363\016\307\034\075\123\036\210\010\150\330\157  
\075\255\302\236\314\202\147\007\047\207\150\161\072\237\165\226  
\042\106\005\260\355\255\307\133\236\052\336\234\374\072\306\225  
\247\365\027\147\030\347\057\111\010\014\134\317\346\314\064\355  
\170\373\120\261\334\153\062\360\242\376\266\074\344\354\132\227  
\307\077\036\160\010\060\240\334\305\263\155\157\320\202\162\021

\253\322\201\150\131\202\027\267\170\222\140\372\314\336\077\204  
\353\215\070\063\220\012\162\043\372\065\314\046\161\061\321\162  
\050\222\331\133\043\155\146\265\155\007\102\353\246\063\316\222  
\333\300\366\154\143\170\315\312\116\075\265\345\122\233\361\276  
\073\346\124\140\260\146\036\011\253\007\376\124\211\021\102\321  
\367\044\272\140\170\032\230\367\311\021\375\026\301\065\032\124  
\165\357\103\323\345\256\116\316\347\173\303\306\116\141\121\113  
\253\232\105\113\241\037\101\275\110\123\025\161\144\013\206\263  
\345\056\276\316\244\033\301\051\204\242\265\313\010\043\166\103  
\042\044\037\027\004\324\156\234\306\374\177\053\146\032\354\212  
\345\326\317\115\365\143\011\267\025\071\326\173\254\353\343\174  
\351\116\374\165\102\310\355\130\225\014\006\102\242\234\367\344  
\160\263\337\162\157\132\067\100\211\330\205\244\327\361\013\336  
\103\031\324\112\130\054\214\212\071\236\277\204\207\361\026\073  
\066\014\351\323\264\312\154\031\101\122\011\241\035\260\152\277  
\202\357\160\121\041\062\334\005\166\214\313\367\144\344\003\120  
\257\214\221\147\253\305\362\356\130\330\336\276\367\347\061\317  
\154\311\073\161\301\325\210\265\145\274\300\350\027\027\007\022  
\265\134\322\253\040\223\264\346\202\203\160\066\305\315\243\215  
\255\213\354\243\301\103\207\346\103\342\064\276\225\213\065\355  
\007\071\332\250\035\172\237\066\236\022\260\014\145\022\220\025  
\140\331\046\100\104\343\126\140\245\020\324\152\074\375\101\334  
\016\132\107\266\357\227\141\165\117\331\376\307\262\035\324\355  
\135\111\263\251\152\313\146\204\023\325\134\240\334\337\156\167  
\006\321\161\165\310\127\157\257\017\167\133\002\003\001\000\001  
\243\102\060\100\060\017\006\003\125\035\023\001\001\377\004\005  
\060\003\001\001\377\060\016\006\003\125\035\017\001\001\377\004  
\004\003\002\001\006\060\035\006\003\125\035\016\004\026\004\024  
\124\255\372\307\222\127\256\312\065\234\056\022\373\344\272\135  
\040\334\224\127\060\015\006\011\052\206\110\206\367\015\001\001  
\013\005\000\003\202\002\001\000\060\231\235\005\062\310\136\016  
\073\230\001\072\212\244\347\007\367\172\370\347\232\337\120\103  
\123\227\052\075\312\074\107\230\056\341\025\173\361\222\363\141  
\332\220\045\026\145\300\237\124\135\016\003\073\133\167\002\234  
\204\266\015\230\137\064\335\073\143\302\303\050\201\302\234\051  
\056\051\342\310\303\001\362\063\352\052\252\314\011\010\367\145  
\147\306\315\337\323\266\053\247\275\314\321\016\160\137\270\043  
\321\313\221\116\012\364\310\172\345\331\143\066\301\324\337\374  
\042\227\367\140\135\352\051\057\130\262\275\130\275\215\226\117  
\020\165\277\110\173\075\121\207\241\074\164\042\302\374\007\177  
\200\334\304\254\376\152\301\160\060\260\351\216\151\342\054\151  
\201\224\011\272\335\376\115\300\203\214\224\130\300\106\040\257  
\234\037\002\370\065\125\111\057\106\324\300\360\240\226\002\017  
\063\305\161\363\236\043\175\224\267\375\072\323\011\203\006\041  
\375\140\075\256\062\300\322\356\215\246\360\347\264\202\174\012  
\314\160\311\171\200\370\376\114\367\065\204\031\212\061\373\012  
\331\327\177\233\360\242\232\153\303\005\112\355\101\140\024\060  
\321\252\021\102\156\323\043\002\004\013\306\145\335\335\122\167

```
\332\201\153\262\250\372\001\070\271\226\352\052\154\147\227\211
\224\236\274\341\124\325\344\152\170\357\112\275\053\232\075\100
\176\306\300\165\322\156\373\150\060\354\354\213\235\371\111\065
\232\032\054\331\263\225\071\325\036\222\367\246\271\145\057\345
\075\155\072\110\114\010\334\344\050\022\050\276\175\065\134\352
\340\026\176\023\033\152\327\076\327\236\374\055\165\262\301\024
\325\043\003\333\133\157\013\076\170\057\015\336\063\215\026\267
\110\347\203\232\201\017\173\301\103\115\125\004\027\070\112\121
\325\131\242\211\164\323\237\276\036\113\327\306\155\267\210\044
\157\140\221\244\202\205\133\126\101\274\320\104\253\152\023\276
\321\054\130\267\022\063\130\262\067\143\334\023\365\224\035\077
\100\121\365\117\365\072\355\310\305\353\302\036\035\026\225\172
\307\176\102\161\223\156\113\025\267\060\337\252\355\127\205\110
\254\035\152\335\071\151\344\341\171\170\276\316\005\277\241\014
\367\200\173\041\147\047\060\131
```

END

CKA\_NSS\_Mozilla\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "Staat der Nederlanden Root CA - G3"

# Issuer: CN=Staat der Nederlanden Root CA - G3,O=Staat der Nederlanden,C=NL

# Serial Number: 10003001 (0x98a239)

# Subject: CN=Staat der Nederlanden Root CA - G3,O=Staat der Nederlanden,C=NL

# Not Valid Before: Thu Nov 14 11:28:42 2013

# Not Valid After : Mon Nov 13 23:00:00 2028

# Fingerprint (SHA-256):

3C:4F:B0:B9:5A:B8:B3:00:32:F4:32:B8:6F:53:5F:E1:72:C1:85:D0:FD:39:86:58:37:CF:36:18:7F:A6:F4:28

# Fingerprint (SHA1): D8:EB:6B:41:51:92:59:E0:F3:E7:85:00:C0:3D:B6:88:97:C9:EE:FC

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Staat der Nederlanden Root CA - G3"

CKA\_CERT\_SHA1\_HASH

MULTILINE\_OCTAL

```
\330\353\153\101\121\222\131\340\363\347\205\000\300\075\266\210
\227\311\356\374
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\013\106\147\007\333\020\057\031\214\065\120\140\321\013\364\067
```

END

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\132\061\013\060\011\006\003\125\004\006\023\002\116\114\061
\036\060\034\006\003\125\004\012\014\025\123\164\141\141\164\040
\144\145\162\040\116\145\144\145\162\154\141\156\144\145\156\061
\053\060\051\006\003\125\004\003\014\042\123\164\141\141\164\040
```



\144\145\162\040\116\145\144\145\162\154\141\156\144\145\156\040

\122\157\157\164\040\103\101\040\055\040\107\063

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\004\000\230\242\071

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "IdenTrust Commercial Root CA 1"

#

# Issuer: CN=IdenTrust Commercial Root CA

1,O=IdenTrust,C=US

# Serial Number:0a:01:42:80:00:00:01:45:23:c8:44:b5:00:00:00:02

# Subject: CN=IdenTrust Commercial Root CA 1,O=IdenTrust,C=US

# Not Valid Before: Thu Jan 16 18:12:23 2014

# Not Valid After : Mon Jan 16 18:12:23 2034

# Fingerprint (SHA-256):

5D:56:49:9B:E4:D2:E0:8B:CF:CA:D0:8A:3E:38:72:3D:50:50:3B:DE:70:69:48:E4:2F:55:60:30:19:E5:28:AE

# Fingerprint (SHA1): DF:71:7E:AA:4A:D9:4E:C9:55:84:99:60:2D:48:DE:5F:BC:F0:3A:25

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "IdenTrust Commercial Root CA 1"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\112\061\013\060\011\006\003\125\004\006\023\002\125\123\061

\022\060\020\006\003\125\004\012\023\011\111\144\145\156\124\162

\165\163\164\061\047\060\045\006\003\125\004\003\023\036\111\144

\145\156\124\162\165\163\164\040\103\157\155\155\145\162\143\151

\141\154\040\122\157\157\164\040\103\101\040\061

END

CKA\_ID

UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\112\061\013\060\011\006\003\125\004\006\023\002\125\123\061

\022\060\020\006\003\125\004\012\023\011\111\144\145\156\124\162

\165\163\164\061\047\060\045\006\003\125\004\003\023\036\111\144

\145\156\124\162\165\163\164\040\103\157\155\155\145\162\143\151

\141\154\040\122\157\157\164\040\103\101\040\061

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\012\001\102\200\000\000\001\105\043\310\104\265\000\000

\000\002

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\140\060\202\003\110\240\003\002\001\002\002\020\012  
\001\102\200\000\000\001\105\043\310\104\265\000\000\000\002\060  
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\112  
\061\013\060\011\006\003\125\004\006\023\002\125\123\061\022\060  
\020\006\003\125\004\012\023\011\111\144\145\156\124\162\165\163  
\164\061\047\060\045\006\003\125\004\003\023\036\111\144\145\156  
\124\162\165\163\164\040\103\157\155\155\145\162\143\151\141\154  
\040\122\157\157\164\040\103\101\040\061\060\036\027\015\061\064  
\060\061\061\066\061\070\061\062\062\063\132\027\015\063\064\060  
\061\061\066\061\070\061\062\062\063\132\060\112\061\013\060\011  
\006\003\125\004\006\023\002\125\123\061\022\060\020\006\003\125  
\004\012\023\011\111\144\145\156\124\162\165\163\164\061\047\060  
\045\006\003\125\004\003\023\036\111\144\145\156\124\162\165\163  
\164\040\103\157\155\155\145\162\143\151\141\154\040\122\157\157  
\164\040\103\101\040\061\060\202\002\042\060\015\006\011\052\206  
\110\206\367\015\001\001\001\005\000\003\202\002\017\000\060\202  
\002\012\002\202\002\001\000\247\120\031\336\077\231\075\324\063  
\106\361\157\121\141\202\262\251\117\217\147\211\135\204\331\123  
\335\014\050\331\327\360\377\256\225\103\162\231\371\265\135\174  
\212\301\102\341\061\120\164\321\201\015\174\315\233\041\253\103  
\342\254\255\136\206\156\363\011\212\037\132\062\275\242\353\224  
\371\350\134\012\354\377\230\322\257\161\263\264\123\237\116\207  
\357\222\274\275\354\117\062\060\210\113\027\136\127\304\123\302  
\366\002\227\215\331\142\053\277\044\037\142\215\337\303\270\051  
\113\111\170\074\223\140\210\042\374\231\332\066\310\302\242\324  
\054\124\000\147\065\156\163\277\002\130\360\244\335\345\260\242  
\046\172\312\340\066\245\031\026\365\375\267\357\256\077\100\365  
\155\132\004\375\316\064\312\044\334\164\043\033\135\063\023\022  
\135\304\001\045\366\060\335\002\135\237\340\325\107\275\264\353  
\033\241\273\111\111\330\237\133\002\363\212\344\044\220\344\142  
\117\117\301\257\213\016\164\027\250\321\162\210\152\172\001\111  
\314\264\106\171\306\027\261\332\230\036\007\131\372\165\041\205  
\145\335\220\126\316\373\253\245\140\235\304\235\371\122\260\213  
\275\207\371\217\053\043\012\043\166\073\367\063\341\311\000\363  
\151\371\113\242\340\116\274\176\223\071\204\007\367\104\160\176  
\376\007\132\345\261\254\321\030\314\362\065\345\111\111\010\312  
\126\311\075\373\017\030\175\213\073\301\023\302\115\217\311\117  
\016\067\351\037\241\016\152\337\142\056\313\065\006\121\171\054  
\310\045\070\364\372\113\247\211\134\234\322\343\015\071\206\112  
\164\174\325\131\207\302\077\116\014\134\122\364\075\367\122\202  
\361\352\243\254\375\111\064\032\050\363\101\210\072\023\356\350  
\336\377\231\035\137\272\313\350\036\362\271\120\140\300\061\323  
\163\345\357\276\240\355\063\013\164\276\040\040\304\147\154\360  
\010\003\172\125\200\177\106\116\226\247\364\036\076\341\366\330  
\011\341\063\144\053\143\327\062\136\237\371\300\173\017\170\157  
\227\274\223\232\371\234\022\220\170\172\200\207\025\327\162\164

\234\125\164\170\261\272\341\156\160\004\272\117\240\272\150\303  
\173\377\061\360\163\075\075\224\052\261\013\101\016\240\376\115  
\210\145\153\171\063\264\327\002\003\001\000\001\243\102\060\100  
\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001\006  
\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001  
\377\060\035\006\003\125\035\016\004\026\004\024\355\104\031\300  
\323\360\006\213\356\244\173\276\102\347\046\124\310\216\066\166  
\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\003  
\202\002\001\000\015\256\220\062\366\246\113\174\104\166\031\141  
\036\047\050\315\136\124\357\045\274\343\010\220\371\051\327\256  
\150\010\341\224\000\130\357\056\056\176\123\122\214\266\134\007  
\352\210\272\231\213\120\224\327\202\200\337\141\011\000\223\255  
\015\024\346\316\301\362\067\224\170\260\137\234\263\242\163\270  
\217\005\223\070\315\215\076\260\270\373\300\317\261\362\354\055  
\055\033\314\354\252\232\263\252\140\202\033\055\073\303\204\075  
\127\212\226\036\234\165\270\323\060\315\140\010\203\220\323\216  
\124\361\115\146\300\135\164\003\100\243\356\205\176\302\037\167  
\234\006\350\301\247\030\135\122\225\355\311\335\045\236\155\372  
\251\355\243\072\064\320\131\173\332\355\120\363\065\277\355\353  
\024\115\061\307\140\364\332\361\207\234\342\110\342\306\305\067  
\373\006\020\372\165\131\146\061\107\051\332\166\232\034\351\202  
\256\357\232\271\121\367\210\043\232\151\225\142\074\345\125\200  
\066\327\124\002\377\361\271\135\316\324\043\157\330\105\204\112  
\133\145\357\211\014\335\024\247\040\313\030\245\045\264\015\371  
\001\360\242\322\364\000\310\164\216\241\052\110\216\145\333\023  
\304\342\045\027\175\353\276\207\133\027\040\124\121\223\112\123  
\003\013\354\135\312\063\355\142\375\105\307\057\133\334\130\240  
\200\071\346\372\327\376\023\024\246\355\075\224\112\102\164\324  
\303\167\131\163\315\217\106\276\125\070\357\372\350\221\062\352  
\227\130\004\042\336\070\303\314\274\155\311\063\072\152\012\151  
\077\240\310\352\162\217\214\143\206\043\275\155\074\226\236\225  
\340\111\114\252\242\271\052\033\234\066\201\170\355\303\350\106  
\342\046\131\104\165\036\331\165\211\121\315\020\204\235\141\140  
\313\135\371\227\042\115\216\230\346\343\177\366\133\273\256\315  
\312\112\201\153\136\013\363\121\341\164\053\351\176\047\247\331  
\231\111\116\370\245\200\333\045\017\034\143\142\212\311\063\147  
\153\074\020\203\306\255\336\250\315\026\216\215\360\007\067\161  
\237\362\253\374\101\365\301\213\354\000\067\135\011\345\116\200  
\357\372\261\134\070\006\245\033\112\341\334\070\055\074\334\253  
\037\220\032\325\112\234\356\321\160\154\314\356\364\127\370\030  
\272\204\156\207

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "IdenTrust Commercial Root CA 1"

```

# Issuer: CN=IdenTrust Commercial Root CA 1,O=IdenTrust,C=US
# Serial Number:0a:01:42:80:00:00:01:45:23:c8:44:b5:00:00:00:02
# Subject: CN=IdenTrust Commercial Root CA 1,O=IdenTrust,C=US
# Not Valid Before: Thu Jan 16 18:12:23 2014
# Not Valid After : Mon Jan 16 18:12:23 2034
# Fingerprint (SHA-256):
5D:56:49:9B:E4:D2:E0:8B:CF:CA:D0:8A:3E:38:72:3D:50:50:3B:DE:70:69:48:E4:2F:55:60:30:19:E5:28:AE
# Fingerprint (SHA1): DF:71:7E:AA:4A:D9:4E:C9:55:84:99:60:2D:48:DE:5F:BC:F0:3A:25
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "IdenTrust Commercial Root CA 1"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\337\161\176\252\112\331\116\311\125\204\231\140\055\110\336\137
\274\360\072\045
END
CKA_CERT_MD5_HASH
MULTILINE_OCTAL
\263\076\167\163\165\356\240\323\343\176\111\143\111\131\273\307
END
CKA_ISSUER MULTILINE_OCTAL
\060\112\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\022\060\020\006\003\125\004\012\023\011\111\144\145\156\124\162
\165\163\164\061\047\060\045\006\003\125\004\003\023\036\111\144
\145\156\124\162\165\163\164\040\103\157\155\155\145\162\143\151
\141\154\040\122\157\157\164\040\103\101\040\061
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\012\001\102\200\000\000\001\105\043\310\104\265\000\000
\000\002
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "IdenTrust Public Sector Root CA 1"
#
# Issuer: CN=IdenTrust Public Sector Root CA 1,O=IdenTrust,C=US
# Serial Number:0a:01:42:80:00:00:01:45:23:cf:46:7c:00:00:00:02
#
# Subject: CN=IdenTrust Public Sector Root CA 1,O=IdenTrust,C=US
# Not Valid Before: Thu Jan 16 17:53:32 2014
# Not Valid After : Mon Jan 16 17:53:32 2034
# Fingerprint (SHA-256):
30:D0:89:5A:9A:44:8A:26:20:91:63:55:22:D1:F5:20:10:B5:86:7A:CA:E1:2C:78:EF:95:8F:D4:F4:38:9F:2F

```

# Fingerprint (SHA1): BA:29:41:60:77:98:3F:F4:F3:EF:F2:31:05:3B:2E:EA:6D:4D:45:FD

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "IdenTrust Public Sector Root CA 1"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\115\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\022\060\020\006\003\125\004\012\023\011\111\144\145\156\124\162  
\165\163\164\061\052\060\050\006\003\125\004\003\023\041\111\144  
\145\156\124\162\165\163\164\040\120\165\142\154\151\143\040\123  
\145\143\164\157\162\040\122\157\157\164\040\103\101\040\061

END

CKA\_ID UTF8 "0"

CKA\_ISSUER

MULTILINE\_OCTAL

\060\115\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\022\060\020\006\003\125\004\012\023\011\111\144\145\156\124\162  
\165\163\164\061\052\060\050\006\003\125\004\003\023\041\111\144  
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CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "IdenTrust Public Sector Root CA 1"

# Issuer: CN=IdenTrust Public Sector Root CA 1,O=IdenTrust,C=US

# Serial Number:0a:01:42:80:00:00:01:45:23:cf:46:7c:00:00:00:02

# Subject: CN=IdenTrust Public Sector Root CA 1,O=IdenTrust,C=US

# Not Valid Before: Thu Jan 16 17:53:32 2014

# Not Valid After : Mon Jan 16 17:53:32 2034

# Fingerprint (SHA-256):

30:D0:89:5A:9A:44:8A:26:20:91:63:55:22:D1:F5:20:10:B5:86:7A:CA:E1:2C:78:EF:95:8F:D4:F4:38:9F:2F

# Fingerprint (SHA1): BA:29:41:60:77:98:3F:F4:F3:EF:F2:31:05:3B:2E:EA:6D:4D:45:FD

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "IdenTrust Public Sector Root CA 1"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

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END

CKA\_CERT\_MD5\_HASH

MULTILINE\_OCTAL

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CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

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END

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CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "Entrust Root Certification Authority - G2"

#

# Issuer: CN=Entrust Root Certification Authority

- G2,OU="(c) 2009 Entrust, Inc. - for authorized use only",OU=See www.entrust.net/legal-terms,O="Entrust, Inc.",C=US

# Serial Number: 1246989352 (0x4a538c28)

# Subject: CN=Entrust Root Certification Authority - G2,OU="(c) 2009 Entrust, Inc. - for authorized use only",OU=See www.entrust.net/legal-terms,O="Entrust, Inc.",C=US

# Not Valid Before: Tue Jul 07 17:25:54 2009

# Not Valid After : Sat Dec 07 17:55:54 2030

# Fingerprint (SHA-256):

43:DF:57:74:B0:3E:7F:EF:5F:E4:0D:93:1A:7B:ED:F1:BB:2E:6B:42:73:8C:4E:6D:38:41:10:3D:3A:A7:F3:39

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CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Entrust Root Certification Authority - G2"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

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END

CKA\_NSS\_MOZILLA\_CA\_POLICY

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CK_BBOOL CK_TRUE
CKA_NSS_SERVER_DISTRUST_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRUST_AFTER CK_BBOOL CK_FALSE

# Trust for "Entrust Root Certification Authority - G2"
# Issuer: CN=Entrust Root Certification Authority - G2,OU="(c) 2009 Entrust, Inc. - for authorized use
only",OU=See www.entrust.net/legal-terms,O="Entrust, Inc.",C=US
# Serial Number: 1246989352 (0x4a538c28)
# Subject: CN=Entrust Root Certification Authority - G2,OU="(c) 2009 Entrust, Inc. - for authorized use
only",OU=See www.entrust.net/legal-terms,O="Entrust, Inc.",C=US
# Not Valid Before: Tue Jul 07 17:25:54 2009
# Not Valid After : Sat Dec 07 17:55:54 2030
# Fingerprint (SHA-256):
43:DF:57:74:B0:3E:7F:EF:5F:E4:0D:93:1A:7B:ED:F1:BB:2E:6B:42:73:8C:4E:6D:38:41:10:3D:3A:A7:F3:39
# Fingerprint (SHA1): 8C:F4:27:FD:79:0C:3A:D1:66:06:8D:E8:1E:57:EF:BB:93:22:72:D4
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE
CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Entrust Root Certification Authority - G2"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\214\364\047\375\171\014\072\321\146\006\215\350\036\127\357\273
\223\042\162\324
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\113\342\311\221\226\145\014\364\016\132\223\222\240\012\376\262
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\276\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\026\060\024\006\003\125\004\012\023\015\105\156\164\162\165
\163\164\054\040\111\156\143\056\061\050\060\046\006\003\125\004
\013\023\037\123\145\145\040\167\167\167\056\145\156\164\162\165
\163\164\056\156\145\164\057\154\145\147\141\154\055\164\145\162
\155\163\061\071\060\067\006\003\125\004\013\023\060\050\143\051
\040\062\060\060\071\040\105\156\164\162\165\163\164\054\040\111
\156\143\056\040\055\040\146\157\162\040\141\165\164\150\157\162
\151\172\145\144\040\165\163\145\040\157\156\154\171\061\062\060
\060\006\003\125\004\003\023\051\105\156\164\162\165\163\164\040
\122\157\157\164\040\103\145\162\164\151\146\151\143\141\164\151
\157\156\040\101\165\164\150\157\162\151\164\171\040\055\040\107
\062
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\004\112\123\214\050
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
```

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR  
CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR  
CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "Entrust Root Certification Authority - EC1"

#

# Issuer: CN=Entrust Root Certification Authority - EC1,OU="(c) 2012 Entrust, Inc. - for authorized use only",OU=See www.entrust.net/legal-terms,O="Entrust, Inc.",C=US

# Serial Number:00:a6:8b:79:29:00:00:00:50:d0:91:f9

# Subject: CN=Entrust Root Certification Authority - EC1,OU="(c) 2012 Entrust, Inc. - for authorized use only",OU=See www.entrust.net/legal-terms,O="Entrust, Inc.",C=US

# Not Valid Before: Tue Dec 18 15:25:36 2012

# Not Valid After : Fri Dec 18 15:55:36 2037

# Fingerprint (SHA-256):

02:ED:0E:B2:8C:14:DA:45:16:5C:56:67:91:70:0D:64:51:D7:FB:56:F0:B2:AB:1D:3B:8E:B0:70:E5:6E:DF:F5

#

Fingerprint (SHA1): 20:D8:06:40:DF:9B:25:F5:12:25:3A:11:EA:F7:59:8A:EB:14:B5:47

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Entrust Root Certification Authority - EC1"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\201\277\061\013\060\011\006\003\125\004\006\023\002\125\123  
\061\026\060\024\006\003\125\004\012\023\015\105\156\164\162\165  
\163\164\054\040\111\156\143\056\061\050\060\046\006\003\125\004  
\013\023\037\123\145\145\040\167\167\167\056\145\156\164\162\165  
\163\164\056\156\145\164\057\154\145\147\141\154\055\164\145\162  
\155\163\061\071\060\067\006\003\125\004\013\023\060\050\143\051  
\040\062\060\061\062\040\105\156\164\162\165\163\164\054\040\111  
\156\143\056\040\055\040\146\157\162\040\141\165\164\150\157\162  
\151\172\145\144\040\165\163\145\040\157\156\154\171\061\063\060  
\061\006\003\125\004\003\023\052\105\156\164\162\165\163\164\040  
\122\157\157\164\040\103\145\162\164\151\146\151\143\141\164\151  
\157\156\040\101\165\164\150\157\162\151\164\171\040\055\040\105  
\103\061

END

CKA\_ID

UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\277\061\013\060\011\006\003\125\004\006\023\002\125\123  
\061\026\060\024\006\003\125\004\012\023\015\105\156\164\162\165  
\163\164\054\040\111\156\143\056\061\050\060\046\006\003\125\004  
\013\023\037\123\145\145\040\167\167\167\056\145\156\164\162\165  
\163\164\056\156\145\164\057\154\145\147\141\154\055\164\145\162  
\155\163\061\071\060\067\006\003\125\004\013\023\060\050\143\051

\040\062\060\061\062\040\105\156\164\162\165\163\164\054\040\111  
\156\143\056\040\055\040\146\157\162\040\141\165\164\150\157\162  
\151\172\145\144\040\165\163\145\040\157\156\154\171\061\063\060  
\061\006\003\125\004\003\023\052\105\156\164\162\165\163\164\040  
\122\157\157\164\040\103\145\162\164\151\146\151\143\141\164\151  
\157\156\040\101\165\164\150\157\162\151\164\171\040\055\040\105  
\103\061

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\015\000\246\213\171\051\000\000\000\000\120\320\221\371

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\002\371\060\202\002\200\240\003\002\001\002\002\015\000  
\246\213\171\051\000\000\000\000\120\320\221\371\060\012\006\010  
\052\206\110\316\075\004\003\003\060\201\277\061\013\060\011\006  
\003\125\004\006\023\002\125\123\061\026\060\024\006\003\125\004  
\012\023\015\105\156\164\162\165\163\164\054\040\111\156\143\056  
\061\050\060\046\006\003\125\004\013\023\037\123\145\145\040\167  
\167\167\056\145\156\164\162\165\163\164\056\156\145\164\057\154  
\145\147\141\154\055\164\145\162\155\163\061\071\060\067\006\003  
\125\004\013\023\060\050\143\051\040\062\060\061\062\040\105\156  
\164\162\165\163\164\054\040\111\156\143\056\040\055\040\146\157  
\162\040\141\165\164\150\157\162\151\172\145\144\040\165\163\145  
\040\157\156\154\171\061\063\060\061\006\003\125\004\003\023\052  
\105\156\164\162\165\163\164\040\122\157\157\164\040\103\145\162  
\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157  
\162\151\164\171\040\055\040\105\103\061\060\036\027\015\061\062  
\061\062\061\070\061\065\062\065\063\066\132\027\015\063\067\061  
\062\061\070\061\065\065\065\063\066\132\060\201\277\061\013\060  
\011\006\003\125\004\006\023\002\125\123\061\026\060\024\006\003  
\125\004\012\023\015\105\156\164\162\165\163\164\054\040\111\156  
\143\056\061\050\060\046\006\003\125\004\013\023\037\123\145\145  
\040\167\167\167\056\145\156\164\162\165\163\164\056\156\145\164  
\057\154\145\147\141\154\055\164\145\162\155\163\061\071\060\067  
\006\003\125\004\013\023\060\050\143\051\040\062\060\061\062\040  
\105\156\164\162\165\163\164\054\040\111\156\143\056\040\055\040  
\146\157\162\040\141\165\164\150\157\162\151\172\145\144\040\165  
\163\145\040\157\156\154\171\061\063\060\061\006\003\125\004\003  
\023\052\105\156\164\162\165\163\164\040\122\157\157\164\040\103  
\145\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164  
\150\157\162\151\164\171\040\055\040\105\103\061\060\166\060\020  
\006\007\052\206\110\316\075\002\001\006\005\053\201\004\000\042  
\003\142\000\004\204\023\311\320\272\155\101\173\342\154\320\353  
\125\137\146\002\032\044\364\133\211\151\107\343\270\302\175\361  
\362\002\305\237\240\366\133\325\213\006\031\206\117\123\020\155  
\007\044\047\241\240\370\325\107\031\141\114\175\312\223\047\352  
\164\014\357\157\226\011\376\143\354\160\135\066\255\147\167\256

```
\311\235\174\125\104\072\242\143\121\037\365\343\142\324\251\107
\007\076\314\040\243\102\060\100\060\016\006\003\125\035\017\001
\001\377\004\004\003\002\001\006\060\017\006\003\125\035\023\001
\001\377\004\005\060\003\001\001\377\060\035\006\003\125\035\016
\004\026\004\024\267\143\347\032\335\215\351\010\246\125\203\244
\340\152\120\101\145\021\102\111\060\012\006\010\052\206\110\316
\075\004\003\003\003\147\000\060\144\002\060\141\171\330\345\102
\107\337\034\256\123\231\027\266\157\034\175\341\277\021\224\321
\003\210\165\344\215\211\244\212\167\106\336\155\141\357\002\365
\373\265\337\314\376\116\377\376\251\346\247\002\060\133\231\327
\205\067\006\265\173\010\375\353\047\213\112\224\371\341\372\247
\216\046\010\350\174\222\150\155\163\330\157\046\254\041\002\270
\231\267\046\101\133\045\140\256\320\110\032\356\006
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "Entrust Root Certification Authority - EC1"

# Issuer: CN=Entrust Root Certification Authority - EC1,OU="(c) 2012 Entrust, Inc. - for authorized use only",OU=See www.entrust.net/legal-terms,O="Entrust, Inc.",C=US

# Serial Number:00:a6:8b:79:29:00:00:00:50:d0:91:f9

# Subject: CN=Entrust Root Certification Authority - EC1,OU="(c) 2012 Entrust, Inc. - for authorized use only",OU=See www.entrust.net/legal-terms,O="Entrust, Inc.",C=US

# Not Valid Before: Tue Dec 18 15:25:36 2012

# Not Valid After : Fri Dec 18 15:55:36 2037

# Fingerprint (SHA-256):

02:ED:0E:B2:8C:14:DA:45:16:5C:56:67:91:70:0D:64:51:D7:FB:56:F0:B2:AB:1D:3B:8E:B0:70:E5:6E:DF:F5

# Fingerprint (SHA1): 20:D8:06:40:DF:9B:25:F5:12:25:3A:11:EA:F7:59:8A:EB:14:B5:47

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Entrust Root Certification Authority - EC1"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\040\330\006\100\337\233\045\365\022\045\072\021\352\367\131\212
\353\024\265\107
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\266\176\035\360\130\305\111\154\044\073\075\355\230\030\355\274
```

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\201\277\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\026\060\024\006\003\125\004\012\023\015\105\156\164\162\165
\163\164\054\040\111\156\143\056\061\050\060\046\006\003\125\004
\013\023\037\123\145\145\040\167\167\167\056\145\156\164\162\165
\163\164\056\156\145\164\057\154\145\147\141\154\055\164\145\162
```

```
\155\163\061\071\060\067\006\003\125\004\013\023\060\050\143\051
\040\062\060\061\062\040\105\156\164\162\165\163\164\054\040\111
\156\143\056\040\055\040\146\157\162\040\141\165\164\150\157\162
\151\172\145\144\040\165\163\145\040\157\156\154\171\061\063\060
\061\006\003\125\004\003\023\052\105\156\164\162\165\163\164\040
\122\157\157\164\040\103\145\162\164\151\146\151\143\141\164\151
\157\156\040\101\165\164\150\157\162\151\164\171\040\055\040\105
\103\061
```

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

```
\002\015\000\246\213\171\051\000\000\000\000\120\320\221\371
```

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "CFCA EV ROOT"

#

# Issuer: CN=CFCA EV ROOT,O=China Financial Certification Authority,C=CN

# Serial Number: 407555286 (0x184accd6)

# Subject: CN=CFCA EV ROOT,O=China Financial Certification Authority,C=CN

# Not Valid Before: Wed Aug 08 03:07:01 2012

#

Not Valid After : Mon Dec 31 03:07:01 2029

# Fingerprint (SHA-256):

5C:C3:D7:8E:4E:1D:5E:45:54:7A:04:E6:87:3E:64:F9:0C:F9:53:6D:1C:CC:2E:F8:00:F3:55:C4:C5:FD:70:FD

# Fingerprint (SHA1): E2:B8:29:4B:55:84:AB:6B:58:C2:90:46:6C:AC:3F:B8:39:8F:84:83

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "CFCA EV ROOT"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

```
\060\126\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\060\060\056\006\003\125\004\012\014\047\103\150\151\156\141\040
\106\151\156\141\156\143\151\141\154\040\103\145\162\164\151\146
\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164
\171\061\025\060\023\006\003\125\004\003\014\014\103\106\103\101
\040\105\126\040\122\117\117\124
```

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\126\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\060\060\056\006\003\125\004\012\014\047\103\150\151\156\141\040
```

\106\151\156\141\156\143\151\141\154\040\103\145\162\164\151\146  
\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164  
\171\061\025\060\023\006\003\125\004\003\014\014\103\106\103\101  
\040\105\126\040\122\117\117\124

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\004\030\112\314\326

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\215\060\202\003\165\240\003\002\001\002\002\004\030  
\112\314\326\060\015\006\011\052\206\110\206\367\015\001\001\013  
\005\000\060\126\061\013\060\011\006\003\125\004\006\023\002\103  
\116\061\060\060\056\006\003\125\004\012\014\047\103\150\151\156  
\141\040\106\151\156\141\156\143\151\141\154\040\103\145\162\164  
\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162  
\151\164\171\061\025\060\023\006\003\125\004\003\014\014\103\106  
\103\101\040\105\126\040\122\117\117\124\060\036\027\015\061\062  
\060\070\060\070\060\063\060\067\060\061\132\027\015\062\071\061  
\062\063\061\060\063\060\067\060\061\132\060\126\061\013\060\011  
\006\003\125\004\006\023\002\103\116\061\060\060\056\006\003\125  
\004\012\014\047\103\150\151\156\141\040\106\151\156\141\156\143  
\151\141\154\040\103\145\162\164\151\146\151\143\141\164\151\157  
\156\040\101\165\164\150\157\162\151\164\171\061\025\060\023\006  
\003\125\004\003\014\014\103\106\103\101\040\105\126\040\122\117  
\117\124\060\202\002\042\060\015\006\011\052\206\110\206\367\015  
\001\001\001\005\000\003\202\002\017\000\060\202\002\012\002\202  
\002\001\000\327\135\153\315\020\077\037\005\131\325\005\115\067  
\261\016\354\230\053\216\025\035\372\223\113\027\202\041\161\020  
\122\327\121\144\160\026\302\125\151\115\216\025\155\237\277\014  
\033\302\340\243\147\326\014\254\317\042\256\257\167\124\052\113  
\114\212\123\122\172\303\356\056\336\263\161\045\301\351\135\075  
\356\241\057\243\367\052\074\311\043\035\152\253\035\241\247\361  
\363\354\240\325\104\317\025\317\162\057\035\143\227\350\231\371  
\375\223\244\124\200\114\122\324\122\253\056\111\337\220\315\270  
\137\276\077\336\241\312\115\040\324\045\350\204\051\123\267\261  
\210\037\377\372\332\220\237\012\251\055\101\077\261\361\030\051  
\356\026\131\054\064\111\032\250\006\327\250\210\322\003\162\172  
\062\342\352\150\115\156\054\226\145\173\312\131\372\362\342\335  
\356\060\054\373\314\106\254\304\143\353\157\177\066\053\064\163  
\022\224\177\337\314\046\236\361\162\135\120\145\131\217\151\263  
\207\136\062\157\303\030\212\265\225\217\260\172\067\336\132\105  
\073\307\066\341\357\147\321\071\323\227\133\163\142\031\110\055  
\207\034\006\373\164\230\040\111\163\360\005\322\033\261\240\243  
\267\033\160\323\210\151\271\132\326\070\364\142\334\045\213\170  
\277\370\350\176\270\134\311\225\117\137\247\055\271\040\153\317  
\153\335\365\015\364\202\267\364\262\146\056\020\050\366\227\132  
\173\226\026\217\001\031\055\154\156\177\071\130\006\144\203\001



\203\203\303\115\222\335\062\306\207\244\067\351\026\316\252\055  
\150\257\012\201\145\072\160\301\233\255\115\155\124\312\052\055  
\113\205\033\263\200\346\160\105\015\153\136\065\360\177\073\270  
\234\344\004\160\211\022\045\223\332\012\231\042\140\152\143\140  
\116\166\006\230\116\275\203\255\035\130\212\045\205\322\307\145  
\036\055\216\306\337\266\306\341\177\212\004\041\025\051\164\360  
\076\234\220\235\014\056\361\212\076\132\252\014\011\036\307\325  
\074\243\355\227\303\036\064\372\070\371\010\016\343\300\135\053  
\203\321\126\152\311\266\250\124\123\056\170\062\147\075\202\177  
\164\320\373\341\266\005\140\271\160\333\216\013\371\023\130\157  
\161\140\020\122\020\271\301\101\011\357\162\037\147\061\170\377  
\226\005\215\002\003\001\000\001\243\143\060\141\060\037\006\003  
\125\035\043\004\030\060\026\200\024\343\376\055\375\050\320\013  
\265\272\266\242\304\277\006\252\005\214\223\373\057\060\017\006  
\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060\016  
\006\003\125\035\017\001\001\377\004\004\003\002\001\006\060\035  
\006\003\125\035\016\004\026\004\024\343\376\055\375\050\320\013  
\265\272\266\242\304\277\006\252\005\214\223\373\057\060\015\006  
\011\052\206\110\206\367\015\001\001\013\005\000\003\202\002\001  
\000\045\306\272\153\353\207\313\336\202\071\226\075\360\104\247  
\153\204\163\003\336\235\053\117\272\040\177\274\170\262\317\227  
\260\033\234\363\327\171\056\365\110\266\322\373\027\210\346\323  
\172\077\355\123\023\320\342\057\152\171\313\000\043\050\346\036  
\067\127\065\211\204\302\166\117\064\066\255\147\303\316\101\006  
\210\305\367\356\330\032\270\326\013\177\120\377\223\252\027\113  
\214\354\355\122\140\262\244\006\352\116\353\364\153\031\375\353  
\365\032\340\045\052\232\334\307\101\066\367\310\164\005\204\071  
\225\071\326\013\073\244\047\372\010\330\134\036\370\004\140\122  
\021\050\050\003\377\357\123\146\000\245\112\064\026\146\174\375  
\011\244\256\236\147\032\157\101\013\153\006\023\233\217\206\161  
\005\264\057\215\211\146\063\051\166\124\232\021\370\047\372\262  
\077\221\340\316\015\033\363\060\032\255\277\042\135\033\323\277  
\045\005\115\341\222\032\177\231\237\074\104\223\312\324\100\111  
\154\200\207\327\004\072\303\062\122\065\016\126\370\245\335\175  
\304\213\015\021\037\123\313\036\262\027\266\150\167\132\340\324  
\313\310\007\256\365\072\056\216\067\267\320\001\113\103\051\167  
\214\071\227\217\202\132\370\121\345\211\240\030\347\150\177\135  
\012\056\373\243\107\016\075\246\043\172\306\001\307\217\310\136  
\277\155\200\126\276\212\044\272\063\352\237\341\062\021\236\361  
\322\117\200\366\033\100\257\070\236\021\120\171\163\022\022\315  
\346\154\235\054\210\162\074\060\201\006\221\042\352\131\255\332  
\031\056\042\302\215\271\214\207\340\146\274\163\043\137\041\144  
\143\200\110\365\240\074\030\075\224\310\110\101\035\100\272\136  
\376\376\126\071\241\310\317\136\236\031\144\106\020\332\027\221  
\267\005\200\254\213\231\222\175\347\242\330\007\013\066\047\347  
\110\171\140\212\303\327\023\134\370\162\100\337\112\313\317\231  
\000\012\000\013\021\225\332\126\105\003\210\012\237\147\320\325  
\171\261\250\215\100\155\015\302\172\100\372\363\137\144\107\222

```
\313\123\271\273\131\316\117\375\320\025\123\001\330\337\353\331
\346\166\357\320\043\273\073\251\171\263\325\002\051\315\211\243
\226\017\112\065\347\116\102\300\165\315\007\317\346\054\353\173
\056
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "CFCA EV ROOT"

# Issuer: CN=CFCA EV ROOT,O=China Financial Certification Authority,C=CN

# Serial Number: 407555286 (0x184accd6)

# Subject: CN=CFCA EV ROOT,O=China Financial Certification Authority,C=CN

# Not Valid Before: Wed Aug 08 03:07:01 2012

# Not Valid After : Mon Dec 31 03:07:01 2029

# Fingerprint (SHA-256):

5C:C3:D7:8E:4E:1D:5E:45:54:7A:04:E6:87:3E:64:F9:0C:F9:53:6D:1C:CC:2E:F8:00:F3:55:C4:C5:FD:70:FD

# Fingerprint (SHA1): E2:B8:29:4B:55:84:AB:6B:58:C2:90:46:6C:AC:3F:B8:39:8F:84:83

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "CFCA EV ROOT"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\342\270\051\113\125\204\253\153\130\302\220\106\154\254\077\270

\071\217\204\203

END

CKA\_CERT\_MD5\_HASH

MULTILINE\_OCTAL

\164\341\266\355\046\172\172\104\060\063\224\253\173\047\201\060

END

CKA\_ISSUER MULTILINE\_OCTAL

\060\126\061\013\060\011\006\003\125\004\006\023\002\103\116\061

\060\060\056\006\003\125\004\012\014\047\103\150\151\156\141\040

\106\151\156\141\156\143\151\141\154\040\103\145\162\164\151\146

\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164

\171\061\025\060\023\006\003\125\004\003\014\014\103\106\103\101

\040\105\126\040\122\117\117\124

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\004\030\112\314\326

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

```
#
# Certificate "OISTE WISeKey Global Root GB CA"
#
# Issuer: CN=OISTE WISeKey Global Root GB CA,OU=OISTE Foundation Endorsed,O=WISeKey,C=CH
# Serial Number:76:b1:20:52:74:f0:85:87:46:b3:f8:23:1a:f6:c2:c0
#
Subject: CN=OISTE WISeKey Global Root GB CA,OU=OISTE Foundation Endorsed,O=WISeKey,C=CH
# Not Valid Before: Mon Dec 01 15:00:32 2014
# Not Valid After : Thu Dec 01 15:10:31 2039
# Fingerprint (SHA-256):
6B:9C:08:E8:6E:B0:F7:67:CF:AD:65:CD:98:B6:21:49:E5:49:4A:67:F5:84:5E:7B:D1:ED:01:9F:27:B8:6B:D6
# Fingerprint (SHA1): 0F:F9:40:76:18:D3:D7:6A:4B:98:F0:A8:35:9E:0C:FD:27:AC:CC:ED
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "OISTE WISeKey Global Root GB CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\155\061\013\060\011\006\003\125\004\006\023\002\103\110\061
\020\060\016\006\003\125\004\012\023\007\127\111\123\145\113\145
\171\061\042\060\040\006\003\125\004\013\023\031\117\111\123\124
\105\040\106\157\165\156\144\141\164\151\157\156\040\105\156\144
\157\162\163\145\144\061\050\060\046\006\003\125\004\003\023\037
\117\111\123\124\105\040\127\111\123\145\113\145\171\040\107\154
\157\142\141\154\040\122\157\157\164\040\107\102\040\103\101
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\155\061\013\060\011\006\003\125\004\006\023\002\103\110\061
\020\060\016\006\003\125\004\012\023\007\127\111\123\145\113\145
\171\061\042\060\040\006\003\125\004\013\023\031\117\111\123\124
\105\040\106\157\165\156\144\141\164\151\157\156\040\105\156\144
\157\162\163\145\144\061\050\060\046\006\003\125\004\003\023\037
\117\111\123\124\105\040\127\111\123\145\113\145\171\040\107\154
\157\142\141\154\040\122\157\157\164\040\107\102\040\103\101
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\166\261\040\122\164\360\205\207\106\263\370\043\032\366
\302\300
END
CKA_VALUE MULTILINE_OCTAL
\060\202\003\265\060\202\002\235\240\003\002\001\002\002\020\166
\261\040\122\164\360\205\207\106\263\370\043\032\366\302\300\060
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\155
\061\013\060\011\006\003\125\004\006\023\002\103\110\061\020\060
\016\006\003\125\004\012\023\007\127\111\123\145\113\145\171\061
```

\042\060\040\006\003\125\004\013\023\031\117\111\123\124\105\040  
\106\157\165\156\144\141\164\151\157\156\040\105\156\144\157\162  
\163\145\144\061\050\060\046\006\003\125\004\003\023\037\117\111  
\123\124\105\040\127\111\123\145\113\145\171\040\107\154\157\142  
\141\154\040\122\157\157\164\040\107\102\040\103\101\060\036\027  
\015\061\064\061\062\060\061\061\065\060\060\063\062\132\027\015  
\063\071\061\062\060\061\061\065\061\060\063\061\132\060\155\061  
\013\060\011\006\003\125\004\006\023\002\103\110\061\020\060\016  
\006\003\125\004\012\023\007\127\111\123\145\113\145\171\061\042  
\060\040\006\003\125\004\013\023\031\117\111\123\124\105\040\106  
\157\165\156\144\141\164\151\157\156\040\105\156\144\157\162\163  
\145\144\061\050\060\046\006\003\125\004\003\023\037\117\111\123  
\124\105\040\127\111\123\145\113\145\171\040\107\154\157\142\141  
\154\040\122\157\157\164\040\107\102\040\103\101\060\202\001\042  
\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003  
\202\001\017\000\060\202\001\012\002\202\001\001\000\330\027\267  
\034\112\044\052\326\227\261\312\342\036\373\175\070\357\230\365  
\262\071\230\116\047\270\021\135\173\322\045\224\210\202\025\046  
\152\033\061\273\250\133\041\041\053\330\017\116\237\132\361\261  
\132\344\171\326\062\043\053\341\123\314\231\105\134\173\117\255  
\274\277\207\112\013\113\227\132\250\366\110\354\175\173\015\315  
\041\006\337\236\025\375\101\212\110\267\040\364\241\172\033\127  
\324\135\120\377\272\147\330\043\231\037\310\077\343\336\377\157  
\133\167\261\153\156\270\311\144\367\341\312\101\106\016\051\161  
\320\271\043\374\311\201\137\116\367\157\337\277\204\255\163\144  
\273\267\102\216\151\366\324\166\035\176\235\247\270\127\212\121  
\147\162\327\324\250\270\225\124\100\163\003\366\352\364\353\376  
\050\102\167\077\235\043\033\262\266\075\200\024\007\114\056\117  
\367\325\012\026\015\275\146\103\067\176\043\103\171\303\100\206  
\365\114\051\332\216\232\255\015\245\004\207\210\036\205\343\351  
\123\325\233\310\213\003\143\170\353\340\031\112\156\273\057\153  
\063\144\130\223\255\151\277\217\033\357\202\110\307\002\003\001  
\000\001\243\121\060\117\060\013\006\003\125\035\017\004\004\003  
\002\001\206\060\017\006\003\125\035\023\001\001\377\004\005\060  
\003\001\001\377\060\035\006\003\125\035\016\004\026\004\024\065  
\017\310\066\143\136\342\243\354\371\073\146\025\316\121\122\343  
\221\232\075\060\020\006\011\053\006\001\004\001\202\067\025\001  
\004\003\002\001\000\060\015\006\011\052\206\110\206\367\015\001  
\001\013\005\000\003\202\001\001\000\100\114\373\207\262\231\201  
\220\176\235\305\260\260\046\315\210\173\053\062\215\156\270\041  
\161\130\227\175\256\067\024\257\076\347\367\232\342\175\366\161  
\230\231\004\252\103\164\170\243\343\111\141\076\163\214\115\224  
\340\371\161\304\266\026\016\123\170\037\326\242\207\057\002\071  
\201\051\074\257\025\230\041\060\376\050\220\000\214\321\341\313  
\372\136\310\375\370\020\106\073\242\170\102\221\027\164\125\012  
\336\120\147\115\146\321\247\377\375\331\300\265\250\243\212\316  
\146\365\017\103\315\247\053\127\173\143\106\152\252\056\122\330  
\364\355\341\155\255\051\220\170\110\272\341\043\252\243\211\354

```
\265\253\226\300\264\113\242\035\227\236\172\362\156\100\161\337
\150\361\145\115\316\174\005\337\123\145\251\245\360\261\227\004
\160\025\106\003\230\324\322\277\124\264\240\130\175\122\157\332
\126\046\142\324\330\333\211\061\157\034\360\042\302\323\142\034
\065\315\114\151\025\124\032\220\230\336\353\036\137\312\167\307
\313\216\075\103\151\234\232\130\320\044\073\337\033\100\226\176
\065\255\201\307\116\161\272\210\023
```

END

CKA\_NSS\_Mozilla\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "OISTE WISEKey Global Root GB CA"

# Issuer: CN=OISTE WISEKey Global Root GB CA,OU=OISTE Foundation Endorsed,O=WISEKey,C=CH

# Serial Number:76:b1:20:52:74:f0:85:87:46:b3:f8:23:1a:f6:c2:c0

# Subject:

CN=OISTE WISEKey Global Root GB CA,OU=OISTE Foundation Endorsed,O=WISEKey,C=CH

# Not Valid Before: Mon Dec 01 15:00:32 2014

# Not Valid After : Thu Dec 01 15:10:31 2039

# Fingerprint (SHA-256):

6B:9C:08:E8:6E:B0:F7:67:CF:AD:65:CD:98:B6:21:49:E5:49:4A:67:F5:84:5E:7B:D1:ED:01:9F:27:B8:6B:D6

# Fingerprint (SHA1): 0F:F9:40:76:18:D3:D7:6A:4B:98:F0:A8:35:9E:0C:FD:27:AC:CC:ED

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "OISTE WISEKey Global Root GB CA"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\017\371\100\166\030\323\327\152\113\230\360\250\065\236\014\375
\047\254\314\355
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\244\353\271\141\050\056\267\057\230\260\065\046\220\231\121\035
```

END

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\155\061\013\060\011\006\003\125\004\006\023\002\103\110\061
\020\060\016\006\003\125\004\012\023\007\127\111\123\145\113\145
\171\061\042\060\040\006\003\125\004\013\023\031\117\111\123\124
\105\040\106\157\165\156\144\141\164\151\157\156\040\105\156\144
\157\162\163\145\144\061\050\060\046\006\003\125\004\003\023\037
\117\111\123\124\105\040\127\111\123\145\113\145\171\040\107\154
\157\142\141\154\040\122\157\157\164\040\107\102\040\103\101
```

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

```
\002\020\166\261\040\122\164\360\205\207\106\263\370\043\032\366
\302\300
```

```

END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "SZAFIR ROOT CA2"
#
# Issuer: CN=SZAFIR ROOT CA2,O=Krajowa Izba Rozliczeniowa S.A.,C=PL
# Serial Number:3e:8a:5d:07:ec:55:d2:32:d5:b7:e3:b6:5f:01:eb:2d:dc:e4:d6:e4
# Subject: CN=SZAFIR ROOT CA2,O=Krajowa Izba Rozliczeniowa S.A.,C=PL
# Not Valid Before: Mon Oct 19 07:43:30 2015
# Not Valid After : Fri Oct 19 07:43:30 2035
# Fingerprint (SHA-256):
A1:33:9D:33:28:1A:0B:56:E5:57:D3:D3:2B:1C:E7:F9:36:7E:B0:94:BD:5F:A7:2A:7E:50:04:C8:DE:D7:CA:FE
#
Fingerprint (SHA1): E2:52:FA:95:3F:ED:DB:24:60:BD:6E:28:F3:9C:CC:CF:5E:B3:3F:DE
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "SZAFIR ROOT CA2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\121\061\013\060\011\006\003\125\004\006\023\002\120\114\061
\050\060\046\006\003\125\004\012\014\037\113\162\141\152\157\167
\141\040\111\172\142\141\040\122\157\172\154\151\143\172\145\156
\151\157\167\141\040\123\056\101\056\061\030\060\026\006\003\125
\004\003\014\017\123\132\101\106\111\122\040\122\117\117\124\040
\103\101\062
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\121\061\013\060\011\006\003\125\004\006\023\002\120\114\061
\050\060\046\006\003\125\004\012\014\037\113\162\141\152\157\167
\141\040\111\172\142\141\040\122\157\172\154\151\143\172\145\156
\151\157\167\141\040\123\056\101\056\061\030\060\026\006\003\125
\004\003\014\017\123\132\101\106\111\122\040\122\117\117\124\040
\103\101\062
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\024\076\212\135\007\354\125\322\062\325\267\343\266\137\001
\353\055\334\344\326\344
END
CKA_VALUE MULTILINE_OCTAL
\060\202\003\162\060\202\002\132\240\003\002\001\002\002\024\076

```

\212\135\007\354\125\322\062\325\267\343\266\137\001\353\055\334  
\344\326\344\060\015\006\011\052\206\110\206\367\015\001\001\013  
\005\000\060\121\061\013\060\011\006\003\125\004\006\023\002\120  
\114\061\050\060\046\006\003\125\004\012\014\037\113\162\141\152  
\157\167\141\040\111\172\142\141\040\122\157\172\154\151\143\172  
\145\156\151\157\167\141\040\123\056\101\056\061\030\060\026\006  
\003\125\004\003\014\017\123\132\101\106\111\122\040\122\117\117  
\124\040\103\101\062\060\036\027\015\061\065\061\060\061\071\060  
\067\064\063\063\060\132\027\015\063\065\061\060\061\071\060\067  
\064\063\063\060\132\060\121\061\013\060\011\006\003\125\004\006  
\023\002\120\114\061\050\060\046\006\003\125\004\012\014\037\113  
\162\141\152\157\167\141\040\111\172\142\141\040\122\157\172\154  
\151\143\172\145\156\151\157\167\141\040\123\056\101\056\061\030  
\060\026\006\003\125\004\003\014\017\123\132\101\106\111\122\040  
\122\117\117\124\040\103\101\062\060\202\001\042\060\015\006\011  
\052\206\110\206\367\015\001\001\001\005\000\003\202\001\017\000  
\060\202\001\012\002\202\001\001\000\267\274\076\120\250\113\315  
\100\265\316\141\347\226\312\264\241\332\014\042\260\372\265\173  
\166\000\167\214\013\317\175\250\206\314\046\121\344\040\075\205  
\014\326\130\343\347\364\052\030\235\332\321\256\046\356\353\123  
\334\364\220\326\023\112\014\220\074\303\364\332\322\216\015\222  
\072\334\261\261\377\070\336\303\272\055\137\200\271\002\275\112  
\235\033\017\264\303\302\301\147\003\335\334\033\234\075\263\260  
\336\000\036\250\064\107\273\232\353\376\013\024\275\066\204\332  
\015\040\277\372\133\313\251\026\040\255\071\140\356\057\165\266  
\347\227\234\371\076\375\176\115\157\115\057\357\210\015\152\372  
\335\361\075\156\040\245\240\022\264\115\160\271\316\327\162\073  
\211\223\247\200\204\034\047\111\162\111\265\377\073\225\236\301  
\314\310\001\354\350\016\212\012\226\347\263\246\207\345\326\371  
\005\053\015\227\100\160\074\272\254\165\132\234\325\115\235\002  
\012\322\113\233\146\113\106\007\027\145\255\237\154\210\000\334  
\042\211\340\341\144\324\147\274\061\171\141\074\273\312\101\315  
\134\152\000\310\074\070\216\130\257\002\003\001\000\001\243\102  
\060\100\060\017\006\003\125\035\023\001\001\377\004\005\060\003  
\001\001\377\060\016\006\003\125\035\017\001\001\377\004\004\003  
\002\001\006\060\035\006\003\125\035\016\004\026\004\024\056\026  
\251\112\030\265\313\314\365\157\120\363\043\137\370\135\347\254  
\360\310\060\015\006\011\052\206\110\206\367\015\001\001\013\005  
\000\003\202\001\001\000\265\163\370\003\334\131\133\035\166\351  
\243\052\173\220\050\262\115\300\063\117\252\232\261\324\270\344  
\047\377\251\226\231\316\106\340\155\174\114\242\070\244\006\160  
\360\364\101\021\354\077\107\215\077\162\207\371\073\375\244\157  
\053\123\000\340\377\071\271\152\007\016\353\035\034\366\242\162  
\220\313\202\075\021\202\213\322\273\237\052\257\041\346\143\206  
\235\171\031\357\367\273\014\065\220\303\212\355\117\017\365\314  
\022\331\244\076\273\240\374\040\225\137\117\046\057\021\043\203  
\116\165\007\017\277\233\321\264\035\351\020\004\376\312\140\217  
\242\114\270\255\317\341\220\017\315\256\012\307\135\173\267\120

```
\322\324\141\372\325\025\333\327\237\207\121\124\353\245\343\353
\311\205\240\045\040\067\373\216\316\014\064\204\341\074\201\262
\167\116\103\245\210\137\206\147\241\075\346\264\134\141\266\076
\333\376\267\050\305\242\007\256\265\312\312\215\052\022\357\227
\355\302\060\244\311\052\172\373\363\115\043\033\231\063\064\240
\056\365\251\013\077\324\135\341\317\204\237\342\031\302\137\212
\326\040\036\343\163\267
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL

CK\_FALSE

# Trust for "SZAFIR ROOT CA2"

# Issuer: CN=SZAFIR ROOT CA2,O=Krajowa Izba Rozliczeniowa S.A.,C=PL

# Serial Number:3e:8a:5d:07:ec:55:d2:32:d5:b7:e3:b6:5f:01:eb:2d:dc:e4:d6:e4

# Subject: CN=SZAFIR ROOT CA2,O=Krajowa Izba Rozliczeniowa S.A.,C=PL

# Not Valid Before: Mon Oct 19 07:43:30 2015

# Not Valid After : Fri Oct 19 07:43:30 2035

# Fingerprint (SHA-256):

A1:33:9D:33:28:1A:0B:56:E5:57:D3:D3:2B:1C:E7:F9:36:7E:B0:94:BD:5F:A7:2A:7E:50:04:C8:DE:D7:CA:FE

# Fingerprint (SHA1): E2:52:FA:95:3F:ED:DB:24:60:BD:6E:28:F3:9C:CC:CF:5E:B3:3F:DE

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "SZAFIR ROOT CA2"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\342\122\372\225\077\355\333\044\140\275\156\050\363\234\314\317
\136\263\077\336
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\021\144\301\211\260\044\261\214\261\007\176\211\236\121\236\231
```

END

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\121\061\013\060\011\006\003\125\004\006\023\002\120\114\061
\050\060\046\006\003\125\004\012\014\037\113\162\141\152\157\167
\141\040\111\172\142\141\040\122\157\172\154\151\143\172\145\156
\151\157\167\141\040\123\056\101\056\061\030\060\026\006\003\125
\004\003\014\017\123\132\101\106\111\122\040\122\117\117\124\040
\103\101\062
```

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

```
\002\024\076\212\135\007\354\125\322\062\325\267\343\266\137\001
\353\055\334\344\326\344
```

END



```
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "Certum Trusted Network CA 2"
#
# Issuer: CN=Certum Trusted Network CA 2,OU=Certum Certification Authority,O=Unizeto Technologies
S.A.,C=PL
# Serial Number:21:d6:d0:4a:4f:25:0f:c9:32:37:fc:aa:5e:12:8d:e9
# Subject: CN=Certum Trusted Network CA 2,OU=Certum Certification Authority,O=Unizeto Technologies
S.A.,C=PL
# Not Valid Before:
  Thu Oct 06 08:39:56 2011
# Not Valid After : Sat Oct 06 08:39:56 2046
# Fingerprint (SHA-256):
B6:76:F2:ED:DA:E8:77:5C:D3:6C:B0:F6:3C:D1:D4:60:39:61:F4:9E:62:65:BA:01:3A:2F:03:07:B6:D0:B8:04
# Fingerprint (SHA1): D3:DD:48:3E:2B:BF:4C:05:E8:AF:10:F5:FA:76:26:CF:D3:DC:30:92
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Certum Trusted Network CA 2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\200\061\013\060\011\006\003\125\004\006\023\002\120\114
\061\042\060\040\006\003\125\004\012\023\031\125\156\151\172\145
\164\157\040\124\145\143\150\156\157\154\157\147\151\145\163\040
\123\056\101\056\061\047\060\045\006\003\125\004\013\023\036\103
\145\162\164\165\155\040\103\145\162\164\151\146\151\143\141\164
\151\157\156\040\101\165\164\150\157\162\151\164\171\061\044\060
\042\006\003\125\004\003\023\033\103\145\162\164\165\155\040\124
\162\165\163\164\145\144\040\116\145\164\167\157\162\153\040\103
\101\040\062
END
CKA_ID
  UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\200\061\013\060\011\006\003\125\004\006\023\002\120\114
\061\042\060\040\006\003\125\004\012\023\031\125\156\151\172\145
\164\157\040\124\145\143\150\156\157\154\157\147\151\145\163\040
\123\056\101\056\061\047\060\045\006\003\125\004\013\023\036\103
\145\162\164\165\155\040\103\145\162\164\151\146\151\143\141\164
\151\157\156\040\101\165\164\150\157\162\151\164\171\061\044\060
\042\006\003\125\004\003\023\033\103\145\162\164\165\155\040\124
\162\165\163\164\145\144\040\116\145\164\167\157\162\153\040\103
\101\040\062
```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\041\326\320\112\117\045\017\311\062\067\374\252\136\022  
\215\351

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\322\060\202\003\272\240\003\002\001\002\002\020\041  
\326\320\112\117\045\017\311\062\067\374\252\136\022\215\351\060  
\015\006\011\052\206\110\206\367\015\001\001\015\005\000\060\201  
\200\061\013\060\011\006\003\125\004\006\023\002\120\114\061\042  
\060\040\006\003\125\004\012\023\031\125\156\151\172\145\164\157  
\040\124\145\143\150\156\157\154\157\147\151\145\163\040\123\056  
\101\056\061\047\060\045\006\003\125\004\013\023\036\103\145\162  
\164\165\155\040\103\145\162\164\151\146\151\143\141\164\151\157  
\156\040\101\165\164\150\157\162\151\164\171\061\044\060\042\006  
\003\125\004\003\023\033\103\145\162\164\165\155\040\124\162\165  
\163\164\145\144\040\116\145\164\167\157\162\153\040\103\101\040  
\062\060\042\030\017\062\060\061\061\061\060\060\066\060\070\063  
\071\065\066\132\030\017\062\060\064\066\061\060\060\066\060\070  
\063\071\065\066\132\060\201\200\061\013\060\011\006\003\125\004  
\006\023\002\120\114\061\042\060\040\006\003\125\004\012\023\031  
\125\156\151\172\145\164\157\040\124\145\143\150\156\157\154\157  
\147\151\145\163\040\123\056\101\056\061\047\060\045\006\003\125  
\004\013\023\036\103\145\162\164\165\155\040\103\145\162\164\151  
\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151  
\164\171\061\044\060\042\006\003\125\004\003\023\033\103\145\162  
\164\165\155\040\124\162\165\163\164\145\144\040\116\145\164\167  
\157\162\153\040\103\101\040\062\060\202\002\042\060\015\006\011  
\052\206\110\206\367\015\001\001\001\005\000\003\202\002\017\000  
\060\202\002\012\002\202\002\001\000\275\371\170\370\346\325\200  
\014\144\235\206\033\226\144\147\077\042\072\036\165\001\175\357  
\373\134\147\214\311\314\134\153\251\221\346\271\102\345\040\113  
\233\332\233\173\271\231\135\331\233\200\113\327\204\100\053\047  
\323\350\272\060\273\076\011\032\247\111\225\357\053\100\044\302  
\227\307\247\356\233\045\357\250\012\000\227\205\132\252\235\334  
\051\311\342\065\007\353\160\115\112\326\301\263\126\270\241\101  
\070\233\321\373\061\177\217\340\137\341\261\077\017\216\026\111  
\140\327\006\215\030\371\252\046\020\253\052\323\320\321\147\215  
\033\106\276\107\060\325\056\162\321\305\143\332\347\143\171\104  
\176\113\143\044\211\206\056\064\077\051\114\122\213\052\247\300  
\342\221\050\211\271\300\133\371\035\331\347\047\255\377\232\002  
\227\301\306\120\222\233\002\054\275\251\271\064\131\012\277\204  
\112\377\337\376\263\237\353\331\236\340\230\043\354\246\153\167  
\026\052\333\314\255\073\034\244\207\334\106\163\136\031\142\150  
\105\127\344\220\202\102\273\102\326\360\141\340\301\243\075\146  
\243\135\364\030\356\210\311\215\027\105\051\231\062\165\002\061  
\356\051\046\310\153\002\346\265\142\105\177\067\025\132\043\150  
\211\324\076\336\116\047\260\360\100\014\274\115\027\313\115\242

\263\036\320\006\132\335\366\223\317\127\165\231\365\372\206\032  
\147\170\263\277\226\376\064\334\275\347\122\126\345\263\345\165  
\173\327\101\221\005\334\135\151\343\225\015\103\271\374\203\226  
\071\225\173\154\200\132\117\023\162\306\327\175\051\172\104\272  
\122\244\052\325\101\106\011\040\376\042\240\266\133\060\215\274  
\211\014\325\327\160\370\207\122\375\332\357\254\121\056\007\263  
\116\376\320\011\332\160\357\230\372\126\346\155\333\265\127\113  
\334\345\054\045\025\310\236\056\170\116\370\332\234\236\206\054  
\312\127\363\032\345\310\222\213\032\202\226\172\303\274\120\022  
\151\330\016\132\106\213\072\353\046\372\043\311\266\260\201\276  
\102\000\244\370\326\376\060\056\307\322\106\366\345\216\165\375  
\362\314\271\320\207\133\314\006\020\140\273\203\065\267\136\147  
\336\107\354\231\110\361\244\241\025\376\255\214\142\216\071\125  
\117\071\026\271\261\143\235\377\267\002\003\001\000\001\243\102  
\060\100\060\017\006\003\125\035\023\001\001\377\004\005\060\003  
\001\001\377\060\035\006\003\125\035\016\004\026\004\024\266\241  
\124\071\002\303\240\077\216\212\274\372\324\370\034\246\321\072  
\016\375\060\016\006\003\125\035\017\001\001\377\004\004\003\002  
\001\006\060\015\006\011\052\206\110\206\367\015\001\001\015\005  
\000\003\202\002\001\000\161\245\016\316\344\351\277\077\070\325  
\211\132\304\002\141\373\114\305\024\027\055\213\117\123\153\020  
\027\374\145\204\307\020\111\220\336\333\307\046\223\210\046\157  
\160\326\002\136\071\240\367\217\253\226\265\245\023\134\201\024  
\155\016\201\202\021\033\212\116\306\117\245\335\142\036\104\337  
\011\131\364\133\167\013\067\351\213\040\306\370\012\116\056\130  
\034\353\063\320\317\206\140\311\332\373\200\057\236\114\140\204  
\170\075\041\144\326\373\101\037\030\017\347\311\165\161\275\275  
\134\336\064\207\076\101\260\016\366\271\326\077\011\023\226\024  
\057\336\232\035\132\271\126\316\065\072\260\137\160\115\136\343  
\051\361\043\050\162\131\266\253\302\214\146\046\034\167\054\046  
\166\065\213\050\247\151\240\371\073\365\043\335\205\020\164\311  
\220\003\126\221\347\257\272\107\324\022\227\021\042\343\242\111  
\224\154\347\267\224\113\272\055\244\332\063\213\114\246\104\377  
\132\074\306\035\144\330\265\061\344\246\074\172\250\127\013\333  
\355\141\032\313\361\316\163\167\143\244\207\157\114\121\070\326  
\344\137\307\237\266\201\052\344\205\110\171\130\136\073\370\333  
\002\202\147\301\071\333\303\164\113\075\066\036\371\051\223\210  
\150\133\250\104\031\041\360\247\350\201\015\054\350\223\066\264  
\067\262\312\260\033\046\172\232\045\037\232\232\200\236\113\052  
\077\373\243\232\376\163\062\161\302\236\306\162\341\212\150\047  
\361\344\017\264\304\114\245\141\223\370\227\020\007\052\060\045  
\251\271\310\161\270\357\150\314\055\176\365\340\176\017\202\250  
\157\266\272\154\203\103\167\315\212\222\027\241\236\133\170\026  
\075\105\342\063\162\335\341\146\312\231\323\311\305\046\375\015  
\150\004\106\256\266\331\233\214\276\031\276\261\306\362\031\343  
\134\002\312\054\330\157\112\007\331\311\065\332\100\165\362\304  
\247\031\157\236\102\020\230\165\346\225\213\140\274\355\305\022  
\327\212\316\325\230\134\126\226\003\305\356\167\006\065\377\317

```
\344\356\077\023\141\356\333\332\055\205\360\315\256\235\262\030
\011\105\303\222\241\162\027\374\107\266\240\013\054\361\304\336
\103\150\010\152\137\073\360\166\143\373\314\006\054\246\306\342
\016\265\271\276\044\217
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

#

Trust for "Certum Trusted Network CA 2"

# Issuer: CN=Certum Trusted Network CA 2,OU=Certum Certification Authority,O=Unizeto Technologies S.A.,C=PL

# Serial Number:21:d6:d0:4a:4f:25:0f:c9:32:37:fc:aa:5e:12:8d:e9

# Subject: CN=Certum Trusted Network CA 2,OU=Certum Certification Authority,O=Unizeto Technologies S.A.,C=PL

# Not Valid Before: Thu Oct 06 08:39:56 2011

# Not Valid After : Sat Oct 06 08:39:56 2046

# Fingerprint (SHA-256):

B6:76:F2:ED:DA:E8:77:5C:D3:6C:B0:F6:3C:D1:D4:60:39:61:F4:9E:62:65:BA:01:3A:2F:03:07:B6:D0:B8:04

# Fingerprint (SHA1): D3:DD:48:3E:2B:BF:4C:05:E8:AF:10:F5:FA:76:26:CF:D3:DC:30:92

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Certum Trusted Network CA 2"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\323\335\110\076\053\277\114\005\350\257\020\365\372\166\046\317
\323\334\060\222
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\155\106\236\331\045\155\010\043\133\136\164\175\036\047\333\362
```

END

CKA\_ISSUER

MULTILINE\_OCTAL

```
\060\201\200\061\013\060\011\006\003\125\004\006\023\002\120\114
\061\042\060\040\006\003\125\004\012\023\031\125\156\151\172\145
\164\157\040\124\145\143\150\156\157\154\157\147\151\145\163\040
\123\056\101\056\061\047\060\045\006\003\125\004\013\023\036\103
\145\162\164\165\155\040\103\145\162\164\151\146\151\143\141\164
\151\157\156\040\101\165\164\150\157\162\151\164\171\061\044\060
\042\006\003\125\004\003\023\033\103\145\162\164\165\155\040\124
\162\165\163\164\145\144\040\116\145\164\167\157\162\153\040\103
\101\040\062
```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

```
\002\020\041\326\320\112\117\045\017\311\062\067\374\252\136\022
```

\215\351

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR  
CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR  
CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR  
CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "Hellenic Academic and Research Institutions RootCA 2015"

#

# Issuer: CN=Hellenic

Academic and Research Institutions RootCA 2015,O=Hellenic Academic and Research Institutions Cert.  
Authority,L=Athens,C=GR

# Serial Number: 0 (0x0)

# Subject: CN=Hellenic Academic and Research Institutions RootCA 2015,O=Hellenic Academic and Research  
Institutions Cert. Authority,L=Athens,C=GR

# Not Valid Before: Tue Jul 07 10:11:21 2015

# Not Valid After : Sat Jun 30 10:11:21 2040

# Fingerprint (SHA-256):

A0:40:92:9A:02:CE:53:B4:AC:F4:F2:FF:C6:98:1C:E4:49:6F:75:5E:6D:45:FE:0B:2A:69:2B:CD:52:52:3F:36

# Fingerprint (SHA1): 01:0C:06:95:A6:98:19:14:FF:BF:5F:C6:B0:B6:95:EA:29:E9:12:A6

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Hellenic Academic and Research Institutions RootCA 2015"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\201\246\061\013\060\011\006\003\125\004\006\023\002\107\122  
\061\017\060\015\006\003\125\004\007\023\006\101\164\150\145\156  
\163\061\104\060\102\006\003\125\004\012\023\073\110\145\154\154  
\145\156\151\143\040\101\143\141\144\145\155\151\143\040\141\156  
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END

CKA\_NSS\_Mozilla\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "Hellenic Academic and Research Institutions RootCA 2015"

# Issuer: CN=Hellenic Academic and Research Institutions RootCA 2015,O=Hellenic Academic and Research  
Institutions Cert. Authority,L=Athens,C=GR

# Serial Number: 0 (0x0)

# Subject: CN=Hellenic Academic and Research Institutions RootCA 2015,O=Hellenic Academic and Research  
Institutions Cert. Authority,L=Athens,C=GR

# Not Valid Before: Tue Jul 07 10:11:21 2015

# Not Valid After : Sat Jun 30 10:11:21 2040

# Fingerprint (SHA-256):

A0:40:92:9A:02:CE:53:B4:AC:F4:F2:FF:C6:98:1C:E4:49:6F:75:5E:6D:45:FE:0B:2A:69:2B:CD:52:52:3F:36

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CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Hellenic Academic and Research Institutions RootCA 2015"

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\163\061\104\060\102\006\003\125\004\012\023\073\110\145\154\154
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CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "Hellenic Academic and Research Institutions ECC RootCA 2015"

#

#

Issuer: CN=Hellenic Academic and Research Institutions ECC RootCA 2015,O=Hellenic Academic and Research Institutions Cert. Authority,L=Athens,C=GR

# Serial Number: 0 (0x0)

# Subject: CN=Hellenic Academic and Research Institutions ECC RootCA 2015,O=Hellenic Academic and Research Institutions Cert. Authority,L=Athens,C=GR

# Not Valid Before: Tue Jul 07 10:37:12 2015

# Not Valid After : Sat Jun 30 10:37:12 2040

# Fingerprint (SHA-256):

44:B5:45:AA:8A:25:E6:5A:73:CA:15:DC:27:FC:36:D2:4C:1C:B9:95:3A:06:65:39:B1:15:82:DC:48:7B:48:33

# Fingerprint (SHA1): 9F:F1:71:8D:92:D5:9A:F3:7D:74:97:B4:BC:6F:84:68:0B:BA:B6:66

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CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

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END

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CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

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END

CKA\_VALUE MULTILINE\_OCTAL

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END

CKA\_NSS\_MOZILLA\_CA\_POLICY

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CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "Hellenic Academic and Research Institutions ECC RootCA 2015"

# Issuer: CN=Hellenic Academic and Research Institutions ECC RootCA 2015,O=Hellenic Academic and Research Institutions Cert. Authority,L=Athens,C=GR

# Serial Number: 0 (0x0)

# Subject: CN=Hellenic Academic and Research Institutions ECC RootCA 2015,O=Hellenic Academic and Research Institutions Cert. Authority,L=Athens,C=GR

# Not Valid Before: Tue Jul 07 10:37:12 2015

# Not Valid After : Sat Jun 30 10:37:12 2040

# Fingerprint (SHA-256):

44:B5:45:AA:8A:25:E6:5A:73:CA:15:DC:27:FC:36:D2:4C:1C:B9:95:3A:06:65:39:B1:15:82:DC:48:7B:48:33

#

Fingerprint (SHA1): 9F:F1:71:8D:92:D5:9A:F3:7D:74:97:B4:BC:6F:84:68:0B:BA:B6:66

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Hellenic Academic and Research Institutions ECC RootCA 2015"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\237\361\161\215\222\325\232\363\175\164\227\264\274\157\204\150
\013\272\266\146
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\201\345\264\027\353\302\365\341\113\015\101\173\111\222\376\357
```

END

```
CKA_ISSUER MULTILINE_OCTAL
\060\201\252\061\013\060\011\006\003\125\004\006\023\002\107\122
\061\017\060\015\006\003\125\004\007\023\006\101\164\150\145\156
\163\061\104\060\102\006\003\125\004\012\023\073\110\145\154\154
\145\156\151\143\040\101\143\141\144\145\155\151\143\040\141\156
\144\040\122\145\163\145\141\162\143\150\040\111\156\163\164\151
\164\165\164\151\157\156\163\040\103\145\162\164\056\040\101\165
\164\150\157\162\151\164\171\061\104\060\102\006\003\125\004\003
\023\073\110\145\154\154\145\156\151\143\040\101\143\141\144\145
\155\151\143\040\141\156\144\040\122\145\163\145\141\162\143\150
\040\111\156\163\164\151\164\165\164\151\157\156\163\040\105\103
\103\040\122\157\157\164\103\101\040\062\060\061\065
```

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

```
\002\001\000
```

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "ISRG Root X1"

#

# Issuer: CN=ISRG Root X1,O=Internet Security Research Group,C=US

# Serial Number:00:82:10:cf:b0:d2:40:e3:59:44:63:e0:bb:63:82:8b:00

# Subject: CN=ISRG Root X1,O=Internet Security Research Group,C=US

# Not Valid Before: Thu Jun 04 11:04:38 2015

# Not Valid After : Mon Jun 04 11:04:38 2035

# Fingerprint (SHA-256):

96:BC:EC:06:26:49:76:F3:74:60:77:9A:CF:28:C5:A7:CF:E8:A3:C0:AA:E1:1A:8F:FC:EE:05:C0:BD:DF:08:C6

#

Fingerprint (SHA1): CA:BD:2A:79:A1:07:6A:31:F2:1D:25:36:35:CB:03:9D:43:29:A5:E8

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "ISRG Root X1"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

```
\060\117\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\051\060\047\006\003\125\004\012\023\040\111\156\164\145\162\156
\145\164\040\123\145\143\165\162\151\164\171\040\122\145\163\145
\141\162\143\150\040\107\162\157\165\160\061\025\060\023\006\003
\125\004\003\023\014\111\123\122\107\040\122\157\157\164\040\130
\061
```

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\117\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\051\060\047\006\003\125\004\012\023\040\111\156\164\145\162\156  
\145\164\040\123\145\143\165\162\151\164\171\040\122\145\163\145  
\141\162\143\150\040\107\162\157\165\160\061\025\060\023\006\003  
\125\004\003\023\014\111\123\122\107\040\122\157\157\164\040\130  
\061

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\021\000\202\020\317\260\322\100\343\131\104\143\340\273\143  
\202\213\000

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\153\060\202\003\123\240\003\002\001\002\002\021\000  
\202\020\317\260\322\100\343\131\104\143\340\273\143\202\213\000  
\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060  
\117\061\013\060\011\006\003\125\004\006\023\002\125\123\061\051  
\060\047\006\003\125\004\012\023\040\111\156\164\145\162\156\145  
\164\040\123\145\143\165\162\151\164\171\040\122\145\163\145\141  
\162\143\150\040\107\162\157\165\160\061\025\060\023\006\003\125  
\004\003\023\014\111\123\122\107\040\122\157\157\164\040\130\061  
\060\036\027\015\061\065\060\066\060\064\061\061\060\064\063\070  
\132\027\015\063\065\060\066\060\064\061\061\060\064\063\070\132  
\060\117\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\051\060\047\006\003\125\004\012\023\040\111\156\164\145\162\156  
\145\164\040\123\145\143\165\162\151\164\171\040\122\145\163\145  
\141\162\143\150\040\107\162\157\165\160\061\025\060\023\006\003  
\125\004\003\023\014\111\123\122\107\040\122\157\157\164\040\130  
\061\060\202\002\042\060\015\006\011\052\206\110\206\367\015\001  
\001\001\005\000\003\202\002\017\000\060\202\002\012\002\202\002  
\001\000\255\350\044\163\364\024\067\363\233\236\053\127\050\034  
\207\276\334\267\337\070\220\214\156\074\346\127\240\170\367\165  
\302\242\376\365\152\156\366\000\117\050\333\336\150\206\154\104  
\223\266\261\143\375\024\022\153\277\037\322\352\061\233\041\176  
\321\063\074\272\110\365\335\171\337\263\270\377\022\361\041\232  
\113\301\212\206\161\151\112\146\146\154\217\176\074\160\277\255  
\051\042\006\363\344\300\346\200\256\342\113\217\267\231\176\224  
\003\237\323\107\227\174\231\110\043\123\350\070\256\117\012\157  
\203\056\321\111\127\214\200\164\266\332\057\320\070\215\173\003  
\160\041\033\165\362\060\074\372\217\256\335\332\143\253\353\026  
\117\302\216\021\113\176\317\013\350\377\265\167\056\364\262\173  
\112\340\114\022\045\014\160\215\003\051\240\341\123\044\354\023  
\331\356\031\277\020\263\112\214\077\211\243\141\121\336\254\207  
\007\224\364\143\161\354\056\342\157\133\230\201\341\211\134\064  
\171\154\166\357\073\220\142\171\346\333\244\232\057\046\305\320  
\020\341\016\336\331\020\216\026\373\267\367\250\367\307\345\002

\007\230\217\066\010\225\347\342\067\226\015\066\165\236\373\016  
\162\261\035\233\274\003\371\111\005\330\201\335\005\264\052\326  
\101\351\254\001\166\225\012\017\330\337\325\275\022\037\065\057  
\050\027\154\322\230\301\250\011\144\167\156\107\067\272\316\254  
\131\136\150\235\177\162\326\211\305\006\101\051\076\131\076\335  
\046\365\044\311\021\247\132\243\114\100\037\106\241\231\265\247  
\072\121\156\206\073\236\175\162\247\022\005\170\131\355\076\121  
\170\025\013\003\217\215\320\057\005\262\076\173\112\034\113\163  
\005\022\374\306\352\340\120\023\174\103\223\164\263\312\164\347  
\216\037\001\010\320\060\324\133\161\066\264\007\272\301\060\060  
\134\110\267\202\073\230\246\175\140\212\242\243\051\202\314\272  
\275\203\004\033\242\203\003\101\241\326\005\361\033\302\266\360  
\250\174\206\073\106\250\110\052\210\334\166\232\166\277\037\152  
\245\075\031\217\353\070\363\144\336\310\053\015\012\050\377\367  
\333\342\025\102\324\042\320\047\135\341\171\376\030\347\160\210  
\255\116\346\331\213\072\306\335\047\121\156\377\274\144\365\063  
\103\117\002\003\001\000\001\243\102\060\100\060\016\006\003\125  
\035\017\001\001\377\004\004\003\002\001\006\060\017\006\003\125  
\035\023\001\001\377\004\005\060\003\001\001\377\060\035\006\003  
\125\035\016\004\026\004\024\171\264\131\346\173\266\345\344\001  
\163\200\010\210\310\032\130\366\351\233\156\060\015\006\011\052  
\206\110\206\367\015\001\001\013\005\000\003\202\002\001\000\125  
\037\130\251\274\262\250\120\320\014\261\330\032\151\040\047\051  
\010\254\141\165\134\212\156\370\202\345\151\057\325\366\126\113  
\271\270\163\020\131\323\041\227\176\347\114\161\373\262\322\140  
\255\071\250\013\352\027\041\126\205\361\120\016\131\353\316\340  
\131\351\272\311\025\357\206\235\217\204\200\366\344\351\221\220  
\334\027\233\142\033\105\360\146\225\322\174\157\302\352\073\357  
\037\317\313\326\256\047\361\251\260\310\256\375\175\176\232\372  
\042\004\353\377\331\177\352\221\053\042\261\027\016\217\362\212  
\064\133\130\330\374\001\311\124\271\270\046\314\212\210\063\211  
\114\055\204\074\202\337\356\226\127\005\272\054\273\367\304\267  
\307\116\073\202\276\061\310\042\163\163\222\321\302\200\244\071  
\071\020\063\043\202\114\074\237\206\262\125\230\035\276\051\206  
\214\042\233\236\342\153\073\127\072\202\160\115\334\011\307\211  
\313\012\007\115\154\350\135\216\311\357\316\253\307\273\265\053  
\116\105\326\112\320\046\314\345\162\312\010\152\245\225\343\025  
\241\367\244\355\311\054\137\245\373\377\254\050\002\056\276\327  
\173\273\343\161\173\220\026\323\007\136\106\123\174\067\007\102  
\214\323\304\226\234\325\231\265\052\340\225\032\200\110\256\114  
\071\007\316\314\107\244\122\225\053\272\270\373\255\322\063\123  
\175\345\035\115\155\325\241\261\307\102\157\346\100\047\065\134  
\243\050\267\007\215\347\215\063\220\347\043\237\373\120\234\171  
\154\106\325\264\025\263\226\156\176\233\014\226\072\270\122\055  
\077\326\133\341\373\010\302\204\376\044\250\243\211\332\254\152  
\341\030\052\261\250\103\141\133\323\037\334\073\215\166\362\055  
\350\215\165\337\027\063\154\075\123\373\173\313\101\137\377\334  
\242\320\141\070\341\226\270\254\135\213\067\327\165\325\063\300

```
\231\021\256\235\101\301\162\165\204\276\002\101\102\137\147\044
\110\224\321\233\047\276\007\077\271\270\117\201\164\121\341\172
\267\355\235\043\342\276\340\325\050\004\023\074\061\003\236\335
\172\154\217\306\007\030\306\177\336\107\216\077\050\236\004\006
\317\245\124\064\167\275\354\211\233\351\027\103\337\133\333\137
\376\216\036\127\242\315\100\235\176\142\042\332\336\030\047
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER

CK\_BBOOL CK\_FALSE

# Trust for "ISRG Root X1"

# Issuer: CN=ISRG Root X1,O=Internet Security Research Group,C=US

# Serial Number:00:82:10:cf:b0:d2:40:e3:59:44:63:e0:bb:63:82:8b:00

# Subject: CN=ISRG Root X1,O=Internet Security Research Group,C=US

# Not Valid Before: Thu Jun 04 11:04:38 2015

# Not Valid After : Mon Jun 04 11:04:38 2035

# Fingerprint (SHA-256):

96:BC:EC:06:26:49:76:F3:74:60:77:9A:CF:28:C5:A7:CF:E8:A3:C0:AA:E1:1A:8F:FC:EE:05:C0:BD:DF:08:C6

# Fingerprint (SHA1): CA:BD:2A:79:A1:07:6A:31:F2:1D:25:36:35:CB:03:9D:43:29:A5:E8

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "ISRG Root X1"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\312\275\052\171\241\007\152\061\362\035\045\066\065\313\003\235
\103\051\245\350
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\014\322\371\340\332\027\163\351\355\206\115\245\343\160\347\116
```

END

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\117\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\051\060\047\006\003\125\004\012\023\040\111\156\164\145\162\156
\145\164\040\123\145\143\165\162\151\164\171\040\122\145\163\145
\141\162\143\150\040\107\162\157\165\160\061\025\060\023\006\003
\125\004\003\023\014\111\123\122\107\040\122\157\157\164\040\130
\061
```

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

```
\002\021\000\202\020\317\260\322\100\343\131\104\143\340\273\143
\202\213\000
```

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST  
CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST  
CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "AC RAIZ FNMT-RCM"

#

# Issuer: OU=AC RAIZ FNMT-RCM,O=FNMT-RCM,C=ES

# Serial Number:5d:93:8d:30:67:36:c8:06:1d:1a:c7:54:84:69:07

# Subject: OU=AC RAIZ FNMT-RCM,O=FNMT-RCM,C=ES

# Not Valid Before: Wed Oct 29 15:59:56 2008

# Not Valid After : Tue Jan 01 00:00:00 2030

# Fingerprint (SHA-256):

EB:C5:57:0C:29:01:8C:4D:67:B1:AA:12:7B:AF:12:F7:03:B4:61:1E:BC:17:B7:DA:B5:57:38:94:17:9B:93:FA

#

Fingerprint (SHA1): EC:50:35:07:B2:15:C4:95:62:19:E2:A8:9A:5B:42:99:2C:4C:2C:20

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "AC RAIZ FNMT-RCM"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\073\061\013\060\011\006\003\125\004\006\023\002\105\123\061

\021\060\017\006\003\125\004\012\014\010\106\116\115\124\055\122

\103\115\061\031\060\027\006\003\125\004\013\014\020\101\103\040

\122\101\111\132\040\106\116\115\124\055\122\103\115

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\073\061\013\060\011\006\003\125\004\006\023\002\105\123\061

\021\060\017\006\003\125\004\012\014\010\106\116\115\124\055\122

\103\115\061\031\060\027\006\003\125\004\013\014\020\101\103\040

\122\101\111\132\040\106\116\115\124\055\122\103\115

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\017\135\223\215\060\147\066\310\006\035\032\307\124\204\151

\007

END

CKA\_VALUE

MULTILINE\_OCTAL

\060\202\005\203\060\202\003\153\240\003\002\001\002\002\017\135

\223\215\060\147\066\310\006\035\032\307\124\204\151\007\060\015

\006\011\052\206\110\206\367\015\001\001\013\005\000\060\073\061

\013\060\011\006\003\125\004\006\023\002\105\123\061\021\060\017

\006\003\125\004\012\014\010\106\116\115\124\055\122\103\115\061

\031\060\027\006\003\125\004\013\014\020\101\103\040\122\101\111

\132\040\106\116\115\124\055\122\103\115\060\036\027\015\060\070



\061\060\062\071\061\065\065\071\065\066\132\027\015\063\060\060  
\061\060\061\060\060\060\060\060\060\060\132\060\073\061\013\060\011  
\006\003\125\004\006\023\002\105\123\061\021\060\017\006\003\125  
\004\012\014\010\106\116\115\124\055\122\103\115\061\031\060\027  
\006\003\125\004\013\014\020\101\103\040\122\101\111\132\040\106  
\116\115\124\055\122\103\115\060\202\002\042\060\015\006\011\052  
\206\110\206\367\015\001\001\001\005\000\003\202\002\017\000\060  
\202\002\012\002\202\002\001\000\272\161\200\172\114\206\156\177  
\310\023\155\300\306\175\034\000\227\217\054\014\043\273\020\232  
\100\251\032\267\207\210\370\233\126\152\373\346\173\216\213\222  
\216\247\045\135\131\021\333\066\056\267\121\027\037\251\010\037  
\004\027\044\130\252\067\112\030\337\345\071\324\127\375\327\301  
\054\221\001\221\342\042\324\003\300\130\374\167\107\354\217\076  
\164\103\272\254\064\215\115\070\166\147\216\260\310\157\060\063  
\130\161\134\264\365\153\156\324\001\120\270\023\176\154\112\243  
\111\321\040\031\356\274\300\051\030\145\247\336\376\357\335\012  
\220\041\347\032\147\222\102\020\230\137\117\060\274\076\034\105  
\264\020\327\150\100\024\300\100\372\347\167\027\172\346\013\217  
\145\133\074\331\232\122\333\265\275\236\106\317\075\353\221\005  
\002\300\226\262\166\114\115\020\226\073\222\372\234\177\017\231  
\337\276\043\065\105\036\002\134\376\265\250\233\231\045\332\136  
\363\042\303\071\365\344\052\056\323\306\037\304\154\252\305\034  
\152\001\005\112\057\322\305\301\250\064\046\135\146\245\322\002  
\041\371\030\267\006\365\116\231\157\250\253\114\121\350\317\120  
\030\305\167\310\071\011\054\111\222\062\231\250\273\027\027\171  
\260\132\305\346\243\304\131\145\107\065\203\136\251\350\065\013  
\231\273\344\315\040\306\233\112\006\071\265\150\374\042\272\356  
\125\214\053\116\352\363\261\343\374\266\231\232\325\102\372\161  
\115\010\317\207\036\152\161\175\371\323\264\351\245\161\201\173  
\302\116\107\226\245\366\166\205\243\050\217\351\200\156\201\123  
\245\155\137\270\110\371\302\371\066\246\056\111\377\270\226\302  
\214\007\263\233\210\130\374\353\033\034\336\055\160\342\227\222  
\060\241\211\343\274\125\250\047\326\113\355\220\255\213\372\143  
\045\131\055\250\065\335\312\227\063\274\345\315\307\235\321\354  
\357\136\016\112\220\006\046\143\255\271\331\065\055\007\272\166  
\145\054\254\127\217\175\364\007\224\327\201\002\226\135\243\007  
\111\325\172\320\127\371\033\347\123\106\165\252\260\171\102\313  
\150\161\010\351\140\275\071\151\316\364\257\303\126\100\307\255  
\122\242\011\344\157\206\107\212\037\353\050\047\135\203\040\257  
\004\311\154\126\232\213\106\365\002\003\001\000\001\243\201\203  
\060\201\200\060\017\006\003\125\035\023\001\001\377\004\005\060  
\003\001\001\377\060\016\006\003\125\035\017\001\001\377\004\004  
\003\002\001\006\060\035\006\003\125\035\016\004\026\004\024\367  
\175\305\375\304\350\232\033\167\144\247\365\035\240\314\277\207  
\140\232\155\060\076\006\003\125\035\040\004\067\060\065\060\063  
\006\004\125\035\040\000\060\053\060\051\006\010\053\006\001\005  
\005\007\002\001\026\035\150\164\164\160\072\057\057\167\167\167  
\056\143\145\162\164\056\146\156\155\164\056\145\163\057\144\160

\143\163\057\060\015\006\011\052\206\110\206\367\015\001\001\013  
\005\000\003\202\002\001\000\007\220\112\337\363\043\116\360\303  
\234\121\145\233\234\042\242\212\014\205\363\163\051\153\115\376  
\001\342\251\014\143\001\277\004\147\245\235\230\137\375\001\023  
\372\354\232\142\351\206\376\266\142\322\156\114\224\373\300\165  
\105\174\145\014\370\262\067\317\254\017\317\215\157\371\031\367  
\217\354\036\362\160\236\360\312\270\357\267\377\166\067\166\133  
\366\156\210\363\257\142\062\042\223\015\072\152\216\024\146\014  
\055\123\164\127\145\036\325\262\335\043\201\073\245\146\043\047  
\147\011\217\341\167\252\103\315\145\121\010\355\121\130\376\346  
\071\371\313\107\204\244\025\361\166\273\244\356\244\073\304\137  
\357\262\063\226\021\030\267\311\145\276\030\341\243\244\334\372  
\030\371\323\274\023\233\071\172\064\272\323\101\373\372\062\212  
\052\267\053\206\013\151\203\070\276\315\212\056\013\160\255\215  
\046\222\356\036\365\001\053\012\331\326\227\233\156\340\250\031  
\034\072\041\213\014\036\100\255\003\347\335\146\176\365\271\040  
\015\003\350\226\371\202\105\324\071\340\240\000\135\327\230\346  
\175\236\147\163\303\232\052\367\253\213\241\072\024\357\064\274  
\122\016\211\230\232\004\100\204\035\176\105\151\223\127\316\353  
\316\370\120\174\117\034\156\004\103\233\371\326\073\043\030\351  
\352\216\321\115\106\215\361\073\344\152\312\272\373\043\267\233  
\372\231\001\051\132\130\132\055\343\371\324\155\016\046\255\301  
\156\064\274\062\370\014\005\372\145\243\333\073\067\203\042\351  
\326\334\162\063\375\135\362\040\275\166\074\043\332\050\367\371  
\033\353\131\144\325\334\137\162\176\040\374\315\211\265\220\147  
\115\142\172\077\116\255\035\303\071\376\172\364\050\026\337\101  
\366\110\200\005\327\017\121\171\254\020\253\324\354\003\146\346  
\152\260\272\061\222\102\100\152\276\072\323\162\341\152\067\125  
\274\254\035\225\267\151\141\362\103\221\164\346\240\323\012\044  
\106\241\010\257\326\332\105\031\226\324\123\035\133\204\171\360  
\300\367\107\357\213\217\305\006\256\235\114\142\235\377\106\004  
\370\323\311\266\020\045\100\165\376\026\252\311\112\140\206\057  
\272\357\060\167\344\124\342\270\204\231\130\200\252\023\213\121  
\072\117\110\366\213\266\263

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "AC RAIZ FNMT-RCM"

# Issuer: OU=AC RAIZ FNMT-RCM,O=FNMT-RCM,C=ES

#

Serial Number:5d:93:8d:30:67:36:c8:06:1d:1a:c7:54:84:69:07

# Subject: OU=AC RAIZ FNMT-RCM,O=FNMT-RCM,C=ES

# Not Valid Before: Wed Oct 29 15:59:56 2008

# Not Valid After : Tue Jan 01 00:00:00 2030

# Fingerprint (SHA-256):

```

EB:C5:57:0C:29:01:8C:4D:67:B1:AA:12:7B:AF:12:F7:03:B4:61:1E:BC:17:B7:DA:B5:57:38:94:17:9B:93:FA
# Fingerprint (SHA1): EC:50:35:07:B2:15:C4:95:62:19:E2:A8:9A:5B:42:99:2C:4C:2C:20
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "AC RAIZ FNMT-RCM"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\354\120\065\007\262\025\304\225\142\031\342\250\232\133\102\231
\054\114\054\040
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\342\011\004\264\323\275\321\240\024\375\032\322\107\304\127\035
END
CKA_ISSUER MULTILINE_OCTAL
\060\073\061\013\060\011\006\003\125\004\006\023\002\105\123\061
\021\060\017\006\003\125\004\012\014\010\106\116\115\124\055\122
\103\115\061\031\060\027\006\003\125\004\013\014\020\101\103\040
\122\101\111\132\040\106\116\115\124\055\122\103\115
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\017\135\223\215\060\147\066\310\006\035\032\307\124\204\151
\007
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "Amazon Root CA 1"
#
# Issuer: CN=Amazon Root CA 1,O=Amazon,C=US
# Serial Number:06:6c:9f:cf:99:bf:8c:0a:39:e2:f0:78:8a:43:e6:96:36:5b:ca
# Subject: CN=Amazon Root CA 1,O=Amazon,C=US
# Not Valid Before: Tue May 26 00:00:00 2015
# Not Valid After : Sun Jan 17 00:00:00 2038
# Fingerprint (SHA-256):
8E:CD:E6:88:4F:3D:87:B1:12:5B:A3:1A:C3:FC:B1:3D:70:16:DE:7F:57:CC:90:4F:E1:CB:97:C6:AE:98:19:6E
# Fingerprint (SHA1): 8D:A7:F9:65:EC:5E:FC:37:91:0F:1C:6E:59:FD:C1:CC:6A:6E:DE:16
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE
CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Amazon Root CA 1"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

```

CKA\_SUBJECT MULTILINE\_OCTAL

\060\071\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\017\060\015\006\003\125\004\012\023\006\101\155\141\172\157\156  
\061\031\060\027\006\003\125\004\003\023\020\101\155\141\172\157  
\156\040\122\157\157\164\040\103\101\040\061

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\071\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\017\060\015\006\003\125\004\012\023\006\101\155\141\172\157\156  
\061\031\060\027\006\003\125\004\003\023\020\101\155\141\172\157  
\156\040\122\157\157\164\040\103\101\040\061

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\023\006\154\237\317\231\277\214\012\071\342\360\170\212\103  
\346\226\066\133\312

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\101\060\202\002\051\240\003\002\001\002\002\023\006  
\154\237\317\231\277\214\012\071\342\360\170\212\103\346\226\066  
\133\312\060\015\006\011\052\206\110\206\367\015\001\001\013\005  
\000\060\071\061\013\060\011\006\003\125\004\006\023\002\125\123  
\061\017\060\015\006\003\125\004\012\023\006\101\155\141\172\157  
\156\061\031\060\027\006\003\125\004\003\023\020\101\155\141\172  
\157\156\040\122\157\157\164\040\103\101\040\061\060\036\027\015  
\061\065\060\065\062\066\060\060\060\060\060\060\132\027\015\063  
\070\060\061\061\067\060\060\060\060\060\060\132\060\071\061\013  
\060\011\006\003\125\004\006\023\002\125\123\061\017\060\015\006  
\003\125\004\012\023\006\101\155\141\172\157\156\061\031\060\027  
\006\003\125\004\003\023\020\101\155\141\172\157\156\040\122\157  
\157\164\040\103\101\040\061\060\202\001\042\060\015\006\011\052  
\206\110\206\367\015\001\001\001\005\000\003\202\001\017\000\060  
\202\001\012\002\202\001\001\000\262\170\200\161\312\170\325\343  
\161\257\107\200\120\164\175\156\330\327\210\166\364\231\150\367  
\130\041\140\371\164\204\001\057\254\002\055\206\323\240\103\172  
\116\262\244\320\066\272\001\276\215\333\110\310\007\027\066\114  
\364\356\210\043\307\076\353\067\365\265\031\370\111\150\260\336  
\327\271\166\070\035\141\236\244\376\202\066\245\345\112\126\344  
\105\341\371\375\264\026\372\164\332\234\233\065\071\057\372\260  
\040\120\006\154\172\320\200\262\246\371\257\354\107\031\217\120  
\070\007\334\242\207\071\130\370\272\325\251\371\110\147\060\226  
\356\224\170\136\157\211\243\121\300\060\206\146\241\105\146\272  
\124\353\243\303\221\371\110\334\377\321\350\060\055\175\055\164  
\160\065\327\210\044\367\236\304\131\156\273\163\207\027\362\062  
\106\050\270\103\372\267\035\252\312\264\362\237\044\016\055\113  
\367\161\134\136\151\377\352\225\002\313\070\212\256\120\070\157  
\333\373\055\142\033\305\307\036\124\341\167\340\147\310\017\234  
\207\043\326\077\100\040\177\040\200\304\200\114\076\073\044\046

```
\216\004\256\154\232\310\252\015\002\003\001\000\001\243\102\060
\100\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001
\001\377\060\016\006\003\125\035\017\001\001\377\004\004\003\002
\001\206\060\035\006\003\125\035\016\004\026\004\024\204\030\314
\205\064\354\274\014\224\224\056\010\131\234\307\262\020\116\012
\010\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000
\003\202\001\001\000\230\362\067\132\101\220\241\032\305\166\121
\050\040\066\043\016\256\346\050\273\252\370\224\256\110\244\060
\177\033\374\044\215\113\264\310\241\227\366\266\361\172\160\310
\123\223\314\010\050\343\230\045\317\043\244\371\336\041\323\174
\205\011\255\116\232\165\072\302\013\152\211\170\166\104\107\030
\145\154\215\101\216\073\177\232\313\364\265\247\120\327\005\054
\067\350\003\113\255\351\141\240\002\156\365\362\360\305\262\355
\133\267\334\372\224\134\167\236\023\245\177\122\255\225\362\370
\223\073\336\213\134\133\312\132\122\133\140\257\024\367\113\357
\243\373\237\100\225\155\061\124\374\102\323\307\106\037\043\255
\331\017\110\160\232\331\165\170\161\321\162\103\064\165\156\127
\131\302\002\134\046\140\051\317\043\031\026\216\210\103\245\324
\344\313\010\373\043\021\103\350\103\051\162\142\241\251\135\136
\010\324\220\256\270\330\316\024\302\320\125\362\206\366\304\223
\103\167\146\141\300\271\350\101\327\227\170\140\003\156\112\162
\256\245\321\175\272\020\236\206\154\033\212\271\131\063\370\353
\304\220\276\361\271
```

END

CKA\_NSS\_Mozilla\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "Amazon Root CA 1"

# Issuer: CN=Amazon Root CA 1,O=Amazon,C=US

# Serial Number:06:6c:9f:cf:99:bf:8c:0a:39:e2:f0:78:8a:43:e6:96:36:5b:ca

# Subject: CN=Amazon Root CA 1,O=Amazon,C=US

# Not Valid Before: Tue May 26 00:00:00 2015

# Not Valid After : Sun Jan 17 00:00:00 2038

# Fingerprint (SHA-256):

8E:CD:E6:88:4F:3D:87:B1:12:5B:A3:1A:C3:FC:B1:3D:70:16:DE:7F:57:CC:90:4F:E1:CB:97:C6:AE:98:19:6E

# Fingerprint (SHA1): 8D:A7:F9:65:EC:5E:FC:37:91:0F:1C:6E:59:FD:C1:CC:6A:6E:DE:16

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Amazon

Root CA 1"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\215\247\371\145\354\136\374\067\221\017\034\156\131\375\301\314
\152\156\336\026
```

END

```

CKA_CERT_MD5_HASH MULTILINE_OCTAL
\103\306\277\256\354\376\255\057\030\306\210\150\060\374\310\346
END
CKA_ISSUER MULTILINE_OCTAL
\060\071\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\017\060\015\006\003\125\004\012\023\006\101\155\141\172\157\156
\061\031\060\027\006\003\125\004\003\023\020\101\155\141\172\157
\156\040\122\157\157\164\040\103\101\040\061
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\023\006\154\237\317\231\277\214\012\071\342\360\170\212\103
\346\226\066\133\312
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "Amazon Root CA 2"
#
# Issuer: CN=Amazon Root CA 2,O=Amazon,C=US
# Serial Number:06:6c:9f:d2:96:35:86:9f:0a:0f:e5:86:78:f8:5b:26:bb:8a:37
#
# Subject: CN=Amazon Root CA 2,O=Amazon,C=US
# Not Valid Before: Tue May 26 00:00:00 2015
# Not Valid After : Sat May 26 00:00:00 2040
# Fingerprint (SHA-256):
1B:A5:B2:AA:8C:65:40:1A:82:96:01:18:F8:0B:EC:4F:62:30:4D:83:CE:C4:71:3A:19:C3:9C:01:1E:A4:6D:B4
# Fingerprint (SHA1): 5A:8C:EF:45:D7:A6:98:59:76:7A:8C:8B:44:96:B5:78:CF:47:4B:1A
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Amazon Root CA 2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\071\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\017\060\015\006\003\125\004\012\023\006\101\155\141\172\157\156
\061\031\060\027\006\003\125\004\003\023\020\101\155\141\172\157
\156\040\122\157\157\164\040\103\101\040\062
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\071\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\017\060\015\006\003\125\004\012\023\006\101\155\141\172\157\156
\061\031\060\027\006\003\125\004\003\023\020\101\155\141\172\157
\156\040\122\157\157\164\040\103\101\040\062

```

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\023\006\154\237\322\226\065\206\237\012\017\345\206\170\370  
\133\046\273\212\067

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\101\060\202\003\051\240\003\002\001\002\002\023\006  
\154\237\322\226\065\206\237\012\017\345\206\170\370\133\046\273  
\212\067\060\015\006\011\052\206\110\206\367\015\001\001\014\005  
\000\060\071\061\013\060\011\006\003\125\004\006\023\002\125\123  
\061\017\060\015\006\003\125\004\012\023\006\101\155\141\172\157  
\156\061\031\060\027\006\003\125\004\003\023\020\101\155\141\172  
\157\156\040\122\157\157\164\040\103\101\040\062\060\036\027\015  
\061\065\060\065\062\066\060\060\060\060\060\060\132\027\015\064  
\060\060\065\062\066\060\060\060\060\060\132\060\071\061\013  
\060\011\006\003\125\004\006\023\002\125\123\061\017\060\015\006  
\003\125\004\012\023\006\101\155\141\172\157\156\061\031\060\027  
\006\003\125\004\003\023\020\101\155\141\172\157\156\040\122\157  
\157\164\040\103\101\040\062\060\202\002\042\060\015\006\011\052  
\206\110\206\367\015\001\001\001\005\000\003\202\002\017\000\060  
\202\002\012\002\202\002\001\000\255\226\237\055\234\112\114\112  
\201\171\121\231\354\212\313\153\140\121\023\274\115\155\006\374  
\260\010\215\335\031\020\152\307\046\014\065\330\300\157\040\204  
\351\224\261\233\205\003\303\133\333\112\350\310\370\220\166\331  
\133\117\343\114\350\006\066\115\314\232\254\075\014\220\053\222  
\324\006\031\140\254\067\104\171\205\201\202\255\132\067\340\015  
\314\235\246\114\122\166\352\103\235\267\004\321\120\366\125\340  
\325\322\246\111\205\351\067\351\312\176\256\134\225\115\110\232  
\077\256\040\132\155\210\225\331\064\270\122\032\103\220\260\277  
\154\005\271\266\170\267\352\320\344\072\074\022\123\142\377\112  
\362\173\276\065\005\251\022\064\343\363\144\164\142\054\075\000  
\111\132\050\376\062\104\273\207\335\145\047\002\161\073\332\112  
\367\037\332\315\367\041\125\220\117\017\354\256\202\341\237\153  
\331\105\323\273\360\137\207\355\074\054\071\206\332\077\336\354  
\162\125\353\171\243\255\333\335\174\260\272\034\316\374\336\117  
\065\166\317\017\370\170\037\152\066\121\106\047\141\133\351\236  
\317\360\242\125\175\174\045\212\157\057\264\305\317\204\056\053  
\375\015\121\020\154\373\137\033\274\033\176\305\256\073\230\001  
\061\222\377\013\127\364\232\262\271\127\351\253\357\015\166\321  
\360\356\364\316\206\247\340\156\351\264\151\241\337\151\366\063  
\306\151\056\227\023\236\245\207\260\127\020\201\067\311\123\263  
\273\177\366\222\321\234\320\030\364\222\156\332\203\117\246\143  
\231\114\245\373\136\357\041\144\172\040\137\154\144\205\025\313  
\067\351\142\014\013\052\026\334\001\056\062\332\076\113\365\236  
\072\366\027\100\224\357\236\221\010\206\372\276\143\250\132\063  
\354\313\164\103\225\371\154\151\122\066\307\051\157\374\125\003  
\134\037\373\237\275\107\353\347\111\107\225\013\116\211\042\011

\111\340\365\141\036\361\277\056\212\162\156\200\131\377\127\072  
\371\165\062\243\116\137\354\355\050\142\331\115\163\362\314\201  
\027\140\355\315\353\334\333\247\312\305\176\002\275\362\124\010  
\124\375\264\055\011\054\027\124\112\230\321\124\341\121\147\010  
\322\355\156\176\157\077\322\055\201\131\051\146\313\220\071\225  
\021\036\164\047\376\335\353\257\002\003\001\000\001\243\102\060  
\100\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001  
\001\377\060\016\006\003\125\035\017\001\001\377\004\004\003\002  
\001\206\060\035\006\003\125\035\016\004\026\004\024\260\014\360  
\114\060\364\005\130\002\110\375\063\345\122\257\113\204\343\146  
\122\060\015\006\011\052\206\110\206\367\015\001\001\014\005\000  
\003\202\002\001\000\252\250\200\217\016\170\243\340\242\324\315  
\346\365\230\172\073\352\000\003\260\227\016\223\274\132\250\366  
\054\214\162\207\251\261\374\177\163\375\143\161\170\245\207\131  
\317\060\341\015\020\262\023\132\155\202\365\152\346\200\237\240  
\005\013\150\344\107\153\307\152\337\266\375\167\062\162\345\030  
\372\011\364\240\223\054\135\322\214\165\205\166\145\220\014\003  
\171\267\061\043\143\255\170\203\011\206\150\204\312\377\371\317  
\046\232\222\171\347\315\113\305\347\141\247\027\313\363\251\022  
\223\223\153\247\350\057\123\222\304\140\130\260\314\002\121\030  
\133\205\215\142\131\143\266\255\264\336\232\373\046\367\000\047  
\300\135\125\067\164\231\311\120\177\343\131\056\104\343\054\045  
\356\354\114\062\167\264\237\032\351\113\135\040\305\332\375\034  
\207\026\306\103\350\324\273\046\232\105\160\136\251\013\067\123  
\342\106\173\047\375\340\106\362\211\267\314\102\266\313\050\046  
\156\331\245\311\072\310\101\023\140\367\120\214\025\256\262\155  
\032\025\032\127\170\346\222\052\331\145\220\202\077\154\002\257  
\256\022\072\047\226\066\004\327\035\242\200\143\251\233\361\345  
\272\264\174\024\260\116\311\261\037\164\137\070\366\121\352\233  
\372\054\242\021\324\251\055\047\032\105\261\257\262\116\161\015  
\300\130\106\326\151\006\313\123\313\263\376\153\101\315\101\176  
\175\114\017\174\162\171\172\131\315\136\112\016\254\233\251\230  
\163\171\174\264\364\314\271\270\007\014\262\164\134\270\307\157  
\210\241\220\247\364\252\371\277\147\072\364\032\025\142\036\267  
\237\276\075\261\051\257\147\241\022\362\130\020\031\123\003\060  
\033\270\032\211\366\234\275\227\003\216\243\011\363\035\213\041  
\361\264\337\344\034\321\237\145\002\006\352\134\326\023\263\204  
\357\242\245\134\214\167\051\247\150\300\153\256\100\322\250\264  
\352\315\360\215\113\070\234\031\232\033\050\124\270\211\220\357  
\312\165\201\076\036\362\144\044\307\030\257\116\377\107\236\007  
\366\065\145\244\323\012\126\377\365\027\144\154\357\250\042\045  
\111\223\266\337\000\027\332\130\176\135\356\305\033\260\321\321  
\137\041\020\307\371\363\272\002\012\047\007\305\361\326\307\323  
\340\373\011\140\154

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE



CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "Amazon Root CA 2"

# Issuer: CN=Amazon Root CA 2,O=Amazon,C=US

# Serial Number:06:6c:9f:d2:96:35:86:9f:0a:0f:e5:86:78:f8:5b:26:bb:8a:37

#

Subject: CN=Amazon Root CA 2,O=Amazon,C=US

# Not Valid Before: Tue May 26 00:00:00 2015

# Not Valid After : Sat May 26 00:00:00 2040

# Fingerprint (SHA-256):

1B:A5:B2:AA:8C:65:40:1A:82:96:01:18:F8:0B:EC:4F:62:30:4D:83:CE:C4:71:3A:19:C3:9C:01:1E:A4:6D:B4

# Fingerprint (SHA1): 5A:8C:EF:45:D7:A6:98:59:76:7A:8C:8B:44:96:B5:78:CF:47:4B:1A

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Amazon Root CA 2"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\132\214\357\105\327\246\230\131\166\172\214\213\104\226\265\170

\317\107\113\032

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\310\345\215\316\250\102\342\172\300\052\134\174\236\046\277\146

END

CKA\_ISSUER MULTILINE\_OCTAL

\060\071\061\013\060\011\006\003\125\004\006\023\002\125\123\061

\017\060\015\006\003\125\004\012\023\006\101\155\141\172\157\156

\061\031\060\027\006\003\125\004\003\023\020\101\155\141\172\157

\156\040\122\157\157\164\040\103\101\040\062

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\023\006\154\237\322\226\065\206\237\012\017\345\206\170\370

\133\046\273\212\067

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "Amazon Root CA 3"

#

# Issuer: CN=Amazon Root CA 3,O=Amazon,C=US

# Serial Number:06:6c:9f:d5:74:97:36:66:3f:3b:0b:9a:d9:e8:9e:76:03:f2:4a

# Subject: CN=Amazon Root CA 3,O=Amazon,C=US

# Not Valid Before: Tue May 26 00:00:00 2015

# Not Valid After : Sat May 26 00:00:00 2040

```
# Fingerprint (SHA-256):
18:CE:6C:FE:7B:F1:4E:60:B2:E3:47:B8:DF:E8:68:CB:31:D0:2E:BB:3A:DA:27:15:69:F5:03:43:B4:6D:B3:A4
# Fingerprint (SHA1): 0D:44:DD:8C:3C:8C:1A:1A:58:75:64:81:E9:0F:2E:2A:FF:B3:D2:6E
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL
CK_FALSE
CKA_LABEL UTF8 "Amazon Root CA 3"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\071\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\017\060\015\006\003\125\004\012\023\006\101\155\141\172\157\156
\061\031\060\027\006\003\125\004\003\023\020\101\155\141\172\157
\156\040\122\157\157\164\040\103\101\040\063
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\071\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\017\060\015\006\003\125\004\012\023\006\101\155\141\172\157\156
\061\031\060\027\006\003\125\004\003\023\020\101\155\141\172\157
\156\040\122\157\157\164\040\103\101\040\063
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\023\006\154\237\325\164\227\066\146\077\073\013\232\331\350
\236\166\003\362\112
END
CKA_VALUE MULTILINE_OCTAL
\060\202\001\266\060\202\001\133\240\003\002\001\002\002\023\006
\154\237\325\164\227\066\146\077\073\013\232\331\350\236\166\003
\362\112\060\012\006\010\052\206\110\316\075\004\003\002\060\071
\061\013\060\011\006\003\125\004\006\023\002\125\123\061\017\060
\015\006\003\125\004\012\023\006\101\155\141\172\157\156\061\031
\060\027\006\003\125\004\003\023\020\101\155\141\172\157\156\040
\122\157\157\164\040\103\101\040\063\060\036\027\015\061\065\060
\065\062\066\060\060\060\060\060\132\027\015\064\060\060\065
\062\066\060\060\060\060\060\060\132\060\071\061\013\060\011\006
\003\125\004\006\023\002\125\123\061\017\060\015\006\003\125\004
\012\023\006\101\155\141\172\157\156\061\031\060\027\006\003\125
\004\003\023\020\101\155\141\172\157\156\040\122\157\157\164\040
\103\101\040\063\060\131\060\023\006\007\052\206\110\316\075\002
\001\006\010\052\206\110\316\075\003\001\007\003\102\000\004\051
\227\247\306\101\177\300\015\233\350\001\033\126\306\362\122\245
\272\055\262\022\350\322\056\327\372\311\305\330\252\155\037\163
\201\073\073\230\153\071\174\063\245\305\116\206\216\200\027\150
\142\105\127\175\104\130\035\263\067\345\147\010\353\146\336\243
\102\060\100\060\017\006\003\125\035\023\001\001\377\004\005\060
\003\001\001\377\060\016\006\003\125\035\017\001\001\377\004\004
```

```
\003\002\001\206\060\035\006\003\125\035\016\004\026\004\024\253
\266\333\327\006\236\067\254\060\206\007\221\160\307\234\304\031
\261\170\300\060\012\006\010\052\206\110\316\075\004\003\002\003
\111\000\060\106\002\041\000\340\205\222\243\027\267\215\371\053
\006\245\223\254\032\230\150\141\162\372\341\241\320\373\034\170
\140\246\103\231\305\270\304\002\041\000\234\002\357\361\224\234
\263\226\371\353\306\052\370\266\054\376\072\220\024\026\327\214
\143\044\110\034\337\060\175\325\150\073
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "Amazon Root CA 3"

# Issuer: CN=Amazon Root CA 3,O=Amazon,C=US

# Serial Number:06:6c:9f:d5:74:97:36:66:3f:3b:0b:9a:d9:e8:9e:76:03:f2:4a

# Subject: CN=Amazon Root CA 3,O=Amazon,C=US

# Not Valid Before: Tue May 26 00:00:00 2015

# Not Valid After

: Sat May 26 00:00:00 2040

# Fingerprint (SHA-256):

18:CE:6C:FE:7B:F1:4E:60:B2:E3:47:B8:DF:E8:68:CB:31:D0:2E:BB:3A:DA:27:15:69:F5:03:43:B4:6D:B3:A4

# Fingerprint (SHA1): 0D:44:DD:8C:3C:8C:1A:1A:58:75:64:81:E9:0F:2E:2A:FF:B3:D2:6E

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Amazon Root CA 3"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\015\104\335\214\074\214\032\032\130\165\144\201\351\017\056\052
\377\263\322\156
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\240\324\357\013\367\265\330\111\225\052\354\365\304\374\201\207
```

END

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\071\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\017\060\015\006\003\125\004\012\023\006\101\155\141\172\157\156
\061\031\060\027\006\003\125\004\003\023\020\101\155\141\172\157
\156\040\122\157\157\164\040\103\101\040\063
```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

```
\002\023\006\154\237\325\164\227\066\146\077\073\013\232\331\350
\236\166\003\362\112
```

END

CKA\_TRUST\_SERVER\_AUTH

```

CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "Amazon Root CA 4"
#
# Issuer: CN=Amazon Root CA 4,O=Amazon,C=US
# Serial Number:06:6c:9f:d7:c1:bb:10:4c:29:43:e5:71:7b:7b:2c:c8:1a:c1:0e
# Subject: CN=Amazon Root CA 4,O=Amazon,C=US
# Not Valid Before: Tue May 26 00:00:00 2015
# Not Valid After : Sat May 26 00:00:00 2040
# Fingerprint (SHA-256):
E3:5D:28:41:9E:D0:20:25:CF:A6:90:38:CD:62:39:62:45:8D:A5:C6:95:FB:DE:A3:C2:2B:0B:FB:25:89:70:92
# Fingerprint (SHA1): F6:10:84:07:D6:F8:BB:67:98:0C:C2:E2:44:C2:EB:AE:1C:EF:63:BE
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Amazon Root CA 4"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\071\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\017\060\015\006\003\125\004\012\023\006\101\155\141\172\157\156
\061\031\060\027\006\003\125\004\003\023\020\101\155\141\172\157
\156\040\122\157\157\164\040\103\101\040\064
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\071\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\017\060\015\006\003\125\004\012\023\006\101\155\141\172\157\156
\061\031\060\027\006\003\125\004\003\023\020\101\155\141\172\157
\156\040\122\157\157\164\040\103\101\040\064
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\023\006\154\237\327\301\273\020\114\051\103\345\161\173\173
\054\310\032\301\016
END
CKA_VALUE MULTILINE_OCTAL
\060\202\001\362\060\202\001\170\240\003\002\001\002\002\023\006
\154\237\327\301\273\020\114\051\103\345\161\173\173\054\310\032
\301\016\060\012\006\010\052\206\110\316\075\004\003\003\060\071
\061\013\060\011\006\003\125\004\006\023\002\125\123\061\017\060
\015\006\003\125\004\012\023\006\101\155\141\172\157\156\061\031
\060\027\006\003\125\004\003\023\020\101\155\141\172\157\156\040
\122\157\157\164\040\103\101\040\064\060\036\027\015\061\065\060

```

\065\062\066\060\060\060\060\060\060\060\060\132\027\015\064\060\060\065  
\062\066\060\060\060\060\060\060\060\132\060\071\061\013\060\011\006  
\003\125\004\006\023\002\125\123\061\017\060\015\006\003\125\004  
\012\023\006\101\155\141\172\157\156\061\031\060\027\006\003\125  
\004\003\023\020\101\155\141\172\157\156\040\122\157\157\164\040  
\103\101\040\064\060\166\060\020\006\007\052\206\110\316\075\002  
\001\006\005\053\201\004\000\042\003\142\000\004\322\253\212\067  
\117\243\123\015\376\301\212\173\113\250\173\106\113\143\260\142  
\366\055\033\333\010\161\041\322\000\350\143\275\232\047\373\360  
\071\156\135\352\075\245\311\201\252\243\133\040\230\105\135\026  
\333\375\350\020\155\343\234\340\343\275\137\204\142\363\160\144  
\063\240\313\044\057\160\272\210\241\052\240\165\370\201\256\142  
\006\304\201\333\071\156\051\260\036\372\056\134\243\102\060\100  
\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001  
\377\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001  
\206\060\035\006\003\125\035\016\004\026\004\024\323\354\307\072  
\145\156\314\341\332\166\232\126\373\234\363\206\155\127\345\201  
\060\012\006\010\052\206\110\316\075\004\003\003\003\150\000\060  
\145\002\060\072\213\041\361\275\176\021\255\320\357\130\226\057  
\326\353\235\176\220\215\053\317\146\125\303\054\343\050\251\160  
\012\107\016\360\067\131\022\377\055\231\224\050\116\052\117\065  
\115\063\132\002\061\000\352\165\000\116\073\304\072\224\022\221  
\311\130\106\235\041\023\162\247\210\234\212\344\114\112\333\226  
\324\254\213\153\153\111\022\123\063\255\327\344\276\044\374\265  
\012\166\324\245\274\020

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "Amazon Root CA 4"

# Issuer: CN=Amazon Root CA 4,O=Amazon,C=US

# Serial Number:06:6c:9f:d7:c1:bb:10:4c:29:43:e5:71:7b:7b:2c:c8:1a:c1:0e

# Subject:

CN=Amazon Root CA 4,O=Amazon,C=US

# Not Valid Before: Tue May 26 00:00:00 2015

# Not Valid After : Sat May 26 00:00:00 2040

# Fingerprint (SHA-256):

E3:5D:28:41:9E:D0:20:25:CF:A6:90:38:CD:62:39:62:45:8D:A5:C6:95:FB:DE:A3:C2:2B:0B:FB:25:89:70:92

# Fingerprint (SHA1): F6:10:84:07:D6:F8:BB:67:98:0C:C2:E2:44:C2:EB:AE:1C:EF:63:BE

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Amazon Root CA 4"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\366\020\204\007\326\370\273\147\230\014\302\342\104\302\353\256

```

\034\357\143\276
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\211\274\047\325\353\027\215\006\152\151\325\375\211\107\264\315
END
CKA_ISSUER MULTILINE_OCTAL
\060\071\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\017\060\015\006\003\125\004\012\023\006\101\155\141\172\157\156
\061\031\060\027\006\003\125\004\003\023\020\101\155\141\172\157
\156\040\122\157\157\164\040\103\101\040\064
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\023\006\154\237\327\301\273\020\114\051\103\345\161\173\173
\054\310\032\301\016
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "Symantec Class 1 Public Primary Certification Authority - G6"
#
# Issuer: CN=Symantec Class 1 Public Primary Certification Authority - G6,OU=Symantec Trust
Network,O=Symantec Corporation,C=US
# Serial Number:24:32:75:f2:1d:2f:d2:09:33:f7:b4:6a:ca:d0:f3:98
# Subject: CN=Symantec Class 1 Public Primary Certification Authority - G6,OU=Symantec Trust
Network,O=Symantec Corporation,C=US
# Not Valid Before: Tue Oct 18 00:00:00 2011
# Not Valid After : Tue Dec 01 23:59:59 2037
# Fingerprint (SHA-256):
9D:19:0B:2E:31:45:66:68:5B:E8:A8:89:E2:7A:A8:C7:D7:AE:1D:8A:AD:DB:A3:C1:EC:F9:D2:48:63:CD:34:B9
# Fingerprint (SHA1): 51:7F:61:1E:29:91:6B:53:82:FB:72:E7:44:D9:8D:C3:CC:53:6D:64
#
For Email Distrust After: Wed Aug 31 00:00:00 2022
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Symantec Class 1 Public Primary Certification Authority - G6"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\224\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\035\060\033\006\003\125\004\012\023\024\123\171\155\141\156
\164\145\143\040\103\157\162\160\157\162\141\164\151\157\156\061
\037\060\035\006\003\125\004\013\023\026\123\171\155\141\156\164
\145\143\040\124\162\165\163\164\040\116\145\164\167\157\162\153

```

\061\105\060\103\006\003\125\004\003\023\074\123\171\155\141\156  
\164\145\143\040\103\154\141\163\163\040\061\040\120\165\142\154  
\151\143\040\120\162\151\155\141\162\171\040\103\145\162\164\151  
\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151  
\164\171\040\055\040\107\066

END

CKA\_ID UTF8

"0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\224\061\013\060\011\006\003\125\004\006\023\002\125\123  
\061\035\060\033\006\003\125\004\012\023\024\123\171\155\141\156  
\164\145\143\040\103\157\162\160\157\162\141\164\151\157\156\061  
\037\060\035\006\003\125\004\013\023\026\123\171\155\141\156\164  
\145\143\040\124\162\165\163\164\040\116\145\164\167\157\162\153  
\061\105\060\103\006\003\125\004\003\023\074\123\171\155\141\156  
\164\145\143\040\103\154\141\163\163\040\061\040\120\165\142\154  
\151\143\040\120\162\151\155\141\162\171\040\103\145\162\164\151  
\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151  
\164\171\040\055\040\107\066

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\044\062\165\362\035\057\322\011\063\367\264\152\312\320  
\363\230

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\366\060\202\002\336\240\003\002\001\002\002\020\044  
\062\165\362\035\057\322\011\063\367\264\152\312\320\363\230\060  
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\201  
\224\061\013\060\011\006\003\125\004\006\023\002\125\123\061\035  
\060\033\006\003\125\004\012\023\024\123\171\155\141\156\164\145  
\143\040\103\157\162\160\157\162\141\164\151\157\156\061\037\060  
\035\006\003\125\004\013\023\026\123\171\155\141\156\164\145\143  
\040\124\162\165\163\164\040\116\145\164\167\157\162\153\061\105  
\060\103\006\003\125\004\003\023\074\123\171\155\141\156\164\145  
\143\040\103\154\141\163\163\040\061\040\120\165\142\154\151\143  
\040\120\162\151\155\141\162\171\040\103\145\162\164\151\146\151  
\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171  
\040\055\040\107\066\060\036\027\015\061\061\061\060\061\070\060  
\060\060\060\060\060\132\027\015\063\067\061\062\060\061\062\063  
\065\071\065\071\132\060\201\224\061\013\060\011\006\003\125\004  
\006\023\002\125\123\061\035\060\033\006\003\125\004\012\023\024  
\123\171\155\141\156\164\145\143\040\103\157\162\160\157\162\141  
\164\151\157\156\061\037\060\035\006\003\125\004\013\023\026\123  
\171\155\141\156\164\145\143\040\124\162\165\163\164\040\116\145  
\164\167\157\162\153\061\105\060\103\006\003\125\004\003\023\074  
\123\171\155\141\156\164\145\143\040\103\154\141\163\163\040\061  
\040\120\165\142\154\151\143\040\120\162\151\155\141\162\171\040  
\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101\165

\164\150\157\162\151\164\171\040\055\040\107\066\060\202\001\042  
\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003  
\202\001\017\000\060\202\001\012\002\202\001\001\000\307\071\327  
\111\144\251\231\202\042\114\352\105\331\007\026\343\173\364\203  
\350\231\163\372\153\261\066\340\232\167\240\100\302\201\215\001  
\307\314\214\275\217\175\367\171\343\172\114\003\115\331\373\375  
\207\070\050\054\335\232\213\124\010\333\147\373\033\214\376\050  
\222\057\276\267\262\110\247\201\241\330\136\210\303\314\071\100  
\101\132\321\334\345\332\020\237\057\332\001\115\375\056\106\174  
\371\056\047\012\151\067\356\221\243\033\152\314\104\277\033\307  
\303\324\021\262\120\140\227\011\275\056\042\365\101\204\146\237  
\315\100\246\251\000\200\301\037\225\222\237\336\363\110\357\333  
\035\167\141\374\177\337\356\226\244\162\320\266\076\377\170\047  
\257\313\222\025\151\010\333\143\020\342\346\227\254\156\334\254  
\366\242\316\036\107\231\271\211\267\022\346\241\324\315\131\021  
\147\303\157\205\330\102\116\050\276\131\125\131\004\225\253\217  
\067\200\277\015\360\374\037\072\144\061\130\201\170\327\342\065  
\366\040\077\051\270\217\026\156\076\110\334\265\114\007\341\362  
\032\352\176\012\171\326\250\275\353\135\206\053\115\002\003\001  
\000\001\243\102\060\100\060\016\006\003\125\035\017\001\001\377  
\004\004\003\002\001\006\060\017\006\003\125\035\023\001\001\377  
\004\005\060\003\001\001\377\060\035\006\003\125\035\016\004\026  
\004\024\063\101\350\310\071\022\025\223\110\362\226\062\056\132  
\365\332\224\137\123\140\060\015\006\011\052\206\110\206\367\015  
\001\001\013\005\000\003\202\001\001\000\025\343\163\127\261\027  
\266\137\111\151\104\246\366\136\172\147\254\322\336\165\111\253  
\376\045\125\307\072\311\104\025\020\156\277\061\153\313\331\007  
\223\177\034\205\143\000\343\062\022\340\314\313\373\071\154\217  
\342\123\342\074\100\063\331\244\214\107\346\255\130\373\211\257  
\343\336\206\051\126\064\054\105\270\022\372\104\211\156\055\024  
\045\050\044\001\145\326\352\122\254\005\156\126\022\011\075\320  
\164\364\327\275\006\312\250\072\215\126\102\372\215\162\076\164  
\361\003\162\337\207\033\136\016\172\125\226\054\070\267\230\205  
\315\115\063\104\311\224\217\132\061\060\067\113\243\072\022\263  
\347\066\321\041\150\113\055\070\346\123\256\034\045\126\010\126  
\003\147\204\235\306\303\316\044\142\307\114\066\317\260\006\104  
\267\365\137\002\335\331\124\351\057\220\116\172\310\116\203\100  
\014\232\227\074\067\277\277\354\366\360\264\205\167\050\301\013  
\310\147\202\020\027\070\242\267\006\352\233\277\072\370\351\043  
\007\277\164\340\230\070\025\125\170\356\162\000\134\031\243\364  
\322\063\340\377\275\321\124\071\051\017

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER

CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER MULTILINE\_OCTAL

\062\062\060\070\063\061\060\060\060\060\060\060\132



END

# Trust for "Symantec Class 1 Public Primary Certification Authority - G6"

# Issuer: CN=Symantec Class 1 Public Primary Certification Authority - G6,OU=Symantec Trust Network,O=Symantec Corporation,C=US

# Serial Number:24:32:75:f2:1d:2f:d2:09:33:f7:b4:6a:ca:d0:f3:98

# Subject: CN=Symantec Class 1 Public Primary Certification Authority - G6,OU=Symantec Trust Network,O=Symantec Corporation,C=US

# Not Valid Before: Tue Oct 18 00:00:00 2011

# Not Valid After : Tue Dec 01 23:59:59 2037

# Fingerprint (SHA-256):

9D:19:0B:2E:31:45:66:68:5B:E8:A8:89:E2:7A:A8:C7:D7:AE:1D:8A:AD:DB:A3:C1:EC:F9:D2:48:63:CD:34:B9

# Fingerprint (SHA1): 51:7F:61:1E:29:91:6B:53:82:FB:72:E7:44:D9:8D:C3:CC:53:6D:64

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Symantec Class 1 Public Primary Certification Authority - G6"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\121\177\141\036\051\221\153\123\202\373\162\347\104\331\215\303  
\314\123\155\144

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\057\250\264\332\366\144\113\036\202\371\106\075\124\032\174\260

END

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\224\061\013\060\011\006\003\125\004\006\023\002\125\123  
\061\035\060\033\006\003\125\004\012\023\024\123\171\155\141\156  
\164\145\143\040\103\157\162\160\157\162\141\164\151\157\156\061  
\037\060\035\006\003\125\004\013\023\026\123\171\155\141\156\164  
\145\143\040\124\162\165\163\164\040\116\145\164\167\157\162\153  
\061\105\060\103\006\003\125\004\003\023\074\123\171\155\141\156  
\164\145\143\040\103\154\141\163\163\040\061\040\120\165\142\154  
\151\143\040\120\162\151\155\141\162\171\040\103\145\162\164\151  
\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151  
\164\171\040\055\040\107\066

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\044\062\165\362\035\057\322\011\063\367\264\152\312\320  
\363\230

END

CKA\_TRUST\_SERVER\_AUTH

CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

```
#
# Certificate "Symantec Class 2 Public Primary Certification Authority - G6"
#
# Issuer: CN=Symantec Class 2 Public Primary Certification Authority - G6,OU=Symantec Trust
Network,O=Symantec Corporation,C=US
# Serial Number:64:82:9e:fc:37:1e:74:5d:fc:97:ff:97:c8:b1:ff:41
# Subject: CN=Symantec Class 2 Public Primary Certification Authority - G6,OU=Symantec Trust
Network,O=Symantec Corporation,C=US
# Not Valid Before: Tue Oct 18 00:00:00 2011
# Not Valid After : Tue Dec 01 23:59:59 2037
# Fingerprint (SHA-256):
CB:62:7D:18:B5:8A:D5:6D:DE:33:1A:30:45:6B:C6:5C:60:1A:4E:9B:18:DE:DC:EA:08:E7:DA:AA:07:81:5F:F0
# Fingerprint (SHA1): 40:B3:31:A0:E9:BF:E8:55:BC:39:93:CA:70:4F:4E:C2:51:D4:1D:8F
# For Email Distrust After: Wed Aug 31 00:00:00 2022
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN
CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Symantec Class 2 Public Primary Certification Authority - G6"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\224\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\035\060\033\006\003\125\004\012\023\024\123\171\155\141\156
\164\145\143\040\103\157\162\160\157\162\141\164\151\157\156\061
\037\060\035\006\003\125\004\013\023\026\123\171\155\141\156\164
\145\143\040\124\162\165\163\164\040\116\145\164\167\157\162\153
\061\105\060\103\006\003\125\004\003\023\074\123\171\155\141\156
\164\145\143\040\103\154\141\163\163\040\062\040\120\165\142\154
\151\143\040\120\162\151\155\141\162\171\040\103\145\162\164\151
\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151
\164\171\040\055\040\107\066
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\224\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\035\060\033\006\003\125\004\012\023\024\123\171\155\141\156
\164\145\143\040\103\157\162\160\157\162\141\164\151\157\156\061
\037\060\035\006\003\125\004\013\023\026\123\171\155\141\156\164
\145\143\040\124\162\165\163\164\040\116\145\164\167\157\162\153
\061\105\060\103\006\003\125\004\003\023\074\123\171\155\141\156
\164\145\143\040\103\154\141\163\163\040\062\040\120\165\142\154
\151\143\040\120\162\151\155\141\162\171\040\103\145\162\164\151
\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151
\164\171\040\055\040\107\066
END
CKA_SERIAL_NUMBER
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MULTILINE\_OCTAL

\002\020\144\202\236\374\067\036\164\135\374\227\377\227\310\261  
\377\101

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\366\060\202\002\336\240\003\002\001\002\002\020\144  
\202\236\374\067\036\164\135\374\227\377\227\310\261\377\101\060  
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\201  
\224\061\013\060\011\006\003\125\004\006\023\002\125\123\061\035  
\060\033\006\003\125\004\012\023\024\123\171\155\141\156\164\145  
\143\040\103\157\162\160\157\162\141\164\151\157\156\061\037\060  
\035\006\003\125\004\013\023\026\123\171\155\141\156\164\145\143  
\040\124\162\165\163\164\040\116\145\164\167\157\162\153\061\105  
\060\103\006\003\125\004\003\023\074\123\171\155\141\156\164\145  
\143\040\103\154\141\163\163\040\062\040\120\165\142\154\151\143  
\040\120\162\151\155\141\162\171\040\103\145\162\164\151\146\151  
\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171  
\040\055\040\107\066\060\036\027\015\061\061\061\060\061\070\060  
\060\060\060\060\060\132\027\015\063\067\061\062\060\061\062\063  
\065\071\065\071\132\060\201\224\061\013\060\011\006\003\125\004  
\006\023\002\125\123\061\035\060\033\006\003\125\004\012\023\024  
\123\171\155\141\156\164\145\143\040\103\157\162\160\157\162\141  
\164\151\157\156\061\037\060\035\006\003\125\004\013\023\026\123  
\171\155\141\156\164\145\143\040\124\162\165\163\164\040\116\145  
\164\167\157\162\153\061\105\060\103\006\003\125\004\003\023\074  
\123\171\155\141\156\164\145\143\040\103\154\141\163\163\040\062  
\040\120\165\142\154\151\143\040\120\162\151\155\141\162\171\040  
\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101\165  
\164\150\157\162\151\164\171\040\055\040\107\066\060\202\001\042  
\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003  
\202\001\017\000\060\202\001\012\002\202\001\001\000\315\314\351  
\005\310\143\205\313\077\100\143\027\275\030\372\065\346\004\147  
\127\145\230\051\244\117\311\134\217\017\064\322\370\332\250\023  
\142\252\270\036\120\147\170\260\026\114\240\071\251\025\172\256  
\355\322\242\300\360\220\067\051\030\046\134\350\015\074\266\154  
\111\077\301\340\334\331\113\266\024\031\013\246\323\226\341\326  
\011\343\031\046\034\371\037\145\113\371\032\103\034\000\203\326  
\320\252\111\242\324\333\346\142\070\272\120\024\103\155\371\061  
\370\126\026\331\070\002\221\317\353\154\335\273\071\116\231\341  
\060\147\105\361\324\360\215\303\337\376\362\070\007\041\175\000  
\136\126\104\263\344\140\275\221\053\234\253\133\004\162\017\262  
\050\331\162\253\005\040\102\045\251\133\003\152\040\020\314\061  
\360\053\332\065\054\320\373\232\227\116\360\202\113\053\330\137  
\066\243\013\055\257\143\015\035\045\177\241\156\134\142\241\215  
\050\076\241\374\034\040\370\001\057\272\125\232\021\260\031\322  
\310\120\171\153\016\152\005\327\252\004\066\262\243\362\341\137  
\167\247\167\234\345\036\334\351\337\152\301\145\135\002\003\001  
\000\001\243\102\060\100\060\016\006\003\125\035\017\001\001\377

\004\004\003\002\001\006\060\017\006\003\125\035\023\001\001\377  
\004\005\060\003\001\001\377\060\035\006\003\125\035\016\004\026  
\004\024\207\214\040\225\310\230\112\321\326\200\006\112\220\064  
\104\337\034\115\277\260\060\015\006\011\052\206\110\206\367\015  
\001\001\013\005\000\003\202\001\001\000\201\216\262\245\146\226  
\267\041\245\266\357\157\043\132\137\333\201\305\102\245\170\301  
\151\375\364\074\327\371\134\153\160\162\032\374\132\227\115\000  
\200\210\210\202\212\303\161\015\216\305\211\233\054\355\215\013  
\322\162\124\365\175\324\134\103\127\351\363\256\245\002\021\366  
\166\053\201\127\335\175\332\164\060\375\124\107\366\340\026\156  
\246\264\012\110\346\347\165\007\017\051\031\071\316\171\364\266  
\154\305\137\231\325\037\113\372\337\155\054\074\015\124\200\160  
\360\210\013\200\317\306\150\242\270\035\160\331\166\214\374\356  
\245\311\317\255\035\317\231\045\127\132\142\105\313\026\153\275  
\111\315\245\243\214\151\171\045\256\270\114\154\213\100\146\113  
\026\077\317\002\032\335\341\154\153\007\141\152\166\025\051\231  
\177\033\335\210\200\301\277\265\217\163\305\246\226\043\204\246  
\050\206\044\063\152\001\056\127\163\045\266\136\277\217\346\035  
\141\250\100\051\147\035\207\233\035\177\233\237\231\315\061\326  
\124\276\142\273\071\254\150\022\110\221\040\245\313\261\335\376  
\157\374\132\344\202\125\131\257\061\251

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER MULTILINE\_OCTAL

\062\062\060\070\063\061\060\060\060\060\060\060\132

END

#

Trust for "Symantec Class 2 Public Primary Certification Authority - G6"

# Issuer: CN=Symantec Class 2 Public Primary Certification Authority - G6,OU=Symantec Trust  
Network,O=Symantec Corporation,C=US

# Serial Number:64:82:9e:fc:37:1e:74:5d:fc:97:ff:97:c8:b1:ff:41

# Subject: CN=Symantec Class 2 Public Primary Certification Authority - G6,OU=Symantec Trust  
Network,O=Symantec Corporation,C=US

# Not Valid Before: Tue Oct 18 00:00:00 2011

# Not Valid After : Tue Dec 01 23:59:59 2037

# Fingerprint (SHA-256):

CB:62:7D:18:B5:8A:D5:6D:DE:33:1A:30:45:6B:C6:5C:60:1A:4E:9B:18:DE:DC:EA:08:E7:DA:AA:07:81:5F:F0

# Fingerprint (SHA1): 40:B3:31:A0:E9:BF:E8:55:BC:39:93:CA:70:4F:4E:C2:51:D4:1D:8F

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Symantec Class 2 Public Primary Certification Authority - G6"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\100\263\061\240\351\277\350\125\274\071\223\312\160\117\116\302

```
\121\324\035\217
END
CKA_CERT_MD5_HASH
MULTILINE_OCTAL
\175\013\203\345\373\174\255\007\117\040\251\265\337\143\355\171
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\224\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\035\060\033\006\003\125\004\012\023\024\123\171\155\141\156
\164\145\143\040\103\157\162\160\157\162\141\164\151\157\156\061
\037\060\035\006\003\125\004\013\023\026\123\171\155\141\156\164
\145\143\040\124\162\165\163\164\040\116\145\164\167\157\162\153
\061\105\060\103\006\003\125\004\003\023\074\123\171\155\141\156
\164\145\143\040\103\154\141\163\163\040\062\040\120\165\142\154
\151\143\040\120\162\151\155\141\162\171\040\103\145\162\164\151
\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151
\164\171\040\055\040\107\066
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\144\202\236\374\067\036\164\135\374\227\377\227\310\261
\377\101
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING
CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "D-TRUST Root CA 3 2013"
#
# Issuer: CN=D-TRUST Root CA 3 2013,O=D-Trust GmbH,C=DE
# Serial Number: 1039788 (0xfddac)
# Subject: CN=D-TRUST Root CA 3 2013,O=D-Trust GmbH,C=DE
# Not Valid Before: Fri Sep 20 08:25:51 2013
# Not Valid After : Wed Sep 20 08:25:51 2028
# Fingerprint (SHA-256):
A1:A8:6D:04:12:1E:B8:7F:02:7C:66:F5:33:03:C2:8E:57:39:F9:43:FC:84:B3:8A:D6:AF:00:90:35:DD:94:57
# Fingerprint (SHA1): 6C:7C:CC:E7:D4:AE:51:5F:99:08:CD:3F:F6:E8:C3:78:DF:6F:EF:97
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "D-TRUST Root CA 3 2013"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\105\061\013\060\011\006\003\125\004\006\023\002\104\105\061
\025\060\023\006\003\125\004\012\014\014\104\055\124\162\165\163
```

\164\040\107\155\142\110\061\037\060\035\006\003\125\004\003\014  
\026\104\055\124\122\125\123\124\040\122\157\157\164\040\103\101  
\040\063\040\062\060\061\063

END

CKA\_ID

UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\105\061\013\060\011\006\003\125\004\006\023\002\104\105\061  
\025\060\023\006\003\125\004\012\014\014\104\055\124\162\165\163  
\164\040\107\155\142\110\061\037\060\035\006\003\125\004\003\014  
\026\104\055\124\122\125\123\124\040\122\157\157\164\040\103\101  
\040\063\040\062\060\061\063

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\003\017\335\254

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\004\016\060\202\002\366\240\003\002\001\002\002\003\017  
\335\254\060\015\006\011\052\206\110\206\367\015\001\001\013\005  
\000\060\105\061\013\060\011\006\003\125\004\006\023\002\104\105  
\061\025\060\023\006\003\125\004\012\014\014\104\055\124\162\165  
\163\164\040\107\155\142\110\061\037\060\035\006\003\125\004\003  
\014\026\104\055\124\122\125\123\124\040\122\157\157\164\040\103  
\101\040\063\040\062\060\061\063\060\036\027\015\061\063\060\071  
\062\060\060\070\062\065\065\061\132\027\015\062\070\060\071\062  
\060\060\070\062\065\065\061\132\060\105\061\013\060\011\006\003  
\125\004\006\023\002\104\105\061\025\060\023\006\003\125\004\012  
\014\014\104\055\124\162\165\163\164\040\107\155\142\110\061\037  
\060\035\006\003\125\004\003\014\026\104\055\124\122\125\123\124  
\040\122\157\157\164\040\103\101\040\063\040\062\060\061\063\060  
\202\001\042\060\015\006\011\052\206\110\206\367\015\001\001\001  
\005\000\003\202\001\017\000\060\202\001\012\002\202\001\001\000  
\304\173\102\222\202\037\354\355\124\230\216\022\300\312\011\337  
\223\156\072\223\134\033\344\020\167\236\116\151\210\154\366\341  
\151\362\366\233\242\141\261\275\007\040\164\230\145\361\214\046  
\010\315\250\065\312\200\066\321\143\155\350\104\172\202\303\154  
\136\336\273\350\066\322\304\150\066\214\237\062\275\204\042\340  
\334\302\356\020\106\071\155\257\223\071\256\207\346\303\274\011  
\311\054\153\147\133\331\233\166\165\114\013\340\273\305\327\274  
\076\171\362\137\276\321\220\127\371\256\366\146\137\061\277\323  
\155\217\247\272\112\363\043\145\273\267\357\243\045\327\012\352  
\130\266\357\210\372\372\171\262\122\130\325\360\254\214\241\121  
\164\051\225\252\121\073\220\062\003\237\034\162\164\220\336\075  
\355\141\322\345\343\375\144\107\345\271\267\112\251\367\037\256  
\226\206\004\254\057\343\244\201\167\267\132\026\377\330\017\077  
\366\267\170\314\244\257\372\133\074\022\133\250\122\211\162\357  
\210\363\325\104\201\206\225\043\237\173\335\274\331\064\357\174  
\224\074\252\300\101\302\343\235\120\032\300\344\031\042\374\263

\002\003\001\000\001\243\202\001\005\060\202\001\001\060\017\006  
\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060\035  
\006\003\125\035\016\004\026\004\024\077\220\310\175\307\025\157  
\363\044\217\251\303\057\113\242\017\041\262\057\347\060\016\006  
\003\125\035\017\001\001\377\004\004\003\002\001\006\060\201\276  
\006\003\125\035\037\004\201\266\060\201\263\060\164\240\162\240  
\160\206\156\154\144\141\160\072\057\057\144\151\162\145\143\164  
\157\162\171\056\144\055\164\162\165\163\164\056\156\145\164\057  
\103\116\075\104\055\124\122\125\123\124\045\062\060\122\157\157  
\164\045\062\060\103\101\045\062\060\063\045\062\060\062\060\061  
\063\054\117\075\104\055\124\162\165\163\164\045\062\060\107\155  
\142\110\054\103\075\104\105\077\143\145\162\164\151\146\151\143  
\141\164\145\162\145\166\157\143\141\164\151\157\156\154\151\163  
\164\060\073\240\071\240\067\206\065\150\164\164\160\072\057\057  
\143\162\154\056\144\055\164\162\165\163\164\056\156\145\164\057  
\143\162\154\057\144\055\164\162\165\163\164\137\162\157\157\164  
\137\143\141\137\063\137\062\060\061\063\056\143\162\154\060\015  
\006\011\052\206\110\206\367\015\001\001\013\005\000\003\202\001  
\001\000\016\131\016\130\344\164\110\043\104\317\064\041\265\234  
\024\032\255\232\113\267\263\210\155\134\251\027\160\360\052\237  
\215\173\371\173\205\372\307\071\350\020\010\260\065\053\137\317  
\002\322\323\234\310\013\036\356\005\124\256\067\223\004\011\175  
\154\217\302\164\274\370\034\224\276\061\001\100\055\363\044\040  
\267\204\125\054\134\310\365\164\112\020\031\213\243\307\355\065  
\326\011\110\323\016\300\272\071\250\260\106\002\260\333\306\210  
\131\302\276\374\173\261\053\317\176\142\207\125\226\314\001\157  
\233\147\041\225\065\213\370\020\374\161\033\267\113\067\151\246  
\073\326\354\213\356\301\260\363\045\311\217\222\175\241\352\303  
\312\104\277\046\245\164\222\234\343\164\353\235\164\331\313\115  
\207\330\374\264\151\154\213\240\103\007\140\170\227\351\331\223  
\174\302\106\274\233\067\122\243\355\212\074\023\251\173\123\113  
\111\232\021\005\054\013\156\126\254\037\056\202\154\340\151\147  
\265\016\155\055\331\344\300\025\361\077\372\030\162\341\025\155  
\047\133\055\060\050\053\237\110\232\144\053\231\357\362\165\111  
\137\134

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "D-TRUST Root CA 3 2013"

# Issuer: CN=D-TRUST Root

CA 3 2013,O=D-Trust GmbH,C=DE

# Serial Number: 1039788 (0xfddac)

# Subject: CN=D-TRUST Root CA 3 2013,O=D-Trust GmbH,C=DE

# Not Valid Before: Fri Sep 20 08:25:51 2013

# Not Valid After : Wed Sep 20 08:25:51 2028

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# Fingerprint (SHA-256):
A1:A8:6D:04:12:1E:B8:7F:02:7C:66:F5:33:03:C2:8E:57:39:F9:43:FC:84:B3:8A:D6:AF:00:90:35:DD:94:57
# Fingerprint (SHA1): 6C:7C:CC:E7:D4:AE:51:5F:99:08:CD:3F:F6:E8:C3:78:DF:6F:EF:97
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "D-TRUST Root CA 3 2013"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\154\174\314\347\324\256\121\137\231\010\315\077\366\350\303\170
\337\157\357\227
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\267\042\146\230\176\326\003\340\301\161\346\165\315\126\105\277
END
CKA_ISSUER MULTILINE_OCTAL
\060\105\061\013\060\011\006\003\125\004\006\023\002\104\105\061
\025\060\023\006\003\125\004\012\014\014\104\055\124\162\165\163
\164\040\107\155\142\110\061\037\060\035\006\003\125\004\003\014
\026\104\055\124\122\125\123\124\040\122\157\157\164\040\103\101
\040\063\040\062\060\061\063
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\003\017\335\254
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "TUBITAK Kamu SM SSL Kok Sertifikasi - Surum 1"
#
# Issuer: CN=TUBITAK Kamu SM SSL Kok Sertifikasi - Surum 1,OU=Kamu Sertifikasyon Merkezi - Kamu
SM,O=Turkiye Bilimsel ve Teknolojik Arastirma Kurumu - TUBITAK,L=Gebze - Kocaeli,C=TR
# Serial Number: 1 (0x1)
# Subject: CN=TUBITAK Kamu SM SSL Kok Sertifikasi - Surum 1,OU=Kamu Sertifikasyon Merkezi - Kamu
SM,O=Turkiye Bilimsel ve Teknolojik Arastirma Kurumu - TUBITAK,L=Gebze - Kocaeli,C=TR
# Not Valid Before: Mon Nov 25 08:25:55 2013
# Not Valid After : Sun Oct 25 08:25:55 2043
# Fingerprint (SHA-256):
46:ED:C3:68:90:46:D5:3A:45:3F:B3:10:4A:B8:0D:CA:EC:65:8B:26:60:EA:16:29:DD:7E:86:79:90:64:87:16
#
Fingerprint (SHA1): 31:43:64:9B:EC:CE:27:EC:ED:3A:3F:0B:8F:0D:E4:E8:91:DD:EE:CA
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE

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CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "TUBITAK Kamu SM SSL Kok Sertifikasi - Surum 1"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\322\061\013\060\011\006\003\125\004\006\023\002\124\122
\061\030\060\026\006\003\125\004\007\023\017\107\145\142\172\145
\040\055\040\113\157\143\141\145\154\151\061\102\060\100\006\003
\125\004\012\023\071\124\165\162\153\151\171\145\040\102\151\154
\151\155\163\145\154\040\166\145\040\124\145\153\156\157\154\157
\152\151\153\040\101\162\141\163\164\151\162\155\141\040\113\165
\162\165\155\165\040\055\040\124\125\102\111\124\101\113\061\055
\060\053\006\003\125\004\013\023\044\113\141\155\165\040\123\145
\162\164\151\146\151\153\141\163\171\157\156\040\115\145\162\153
\145\172\151\040\055\040\113\141\155\165\040\123\115\061\066\060
\064\006\003\125\004\003\023\055\124\125\102\111\124\101\113\040
\113\141\155\165\040\123\115\040\123\123\114\040\113\157\153\040
\123\145\162\164\151\146\151\153\141\163\151\040\055\040\123\165
\162\165\155\040\061
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\322\061\013\060\011\006\003\125\004\006\023\002\124\122
\061\030\060\026\006\003\125\004\007\023\017\107\145\142\172\145
\040\055\040\113\157\143\141\145\154\151\061\102\060\100\006\003
\125\004\012\023\071\124\165\162\153\151\171\145\040\102\151\154
\151\155\163\145\154\040\166\145\040\124\145\153\156\157\154\157
\152\151\153\040\101\162\141\163\164\151\162\155\141\040\113\165
\162\165\155\165\040\055\040\124\125\102\111\124\101\113\061\055
\060\053\006\003\125\004\013\023\044\113\141\155\165\040\123\145
\162\164\151\146\151\153\141\163\171\157\156\040\115\145\162\153
\145\172\151\040\055\040\113\141\155\165\040\123\115\061\066\060
\064\006\003\125\004\003\023\055\124\125\102\111\124\101\113\040
\113\141\155\165\040\123\115\040\123\123\114\040\113\157\153\040
\123\145\162\164\151\146\151\153\141\163\151\040\055\040\123\165
\162\165\155\040\061
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\001\001
END
CKA_VALUE MULTILINE_OCTAL
\060\202\004\143\060\202\003\113\240\003\002\001\002\002\001\001
\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060
\201\322\061\013\060\011\006\003\125\004\006\023\002\124\122\061
\030\060\026\006\003\125\004\007\023\017\107\145\142\172\145\040
\055\040\113\157\143\141\145\154\151\061\102\060\100\006\003\125
\004\012\023\071\124\165\162\153\151\171\145\040\102\151\154\151
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\155\163\145\154\040\166\145\040\124\145\153\156\157\154\157\152  
\151\153\040\101\162\141\163\164\151\162\155\141\040\113\165\162  
\165\155\165\040\055\040\124\125\102\111\124\101\113\061\055\060  
\053\006\003\125\004\013\023\044\113\141\155\165\040\123\145\162  
\164\151\146\151\153\141\163\171\157\156\040\115\145\162\153\145  
\172\151\040\055\040\113\141\155\165\040\123\115\061\066\060\064  
\006\003\125\004\003\023\055\124\125\102\111\124\101\113\040\113  
\141\155\165\040\123\115\040\123\123\114\040\113\157\153\040\123  
\145\162\164\151\146\151\153\141\163\151\040\055\040\123\165\162  
\165\155\040\061\060\036\027\015\061\063\061\061\062\065\060\070  
\062\065\065\065\132\027\015\064\063\061\060\062\065\060\070\062  
\065\065\065\132\060\201\322\061\013\060\011\006\003\125\004\006  
\023\002\124\122\061\030\060\026\006\003\125\004\007\023\017\107  
\145\142\172\145\040\055\040\113\157\143\141\145\154\151\061\102  
\060\100\006\003\125\004\012\023\071\124\165\162\153\151\171\145  
\040\102\151\154\151\155\163\145\154\040\166\145\040\124\145\153  
\156\157\154\157\152\151\153\040\101\162\141\163\164\151\162\155  
\141\040\113\165\162\165\155\165\040\055\040\124\125\102\111\124  
\101\113\061\055\060\053\006\003\125\004\013\023\044\113\141\155  
\165\040\123\145\162\164\151\146\151\153\141\163\171\157\156\040  
\115\145\162\153\145\172\151\040\055\040\113\141\155\165\040\123  
\115\061\066\060\064\006\003\125\004\003\023\055\124\125\102\111  
\124\101\113\040\113\141\155\165\040\123\115\040\123\123\114\040  
\113\157\153\040\123\145\162\164\151\146\151\153\141\163\151\040  
\055\040\123\165\162\165\155\040\061\060\202\001\042\060\015\006  
\011\052\206\110\206\367\015\001\001\001\005\000\003\202\001\017  
\000\060\202\001\012\002\202\001\001\000\257\165\060\063\252\273  
\153\323\231\054\022\067\204\331\215\173\227\200\323\156\347\377  
\233\120\225\076\220\225\126\102\327\031\174\046\204\215\222\372  
\001\035\072\017\342\144\070\267\214\274\350\210\371\213\044\253  
\056\243\365\067\344\100\216\030\045\171\203\165\037\073\377\154  
\250\305\306\126\370\264\355\212\104\243\253\154\114\374\035\320  
\334\357\150\275\317\344\252\316\360\125\367\242\064\324\203\153  
\067\174\034\302\376\265\003\354\127\316\274\264\265\305\355\000  
\017\123\067\052\115\364\117\014\203\373\206\317\313\376\214\116  
\275\207\371\247\213\041\127\234\172\337\003\147\211\054\235\227  
\141\247\020\270\125\220\177\016\055\047\070\164\337\347\375\332  
\116\022\343\115\025\042\002\310\340\340\374\017\255\212\327\311  
\124\120\314\073\017\312\026\200\204\320\121\126\303\216\126\177  
\211\042\063\057\346\205\012\275\245\250\033\066\336\323\334\054  
\155\073\307\023\275\131\043\054\346\345\244\367\330\013\355\352  
\220\100\104\250\225\273\223\325\320\200\064\266\106\170\016\037  
\000\223\106\341\356\351\371\354\117\027\002\003\001\000\001\243  
\102\060\100\060\035\006\003\125\035\016\004\026\004\024\145\077  
\307\212\206\306\074\335\074\124\134\065\370\072\355\122\014\107  
\127\310\060\016\006\003\125\035\017\001\001\377\004\004\003\002  
\001\006\060\017\006\003\125\035\023\001\001\377\004\005\060\003  
\001\001\377\060\015\006\011\052\206\110\206\367\015\001\001\013

\005\000\003\202\001\001\000\052\077\341\361\062\216\256\341\230  
\134\113\136\317\153\036\152\011\322\042\251\022\307\136\127\175  
\163\126\144\200\204\172\223\344\011\271\020\315\237\052\047\341  
\000\167\276\110\310\065\250\201\237\344\270\054\311\177\016\260  
\322\113\067\135\352\271\325\013\136\064\275\364\163\051\303\355  
\046\025\234\176\010\123\212\130\215\320\113\050\337\301\263\337  
\040\363\371\343\343\072\337\314\234\224\330\116\117\303\153\027  
\267\367\162\350\255\146\063\265\045\123\253\340\370\114\251\235  
\375\362\015\272\256\271\331\252\306\153\371\223\273\256\253\270  
\227\074\003\032\272\103\306\226\271\105\162\070\263\247\241\226  
\075\221\173\176\300\041\123\114\207\355\362\013\124\225\121\223  
\325\042\245\015\212\361\223\016\076\124\016\260\330\311\116\334  
\362\061\062\126\352\144\371\352\265\235\026\146\102\162\363\177  
\323\261\061\103\374\244\216\027\361\155\043\253\224\146\370\255  
\373\017\010\156\046\055\177\027\007\011\262\214\373\120\300\237  
\226\215\317\266\375\000\235\132\024\232\277\002\104\365\301\302  
\237\042\136\242\017\241\343

END

CKA\_NSS\_Mozilla\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL

CK\_FALSE

# Trust for "TUBITAK Kamu SM SSL Kok Sertifikasi - Surum 1"

# Issuer: CN=TUBITAK Kamu SM SSL Kok Sertifikasi - Surum 1,OU=Kamu Sertifikasyon Merkezi - Kamu  
SM,O=Turkiye Bilimsel ve Teknolojik Arastirma Kurumu - TUBITAK,L=Gebze - Kocaeli,C=TR

# Serial Number: 1 (0x1)

# Subject: CN=TUBITAK Kamu SM SSL Kok Sertifikasi - Surum 1,OU=Kamu Sertifikasyon Merkezi - Kamu  
SM,O=Turkiye Bilimsel ve Teknolojik Arastirma Kurumu - TUBITAK,L=Gebze - Kocaeli,C=TR

# Not Valid Before: Mon Nov 25 08:25:55 2013

# Not Valid After : Sun Oct 25 08:25:55 2043

# Fingerprint (SHA-256):

46:ED:C3:68:90:46:D5:3A:45:3F:B3:10:4A:B8:0D:CA:EC:65:8B:26:60:EA:16:29:DD:7E:86:79:90:64:87:16

# Fingerprint (SHA1): 31:43:64:9B:EC:CE:27:EC:ED:3A:3F:0B:8F:0D:E4:E8:91:DD:EE:CA

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "TUBITAK Kamu SM SSL Kok Sertifikasi - Surum 1"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\061\103\144\233\354\316\047\354\355\072\077\013\217\015\344\350  
\221\335\356\312

END

CKA\_CERT\_MD5\_HASH

MULTILINE\_OCTAL

\334\000\201\334\151\057\076\057\260\073\366\075\132\221\216\111

END

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\322\061\013\060\011\006\003\125\004\006\023\002\124\122  
\061\030\060\026\006\003\125\004\007\023\017\107\145\142\172\145  
\040\055\040\113\157\143\141\145\154\151\061\102\060\100\006\003  
\125\004\012\023\071\124\165\162\153\151\171\145\040\102\151\154  
\151\155\163\145\154\040\166\145\040\124\145\153\156\157\154\157  
\152\151\153\040\101\162\141\163\164\151\162\155\141\040\113\165  
\162\165\155\165\040\055\040\124\125\102\111\124\101\113\061\055  
\060\053\006\003\125\004\013\023\044\113\141\155\165\040\123\145  
\162\164\151\146\151\153\141\163\171\157\156\040\115\145\162\153  
\145\172\151\040\055\040\113\141\155\165\040\123\115\061\066\060  
\064\006\003\125\004\003\023\055\124\125\102\111\124\101\113\040  
\113\141\155\165\040\123\115\040\123\123\114\040\113\157\153\040  
\123\145\162\164\151\146\151\153\141\163\151\040\055\040\123\165  
\162\165\155\040\061

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\001\001

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "GDCA TrustAUTH R5 ROOT"

#

# Issuer: CN=GDCA TrustAUTH R5 ROOT,O="GUANG DONG CERTIFICATE AUTHORITY  
CO.,LTD.",C=CN

# Serial Number:7d:09:97:fe:f0:47:ea:7a

# Subject: CN=GDCA TrustAUTH R5 ROOT,O="GUANG DONG CERTIFICATE AUTHORITY  
CO.,LTD.",C=CN

# Not Valid Before: Wed Nov 26 05:13:15 2014

# Not Valid After : Mon Dec 31 15:59:59 2040

# Fingerprint (SHA-256):

BF:FF:8F:D0:44:33:48:7D:6A:8A:A6:0C:1A:29:76:7A:9F:C2:BB:B0:5E:42:0F:71:3A:13:B9:92:89:1D:38:93

# Fingerprint (SHA1): 0F:36:38:5B:81:1A:25:C3:9B:31:4E:83:CA:E9:34:66:70:CC:74:B4

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE

CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "GDCA TrustAUTH R5 ROOT"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\142\061\013\060\011\006\003\125\004\006\023\002\103\116\061  
\062\060\060\006\003\125\004\012\014\051\107\125\101\116\107\040

\104\117\116\107\040\103\105\122\124\111\106\111\103\101\124\105  
\040\101\125\124\110\117\122\111\124\131\040\103\117\056\054\114  
\124\104\056\061\037\060\035\006\003\125\004\003\014\026\107\104  
\103\101\040\124\162\165\163\164\101\125\124\110\040\122\065\040  
\122\117\117\124

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\142\061\013\060\011\006\003\125\004\006\023\002\103\116\061  
\062\060\060\006\003\125\004\012\014\051\107\125\101\116\107\040  
\104\117\116\107\040\103\105\122\124\111\106\111\103\101\124\105  
\040\101\125\124\110\117\122\111\124\131\040\103\117\056\054\114  
\124\104\056\061\037\060\035\006\003\125\004\003\014\026\107\104  
\103\101\040\124\162\165\163\164\101\125\124\110\040\122\065\040  
\122\117\117\124

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\010\175\011\227\376\360\107\352\172

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\210\060\202\003\160\240\003\002\001\002\002\010\175  
\011\227\376\360\107\352\172\060\015\006\011\052\206\110\206\367  
\015\001\001\013\005\000\060\142\061\013\060\011\006\003\125\004  
\006\023\002\103\116\061\062\060\060\006\003\125\004\012\014\051  
\107\125\101\116\107\040\104\117\116\107\040\103\105\122\124\111  
\106\111\103\101\124\105\040\101\125\124\110\117\122\111\124\131  
\040\103\117\056\054\114\124\104\056\061\037\060\035\006\003\125  
\004\003\014\026\107\104\103\101\040\124\162\165\163\164\101\125  
\124\110\040\122\065\040\122\117\117\124\060\036\027\015\061\064  
\061\061\062\066\060\065\061\063\061\065\132\027\015\064\060\061  
\062\063\061\061\065\065\071\065\071\132\060\142\061\013\060\011  
\006\003\125\004\006\023\002\103\116\061\062\060\060\006\003\125  
\004\012\014\051\107\125\101\116\107\040\104\117\116\107\040\103  
\105\122\124\111\106\111\103\101\124\105\040\101\125\124\110\117  
\122\111\124\131\040\103\117\056\054\114\124\104\056\061\037\060  
\035\006\003\125\004\003\014\026\107\104\103\101\040\124\162\165  
\163\164\101\125\124\110\040\122\065\040\122\117\117\124\060\202  
\002\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005  
\000\003\202\002\017\000\060\202\002\012\002\202\002\001\000\331  
\243\026\360\310\164\164\167\233\357\063\015\073\006\176\125\374  
\265\140\217\166\206\022\102\175\126\146\076\210\202\355\162\143  
\016\236\213\335\064\054\002\121\121\303\031\375\131\124\204\311  
\361\153\263\114\260\351\350\106\135\070\306\242\247\056\021\127  
\272\202\025\242\234\217\155\260\231\112\012\362\353\211\160\143  
\116\171\304\267\133\275\242\135\261\362\101\002\053\255\251\072  
\243\354\171\012\354\137\072\343\375\357\200\074\255\064\233\032  
\253\210\046\173\126\242\202\206\037\353\065\211\203\177\137\256

\051\116\075\266\156\354\256\301\360\047\233\256\343\364\354\357  
\256\177\367\206\075\162\172\353\245\373\131\116\247\353\225\214  
\042\071\171\341\055\010\217\314\274\221\270\101\367\024\301\043  
\251\303\255\232\105\104\263\262\327\054\315\306\051\342\120\020  
\256\134\313\202\216\027\030\066\175\227\346\210\232\260\115\064  
\011\364\054\271\132\146\052\260\027\233\236\036\166\235\112\146  
\061\101\337\077\373\305\006\357\033\266\176\032\106\066\367\144  
\143\073\343\071\030\043\347\147\165\024\325\165\127\222\067\275  
\276\152\033\046\120\362\066\046\006\220\305\160\001\144\155\166  
\146\341\221\333\156\007\300\141\200\056\262\056\057\214\160\247  
\321\073\074\263\221\344\156\266\304\073\160\362\154\222\227\011  
\315\107\175\030\300\363\273\236\017\326\213\256\007\266\132\017  
\316\013\014\107\247\345\076\270\275\175\307\233\065\240\141\227  
\072\101\165\027\314\053\226\167\052\222\041\036\331\225\166\040  
\147\150\317\015\275\337\326\037\011\152\232\342\314\163\161\244  
\057\175\022\200\267\123\060\106\136\113\124\231\017\147\311\245  
\310\362\040\301\202\354\235\021\337\302\002\373\032\073\321\355  
\040\232\357\145\144\222\020\015\052\342\336\160\361\030\147\202  
\214\141\336\270\274\321\057\234\373\017\320\053\355\033\166\271  
\344\071\125\370\370\241\035\270\252\200\000\114\202\347\262\177  
\011\270\274\060\240\057\015\365\122\236\216\367\222\263\012\000  
\035\000\124\227\006\340\261\007\331\307\017\134\145\175\074\155  
\131\127\344\355\245\215\351\100\123\237\025\113\240\161\366\032  
\041\343\332\160\006\041\130\024\207\205\167\171\252\202\171\002  
\003\001\000\001\243\102\060\100\060\035\006\003\125\035\016\004  
\026\004\024\342\311\100\237\115\316\350\232\241\174\317\016\077  
\145\305\051\210\152\031\121\060\017\006\003\125\035\023\001\001  
\377\004\005\060\003\001\001\377\060\016\006\003\125\035\017\001  
\001\377\004\004\003\002\001\206\060\015\006\011\052\206\110\206  
\367\015\001\001\013\005\000\003\202\002\001\000\321\111\127\340  
\247\314\150\130\272\001\017\053\031\315\215\260\141\105\254\021  
\355\143\120\151\370\037\177\276\026\217\375\235\353\013\252\062  
\107\166\322\147\044\355\275\174\063\062\227\052\307\005\206\146  
\015\027\175\024\025\033\324\353\375\037\232\366\136\227\151\267  
\032\045\244\012\263\221\077\137\066\254\213\354\127\250\076\347  
\201\212\030\127\071\205\164\032\102\307\351\133\023\137\217\371  
\010\351\222\164\215\365\107\322\253\073\326\373\170\146\116\066  
\175\371\351\222\351\004\336\375\111\143\374\155\373\024\161\223  
\147\057\107\112\267\271\377\036\052\163\160\106\060\277\132\362  
\057\171\245\341\215\014\331\371\262\143\067\214\067\145\205\160  
\152\134\133\011\162\271\255\143\074\261\335\370\374\062\277\067  
\206\344\273\216\230\047\176\272\037\026\341\160\021\362\003\337  
\045\142\062\047\046\030\062\204\237\377\000\072\023\272\232\115  
\364\117\270\024\160\042\261\312\053\220\316\051\301\160\364\057  
\235\177\362\220\036\326\132\337\267\106\374\346\206\372\313\340  
\040\166\172\272\246\313\365\174\336\142\245\261\213\356\336\202  
\146\212\116\072\060\037\077\200\313\255\047\272\014\136\327\320  
\261\126\312\167\161\262\265\165\241\120\251\100\103\027\302\050

```
\331\317\122\213\133\310\143\324\102\076\240\063\172\106\056\367
\012\040\106\124\176\152\117\061\361\201\176\102\164\070\145\163
\047\356\306\174\270\216\327\245\072\327\230\241\234\214\020\125
\323\333\113\354\100\220\362\315\156\127\322\142\016\174\127\223
\261\247\155\315\235\203\273\052\347\345\266\073\161\130\255\375
\321\105\274\132\221\356\123\025\157\323\105\011\165\156\272\220
\135\036\004\317\067\337\036\250\146\261\214\346\040\152\357\374
\110\116\164\230\102\257\051\157\056\152\307\373\175\321\146\061
\042\314\206\000\176\146\203\014\102\364\275\064\222\303\032\352
\117\312\176\162\115\013\160\214\246\110\273\246\241\024\366\373
\130\104\231\024\256\252\013\223\151\240\051\045\112\245\313\053
\335\212\146\007\026\170\025\127\161\033\354\365\107\204\363\236
\061\067\172\325\177\044\255\344\274\375\375\314\156\203\350\014
\250\267\101\154\007\335\275\074\206\227\057\322
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER

CK\_BBOOL CK\_FALSE

# Trust for "GDCA TrustAUTH R5 ROOT"

# Issuer: CN=GDCA TrustAUTH R5 ROOT,O="GUANG DONG CERTIFICATE AUTHORITY  
CO.,LTD.",C=CN

# Serial Number:7d:09:97:fe:f0:47:ea:7a

# Subject: CN=GDCA TrustAUTH R5 ROOT,O="GUANG DONG CERTIFICATE AUTHORITY  
CO.,LTD.",C=CN

# Not Valid Before: Wed Nov 26 05:13:15 2014

# Not Valid After : Mon Dec 31 15:59:59 2040

# Fingerprint (SHA-256):

BF:FF:8F:D0:44:33:48:7D:6A:8A:A6:0C:1A:29:76:7A:9F:C2:BB:B0:5E:42:0F:71:3A:13:B9:92:89:1D:38:93

# Fingerprint (SHA1): 0F:36:38:5B:81:1A:25:C3:9B:31:4E:83:CA:E9:34:66:70:CC:74:B4

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "GDCA TrustAUTH R5 ROOT"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\017\066\070\133\201\032\045\303\233\061\116\203\312\351\064\146
\160\314\164\264
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\143\314\331\075\064\065\134\157\123\243\342\010\160\110\037\264
```

END

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\142\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\062\060\060\006\003\125\004\012\014\051\107\125\101\116\107\040
\104\117\116\107\040\103\105\122\124\111\106\111\103\101\124\105
```

```
\040\101\125\124\110\117\122\111\124\131\040\103\117\056\054\114
\124\104\056\061\037\060\035\006\003\125\004\003\014\026\107\104
\103\101\040\124\162\165\163\164\101\125\124\110\040\122\065\040
\122\117\117\124
```

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

```
\002\010\175\011\227\376\360\107\352\172
```

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "TrustCor RootCert CA-1"

#

# Issuer: CN=TrustCor RootCert CA-1,OU=TrustCor Certificate Authority,O=TrustCor Systems S. de  
R.L.,L=Panama City,ST=Panama,C=PA

# Serial Number:00:da:9b:ec:71:f3:03:b0:19

# Subject: CN=TrustCor RootCert CA-1,OU=TrustCor Certificate Authority,O=TrustCor  
Systems S. de R.L.,L=Panama City,ST=Panama,C=PA

# Not Valid Before: Thu Feb 04 12:32:16 2016

# Not Valid After : Mon Dec 31 17:23:16 2029

# Fingerprint (SHA-256):

D4:0E:9C:86:CD:8F:E4:68:C1:77:69:59:F4:9E:A7:74:FA:54:86:84:B6:C4:06:F3:90:92:61:F4:DC:E2:57:5C

# Fingerprint (SHA1): FF:BD:CD:E7:82:C8:43:5E:3C:6F:26:86:5C:CA:A8:3A:45:5B:C3:0A

# For Server Distrust After: Wed Nov 30 00:00:00 2022

# For Email Distrust After: Wed Nov 30 00:00:00 2022

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "TrustCor RootCert CA-1"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

```
\060\201\244\061\013\060\011\006\003\125\004\006\023\002\120\101
\061\017\060\015\006\003\125\004\010\014\006\120\141\156\141\155
\141\061\024\060\022\006\003\125\004\007\014\013\120\141\156\141
\155\141\040\103\151\164\171\061\044\060\042\006\003\125\004\012
\014\033\124\162\165\163\164\103\157\162\040\123\171\163\164\145
\155\163\040\123\056\040\144\145\040\122\056\114\056\061\047\060
\045\006\003\125\004\013\014\036\124\162\165\163\164\103\157\162
\040\103\145\162\164\151\146\151\143\141\164\145\040\101\165\164
\150\157\162\151\164\171\061\037\060\035\006\003\125\004\003\014
\026\124\162\165\163\164\103\157\162\040\122\157\157\164\103\145
\162\164\040\103\101\055\061
```

END



CKA\_ID

UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\244\061\013\060\011\006\003\125\004\006\023\002\120\101  
\061\017\060\015\006\003\125\004\010\014\006\120\141\156\141\155  
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CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

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CKA\_VALUE MULTILINE\_OCTAL

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CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER\_MULTILINE\_OCTAL

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END

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER\_MULTILINE\_OCTAL

\062\062\061\061\063\060\060\060\060\060\060\132

END

# Trust for "TrustCor RootCert CA-1"

# Issuer: CN=TrustCor RootCert CA-1,OU=TrustCor Certificate Authority,O=TrustCor Systems S. de R.L.,L=Panama City,ST=Panama,C=PA

#

Serial Number:00:da:9b:ec:71:f3:03:b0:19

# Subject: CN=TrustCor RootCert CA-1,OU=TrustCor Certificate Authority,O=TrustCor Systems S. de R.L.,L=Panama City,ST=Panama,C=PA

# Not Valid Before: Thu Feb 04 12:32:16 2016

# Not Valid After : Mon Dec 31 17:23:16 2029

# Fingerprint (SHA-256):

D4:0E:9C:86:CD:8F:E4:68:C1:77:69:59:F4:9E:A7:74:FA:54:86:84:B6:C4:06:F3:90:92:61:F4:DC:E2:57:5C

# Fingerprint (SHA1): FF:BD:CD:E7:82:C8:43:5E:3C:6F:26:86:5C:CA:A8:3A:45:5B:C3:0A

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "TrustCor RootCert CA-1"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

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END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

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END

CKA\_ISSUER MULTILINE\_OCTAL

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CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\011\000\332\233\354\161\363\003\260\031

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CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

```
#
# Certificate "TrustCor RootCert CA-2"
#
# Issuer: CN=TrustCor RootCert CA-2,OU=TrustCor Certificate Authority,O=TrustCor
Systems S. de R.L.,L=Panama City,ST=Panama,C=PA
# Serial Number:25:a1:df:ca:33:cb:59:02
# Subject: CN=TrustCor RootCert CA-2,OU=TrustCor Certificate Authority,O=TrustCor Systems S. de
R.L.,L=Panama City,ST=Panama,C=PA
# Not Valid Before: Thu Feb 04 12:32:23 2016
# Not Valid After : Sun Dec 31 17:26:39 2034
# Fingerprint (SHA-256):
07:53:E9:40:37:8C:1B:D5:E3:83:6E:39:5D:AE:A5:CB:83:9E:50:46:F1:BD:0E:AE:19:51:CF:10:FE:C7:C9:65
# Fingerprint (SHA1): B8:BE:6D:CB:56:F1:55:B9:63:D4:12:CA:4E:06:34:C7:94:B2:1C:C0
# For Server Distrust After: Wed Nov 30 00:00:00 2022
# For Email Distrust After: Wed Nov 30 00:00:00 2022
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "TrustCor RootCert CA-2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
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CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

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\144\177\133\015\063\011\007\063\173\006\077\021\244\134\160\074  
\205\300\317\343\220\250\203\167\372\333\346\305\214\150\147\020  
\147\245\122\055\360\304\231\217\177\277\321\153\342\265\107\326  
\331\320\205\231\115\224\233\017\113\215\356\000\132\107\035\021  
\003\254\101\030\257\207\267\157\014\072\217\312\317\334\003\301  
\242\011\310\345\375\200\136\310\140\102\001\033\032\123\132\273  
\067\246\267\274\272\204\351\036\154\032\324\144\332\324\103\376  
\223\213\113\362\054\171\026\020\324\223\013\210\217\241\330\206  
\024\106\221\107\233\050\044\357\127\122\116\134\102\234\252\367

```
\111\354\047\350\100\036\263\246\211\042\162\234\365\015\063\264
\130\243\060\073\335\324\152\124\223\276\032\115\363\223\224\367
\374\204\013\077\204\040\134\064\003\104\305\332\255\274\012\301
\002\317\036\345\224\331\363\216\133\330\114\360\235\354\141\027
\273\024\062\124\014\002\051\223\036\222\206\366\177\357\347\222
\005\016\131\335\231\010\056\056\372\234\000\122\323\305\146\051
\344\247\227\104\244\016\050\201\023\065\305\366\157\144\346\101
\304\325\057\314\064\105\045\317\101\000\226\075\112\056\302\226
\230\117\116\112\234\227\267\333\037\222\062\310\377\017\121\156
\326\354\011
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER MULTILINE\_OCTAL

\062\062\061\061\063\060\060\060\060\060\060\060\132

END

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER

MULTILINE\_OCTAL

\062\062\061\061\063\060\060\060\060\060\060\060\132

END

# Trust for "TrustCor RootCert CA-2"

# Issuer: CN=TrustCor RootCert CA-2,OU=TrustCor Certificate Authority,O=TrustCor Systems S. de  
R.L.,L=Panama City,ST=Panama,C=PA

# Serial Number:25:a1:df:ca:33:cb:59:02

# Subject: CN=TrustCor RootCert CA-2,OU=TrustCor Certificate Authority,O=TrustCor Systems S. de  
R.L.,L=Panama City,ST=Panama,C=PA

# Not Valid Before: Thu Feb 04 12:32:23 2016

# Not Valid After : Sun Dec 31 17:26:39 2034

# Fingerprint (SHA-256):

07:53:E9:40:37:8C:1B:D5:E3:83:6E:39:5D:AE:A5:CB:83:9E:50:46:F1:BD:0E:AE:19:51:CF:10:FE:C7:C9:65

# Fingerprint (SHA1): B8:BE:6D:CB:56:F1:55:B9:63:D4:12:CA:4E:06:34:C7:94:B2:1C:C0

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "TrustCor RootCert CA-2"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\270\276\155\313\126\361\125\271\143\324\022\312\116\006\064\307  
\224\262\034\300

END

CKA\_CERT\_MD5\_HASH

MULTILINE\_OCTAL

\242\341\370\030\013\272\105\325\307\101\052\273\067\122\105\144

END

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\244\061\013\060\011\006\003\125\004\006\023\002\120\101  
\061\017\060\015\006\003\125\004\010\014\006\120\141\156\141\155

```
\141\061\024\060\022\006\003\125\004\007\014\013\120\141\156\141
\155\141\040\103\151\164\171\061\044\060\042\006\003\125\004\012
\014\033\124\162\165\163\164\103\157\162\040\123\171\163\164\145
\155\163\040\123\056\040\144\145\040\122\056\114\056\061\047\060
\045\006\003\125\004\013\014\036\124\162\165\163\164\103\157\162
\040\103\145\162\164\151\146\151\143\141\164\145\040\101\165\164
\150\157\162\151\164\171\061\037\060\035\006\003\125\004\003\014
\026\124\162\165\163\164\103\157\162\040\122\157\157\164\103\145
\162\164\040\103\101\055\062
```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

```
\002\010\045\241\337\312\063\313\131\002
```

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST

CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "TrustCor ECA-1"

#

# Issuer: CN=TrustCor ECA-1,OU=TrustCor Certificate Authority,O=TrustCor Systems S. de R.L.,L=Panama City,ST=Panama,C=PA

# Serial Number:00:84:82:2c:5f:1c:62:d0:40

# Subject: CN=TrustCor ECA-1,OU=TrustCor Certificate Authority,O=TrustCor Systems S. de R.L.,L=Panama City,ST=Panama,C=PA

# Not Valid Before: Thu Feb 04 12:32:33 2016

# Not Valid After : Mon Dec 31 17:28:07 2029

# Fingerprint (SHA-256):

5A:88:5D:B1:9C:01:D9:12:C5:75:93:88:93:8C:AF:BB:DF:03:1A:B2:D4:8E:91:EE:15:58:9B:42:97:1D:03:9C

# Fingerprint (SHA1): 58:D1:DF:95:95:67:6B:63:C0:F0:5B:1C:17:4D:8B:84:0B:C8:78:BD

# For Server Distrust After: Wed Nov 30 00:00:00 2022

# For Email Distrust After: Wed Nov 30 00:00:00 2022

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8

"TrustCor ECA-1"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

```
\060\201\234\061\013\060\011\006\003\125\004\006\023\002\120\101
\061\017\060\015\006\003\125\004\010\014\006\120\141\156\141\155
\141\061\024\060\022\006\003\125\004\007\014\013\120\141\156\141
\155\141\040\103\151\164\171\061\044\060\042\006\003\125\004\012
\014\033\124\162\165\163\164\103\157\162\040\123\171\163\164\145
\155\163\040\123\056\040\144\145\040\122\056\114\056\061\047\060
```



\045\006\003\125\004\013\014\036\124\162\165\163\164\103\157\162  
\040\103\145\162\164\151\146\151\143\141\164\145\040\101\165\164  
\150\157\162\151\164\171\061\027\060\025\006\003\125\004\003\014  
\016\124\162\165\163\164\103\157\162\040\105\103\101\055\061

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\234\061\013\060\011\006\003\125\004\006\023\002\120\101  
\061\017\060\015\006\003\125\004\010\014\006\120\141\156\141\155  
\141\061\024\060\022\006\003\125\004\007\014\013\120\141\156\141  
\155\141\040\103\151\164\171\061\044\060\042\006\003\125\004\012  
\014\033\124\162\165\163\164\103\157\162\040\123\171\163\164\145  
\155\163\040\123\056\040\144\145\040\122\056\114\056\061\047\060  
\045\006\003\125\004\013\014\036\124\162\165\163\164\103\157\162  
\040\103\145\162\164\151\146\151\143\141\164\145\040\101\165\164  
\150\157\162\151\164\171\061\027\060\025\006\003\125\004\003\014  
\016\124\162\165\163\164\103\157\162\040\105\103\101\055\061

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\011\000\204\202\054\137\034\142\320\100

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\004\040\060\202\003\010\240\003\002\001\002\002\011\000  
\204\202\054\137\034\142\320\100\060\015\006\011\052\206\110\206  
\367\015\001\001\013\005\000\060\201\234\061\013\060\011\006\003  
\125\004\006\023\002\120\101\061\017\060\015\006\003\125\004\010  
\014\006\120\141\156\141\155\141\061\024\060\022\006\003\125\004  
\007\014\013\120\141\156\141\155\141\040\103\151\164\171\061\044  
\060\042\006\003\125\004\012\014\033\124\162\165\163\164\103\157  
\162\040\123\171\163\164\145\155\163\040\123\056\040\144\145\040  
\122\056\114\056\061\047\060\045\006\003\125\004\013\014\036\124  
\162\165\163\164\103\157\162\040\103\145\162\164\151\146\151\143  
\141\164\145\040\101\165\164\150\157\162\151\164\171\061\027\060  
\025\006\003\125\004\003\014\016\124\162\165\163\164\103\157\162  
\040\105\103\101\055\061\060\036\027\015\061\066\060\062\060\064  
\061\062\063\062\063\063\132\027\015\062\071\061\062\063\061\061  
\067\062\070\060\067\132\060\201\234\061\013\060\011\006\003\125  
\004\006\023\002\120\101\061\017\060\015\006\003\125\004\010\014  
\006\120\141\156\141\155\141\061\024\060\022\006\003\125\004\007  
\014\013\120\141\156\141\155\141\040\103\151\164\171\061\044\060  
\042\006\003\125\004\012\014\033\124\162\165\163\164\103\157\162  
\040\123\171\163\164\145\155\163\040\123\056\040\144\145\040\122  
\056\114\056\061\047\060\045\006\003\125\004\013\014\036\124\162  
\165\163\164\103\157\162\040\103\145\162\164\151\146\151\143\141  
\164\145\040\101\165\164\150\157\162\151\164\171\061\027\060\025  
\006\003\125\004\003\014\016\124\162\165\163\164\103\157\162\040  
\105\103\101\055\061\060\202\001\042\060\015\006\011\052\206\110

\206\367\015\001\001\001\005\000\003\202\001\017\000\060\202\001  
\012\002\202\001\001\000\317\217\340\021\265\237\250\166\166\333  
\337\017\124\357\163\143\051\202\255\107\306\243\153\355\376\137  
\063\370\103\121\351\032\063\221\061\027\240\164\304\324\247\001  
\346\262\222\076\152\235\355\016\371\164\230\100\323\077\003\200  
\006\202\100\350\261\342\247\121\247\035\203\046\153\253\336\372  
\027\221\053\330\306\254\036\261\236\031\001\325\227\246\352\015  
\267\304\125\037\047\174\322\010\325\166\037\051\025\207\100\071  
\335\070\105\021\165\320\232\247\064\340\277\315\310\122\035\271  
\107\176\015\270\273\306\014\366\163\127\026\132\176\103\221\037  
\125\072\306\155\104\004\252\234\251\234\247\114\211\027\203\256  
\243\004\136\122\200\213\036\022\045\021\031\327\014\175\175\061  
\104\101\352\333\257\260\034\357\201\320\054\305\232\041\233\075  
\355\102\073\120\046\362\354\316\161\141\006\142\041\124\116\177  
\301\235\076\177\040\214\200\313\052\330\227\142\310\203\063\221  
\175\260\242\132\017\127\350\073\314\362\045\262\324\174\057\354  
\115\306\241\072\025\172\347\266\135\065\365\366\110\112\066\105  
\146\324\272\230\130\301\002\003\001\000\001\243\143\060\141\060  
\035\006\003\125\035\016\004\026\004\024\104\236\110\365\314\155  
\110\324\240\113\177\376\131\044\057\203\227\231\232\206\060\037  
\006\003\125\035\043\004\030\060\026\200\024\104\236\110\365\314  
\155\110\324\240\113\177\376\131\044\057\203\227\231\232\206\060  
\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377  
\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001\206  
\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\003  
\202\001\001\000\005\076\065\134\025\160\233\311\307\163\141\157  
\162\053\324\302\217\362\103\135\002\316\304\224\271\224\021\203  
\147\135\342\147\154\165\166\277\273\014\252\066\306\255\107\223  
\143\334\036\176\326\336\056\376\351\031\062\070\003\177\024\366  
\000\163\054\131\261\041\006\341\373\254\030\225\014\243\377\231  
\226\367\053\047\233\325\044\314\035\335\301\072\340\230\104\260  
\304\344\076\167\261\163\251\144\054\366\034\001\174\077\135\105  
\205\300\205\347\045\217\225\334\027\363\074\237\032\156\260\312  
\343\035\052\351\114\143\372\044\141\142\326\332\176\266\034\154  
\365\002\035\324\052\335\125\220\353\052\021\107\074\056\136\164  
\262\202\042\245\175\123\037\105\354\047\221\175\347\042\026\350  
\300\150\066\330\306\361\117\200\104\062\371\341\321\321\035\252  
\336\250\253\234\004\257\255\040\016\144\230\115\245\153\300\110  
\130\226\151\115\334\007\214\121\223\242\337\237\017\075\213\140  
\264\202\215\252\010\116\142\105\340\371\013\322\340\340\074\133  
\336\134\161\047\045\302\346\003\201\213\020\123\343\307\125\242  
\264\237\327\346

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRUST\_AFTER\_MULTILINE\_OCTAL

\062\062\061\061\063\060\060\060\060\060\060\060\132

END

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER  
MULTILINE\_OCTAL  
\062\062\061\061\063\060\060\060\060\060\060\132  
END

# Trust for "TrustCor ECA-1"  
# Issuer: CN=TrustCor ECA-1,OU=TrustCor Certificate Authority,O=TrustCor Systems S. de R.L.,L=Panama  
City,ST=Panama,C=PA  
# Serial Number:00:84:82:2c:5f:1c:62:d0:40  
# Subject: CN=TrustCor ECA-1,OU=TrustCor Certificate Authority,O=TrustCor Systems S. de R.L.,L=Panama  
City,ST=Panama,C=PA  
# Not Valid Before: Thu Feb 04 12:32:33 2016  
# Not Valid After : Mon Dec 31 17:28:07 2029  
# Fingerprint (SHA-256):  
5A:88:5D:B1:9C:01:D9:12:C5:75:93:88:93:8C:AF:BB:DF:03:1A:B2:D4:8E:91:EE:15:58:9B:42:97:1D:03:9C  
# Fingerprint (SHA1): 58:D1:DF:95:95:67:6B:63:C0:F0:5B:1C:17:4D:8B:84:0B:C8:78:BD

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST  
CKA\_TOKEN CK\_BBOOL CK\_TRUE  
CKA\_PRIVATE CK\_BBOOL CK\_FALSE  
CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE  
CKA\_LABEL UTF8 "TrustCor ECA-1"  
CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL  
\130\321\337\225\225\147\153\143\300\360\133\034\027\115\213\204  
\013\310\170\275  
END

CKA\_CERT\_MD5\_HASH  
MULTILINE\_OCTAL  
\047\222\043\035\012\365\100\174\351\346\153\235\330\365\347\154  
END

CKA\_ISSUER MULTILINE\_OCTAL  
\060\201\234\061\013\060\011\006\003\125\004\006\023\002\120\101  
\061\017\060\015\006\003\125\004\010\014\006\120\141\156\141\155  
\141\061\024\060\022\006\003\125\004\007\014\013\120\141\156\141  
\155\141\040\103\151\164\171\061\044\060\042\006\003\125\004\012  
\014\033\124\162\165\163\164\103\157\162\040\123\171\163\164\145  
\155\163\040\123\056\040\144\145\040\122\056\114\056\061\047\060  
\045\006\003\125\004\013\014\036\124\162\165\163\164\103\157\162  
\040\103\145\162\164\151\146\151\143\141\164\145\040\101\165\164  
\150\157\162\151\164\171\061\027\060\025\006\003\125\004\003\014  
\016\124\162\165\163\164\103\157\162\040\105\103\101\055\061  
END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL  
\002\011\000\204\202\054\137\034\142\320\100  
END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR  
CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR  
CKA\_TRUST\_CODE\_SIGNING

```

CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "SSL.com Root Certification Authority RSA"
#
# Issuer: CN=SSL.com Root Certification Authority RSA,O=SSL Corporation,L=Houston,ST=Texas,C=US
# Serial Number:7b:2c:9b:d3:16:80:32:99
# Subject: CN=SSL.com Root Certification Authority RSA,O=SSL Corporation,L=Houston,ST=Texas,C=US
# Not Valid Before: Fri Feb 12 17:39:39 2016
# Not Valid After : Tue Feb 12 17:39:39 2041
# Fingerprint (SHA-256):
85:66:6A:56:2E:E0:BE:5C:E9:25:C1:D8:89:0A:6F:76:A8:7E:C1:6D:4D:7D:5F:29:EA:74:19:CF:20:12:3B:69
# Fingerprint (SHA1): B7:AB:33:08:D1:EA:44:77:BA:14:80:12:5A:6F:BD:A9:36:49:0C:BB
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "SSL.com Root Certification Authority RSA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\174\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\016\060\014\006\003\125\004\010\014\005\124\145\170\141\163\061
\020\060\016\006\003\125\004\007\014\007\110\157\165\163\164\157
\156\061\030\060\026\006\003\125\004\012\014\017\123\123\114\040
\103\157\162\160\157\162\141\164\151\157\156\061\061\060\057\006
\003\125\004\003\014\050\123\123\114\056\143\157\155\040\122\157
\157\164\040\103\145\162\164\151\146\151\143\141\164\151\157\156
\040\101\165\164\150\157\162\151\164\171\040\122\123\101
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\174\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\016\060\014\006\003\125\004\010\014\005\124\145\170\141\163\061
\020\060\016\006\003\125\004\007\014\007\110\157\165\163\164\157
\156\061\030\060\026\006\003\125\004\012\014\017\123\123\114\040
\103\157\162\160\157\162\141\164\151\157\156\061\061\060\057\006
\003\125\004\003\014\050\123\123\114\056\143\157\155\040\122\157
\157\164\040\103\145\162\164\151\146\151\143\141\164\151\157\156
\040\101\165\164\150\157\162\151\164\171\040\122\123\101
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\010\173\054\233\323\026\200\062\231
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\335\060\202\003\305\240\003\002\001\002\002\010\173

```

\054\233\323\026\200\062\231\060\015\006\011\052\206\110\206\367  
\015\001\001\013\005\000\060\174\061\013\060\011\006\003\125\004  
\006\023\002\125\123\061\016\060\014\006\003\125\004\010\014\005  
\124\145\170\141\163\061\020\060\016\006\003\125\004\007\014\007  
\110\157\165\163\164\157\156\061\030\060\026\006\003\125\004\012  
\014\017\123\123\114\040\103\157\162\160\157\162\141\164\151\157  
\156\061\061\060\057\006\003\125\004\003\014\050\123\123\114\056  
\143\157\155\040\122\157\157\164\040\103\145\162\164\151\146\151  
\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171  
\040\122\123\101\060\036\027\015\061\066\060\062\061\062\061\067  
\063\071\063\071\132\027\015\064\061\060\062\061\062\061\067\063  
\071\063\071\132\060\174\061\013\060\011\006\003\125\004\006\023  
\002\125\123\061\016\060\014\006\003\125\004\010\014\005\124\145  
\170\141\163\061\020\060\016\006\003\125\004\007\014\007\110\157  
\165\163\164\157\156\061\030\060\026\006\003\125\004\012\014\017  
\123\123\114\040\103\157\162\160\157\162\141\164\151\157\156\061  
\061\060\057\006\003\125\004\003\014\050\123\123\114\056\143\157  
\155\040\122\157\157\164\040\103\145\162\164\151\146\151\143\141  
\164\151\157\156\040\101\165\164\150\157\162\151\164\171\040\122  
\123\101\060\202\002\042\060\015\006\011\052\206\110\206\367\015  
\001\001\001\005\000\003\202\002\017\000\060\202\002\012\002\202  
\002\001\000\371\017\335\243\053\175\313\320\052\376\354\147\205  
\246\347\056\033\272\167\341\343\365\257\244\354\372\112\135\221  
\304\127\107\153\030\167\153\166\362\375\223\344\075\017\302\026  
\236\013\146\303\126\224\236\027\203\205\316\126\357\362\026\375  
\000\142\365\042\011\124\350\145\027\116\101\271\340\117\106\227  
\252\033\310\270\156\142\136\151\261\137\333\052\002\176\374\154  
\312\363\101\330\355\320\350\374\077\141\110\355\260\003\024\035  
\020\016\113\031\340\273\116\354\206\145\377\066\363\136\147\002  
\013\235\206\125\141\375\172\070\355\376\342\031\000\267\157\241  
\120\142\165\164\074\240\372\310\045\222\264\156\172\042\307\370  
\036\241\343\262\335\221\061\253\053\035\004\377\245\112\004\067  
\351\205\244\063\053\375\342\326\125\064\174\031\244\112\150\307  
\262\250\323\267\312\241\223\210\353\301\227\274\214\371\035\331  
\042\204\044\164\307\004\075\152\251\051\223\314\353\270\133\341  
\376\137\045\252\064\130\310\301\043\124\235\033\230\021\303\070  
\234\176\075\206\154\245\017\100\206\174\002\364\134\002\117\050  
\313\256\161\237\017\072\310\063\376\021\045\065\352\374\272\305  
\140\075\331\174\030\325\262\251\323\165\170\003\162\042\312\072  
\303\037\357\054\345\056\251\372\236\054\266\121\106\375\257\003  
\326\352\140\150\352\205\026\066\153\205\351\036\300\263\335\304  
\044\334\200\052\201\101\155\224\076\310\340\311\201\101\000\236  
\136\277\177\305\010\230\242\030\054\102\100\263\371\157\070\047  
\113\116\200\364\075\201\107\340\210\174\352\034\316\265\165\134  
\121\056\034\053\177\032\162\050\347\000\265\321\164\306\327\344  
\237\255\007\223\266\123\065\065\374\067\344\303\366\135\026\276  
\041\163\336\222\012\370\240\143\152\274\226\222\152\076\370\274  
\145\125\233\336\365\015\211\046\004\374\045\032\246\045\151\313

\302\155\312\174\342\131\137\227\254\353\357\056\310\274\327\033  
\131\074\053\314\362\031\310\223\153\047\143\031\317\374\351\046  
\370\312\161\233\177\223\376\064\147\204\116\231\353\374\263\170  
\011\063\160\272\146\246\166\355\033\163\353\032\245\015\304\042  
\023\040\224\126\012\116\054\154\116\261\375\317\234\011\272\242  
\063\355\207\002\003\001\000\001\243\143\060\141\060\035\006\003  
\125\035\016\004\026\004\024\335\004\011\007\242\365\172\175\122  
\123\022\222\225\356\070\200\045\015\246\131\060\017\006\003\125  
\035\023\001\001\377\004\005\060\003\001\001\377\060\037\006\003  
\125\035\043\004\030\060\026\200\024\335\004\011\007\242\365\172  
\175\122\123\022\222\225\356\070\200\045\015\246\131\060\016\006  
\003\125\035\017\001\001\377\004\004\003\002\001\206\060\015\006  
\011\052\206\110\206\367\015\001\001\013\005\000\003\202\002\001  
\000\040\030\021\224\051\373\046\235\034\036\036\160\141\361\225  
\162\223\161\044\255\150\223\130\216\062\257\033\263\160\003\374  
\045\053\164\205\220\075\170\152\364\271\213\245\227\073\265\030  
\221\273\036\247\371\100\133\221\371\125\231\257\036\021\320\134  
\035\247\146\343\261\224\007\014\062\071\246\352\033\260\171\330  
\035\234\160\104\343\212\335\304\371\225\037\212\070\103\077\001  
\205\245\107\247\075\106\262\274\345\042\150\367\173\234\330\054  
\076\012\041\310\055\063\254\277\305\201\231\061\164\301\165\161  
\305\276\261\360\043\105\364\235\153\374\031\143\235\243\274\004  
\306\030\013\045\273\123\211\017\263\200\120\336\105\356\104\177  
\253\224\170\144\230\323\366\050\335\207\330\160\145\164\373\016  
\271\023\353\247\017\141\251\062\226\314\336\273\355\143\114\030  
\273\251\100\367\240\124\156\040\210\161\165\030\352\172\264\064  
\162\340\043\047\167\134\266\220\352\206\045\100\253\357\063\017  
\313\237\202\276\242\040\373\366\265\055\032\346\302\205\261\164  
\017\373\310\145\002\244\122\001\107\335\111\042\301\277\330\353  
\153\254\176\336\354\143\063\025\267\043\010\217\306\017\215\101  
\132\335\216\305\271\217\345\105\077\170\333\272\322\033\100\261  
\376\161\115\077\340\201\242\272\136\264\354\025\340\223\335\010  
\037\176\341\125\231\013\041\336\223\236\012\373\346\243\111\275  
\066\060\376\347\167\262\240\165\227\265\055\201\210\027\145\040  
\367\332\220\000\237\311\122\314\062\312\065\174\365\075\017\330  
\053\327\365\046\154\311\006\064\226\026\352\160\131\032\062\171  
\171\013\266\210\177\017\122\110\075\277\154\330\242\104\056\321  
\116\267\162\130\323\211\023\225\376\104\253\370\327\213\033\156  
\234\274\054\240\133\325\152\000\257\137\067\341\325\372\020\013  
\230\234\206\347\046\217\316\360\354\156\212\127\013\200\343\116  
\262\300\240\143\141\220\272\125\150\067\164\152\266\222\333\237  
\241\206\042\266\145\047\016\354\266\237\102\140\344\147\302\265  
\332\101\013\304\323\213\141\033\274\372\037\221\053\327\104\007  
\136\272\051\254\331\305\351\357\123\110\132\353\200\361\050\130  
\041\315\260\006\125\373\047\077\123\220\160\251\004\036\127\047  
\271

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

```

CK_BBOOL CK_TRUE
CKA_NSS_SERVER_DISTRUST_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRUST_AFTER CK_BBOOL CK_FALSE

# Trust for "SSL.com Root Certification Authority RSA"
# Issuer: CN=SSL.com Root Certification Authority RSA,O=SSL Corporation,L=Houston,ST=Texas,C=US
# Serial Number:7b:2c:9b:d3:16:80:32:99
# Subject: CN=SSL.com Root Certification Authority RSA,O=SSL Corporation,L=Houston,ST=Texas,C=US
# Not Valid Before: Fri Feb 12 17:39:39 2016
# Not Valid After : Tue Feb 12 17:39:39 2041
# Fingerprint (SHA-256):
85:66:6A:56:2E:E0:BE:5C:E9:25:C1:D8:89:0A:6F:76:A8:7E:C1:6D:4D:7D:5F:29:EA:74:19:CF:20:12:3B:69
# Fingerprint (SHA1): B7:AB:33:08:D1:EA:44:77:BA:14:80:12:5A:6F:BD:A9:36:49:0C:BB
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN
CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "SSL.com Root Certification Authority RSA"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\267\253\063\010\321\352\104\167\272\024\200\022\132\157\275\251
\066\111\014\273
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\206\151\022\300\160\361\354\254\254\302\325\274\245\133\241\051
END
CKA_ISSUER MULTILINE_OCTAL
\060\174\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\016\060\014\006\003\125\004\010\014\005\124\145\170\141\163\061
\020\060\016\006\003\125\004\007\014\007\110\157\165\163\164\157
\156\061\030\060\026\006\003\125\004\012\014\017\123\123\114\040
\103\157\162\160\157\162\141\164\151\157\156\061\061\060\057\006
\003\125\004\003\014\050\123\123\114\056\143\157\155\040\122\157
\157\164\040\103\145\162\164\151\146\151\143\141\164\151\157\156
\040\101\165\164\150\157\162\151\164\171\040\122\123\101
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\010\173\054\233\323\026\200\062\231
END
CKA_TRUST_SERVER_AUTH
CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "SSL.com Root Certification Authority ECC"
#

```

```
# Issuer: CN=SSL.com Root Certification Authority ECC,O=SSL Corporation,L=Houston,ST=Texas,C=US
# Serial Number:75:e6:df:cb:c1:68:5b:a8
# Subject: CN=SSL.com Root Certification Authority ECC,O=SSL Corporation,L=Houston,ST=Texas,C=US
# Not Valid Before: Fri Feb 12 18:14:03 2016
# Not Valid After : Tue Feb 12 18:14:03 2041
# Fingerprint (SHA-256):
34:17:BB:06:CC:60:07:DA:1B:96:1C:92:0B:8A:B4:CE:3F:AD:82:0E:4A:A3:0B:9A:CB:C4:A7:4E:BD:CE:BC:65
# Fingerprint (SHA1): C3:19:7C:39:24:E6:54:AF:1B:C4:AB:20:95:7A:E2:C3:0E:13:02:6A
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "SSL.com Root Certification Authority ECC"
CKA_CERTIFICATE_TYPE
CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\174\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\016\060\014\006\003\125\004\010\014\005\124\145\170\141\163\061
\020\060\016\006\003\125\004\007\014\007\110\157\165\163\164\157
\156\061\030\060\026\006\003\125\004\012\014\017\123\123\114\040
\103\157\162\160\157\162\141\164\151\157\156\061\061\060\057\006
\003\125\004\003\014\050\123\123\114\056\143\157\155\040\122\157
\157\164\040\103\145\162\164\151\146\151\143\141\164\151\157\156
\040\101\165\164\150\157\162\151\164\171\040\105\103\103
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\174\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\016\060\014\006\003\125\004\010\014\005\124\145\170\141\163\061
\020\060\016\006\003\125\004\007\014\007\110\157\165\163\164\157
\156\061\030\060\026\006\003\125\004\012\014\017\123\123\114\040
\103\157\162\160\157\162\141\164\151\157\156\061\061\060\057\006
\003\125\004\003\014\050\123\123\114\056\143\157\155\040\122\157
\157\164\040\103\145\162\164\151\146\151\143\141\164\151\157\156
\040\101\165\164\150\157\162\151\164\171\040\105\103\103
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\010\165\346\337\313\301\150\133\250
END
CKA_VALUE MULTILINE_OCTAL
\060\202\002\215\060\202\002\024\240\003\002\001\002\002\010\165
\346\337\313\301\150\133\250\060\012\006\010\052\206\110\316\075
\004\003\002\060\174\061\013\060\011\006\003\125\004\006\023\002
\125\123\061\016\060\014\006\003\125\004\010\014\005\124\145\170
\141\163\061\020\060\016\006\003\125\004\007\014\007\110\157\165
\163\164\157\156\061\030\060\026\006\003\125\004\012\014\017\123
\123\114\040\103\157\162\160\157\162\141\164\151\157\156\061\061
```



\060\057\006\003\125\004\003\014\050\123\123\114\056\143\157\155  
\040\122\157\157\164\040\103\145\162\164\151\146\151\143\141\164  
\151\157\156\040\101\165\164\150\157\162\151\164\171\040\105\103  
\103\060\036\027\015\061\066\060\062\061\062\061\070\061\064\060\060  
\063\132\027\015\064\061\060\062\061\062\061\070\061\064\060\063  
\132\060\174\061\013\060\011\006\003\125\004\006\023\002\125\123  
\061\016\060\014\006\003\125\004\010\014\005\124\145\170\141\163  
\061\020\060\016\006\003\125\004\007\014\007\110\157\165\163\164  
\157\156\061\030\060\026\006\003\125\004\012\014\017\123\123\114  
\040\103\157\162\160\157\162\141\164\151\157\156\061\061\060\057  
\006\003\125\004\003\014\050\123\123\114\056\143\157\155\040\122  
\157\157\164\040\103\145\162\164\151\146\151\143\141\164\151\157  
\156\040\101\165\164\150\157\162\151\164\171\040\105\103\103\060  
\166\060\020\006\007\052\206\110\316\075\002\001\006\005\053\201  
\004\000\042\003\142\000\004\105\156\251\120\304\246\043\066\236  
\137\050\215\027\313\226\042\144\077\334\172\216\035\314\010\263  
\242\161\044\272\216\111\271\004\033\107\226\130\253\055\225\310  
\355\236\010\065\310\047\353\211\214\123\130\353\142\212\376\360  
\133\017\153\061\122\143\101\073\211\315\354\354\266\215\031\323  
\064\007\334\273\306\006\177\302\105\225\354\313\177\250\043\340  
\011\351\201\372\363\107\323\243\143\060\141\060\035\006\003\125  
\035\016\004\026\004\024\202\321\205\163\060\347\065\004\323\216  
\002\222\373\345\244\321\304\041\350\315\060\017\006\003\125\035  
\023\001\001\377\004\005\060\003\001\001\377\060\037\006\003\125  
\035\043\004\030\060\026\200\024\202\321\205\163\060\347\065\004  
\323\216\002\222\373\345\244\321\304\041\350\315\060\016\006\003  
\125\035\017\001\001\377\004\004\003\002\001\206\060\012\006\010  
\052\206\110\316\075\004\003\002\003\147\000\060\144\002\060\157  
\347\353\131\021\244\140\317\141\260\226\173\355\005\371\057\023  
\221\334\355\345\374\120\153\021\106\106\263\034\041\000\142\273  
\276\303\347\350\315\007\231\371\015\013\135\162\076\304\252\002  
\060\037\274\272\013\342\060\044\373\174\155\200\125\012\231\076  
\200\015\063\345\146\243\263\243\273\245\325\213\217\011\054\246  
\135\176\342\360\007\010\150\155\322\174\151\156\137\337\345\152  
\145

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER

CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "SSL.com Root Certification Authority ECC"

# Issuer: CN=SSL.com Root Certification Authority ECC,O=SSL Corporation,L=Houston,ST=Texas,C=US

# Serial Number:75:e6:df:cb:c1:68:5b:a8

# Subject: CN=SSL.com Root Certification Authority ECC,O=SSL Corporation,L=Houston,ST=Texas,C=US

# Not Valid Before: Fri Feb 12 18:14:03 2016

# Not Valid After : Tue Feb 12 18:14:03 2041

```

# Fingerprint (SHA-256):
34:17:BB:06:CC:60:07:DA:1B:96:1C:92:0B:8A:B4:CE:3F:AD:82:0E:4A:A3:0B:9A:CB:C4:A7:4E:BD:CE:BC:65
# Fingerprint (SHA1): C3:19:7C:39:24:E6:54:AF:1B:C4:AB:20:95:7A:E2:C3:0E:13:02:6A
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "SSL.com Root Certification Authority ECC"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\303\031\174\071\044\346\124\257\033\304\253\040\225\172\342\303
\016\023\002\152
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\056\332\344\071\177\234\217\067\321\160\237\046\027\121\072\216
END
CKA_ISSUER
MULTILINE_OCTAL
\060\174\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\016\060\014\006\003\125\004\010\014\005\124\145\170\141\163\061
\020\060\016\006\003\125\004\007\014\007\110\157\165\163\164\157
\156\061\030\060\026\006\003\125\004\012\014\017\123\123\114\040
\103\157\162\160\157\162\141\164\151\157\156\061\061\060\057\006
\003\125\004\003\014\050\123\123\114\056\143\157\155\040\122\157
\157\164\040\103\145\162\164\151\146\151\143\141\164\151\157\156
\040\101\165\164\150\157\162\151\164\171\040\105\103\103
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\010\165\346\337\313\301\150\133\250
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "SSL.com EV Root Certification Authority RSA R2"
#
# Issuer: CN=SSL.com EV Root
Certification Authority RSA R2,O=SSL Corporation,L=Houston,ST=Texas,C=US
# Serial Number:56:b6:29:cd:34:bc:78:f6
# Subject: CN=SSL.com EV Root Certification Authority RSA R2,O=SSL
Corporation,L=Houston,ST=Texas,C=US
# Not Valid Before: Wed May 31 18:14:37 2017
# Not Valid After : Fri May 30 18:14:37 2042
# Fingerprint (SHA-256):
2E:7B:F1:6C:C2:24:85:A7:BB:E2:AA:86:96:75:07:61:B0:AE:39:BE:3B:2F:E9:D0:CC:6D:4E:F7:34:91:42:5C
# Fingerprint (SHA1): 74:3A:F0:52:9B:D0:32:A0:F4:4A:83:CD:D4:BA:A9:7B:7C:2E:C4:9A
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

```

```
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "SSL.com EV Root Certification Authority RSA R2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\202\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\016\060\014\006\003\125\004\010\014\005\124\145\170\141\163
\061\020\060\016\006\003\125\004\007\014\007\110\157\165\163\164
\157\156\061\030\060\026\006\003\125\004\012\014\017\123\123\114
\040\103\157\162\160\157\162\141\164\151\157\156\061\067\060\065
\006\003\125\004\003\014\056\123\123\114\056\143\157\155\040\105
\126\040\122\157\157\164\040\103\145\162\164\151\146\151\143\141
\164\151\157\156\040\101\165\164\150\157\162\151\164\171\040\122
\123\101\040\122\062
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\202\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\016\060\014\006\003\125\004\010\014\005\124\145\170\141\163
\061\020\060\016\006\003\125\004\007\014\007\110\157\165\163\164
\157\156\061\030\060\026\006\003\125\004\012\014\017\123\123\114
\040\103\157\162\160\157\162\141\164\151\157\156\061\067\060\065
\006\003\125\004\003\014\056\123\123\114\056\143\157\155\040\105
\126\040\122\157\157\164\040\103\145\162\164\151\146\151\143\141
\164\151\157\156\040\101\165\164\150\157\162\151\164\171\040\122
\123\101\040\122\062
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\010\126\266\051\315\064\274\170\366
END
CKA_VALUE
MULTILINE_OCTAL
\060\202\005\353\060\202\003\323\240\003\002\001\002\002\010\126
\266\051\315\064\274\170\366\060\015\006\011\052\206\110\206\367
\015\001\001\013\005\000\060\201\202\061\013\060\011\006\003\125
\004\006\023\002\125\123\061\016\060\014\006\003\125\004\010\014
\005\124\145\170\141\163\061\020\060\016\006\003\125\004\007\014
\007\110\157\165\163\164\157\156\061\030\060\026\006\003\125\004
\012\014\017\123\123\114\040\103\157\162\160\157\162\141\164\151
\157\156\061\067\060\065\006\003\125\004\003\014\056\123\123\114
\056\143\157\155\040\105\126\040\122\157\157\164\040\103\145\162
\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157
\162\151\164\171\040\122\123\101\040\122\062\060\036\027\015\061
\067\060\065\063\061\061\070\061\064\063\067\132\027\015\064\062
\060\065\063\060\061\070\061\064\063\067\132\060\201\202\061\013
\060\011\006\003\125\004\006\023\002\125\123\061\016\060\014\006
```

\003\125\004\010\014\005\124\145\170\141\163\061\020\060\016\006  
\003\125\004\007\014\007\110\157\165\163\164\157\156\061\030\060  
\026\006\003\125\004\012\014\017\123\123\114\040\103\157\162\160  
\157\162\141\164\151\157\156\061\067\060\065\006\003\125\004\003  
\014\056\123\123\114\056\143\157\155\040\105\126\040\122\157\157  
\164\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040  
\101\165\164\150\157\162\151\164\171\040\122\123\101\040\122\062  
\060\202\002\042\060\015\006\011\052\206\110\206\367\015\001\001  
\001\005\000\003\202\002\017\000\060\202\002\012\002\202\002\001  
\000\217\066\145\100\341\326\115\300\327\264\351\106\332\153\352  
\063\107\315\114\371\175\175\276\275\055\075\360\333\170\341\206  
\245\331\272\011\127\150\355\127\076\240\320\010\101\203\347\050  
\101\044\037\343\162\025\320\001\032\373\136\160\043\262\313\237  
\071\343\317\305\116\306\222\155\046\306\173\273\263\332\047\235  
\012\206\351\201\067\005\376\360\161\161\354\303\034\351\143\242  
\027\024\235\357\033\147\323\205\125\002\002\326\111\311\314\132  
\341\261\367\157\062\237\311\324\073\210\101\250\234\275\313\253  
\333\155\173\011\037\242\114\162\220\332\053\010\374\317\074\124  
\316\147\017\250\317\135\226\031\013\304\343\162\353\255\321\175  
\035\047\357\222\353\020\277\133\353\073\257\317\200\335\301\322  
\226\004\133\172\176\244\251\074\070\166\244\142\216\240\071\136  
\352\167\317\135\000\131\217\146\054\076\007\242\243\005\046\021  
\151\227\352\205\267\017\226\013\113\310\100\341\120\272\056\212  
\313\367\017\232\042\347\177\232\067\023\315\362\115\023\153\041  
\321\300\314\042\362\241\106\366\104\151\234\312\141\065\007\000  
\157\326\141\010\021\352\272\270\366\351\263\140\345\115\271\354  
\237\024\146\311\127\130\333\315\207\151\370\212\206\022\003\107  
\277\146\023\166\254\167\175\064\044\205\203\315\327\252\234\220  
\032\237\041\054\177\170\267\144\270\330\350\246\364\170\263\125  
\313\204\322\062\304\170\256\243\217\141\335\316\010\123\255\354  
\210\374\025\344\232\015\346\237\032\167\316\114\217\270\024\025  
\075\142\234\206\070\006\000\146\022\344\131\166\132\123\300\002  
\230\242\020\053\150\104\173\216\171\316\063\112\166\252\133\201  
\026\033\265\212\330\320\000\173\136\142\264\011\326\206\143\016  
\246\005\225\111\272\050\213\210\223\262\064\034\330\244\125\156  
\267\034\320\336\231\125\073\043\364\042\340\371\051\146\046\354  
\040\120\167\333\112\013\217\276\345\002\140\160\101\136\324\256  
\120\071\042\024\046\313\262\073\163\164\125\107\007\171\201\071  
\250\060\023\104\345\004\212\256\226\023\045\102\017\271\123\304  
\233\374\315\344\034\336\074\372\253\326\006\112\037\147\246\230  
\060\034\335\054\333\334\030\225\127\146\306\377\134\213\126\365  
\167\002\003\001\000\001\243\143\060\141\060\017\006\003\125\035  
\023\001\001\377\004\005\060\003\001\001\377\060\037\006\003\125  
\035\043\004\030\060\026\200\024\371\140\273\324\343\325\064\366  
\270\365\006\200\045\247\163\333\106\151\250\236\060\035\006\003  
\125\035\016\004\026\004\024\371\140\273\324\343\325\064\366\270  
\365\006\200\045\247\163\333\106\151\250\236\060\016\006\003\125  
\035\017\001\001\377\004\004\003\002\001\206\060\015\006\011\052

\206\110\206\367\015\001\001\013\005\000\003\202\002\001\000\126  
\263\216\313\012\235\111\216\277\244\304\221\273\146\027\005\121  
\230\165\373\345\120\054\172\236\361\024\372\253\323\212\076\377  
\221\051\217\143\213\330\264\251\124\001\015\276\223\206\057\371  
\112\155\307\136\365\127\371\312\125\034\022\276\107\017\066\305  
\337\152\267\333\165\302\107\045\177\271\361\143\370\150\055\125  
\004\321\362\215\260\244\317\274\074\136\037\170\347\245\240\040  
\160\260\004\305\267\367\162\247\336\042\015\275\063\045\106\214  
\144\222\046\343\076\056\143\226\332\233\214\075\370\030\011\327  
\003\314\175\206\202\340\312\004\007\121\120\327\377\222\325\014  
\357\332\206\237\231\327\353\267\257\150\342\071\046\224\272\150  
\267\277\203\323\352\172\147\075\142\147\256\045\345\162\350\342  
\344\354\256\022\366\113\053\074\237\351\260\100\363\070\124\263  
\375\267\150\310\332\306\217\121\074\262\373\221\334\034\347\233  
\235\341\267\015\162\217\342\244\304\251\170\371\353\024\254\306  
\103\005\302\145\071\050\030\002\303\202\262\235\005\276\145\355  
\226\137\145\164\074\373\011\065\056\173\234\023\375\033\017\135  
\307\155\201\072\126\017\314\073\341\257\002\057\042\254\106\312  
\106\074\240\034\114\326\104\264\136\056\134\025\146\011\341\046  
\051\376\306\122\141\272\261\163\377\303\014\234\345\154\152\224  
\077\024\312\100\026\225\204\363\131\251\254\137\114\141\223\155  
\321\073\314\242\225\014\042\246\147\147\104\056\271\331\322\212  
\101\263\146\013\132\373\175\043\245\362\032\260\377\336\233\203  
\224\056\321\077\337\222\267\221\257\005\073\145\307\240\154\261  
\315\142\022\303\220\033\343\045\316\064\274\157\167\166\261\020  
\303\367\005\032\300\326\257\164\142\110\027\167\222\151\220\141  
\034\336\225\200\164\124\217\030\034\303\363\003\320\277\244\103  
\165\206\123\030\172\012\056\011\034\066\237\221\375\202\212\042  
\113\321\016\120\045\335\313\003\014\027\311\203\000\010\116\065  
\115\212\213\355\360\002\224\146\054\104\177\313\225\047\226\027  
\255\011\060\254\266\161\027\156\213\027\366\034\011\324\055\073  
\230\245\161\323\124\023\331\140\363\365\113\146\117\372\361\356  
\040\022\215\264\254\127\261\105\143\241\254\166\251\302\373

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "SSL.com EV Root Certification Authority RSA R2"

# Issuer: CN=SSL.com EV Root Certification Authority RSA R2,O=SSL Corporation,L=Houston,ST=Texas,C=US

# Serial Number:56:b6:29:cd:34:bc:78:f6

# Subject: CN=SSL.com EV Root Certification Authority RSA R2,O=SSL Corporation,L=Houston,ST=Texas,C=US

# Not Valid Before: Wed May 31 18:14:37 2017

# Not Valid After : Fri May 30 18:14:37 2042

# Fingerprint (SHA-256):

2E:7B:F1:6C:C2:24:85:A7:BB:E2:AA:86:96:75:07:61:B0:AE:39:BE:3B:2F:E9:D0:CC:6D:4E:F7:34:91:42:5C

```
# Fingerprint (SHA1): 74:3A:F0:52:9B:D0:32:A0:F4:4A:83:CD:D4:BA:A9:7B:7C:2E:C4:9A
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE
CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "SSL.com EV Root Certification Authority RSA R2"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\164\072\360\122\233\320\062\240\364\112\203\315\324\272\251\173
\174\056\304\232
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\341\036\061\130\032\256\124\123\002\366\027\152\021\173\115\225
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\202\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\016\060\014\006\003\125\004\010\014\005\124\145\170\141\163
\061\020\060\016\006\003\125\004\007\014\007\110\157\165\163\164
\157\156\061\030\060\026\006\003\125\004\012\014\017\123\123\114
\040\103\157\162\160\157\162\141\164\151\157\156\061\067\060\065
\006\003\125\004\003\014\056\123\123\114\056\143\157\155\040\105
\126\040\122\157\157\164\040\103\145\162\164\151\146\151\143\141
\164\151\157\156\040\101\165\164\150\157\162\151\164\171\040\122
\123\101\040\122\062
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\010\126\266\051\315\064\274\170\366
END
CKA_TRUST_SERVER_AUTH
CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
#
# Certificate "SSL.com EV Root Certification Authority ECC"
#
# Issuer: CN=SSL.com EV Root Certification Authority ECC,O=SSL Corporation,L=Houston,ST=Texas,C=US
# Serial Number:2c:29:9c:5b:16:ed:05:95
# Subject: CN=SSL.com EV Root Certification Authority ECC,O=SSL Corporation,L=Houston,ST=Texas,C=US
# Not Valid Before: Fri Feb 12 18:15:23 2016
# Not Valid After : Tue Feb 12 18:15:23 2041
# Fingerprint (SHA-256):
22:A2:C1:F7:BD:ED:70:4C:C1:E7:01:B5:F4:08:C3:10:88:0F:E9:56:B5:DE:2A:4A:44:F9:9C:87:3A:25:A7:C8
# Fingerprint (SHA1): 4C:DD:51:A3:D1:F5:20:32:14:B0:C6:C5:32:23:03:91:C7:46:42:6D
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "SSL.com EV Root Certification
  Authority ECC"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\177\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\016\060\014\006\003\125\004\010\014\005\124\145\170\141\163\061
\020\060\016\006\003\125\004\007\014\007\110\157\165\163\164\157
\156\061\030\060\026\006\003\125\004\012\014\017\123\123\114\040
\103\157\162\160\157\162\141\164\151\157\156\061\064\060\062\006
\003\125\004\003\014\053\123\123\114\056\143\157\155\040\105\126
\040\122\157\157\164\040\103\145\162\164\151\146\151\143\141\164
\151\157\156\040\101\165\164\150\157\162\151\164\171\040\105\103
\103
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\177\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\016\060\014\006\003\125\004\010\014\005\124\145\170\141\163\061
\020\060\016\006\003\125\004\007\014\007\110\157\165\163\164\157
\156\061\030\060\026\006\003\125\004\012\014\017\123\123\114\040
\103\157\162\160\157\162\141\164\151\157\156\061\064\060\062\006
\003\125\004\003\014\053\123\123\114\056\143\157\155\040\105\126
\040\122\157\157\164\040\103\145\162\164\151\146\151\143\141\164
\151\157\156\040\101\165\164\150\157\162\151\164\171\040\105\103
\103
END
CKA_SERIAL_NUMBER
  MULTILINE_OCTAL
\002\010\054\051\234\133\026\355\005\225
END
CKA_VALUE MULTILINE_OCTAL
\060\202\002\224\060\202\002\032\240\003\002\001\002\002\010\054
\051\234\133\026\355\005\225\060\012\006\010\052\206\110\316\075
\004\003\002\060\177\061\013\060\011\006\003\125\004\006\023\002
\125\123\061\016\060\014\006\003\125\004\010\014\005\124\145\170
\141\163\061\020\060\016\006\003\125\004\007\014\007\110\157\165
\163\164\157\156\061\030\060\026\006\003\125\004\012\014\017\123
\123\114\040\103\157\162\160\157\162\141\164\151\157\156\061\064
\060\062\006\003\125\004\003\014\053\123\123\114\056\143\157\155
\040\105\126\040\122\157\157\164\040\103\145\162\164\151\146\151
\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171
\040\105\103\103\060\036\027\015\061\066\060\062\061\062\061\070
\061\065\062\063\132\027\015\064\061\060\062\061\062\061\070\061
\065\062\063\132\060\177\061\013\060\011\006\003\125\004\006\023
\002\125\123\061\016\060\014\006\003\125\004\010\014\005\124\145
\170\141\163\061\020\060\016\006\003\125\004\007\014\007\110\157
\165\163\164\157\156\061\030\060\026\006\003\125\004\012\014\017
```

\123\123\114\040\103\157\162\160\157\162\141\164\151\157\156\061  
\064\060\062\006\003\125\004\003\014\053\123\123\114\056\143\157  
\155\040\105\126\040\122\157\157\164\040\103\145\162\164\151\146  
\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164  
\171\040\105\103\103\060\166\060\020\006\007\052\206\110\316\075  
\002\001\006\005\053\201\004\000\042\003\142\000\004\252\022\107  
\220\230\033\373\357\303\100\007\203\040\116\361\060\202\242\006  
\321\362\222\206\141\362\366\041\150\312\000\304\307\352\103\000  
\124\206\334\375\037\337\000\270\101\142\134\334\160\026\062\336  
\037\231\324\314\305\007\310\010\037\141\026\007\121\075\175\134  
\007\123\343\065\070\214\337\315\237\331\056\015\112\266\031\056  
\132\160\132\006\355\276\360\241\260\312\320\011\051\243\143\060  
\141\060\035\006\003\125\035\016\004\026\004\024\133\312\136\345  
\336\322\201\252\315\250\055\144\121\266\331\162\233\227\346\117  
\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001  
\377\060\037\006\003\125\035\043\004\030\060\026\200\024\133\312  
\136\345\336\322\201\252\315\250\055\144\121\266\331\162\233\227  
\346\117\060\016\006\003\125\035\017\001\001\377\004\004\003\002  
\001\206\060\012\006\010\052\206\110\316\075\004\003\002\003\150  
\000\060\145\002\061\000\212\346\100\211\067\353\351\325\023\331  
\312\324\153\044\363\260\075\207\106\130\032\354\261\337\157\373  
\126\272\160\153\307\070\314\350\261\214\117\017\367\361\147\166  
\016\203\320\036\121\217\002\060\075\366\043\050\046\114\306\140  
\207\223\046\233\262\065\036\272\326\367\074\321\034\316\372\045  
\074\246\032\201\025\133\363\022\017\154\356\145\212\311\207\250  
\371\007\340\142\232\214\134\112

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "SSL.com EV Root Certification Authority ECC"

# Issuer: CN=SSL.com EV Root Certification Authority ECC,O=SSL Corporation,L=Houston,ST=Texas,C=US

# Serial Number:2c:29:9c:5b:16:ed:05:95

# Subject: CN=SSL.com EV Root Certification Authority ECC,O=SSL Corporation,L=Houston,ST=Texas,C=US

# Not Valid Before: Fri Feb 12 18:15:23 2016

# Not Valid After : Tue Feb 12 18:15:23 2041

# Fingerprint (SHA-256):

22:A2:C1:F7:BD:ED:70:4C:C1:E7:01:B5:F4:08:C3:10:88:0F:E9:56:B5:DE:2A:4A:44:F9:9C:87:3A:25:A7:C8

# Fingerprint (SHA1): 4C:DD:51:A3:D1:F5:20:32:14:B0:C6:C5:32:23:03:91:C7:46:42:6D

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "SSL.com EV Root Certification Authority ECC"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\114\335\121\243\321\365\040\062\024\260\306\305\062\043\003\221



```

\307\106\102\155
END
CKA_CERT_MD5_HASH
MULTILINE_OCTAL
\131\123\042\145\203\102\001\124\300\316\102\271\132\174\362\220
END
CKA_ISSUER MULTILINE_OCTAL
\060\177\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\016\060\014\006\003\125\004\010\014\005\124\145\170\141\163\061
\020\060\016\006\003\125\004\007\014\007\110\157\165\163\164\157
\156\061\030\060\026\006\003\125\004\012\014\017\123\123\114\040
\103\157\162\160\157\162\141\164\151\157\156\061\064\060\062\006
\003\125\004\003\014\053\123\123\114\056\143\157\155\040\105\126
\040\122\157\157\164\040\103\145\162\164\151\146\151\143\141\164
\151\157\156\040\101\165\164\150\157\162\151\164\171\040\105\103
\103
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\010\054\051\234\133\026\355\005\225
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
#
Certificate "GlobalSign Root CA - R6"
#
# Issuer: CN=GlobalSign,O=GlobalSign,OU=GlobalSign Root CA - R6
# Serial Number:45:e6:bb:03:83:33:c3:85:65:48:e6:ff:45:51
# Subject: CN=GlobalSign,O=GlobalSign,OU=GlobalSign Root CA - R6
# Not Valid Before: Wed Dec 10 00:00:00 2014
# Not Valid After : Sun Dec 10 00:00:00 2034
# Fingerprint (SHA-256):
2C:AB:EA:FE:37:D0:6C:A2:2A:BA:73:91:C0:03:3D:25:98:29:52:C4:53:64:73:49:76:3A:3A:B5:AD:6C:CF:69
# Fingerprint (SHA1): 80:94:64:0E:B5:A7:A1:CA:11:9C:1F:DD:D5:9F:81:02:63:A7:FB:D1
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "GlobalSign Root CA - R6"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\114\061\040\060\036\006\003\125\004\013\023\027\107\154\157
\142\141\154\123\151\147\156\040\122\157\157\164\040\103\101\040
\055\040\122\066\061\023\060\021\006\003\125\004\012\023\012\107
\154\157\142\141\154\123\151\147\156\061\023\060\021\006\003\125

```

\004\003\023\012\107\154\157\142\141\154\123\151\147\156  
END  
CKA\_ID  
UTF8 "0"  
CKA\_ISSUER MULTILINE\_OCTAL  
\060\114\061\040\060\036\006\003\125\004\013\023\027\107\154\157  
\142\141\154\123\151\147\156\040\122\157\157\164\040\103\101\040  
\055\040\122\066\061\023\060\021\006\003\125\004\012\023\012\107  
\154\157\142\141\154\123\151\147\156\061\023\060\021\006\003\125  
\004\003\023\012\107\154\157\142\141\154\123\151\147\156  
END  
CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL  
\002\016\105\346\273\003\203\063\303\205\145\110\346\377\105\121  
END  
CKA\_VALUE MULTILINE\_OCTAL  
\060\202\005\203\060\202\003\153\240\003\002\001\002\002\016\105  
\346\273\003\203\063\303\205\145\110\346\377\105\121\060\015\006  
\011\052\206\110\206\367\015\001\001\014\005\000\060\114\061\040  
\060\036\006\003\125\004\013\023\027\107\154\157\142\141\154\123  
\151\147\156\040\122\157\157\164\040\103\101\040\055\040\122\066  
\061\023\060\021\006\003\125\004\012\023\012\107\154\157\142\141  
\154\123\151\147\156\061\023\060\021\006\003\125\004\003\023\012  
\107\154\157\142\141\154\123\151\147\156\060\036\027\015\061\064  
\061\062\061\060\060\060\060\060\060\060\132\027\015\063\064\061  
\062\061\060\060\060\060\060\060\060\132\060\114\061\040\060\036  
\006\003\125\004\013\023\027\107\154\157\142\141\154\123\151\147  
\156\040\122\157\157\164\040\103\101\040\055\040\122\066\061\023  
\060\021\006\003\125\004\012\023\012\107\154\157\142\141\154\123  
\151\147\156\061\023\060\021\006\003\125\004\003\023\012\107\154  
\157\142\141\154\123\151\147\156\060\202\002\042\060\015\006\011  
\052\206\110\206\367\015\001\001\001\005\000\003\202\002\017\000  
\060\202\002\012\002\202\002\001\000\225\007\350\163\312\146\371  
\354\024\312\173\074\367\015\010\361\264\105\013\054\202\264\110  
\306\353\133\074\256\203\270\101\222\063\024\244\157\177\351\052  
\314\306\260\210\153\305\266\211\321\306\262\377\024\316\121\024  
\041\354\112\335\033\132\306\326\207\356\115\072\025\006\355\144  
\146\013\222\200\312\104\336\163\224\116\363\247\211\177\117\170  
\143\010\310\022\120\155\102\146\057\115\271\171\050\115\122\032  
\212\032\200\267\031\201\016\176\304\212\274\144\114\041\034\103  
\150\327\075\074\212\305\262\146\325\220\232\267\061\006\305\276  
\342\155\062\006\246\036\371\271\353\252\243\270\277\276\202\143  
\120\320\360\030\211\337\344\017\171\365\352\242\037\052\322\160  
\056\173\347\274\223\273\155\123\342\110\174\214\020\007\070\377  
\146\262\167\141\176\340\352\214\074\252\264\244\366\363\225\112  
\022\007\155\375\214\262\211\317\320\240\141\167\310\130\164\260  
\324\043\072\367\135\072\312\242\333\235\011\336\135\104\055\220  
\361\201\315\127\222\372\176\274\120\004\143\064\337\153\223\030  
\276\153\066\262\071\344\254\044\066\267\360\357\266\034\023\127

\223\266\336\262\370\342\205\267\163\242\270\065\252\105\362\340  
\235\066\241\157\124\212\361\162\126\156\056\210\305\121\102\104  
\025\224\356\243\305\070\226\233\116\116\132\013\107\363\006\066  
\111\167\060\274\161\067\345\246\354\041\010\165\374\346\141\026  
\077\167\325\331\221\227\204\012\154\324\002\115\164\300\024\355  
\375\071\373\203\362\136\024\241\004\260\013\351\376\356\217\341  
\156\013\262\010\263\141\146\011\152\261\006\072\145\226\131\300  
\360\065\375\311\332\050\215\032\021\207\160\201\012\250\232\165  
\035\236\072\206\005\000\236\333\200\326\045\371\334\005\236\047  
\131\114\166\071\133\352\371\245\241\330\203\017\321\377\337\060  
\021\371\205\317\063\110\365\312\155\144\024\054\172\130\117\323  
\113\010\111\305\225\144\032\143\016\171\075\365\263\214\312\130  
\255\234\102\105\171\156\016\207\031\134\124\261\145\266\277\214  
\233\334\023\351\015\157\270\056\334\147\156\311\213\021\265\204  
\024\212\000\031\160\203\171\221\227\221\324\032\047\277\067\036  
\062\007\330\024\143\074\050\114\257\002\003\001\000\001\243\143  
\060\141\060\016\006\003\125\035\017\001\001\377\004\004\003\002  
\001\006\060\017\006\003\125\035\023\001\001\377\004\005\060\003  
\001\001\377\060\035\006\003\125\035\016\004\026\004\024\256\154  
\005\243\223\023\342\242\347\342\327\034\326\307\360\177\310\147  
\123\240\060\037\006\003\125\035\043\004\030\060\026\200\024\256  
\154\005\243\223\023\342\242\347\342\327\034\326\307\360\177\310  
\147\123\240\060\015\006\011\052\206\110\206\367\015\001\001\014  
\005\000\003\202\002\001\000\203\045\355\350\321\375\225\122\315  
\236\300\004\240\221\151\346\134\320\204\336\334\255\242\117\350  
\107\170\326\145\230\251\133\250\074\207\174\002\212\321\156\267  
\026\163\346\137\300\124\230\325\164\276\301\315\342\021\221\255  
\043\030\075\335\341\162\104\226\264\225\136\300\173\216\231\170  
\026\103\023\126\127\263\242\263\073\265\167\334\100\162\254\243  
\353\233\065\076\261\010\041\241\347\304\103\067\171\062\276\265  
\347\234\054\114\274\103\051\231\216\060\323\254\041\340\343\035  
\372\330\007\063\166\124\000\042\052\271\115\040\056\160\150\332  
\345\123\374\203\134\323\235\362\377\104\014\104\146\362\322\343  
\275\106\000\032\155\002\272\045\135\215\241\061\121\335\124\106  
\034\115\333\231\226\357\032\034\004\134\246\025\357\170\340\171  
\376\135\333\076\252\114\125\375\232\025\251\157\341\246\373\337  
\160\060\351\303\356\102\106\355\302\223\005\211\372\175\143\173  
\077\320\161\201\174\000\350\230\256\016\170\064\303\045\373\257  
\012\237\040\153\335\073\023\217\022\214\342\101\032\110\172\163  
\240\167\151\307\266\134\177\202\310\036\376\130\033\050\053\250  
\154\255\136\155\300\005\322\173\267\353\200\376\045\067\376\002  
\233\150\254\102\135\303\356\365\314\334\360\120\165\322\066\151  
\234\346\173\004\337\156\006\151\266\336\012\011\110\131\207\353  
\173\024\140\172\144\252\151\103\357\221\307\114\354\030\335\154  
\357\123\055\214\231\341\136\362\162\076\317\124\310\275\147\354  
\244\017\114\105\377\323\271\060\043\007\114\217\020\277\206\226  
\331\231\132\264\231\127\034\244\314\273\025\211\123\272\054\005  
\017\344\304\236\031\261\030\064\325\114\235\272\355\367\037\257

```
\044\225\004\170\250\003\273\356\201\345\332\137\174\213\112\241
\220\164\045\247\263\076\113\310\054\126\275\307\310\357\070\342
\134\222\360\171\367\234\204\272\164\055\141\001\040\176\176\321
\362\117\007\131\137\213\055\103\122\353\106\014\224\341\365\146
\107\171\167\325\124\133\037\255\044\067\313\105\132\116\240\104
\110\310\330\260\231\305\025\204\011\366\326\111\111\300\145\270
\346\032\161\156\240\250\361\202\350\105\076\154\326\002\327\012
\147\203\005\132\311\244\020
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "GlobalSign Root CA - R6"

# Issuer: CN=GlobalSign,O=GlobalSign,OU=GlobalSign Root CA - R6

# Serial Number:45:e6:bb:03:83:33:c3:85:65:48:e6:ff:45:51

# Subject: CN=GlobalSign,O=GlobalSign,OU=GlobalSign Root CA - R6

# Not Valid Before: Wed Dec 10 00:00:00 2014

# Not Valid After : Sun Dec 10 00:00:00 2034

# Fingerprint (SHA-256):

2C:AB:EA:FE:37:D0:6C:A2:2A:BA:73:91:C0:03:3D:25:98:29:52:C4:53:64:73:49:76:3A:3A:B5:AD:6C:CF:69

# Fingerprint (SHA1): 80:94:64:0E:B5:A7:A1:CA:11:9C:1F:DD:D5:9F:81:02:63:A7:FB:D1

CKA\_CLASS

CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "GlobalSign Root CA - R6"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\200\224\144\016\265\247\241\312\021\234\037\335\325\237\201\002
\143\247\373\321
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\117\335\007\344\324\042\144\071\036\014\067\102\352\321\306\256
```

END

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\114\061\040\060\036\006\003\125\004\013\023\027\107\154\157
\142\141\154\123\151\147\156\040\122\157\157\164\040\103\101\040
\055\040\122\066\061\023\060\021\006\003\125\004\012\023\012\107
\154\157\142\141\154\123\151\147\156\061\023\060\021\006\003\125
\004\003\023\012\107\154\157\142\141\154\123\151\147\156
```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

```
\002\016\105\346\273\003\203\063\303\205\145\110\346\377\105\121
```

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

```

CKA_TRUST_CODE_SIGNING CK_TRUST
CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "OISTE WISeKey Global Root GC CA"
#
# Issuer: CN=OISTE WISeKey Global Root GC CA,OU=OISTE Foundation Endorsed,O=WISeKey,C=CH
# Serial Number:21:2a:56:0c:ae:da:0c:ab:40:45:bf:2b:a2:2d:3a:ea
# Subject: CN=OISTE WISeKey Global Root GC CA,OU=OISTE Foundation Endorsed,O=WISeKey,C=CH
# Not Valid Before: Tue May 09 09:48:34 2017
# Not Valid After : Fri May 09 09:58:33 2042
# Fingerprint (SHA-256):
85:60:F9:1C:36:24:DA:BA:95:70:B5:FE:A0:DB:E3:6F:F1:1A:83:23:BE:94:86:85:4F:B3:F3:4A:55:71:19:8D
# Fingerprint (SHA1): E0:11:84:5E:34:DE:BE:88:81:B9:9C:F6:16:26:D1:96:1F:C3:B9:31
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "OISTE WISeKey Global Root GC CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\155\061\013\060\011\006\003\125\004\006\023\002\103\110\061
\020\060\016\006\003\125\004\012\023\007\127\111\123\145\113\145
\171\061\042\060\040\006\003\125\004\013\023\031\117\111\123\124
\105\040\106\157\165\156\144\141\164\151\157\156\040\105\156\144
\157\162\163\145\144\061\050\060\046\006\003\125\004\003\023\037
\117\111\123\124\105\040\127\111\123\145\113\145\171\040\107\154
\157\142\141\154\040\122\157\157\164\040\107\103\040\103\101
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\155\061\013\060\011\006\003\125\004\006\023\002\103\110\061
\020\060\016\006\003\125\004\012\023\007\127\111\123\145\113\145
\171\061\042\060\040\006\003\125\004\013\023\031\117\111\123\124
\105\040\106\157\165\156\144\141\164\151\157\156\040\105\156\144
\157\162\163\145\144\061\050\060\046\006\003\125\004\003\023\037
\117\111\123\124\105\040\127\111\123\145\113\145\171\040\107\154
\157\142\141\154\040\122\157\157\164\040\107\103\040\103\101
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\041\052\126\014\256\332\014\253\100\105\277\053\242\055
\072\352
END
CKA_VALUE MULTILINE_OCTAL
\060\202\002\151\060\202\001\357\240\003\002\001\002\002\020\041
\052\126\014\256\332\014\253\100\105\277\053\242\055\072\352\060

```

\012\006\010\052\206\110\316\075\004\003\003\060\155\061\013\060  
\011\006\003\125\004\006\023\002\103\110\061\020\060\016\006\003  
\125\004\012\023\007\127\111\123\145\113\145\171\061\042\060\040  
\006\003\125\004\013\023\031\117\111\123\124\105\040\106\157\165  
\156\144\141\164\151\157\156\040\105\156\144\157\162\163\145\144  
\061\050\060\046\006\003\125\004\003\023\037\117\111\123\124\105  
\040\127\111\123\145\113\145\171\040\107\154\157\142\141\154\040  
\122\157\157\164\040\107\103\040\103\101\060\036\027\015\061\067  
\060\065\060\071\060\071\064\070\063\064\132\027\015\064\062\060  
\065\060\071\060\071\065\070\063\063\132\060\155\061\013\060\011  
\006\003\125\004\006\023\002\103\110\061\020\060\016\006\003\125  
\004\012\023\007\127\111\123\145\113\145\171\061\042\060\040\006  
\003\125\004\013\023\031\117\111\123\124\105\040\106\157\165\156  
\144\141\164\151\157\156\040\105\156\144\157\162\163\145\144\061  
\050\060\046\006\003\125\004\003\023\037\117\111\123\124\105\040  
\127\111\123\145\113\145\171\040\107\154\157\142\141\154\040\122  
\157\157\164\040\107\103\040\103\101\060\166\060\020\006\007\052  
\206\110\316\075\002\001\006\005\053\201\004\000\042\003\142\000  
\004\114\351\120\300\306\017\162\030\274\330\361\272\263\211\342  
\171\112\243\026\247\153\124\044\333\121\377\352\364\011\044\303  
\013\042\237\313\152\047\202\201\015\322\300\257\061\344\164\202  
\156\312\045\331\214\165\235\361\333\320\232\242\113\041\176\026  
\247\143\220\322\071\324\261\207\170\137\030\226\017\120\033\065  
\067\017\152\306\334\331\023\115\244\216\220\067\346\275\133\061  
\221\243\124\060\122\060\016\006\003\125\035\017\001\001\377\004  
\004\003\002\001\006\060\017\006\003\125\035\023\001\001\377\004  
\005\060\003\001\001\377\060\035\006\003\125\035\016\004\026\004  
\024\110\207\024\254\343\303\236\220\140\072\327\312\211\356\323  
\255\214\264\120\146\060\020\006\011\053\006\001\004\001\202\067  
\025\001\004\003\002\001\000\060\012\006\010\052\206\110\316\075  
\004\003\003\003\150\000\060\145\002\060\046\307\151\133\334\325  
\347\262\347\310\014\214\214\303\335\171\214\033\143\325\311\122  
\224\116\115\202\112\163\036\262\200\204\251\045\300\114\132\155  
\111\051\140\170\023\342\176\110\353\144\002\061\000\333\064\040  
\062\010\377\232\111\002\266\210\336\024\257\135\154\231\161\215  
\032\077\213\327\340\242\066\206\034\007\202\072\166\123\375\302  
\242\355\357\173\260\200\117\130\017\113\123\071\275

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "OISTE WISeKey Global Root GC CA"

# Issuer: CN=OISTE WISeKey Global Root GC CA,OU=OISTE Foundation Endorsed,O=WISeKey,C=CH

# Serial Number:21:2a:56:0c:ae:da:0c:ab:40:45:bf:2b:a2:2d:3a:ea

# Subject: CN=OISTE WISeKey Global Root GC CA,OU=OISTE Foundation Endorsed,O=WISeKey,C=CH

# Not Valid Before: Tue May 09

09:48:34 2017

# Not Valid After : Fri May 09 09:58:33 2042

# Fingerprint (SHA-256):

85:60:F9:1C:36:24:DA:BA:95:70:B5:FE:A0:DB:E3:6F:F1:1A:83:23:BE:94:86:85:4F:B3:F3:4A:55:71:19:8D

# Fingerprint (SHA1): E0:11:84:5E:34:DE:BE:88:81:B9:9C:F6:16:26:D1:96:1F:C3:B9:31

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "OISTE WISeKey Global Root GC CA"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\340\021\204\136\064\336\276\210\201\271\234\366\026\046\321\226  
\037\303\271\061

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\251\326\271\055\057\223\144\370\245\151\312\221\351\150\007\043

END

CKA\_ISSUER MULTILINE\_OCTAL

\060\155\061\013\060\011\006\003\125\004\006\023\002\103\110\061  
\020\060\016\006\003\125\004\012\023\007\127\111\123\145\113\145  
\171\061\042\060\040\006\003\125\004\013\023\031\117\111\123\124  
\105\040\106\157\165\156\144\141\164\151\157\156\040\105\156\144  
\157\162\163\145\144\061\050\060\046\006\003\125\004\003\023\037  
\117\111\123\124\105\040\127\111\123\145\113\145\171\040\107\154  
\157\142\141\154\040\122\157\157\164\040\107\103\040\103\101

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\020\041\052\126\014\256\332\014\253\100\105\277\053\242\055  
\072\352

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "UCA Global G2 Root"

#

# Issuer: CN=UCA Global G2 Root,O=UniTrust,C=CN

# Serial Number:5d:df:b1:da:5a:a3:ed:5d:be:5a:65:20:65:03:90:ef

# Subject: CN=UCA Global G2 Root,O=UniTrust,C=CN

# Not Valid Before: Fri Mar 11 00:00:00 2016

# Not Valid After : Mon Dec 31 00:00:00 2040

# Fingerprint (SHA-256):

9B:EA:11:C9:76:FE:01:47:64:C1:BE:56:A6:F9:14:B5:A5:60:31:7A:BD:99:88:39:33:82:E5:16:1A:A0:49:3C

# Fingerprint (SHA1): 28:F9:78:16:19:7A:FF:18:25:18:AA:44:FE:C1:A0:CE:5C:B6:4C:8A

CKA\_CLASS CK\_OBJECT\_CLASS

```
CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "UCA Global G2 Root"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\075\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\021\060\017\006\003\125\004\012\014\010\125\156\151\124\162\165
\163\164\061\033\060\031\006\003\125\004\003\014\022\125\103\101
\040\107\154\157\142\141\154\040\107\062\040\122\157\157\164
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\075\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\021\060\017\006\003\125\004\012\014\010\125\156\151\124\162\165
\163\164\061\033\060\031\006\003\125\004\003\014\022\125\103\101
\040\107\154\157\142\141\154\040\107\062\040\122\157\157\164
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\135\337\261\332\132\243\355\135\276\132\145\040\145\003
\220\357
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\106\060\202\003\056\240\003\002\001\002\002\020\135
\337\261\332\132\243\355\135\276\132\145\040\145\003\220\357\060
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\075
\061\013\060\011\006\003\125\004\006\023\002\103\116\061\021\060
\017\006\003\125\004\012\014\010\125\156\151\124\162\165\163\164
\061\033\060\031\006\003\125\004\003\014\022\125\103\101\040\107
\154\157\142\141\154\040\107\062\040\122\157\157\164\060\036\027
\015\061\066\060\063\061\061\060\060\060\060\060\060\132\027\015
\064\060\061\062\063\061\060\060\060\060\060\060\132\060\075\061
\013\060\011\006\003\125\004\006\023\002\103\116\061\021\060\017
\006\003\125\004\012\014\010\125\156\151\124\162\165\163\164\061
\033\060\031\006\003\125\004\003\014\022\125\103\101\040\107\154
\157\142\141\154\040\107\062\040\122\157\157\164\060\202\002\042
\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003
\202\002\017\000\060\202\002\012\002\202\002\001\000\305\346\053
\157\174\357\046\005\047\243\201\044\332\157\313\001\371\231\232
\251\062\302\042\207\141\101\221\073\313\303\150\033\006\305\114
\251\053\301\147\027\042\035\053\355\371\051\211\223\242\170\275
\222\153\240\243\015\242\176\312\223\263\246\321\214\065\325\165
\371\027\366\317\105\305\345\172\354\167\223\240\217\043\256\016
\032\003\177\276\324\320\355\056\173\253\106\043\133\377\054\346
\124\172\224\300\052\025\360\311\215\260\172\073\044\341\327\150
\342\061\074\006\063\106\266\124\021\246\245\057\042\124\052\130
\015\001\002\361\372\025\121\147\154\300\372\327\266\033\177\321
```



\126\210\057\032\072\215\073\273\202\021\340\107\000\320\122\207  
\253\373\206\176\017\044\153\100\235\064\147\274\215\307\055\206  
\157\171\076\216\251\074\027\113\177\260\231\343\260\161\140\334  
\013\365\144\303\316\103\274\155\161\271\322\336\047\133\212\350  
\330\306\256\341\131\175\317\050\055\065\270\225\126\032\361\262  
\130\113\267\022\067\310\174\263\355\113\200\341\215\372\062\043  
\266\157\267\110\225\010\261\104\116\205\214\072\002\124\040\057  
\337\277\127\117\073\072\220\041\327\301\046\065\124\040\354\307  
\077\107\354\357\132\277\113\172\301\255\073\027\120\134\142\330  
\017\113\112\334\053\372\156\274\163\222\315\354\307\120\350\101  
\226\327\251\176\155\330\351\035\217\212\265\271\130\222\272\112  
\222\053\014\126\375\200\353\010\360\136\051\156\033\034\014\257  
\217\223\211\255\333\275\243\236\041\312\211\031\354\337\265\303  
\032\353\026\376\170\066\114\326\156\320\076\027\034\220\027\153  
\046\272\373\172\057\277\021\034\030\016\055\163\003\217\240\345  
\065\240\132\342\114\165\035\161\341\071\070\123\170\100\314\203  
\223\327\012\236\235\133\217\212\344\345\340\110\344\110\262\107  
\315\116\052\165\052\173\362\042\366\311\276\011\221\226\127\172  
\210\210\254\356\160\254\371\334\051\343\014\034\073\022\116\104  
\326\247\116\260\046\310\363\331\032\227\221\150\352\357\215\106  
\006\322\126\105\130\232\074\014\017\203\270\005\045\303\071\317  
\073\244\064\211\267\171\022\057\107\305\347\251\227\151\374\246  
\167\147\265\337\173\361\172\145\025\344\141\126\145\002\003\001  
\000\001\243\102\060\100\060\016\006\003\125\035\017\001\001\377  
\004\004\003\002\001\006\060\017\006\003\125\035\023\001\001\377  
\004\005\060\003\001\001\377\060\035\006\003\125\035\016\004\026  
\004\024\201\304\214\314\365\344\060\377\245\014\010\137\214\025  
\147\041\164\001\337\337\060\015\006\011\052\206\110\206\367\015  
\001\001\013\005\000\003\202\002\001\000\023\145\042\365\216\053  
\255\104\344\313\377\271\150\346\303\200\110\075\004\173\372\043  
\057\172\355\066\332\262\316\155\366\346\236\345\137\130\217\313  
\067\062\241\310\145\266\256\070\075\065\033\076\274\073\266\004  
\320\274\371\111\365\233\367\205\305\066\266\313\274\370\310\071  
\325\344\137\007\275\025\124\227\164\312\312\355\117\272\272\144  
\166\237\201\270\204\105\111\114\215\157\242\353\261\314\321\303  
\224\332\104\302\346\342\352\030\350\242\037\047\005\272\327\345  
\326\251\315\335\357\166\230\215\000\016\315\033\372\003\267\216  
\200\130\016\047\077\122\373\224\242\312\136\145\311\326\204\332  
\271\065\161\363\046\300\117\167\346\201\047\322\167\073\232\024  
\157\171\364\366\320\341\323\224\272\320\127\121\275\047\005\015  
\301\375\310\022\060\356\157\215\021\053\010\235\324\324\277\200  
\105\024\232\210\104\332\060\352\264\247\343\356\357\133\202\325  
\076\326\255\170\222\333\134\074\363\330\255\372\270\153\177\304  
\066\050\266\002\025\212\124\054\234\260\027\163\216\320\067\243  
\024\074\230\225\000\014\051\005\133\236\111\111\261\137\307\343  
\313\317\047\145\216\065\027\267\127\310\060\331\101\133\271\024  
\266\350\302\017\224\061\247\224\230\314\152\353\265\341\047\365  
\020\250\001\350\216\022\142\350\210\314\265\177\106\227\300\233

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\020\146\070\032\066\106\137\042\150\075\337\311\306\023\047\253
\123\006\254\242\074\206\006\145\157\261\176\261\051\104\232\243
\272\111\151\050\151\217\327\345\137\255\004\206\144\157\032\240
\014\305\010\142\316\200\243\320\363\354\150\336\276\063\307\027
\133\177\200\304\114\114\261\246\204\212\303\073\270\011\315\024
\201\272\030\343\124\127\066\376\333\057\174\107\241\072\063\310
\371\130\073\104\117\261\312\002\211\004\226\050\150\305\113\270
\046\211\273\326\063\057\120\325\376\232\211\272\030\062\222\124
\306\133\340\235\371\136\345\015\042\233\366\332\342\310\041\262
\142\041\252\206\100\262\056\144\323\137\310\343\176\021\147\105
\037\005\376\343\242\357\263\250\263\363\175\217\370\014\037\042
\037\055\160\264\270\001\064\166\060\000\345\043\170\247\126\327
\120\037\212\373\006\365\302\031\360\320
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "UCA Global G2 Root"

# Issuer: CN=UCA Global G2 Root,O=UniTrust,C=CN

# Serial Number:5d:df:b1:da:5a:a3:ed:5d:be:5a:65:20:65:03:90:ef

# Subject: CN=UCA Global G2 Root,O=UniTrust,C=CN

# Not Valid Before: Fri Mar 11 00:00:00 2016

# Not Valid After : Mon Dec 31 00:00:00 2040

# Fingerprint (SHA-256):

9B:EA:11:C9:76:FE:01:47:64:C1:BE:56:A6:F9:14:B5:A5:60:31:7A:BD:99:88:39:33:82:E5:16:1A:A0:49:3C

# Fingerprint (SHA1): 28:F9:78:16:19:7A:FF:18:25:18:AA:44:FE:C1:A0:CE:5C:B6:4C:8A

CKA\_CLASS

CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "UCA Global G2 Root"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\050\371\170\026\031\172\377\030\045\030\252\104\376\301\240\316
\134\266\114\212
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\200\376\360\304\112\360\134\142\062\237\034\272\170\251\120\370
```

END

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\075\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\021\060\017\006\003\125\004\012\014\010\125\156\151\124\162\165
\163\164\061\033\060\031\006\003\125\004\003\014\022\125\103\101
\040\107\154\157\142\141\154\040\107\062\040\122\157\157\164
```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

```

\002\020\135\337\261\332\132\243\355\135\276\132\145\040\145\003
\220\357
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED
CK_BBOOL CK_FALSE

#
# Certificate "UCA Extended Validation Root"
#
# Issuer: CN=UCA Extended Validation Root,O=UniTrust,C=CN
# Serial Number:4f:d2:2b:8f:f5:64:c8:33:9e:4f:34:58:66:23:70:60
# Subject: CN=UCA Extended Validation Root,O=UniTrust,C=CN
# Not Valid Before: Fri Mar 13 00:00:00 2015
# Not Valid After : Fri Dec 31 00:00:00 2038
# Fingerprint (SHA-256):
D4:3A:F9:B3:54:73:75:5C:96:84:FC:06:D7:D8:CB:70:EE:5C:28:E7:73:FB:29:4E:B4:1E:E7:17:22:92:4D:24
# Fingerprint (SHA1): A3:A1:B0:6F:24:61:23:4A:E3:36:A5:C2:37:FC:A6:FF:DD:F0:D7:3A
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "UCA Extended Validation Root"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\107\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\021\060\017\006\003\125\004\012\014\010\125\156\151\124\162\165
\163\164\061\045\060\043\006\003\125\004\003\014\034\125\103\101
\040\105\170\164\145\156\144\145\144\040\126\141\154\151\144\141
\164\151\157\156\040\122\157\157\164
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\107\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\021\060\017\006\003\125\004\012\014\010\125\156\151\124\162\165
\163\164\061\045\060\043\006\003\125\004\003\014\034\125\103\101
\040\105\170\164\145\156\144\145\144\040\126\141\154\151\144\141
\164\151\157\156\040\122\157\157\164
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\117\322\053\217\365\144\310\063\236\117\064\130\146\043
\160\140
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\132\060\202\003\102\240\003\002\001\002\002\020\117

```

\322\053\217\365\144\310\063\236\117\064\130\146\043\160\140\060  
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\107  
\061\013\060\011\006\003\125\004\006\023\002\103\116\061\021\060  
\017\006\003\125\004\012\014\010\125\156\151\124\162\165\163\164  
\061\045\060\043\006\003\125\004\003\014\034\125\103\101\040\105  
\170\164\145\156\144\145\144\040\126\141\154\151\144\141\164\151  
\157\156\040\122\157\157\164\060\036\027\015\061\065\060\063\061  
\063\060\060\060\060\060\060\132\027\015\063\070\061\062\063\061  
\060\060\060\060\060\060\132\060\107\061\013\060\011\006\003\125  
\004\006\023\002\103\116\061\021\060\017\006\003\125\004\012\014  
\010\125\156\151\124\162\165\163\164\061\045\060\043\006\003\125  
\004\003\014\034\125\103\101\040\105\170\164\145\156\144\145\144  
\040\126\141\154\151\144\141\164\151\157\156\040\122\157\157\164  
\060\202\002\042\060\015\006\011\052\206\110\206\367\015\001\001  
\001\005\000\003\202\002\017\000\060\202\002\012\002\202\002\001  
\000\251\011\007\050\023\002\260\231\340\144\252\036\103\026\172  
\163\261\221\240\165\076\250\372\343\070\000\172\354\211\152\040  
\017\213\305\260\233\063\003\132\206\306\130\206\325\301\205\273  
\117\306\234\100\115\312\276\356\151\226\270\255\201\060\232\174  
\222\005\353\005\053\232\110\320\270\166\076\226\310\040\273\322  
\260\361\217\330\254\105\106\377\252\147\140\264\167\176\152\037  
\074\032\122\172\004\075\007\074\205\015\204\320\037\166\012\367  
\152\024\337\162\343\064\174\127\116\126\001\076\171\361\252\051  
\073\154\372\370\217\155\115\310\065\337\256\353\334\044\356\171  
\105\247\205\266\005\210\336\210\135\045\174\227\144\147\011\331  
\277\132\025\005\206\363\011\036\354\130\062\063\021\363\167\144  
\260\166\037\344\020\065\027\033\362\016\261\154\244\052\243\163  
\374\011\037\036\062\031\123\021\347\331\263\054\056\166\056\241  
\243\336\176\152\210\011\350\362\007\212\370\262\315\020\347\342  
\163\100\223\273\010\321\077\341\374\013\224\263\045\357\174\246  
\327\321\257\237\377\226\232\365\221\173\230\013\167\324\176\350  
\007\322\142\265\225\071\343\363\361\155\017\016\145\204\212\143  
\124\305\200\266\340\236\113\175\107\046\247\001\010\135\321\210  
\236\327\303\062\104\372\202\112\012\150\124\177\070\123\003\314  
\244\000\063\144\121\131\013\243\202\221\172\136\354\026\302\363  
\052\346\142\332\052\333\131\142\020\045\112\052\201\013\107\007  
\103\006\160\207\322\372\223\021\051\172\110\115\353\224\307\160  
\115\257\147\325\121\261\200\040\001\001\264\172\010\246\220\177  
\116\340\357\007\101\207\257\152\245\136\213\373\317\120\262\232  
\124\257\303\211\272\130\055\365\060\230\261\066\162\071\176\111  
\004\375\051\247\114\171\344\005\127\333\224\271\026\123\215\106  
\263\035\225\141\127\126\177\257\360\026\133\141\130\157\066\120  
\021\013\330\254\053\225\026\032\016\037\010\315\066\064\145\020  
\142\146\325\200\137\024\040\137\055\014\240\170\012\150\326\054  
\327\351\157\053\322\112\005\223\374\236\157\153\147\377\210\361  
\116\245\151\112\122\067\005\352\306\026\215\322\304\231\321\202  
\053\073\272\065\165\367\121\121\130\363\310\007\335\344\264\003  
\177\002\003\001\000\001\243\102\060\100\060\035\006\003\125\035

\016\004\026\004\024\331\164\072\344\060\075\015\367\022\334\176  
\132\005\237\036\064\232\367\341\024\060\017\006\003\125\035\023  
\001\001\377\004\005\060\003\001\001\377\060\016\006\003\125\035  
\017\001\001\377\004\004\003\002\001\206\060\015\006\011\052\206  
\110\206\367\015\001\001\013\005\000\003\202\002\001\000\066\215  
\227\314\102\025\144\051\067\233\046\054\326\373\256\025\151\054  
\153\032\032\367\137\266\371\007\114\131\352\363\311\310\271\256  
\314\272\056\172\334\300\365\260\055\300\073\257\237\160\005\021  
\152\237\045\117\001\051\160\343\345\014\341\352\132\174\334\111  
\273\301\036\052\201\365\026\113\162\221\310\242\061\271\252\332  
\374\235\037\363\135\100\002\023\374\116\034\006\312\263\024\220  
\124\027\031\022\032\361\037\327\014\151\132\366\161\170\364\224  
\175\221\013\216\354\220\124\216\274\157\241\114\253\374\164\144  
\375\161\232\370\101\007\241\315\221\344\074\232\340\233\062\071  
\163\253\052\325\151\310\170\221\046\061\175\342\307\060\361\374  
\024\170\167\022\016\023\364\335\026\224\277\113\147\173\160\123  
\205\312\260\273\363\070\115\054\220\071\300\015\302\135\153\351  
\342\345\325\210\215\326\054\277\253\033\276\265\050\207\022\027  
\164\156\374\175\374\217\320\207\046\260\033\373\271\154\253\342  
\236\075\025\301\073\056\147\002\130\221\237\357\370\102\037\054  
\267\150\365\165\255\317\265\366\377\021\175\302\360\044\245\255  
\323\372\240\074\251\372\135\334\245\240\357\104\244\276\326\350  
\345\344\023\226\027\173\006\076\062\355\307\267\102\274\166\243  
\330\145\070\053\070\065\121\041\016\016\157\056\064\023\100\341  
\053\147\014\155\112\101\060\030\043\132\062\125\231\311\027\340  
\074\336\366\354\171\255\053\130\031\242\255\054\042\032\225\216  
\276\226\220\135\102\127\304\371\024\003\065\053\034\055\121\127  
\010\247\072\336\077\344\310\264\003\163\302\301\046\200\273\013  
\102\037\255\015\257\046\162\332\314\276\263\243\203\130\015\202  
\305\037\106\121\343\234\030\314\215\233\215\354\111\353\165\120  
\325\214\050\131\312\164\064\332\214\013\041\253\036\352\033\345  
\307\375\025\076\300\027\252\373\043\156\046\106\313\372\371\261  
\162\153\151\317\042\204\013\142\017\254\331\031\000\224\242\166  
\074\324\055\232\355\004\236\055\006\142\020\067\122\034\205\162  
\033\047\345\314\306\061\354\067\354\143\131\233\013\035\166\314  
\176\062\232\210\225\010\066\122\273\336\166\137\166\111\111\255  
\177\275\145\040\262\311\301\053\166\030\166\237\126\261

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "UCA Extended Validation Root"

# Issuer: CN=UCA Extended Validation Root,O=UniTrust,C=CN

# Serial Number:4f:d2:2b:8f:f5:64:c8:33:9e:4f:34:58:66:23:70:60

# Subject: CN=UCA Extended Validation Root,O=UniTrust,C=CN

# Not Valid Before: Fri Mar 13 00:00:00 2015

```

# Not Valid After : Fri Dec 31 00:00:00 2038
# Fingerprint (SHA-256):
D4:3A:F9:B3:54:73:75:5C:96:84:FC:06:D7:D8:CB:70:EE:5C:28:E7:73:FB:29:4E:B4:1E:E7:17:22:92:4D:24
# Fingerprint (SHA1): A3:A1:B0:6F:24:61:23:4A:E3:36:A5:C2:37:FC:A6:FF:DD:F0:D7:3A
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL
UTF8 "UCA Extended Validation Root"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\243\241\260\157\044\141\043\112\343\066\245\302\067\374\246\377
\335\360\327\072
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\241\363\137\103\306\064\233\332\277\214\176\005\123\255\226\342
END
CKA_ISSUER MULTILINE_OCTAL
\060\107\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\021\060\017\006\003\125\004\012\014\010\125\156\151\124\162\165
\163\164\061\045\060\043\006\003\125\004\003\014\034\125\103\101
\040\105\170\164\145\156\144\145\144\040\126\141\154\151\144\141
\164\151\157\156\040\122\157\157\164
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\117\322\053\217\365\144\310\063\236\117\064\130\146\043
\160\140
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "Certigna Root CA"
#
# Issuer: CN=Certigna Root CA,OU=0002
48146308100036,O=Dhimyotis,C=FR
# Serial Number:00:ca:e9:1b:89:f1:55:03:0d:a3:e6:41:6d:c4:e3:a6:e1
# Subject: CN=Certigna Root CA,OU=0002 48146308100036,O=Dhimyotis,C=FR
# Not Valid Before: Tue Oct 01 08:32:27 2013
# Not Valid After : Sat Oct 01 08:32:27 2033
# Fingerprint (SHA-256):
D4:8D:3D:23:EE:DB:50:A4:59:E5:51:97:60:1C:27:77:4B:9D:7B:18:C9:4D:5A:05:95:11:A1:02:50:B9:31:68
# Fingerprint (SHA1): 2D:0D:52:14:FF:9E:AD:99:24:01:74:20:47:6E:6C:85:27:27:F5:43
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE

```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Certigna Root CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\132\061\013\060\011\006\003\125\004\006\023\002\106\122\061
\022\060\020\006\003\125\004\012\014\011\104\150\151\155\171\157
\164\151\163\061\034\060\032\006\003\125\004\013\014\023\060\060
\060\062\040\064\070\061\064\066\063\060\070\061\060\060\060\063
\066\061\031\060\027\006\003\125\004\003\014\020\103\145\162\164
\151\147\156\141\040\122\157\157\164\040\103\101
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\132\061\013\060\011\006\003\125\004\006\023\002\106\122\061
\022\060\020\006\003\125\004\012\014\011\104\150\151\155\171\157
\164\151\163\061\034\060\032\006\003\125\004\013\014\023\060\060
\060\062\040\064\070\061\064\066\063\060\070\061\060\060\060\063
\066\061\031\060\027\006\003\125\004\003\014\020\103\145\162\164
\151\147\156\141\040\122\157\157\164\040\103\101
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\021\000\312\351\033\211\361\125\003\015\243\346\101\155\304
\343\246\341
END
CKA_VALUE MULTILINE_OCTAL
\060\202\006\133\060\202\004\103\240\003\002\001\002\002\021\000
\312\351\033\211\361\125\003\015\243\346\101\155\304\343\246\341
\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060
\132\061\013\060\011\006\003\125\004\006\023\002\106\122\061\022
\060\020\006\003\125\004\012\014\011\104\150\151\155\171\157\164
\151\163\061\034\060\032\006\003\125\004\013\014\023\060\060\060
\062\040\064\070\061\064\066\063\060\070\061\060\060\060\063\066
\061\031\060\027\006\003\125\004\003\014\020\103\145\162\164\151
\147\156\141\040\122\157\157\164\040\103\101\060\036\027\015\061
\063\061\060\060\061\060\070\063\062\062\067\132\027\015\063\063
\061\060\060\061\060\070\063\062\062\067\132\060\132\061\013\060
\011\006\003\125\004\006\023\002\106\122\061\022\060\020\006\003
\125\004\012\014\011\104\150\151\155\171\157\164\151\163\061\034
\060\032\006\003\125\004\013\014\023\060\060\060\062\040\064\070
\061\064\066\063\060\070\061\060\060\060\063\066\061\031\060\027
\006\003\125\004\003\014\020\103\145\162\164\151\147\156\141\040
\122\157\157\164\040\103\101\060\202\002\042\060\015\006\011\052
\206\110\206\367\015\001\001\001\005\000\003\202\002\017\000\060
\202\002\012\002\202\002\001\000\315\030\071\145\032\131\261\352
\144\026\016\214\224\044\225\174\203\323\305\071\046\334\014\357
\026\127\215\327\330\254\243\102\177\202\312\355\315\133\333\016
\267\055\355\105\010\027\262\331\263\313\326\027\122\162\050\333
```

\216\116\236\212\266\013\371\236\204\232\115\166\336\042\051\134  
\322\263\322\006\076\060\071\251\164\243\222\126\034\241\157\114  
\012\040\155\237\043\172\264\306\332\054\344\035\054\334\263\050  
\320\023\362\114\116\002\111\241\124\100\236\346\345\005\240\055  
\204\310\377\230\154\320\353\212\032\204\010\036\267\150\043\356  
\043\325\160\316\155\121\151\020\356\241\172\302\321\042\061\302  
\202\205\322\362\125\166\120\174\045\172\311\204\134\013\254\335  
\102\116\053\347\202\242\044\211\313\220\262\320\356\043\272\146  
\114\273\142\244\371\123\132\144\173\174\230\372\243\110\236\017  
\225\256\247\030\364\152\354\056\003\105\257\360\164\370\052\315  
\172\135\321\276\104\046\062\051\361\361\365\154\314\176\002\041  
\013\237\157\244\077\276\235\123\342\317\175\251\054\174\130\032  
\227\341\075\067\067\030\146\050\322\100\305\121\212\214\303\055  
\316\123\210\044\130\144\060\026\305\252\340\326\012\246\100\337  
\170\366\365\004\174\151\023\204\274\321\321\247\006\317\001\367  
\150\300\250\127\273\072\141\255\004\214\223\343\255\374\360\333  
\104\155\131\334\111\131\256\254\232\231\066\060\101\173\166\063  
\042\207\243\302\222\206\156\371\160\356\256\207\207\225\033\304  
\172\275\061\363\324\322\345\231\377\276\110\354\165\365\170\026  
\035\246\160\301\177\074\033\241\222\373\317\310\074\326\305\223  
\012\217\365\125\072\166\225\316\131\230\212\011\225\167\062\232  
\203\272\054\004\072\227\275\324\057\276\327\154\233\242\312\175  
\155\046\311\125\325\317\303\171\122\010\011\231\007\044\055\144  
\045\153\246\041\151\233\152\335\164\115\153\227\172\101\275\253  
\027\371\220\027\110\217\066\371\055\325\305\333\356\252\205\105  
\101\372\315\072\105\261\150\346\066\114\233\220\127\354\043\271  
\207\010\302\304\011\361\227\206\052\050\115\342\164\300\332\304  
\214\333\337\342\241\027\131\316\044\131\164\061\332\177\375\060  
\155\331\334\341\152\341\374\137\002\003\001\000\001\243\202\001  
\032\060\202\001\026\060\017\006\003\125\035\023\001\001\377\004  
\005\060\003\001\001\377\060\016\006\003\125\035\017\001\001\377  
\004\004\003\002\001\006\060\035\006\003\125\035\016\004\026\004  
\024\030\207\126\340\156\167\356\044\065\074\116\163\232\037\326  
\341\342\171\176\053\060\037\006\003\125\035\043\004\030\060\026  
\200\024\030\207\126\340\156\167\356\044\065\074\116\163\232\037  
\326\341\342\171\176\053\060\104\006\003\125\035\040\004\075\060  
\073\060\071\006\004\125\035\040\000\060\061\060\057\006\010\053  
\006\001\005\005\007\002\001\026\043\150\164\164\160\163\072\057  
\057\167\167\167\167\056\143\145\162\164\151\147\156\141\056\146  
\162\057\141\165\164\157\162\151\164\145\163\057\060\155\006\003  
\125\035\037\004\146\060\144\060\057\240\055\240\053\206\051\150  
\164\164\160\072\057\057\143\162\154\056\143\145\162\164\151\147  
\156\141\056\146\162\057\143\145\162\164\151\147\156\141\162\157  
\157\164\143\141\056\143\162\154\060\061\240\057\240\055\206\053  
\150\164\164\160\072\057\057\143\162\154\056\144\150\151\155\171  
\157\164\151\163\056\143\157\155\057\143\145\162\164\151\147\156  
\141\162\157\157\164\143\141\056\143\162\154\060\015\006\011\052  
\206\110\206\367\015\001\001\013\005\000\003\202\002\001\000\224



\270\236\117\360\343\225\010\042\347\315\150\101\367\034\125\325  
\174\000\342\055\072\211\135\150\070\057\121\042\013\112\215\313  
\351\273\135\076\273\134\075\261\050\376\344\123\125\023\317\241  
\220\033\002\035\137\146\106\011\063\050\341\015\044\227\160\323  
\020\037\352\144\127\226\273\135\332\347\304\214\117\114\144\106  
\035\134\207\343\131\336\102\321\233\250\176\246\211\335\217\034  
\311\060\202\355\073\234\315\300\351\031\340\152\330\002\165\067  
\253\367\064\050\050\221\362\004\012\117\065\343\140\046\001\372  
\320\021\214\371\021\152\356\257\075\303\120\323\217\137\063\171  
\074\206\250\163\105\220\214\040\266\162\163\027\043\276\007\145  
\345\170\222\015\272\001\300\353\214\034\146\277\254\206\167\001  
\224\015\234\346\351\071\215\037\246\121\214\231\014\071\167\341  
\264\233\372\034\147\127\157\152\152\216\251\053\114\127\171\172  
\127\042\317\315\137\143\106\215\134\131\072\206\370\062\107\142  
\243\147\015\030\221\334\373\246\153\365\110\141\163\043\131\216  
\002\247\274\104\352\364\111\235\361\124\130\371\140\257\332\030  
\244\057\050\105\334\172\240\210\206\135\363\073\347\377\051\065  
\200\374\144\103\224\346\343\034\157\276\255\016\052\143\231\053  
\311\176\205\366\161\350\006\003\225\376\336\217\110\034\132\324  
\222\350\053\356\347\061\333\272\004\152\207\230\347\305\137\357  
\175\247\042\367\001\330\115\371\211\320\016\232\005\131\244\236  
\230\331\157\053\312\160\276\144\302\125\243\364\351\257\303\222  
\051\334\210\026\044\231\074\215\046\230\266\133\267\314\316\267  
\067\007\375\046\331\230\205\044\377\131\043\003\232\355\235\235  
\250\344\136\070\316\327\122\015\157\322\077\155\261\005\153\111  
\316\212\221\106\163\364\366\057\360\250\163\167\016\145\254\241  
\215\146\122\151\176\113\150\014\307\036\067\047\203\245\214\307  
\002\344\024\315\111\001\260\163\263\375\306\220\072\157\322\154  
\355\073\356\354\221\276\242\103\135\213\000\112\146\045\104\160  
\336\100\017\370\174\025\367\242\316\074\327\136\023\214\201\027  
\030\027\321\275\361\167\020\072\324\145\071\301\047\254\127\054  
\045\124\377\242\332\117\212\141\071\136\256\075\112\214\275

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "Certigna Root CA"

# Issuer: CN=Certigna Root CA,OU=0002 48146308100036,O=Dhimyotis,C=FR

# Serial Number:00:ca:e9:1b:89:f1:55:03:0d:a3:e6:41:6d:c4:e3:a6:e1

# Subject: CN=Certigna Root CA,OU=0002 48146308100036,O=Dhimyotis,C=FR

# Not Valid Before: Tue Oct 01 08:32:27 2013

# Not Valid After : Sat Oct 01 08:32:27 2033

# Fingerprint (SHA-256):

D4:8D:3D:23:EE:DB:50:A4:59:E5:51:97:60:1C:27:77:4B:9D:7B:18:C9:4D:5A:05:95:11:A1:02:50:B9:31:68

# Fingerprint (SHA1): 2D:0D:52:14:FF:9E:AD:99:24:01:74:20:47:6E:6C:85:27:27:F5:43

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

```

CKA_TOKEN
CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Certigna Root CA"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\055\015\122\024\377\236\255\231\044\001\164\040\107\156\154\205
\047\047\365\103
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\016\134\060\142\047\353\133\274\327\256\142\272\351\325\337\167
END
CKA_ISSUER MULTILINE_OCTAL
\060\132\061\013\060\011\006\003\125\004\006\023\002\106\122\061
\022\060\020\006\003\125\004\012\014\011\104\150\151\155\171\157
\164\151\163\061\034\060\032\006\003\125\004\013\014\023\060\060
\060\062\040\064\070\061\064\066\063\060\070\061\060\060\060\063
\066\061\031\060\027\006\003\125\004\003\014\020\103\145\162\164
\151\147\156\141\040\122\157\157\164\040\103\101
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\021\000\312\351\033\211\361\125\003\015\243\346\101\155\304
\343\246\341
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING
CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "emSign Root CA - G1"
#
# Issuer: CN=emSign Root CA - G1,O=eMudhra Technologies Limited,OU=emSign PKI,C=IN
# Serial Number:31:f5:e4:62:0c:6c:58:ed:d6:d8
# Subject: CN=emSign Root CA - G1,O=eMudhra Technologies Limited,OU=emSign PKI,C=IN
# Not Valid Before: Sun Feb 18 18:30:00 2018
# Not Valid After : Wed Feb 18 18:30:00 2043
# Fingerprint (SHA-256):
40:F6:AF:03:46:A9:9A:A1:CD:1D:55:5A:4E:9C:CE:62:C7:F9:63:46:03:EE:40:66:15:83:3D:C8:C8:D0:03:67
# Fingerprint (SHA1): 8A:C7:AD:8F:73:AC:4E:C1:B5:75:4D:A5:40:F4:FC:CF:7C:B5:8E:8C
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "emSign Root CA - G1"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL

```

\060\147\061\013\060\011\006\003\125\004\006\023\002\111\116\061  
\023\060\021\006\003\125\004\013\023\012\145\155\123\151\147\156  
\040\120\113\111\061\045\060\043\006\003\125\004\012\023\034\145  
\115\165\144\150\162\141\040\124\145\143\150\156\157\154\157\147  
\151\145\163\040\114\151\155\151\164\145\144\061\034\060\032\006  
\003\125\004\003\023\023\145\155\123\151\147\156\040\122\157\157  
\164\040\103\101\040\055\040\107\061

END

CKA\_ID

UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\147\061\013\060\011\006\003\125\004\006\023\002\111\116\061  
\023\060\021\006\003\125\004\013\023\012\145\155\123\151\147\156  
\040\120\113\111\061\045\060\043\006\003\125\004\012\023\034\145  
\115\165\144\150\162\141\040\124\145\143\150\156\157\154\157\147  
\151\145\163\040\114\151\155\151\164\145\144\061\034\060\032\006  
\003\125\004\003\023\023\145\155\123\151\147\156\040\122\157\157  
\164\040\103\101\040\055\040\107\061

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\012\061\365\344\142\014\154\130\355\326\330

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\224\060\202\002\174\240\003\002\001\002\002\012\061  
\365\344\142\014\154\130\355\326\330\060\015\006\011\052\206\110  
\206\367\015\001\001\013\005\000\060\147\061\013\060\011\006\003  
\125\004\006\023\002\111\116\061\023\060\021\006\003\125\004\013  
\023\012\145\155\123\151\147\156\040\120\113\111\061\045\060\043  
\006\003\125\004\012\023\034\145\115\165\144\150\162\141\040\124  
\145\143\150\156\157\154\157\147\151\145\163\040\114\151\155\151  
\164\145\144\061\034\060\032\006\003\125\004\003\023\023\145\155  
\123\151\147\156\040\122\157\157\164\040\103\101\040\055\040\107  
\061\060\036\027\015\061\070\060\062\061\070\061\070\063\060\060  
\060\132\027\015\064\063\060\062\061\070\061\070\063\060\060\060  
\132\060\147\061\013\060\011\006\003\125\004\006\023\002\111\116  
\061\023\060\021\006\003\125\004\013\023\012\145\155\123\151\147  
\156\040\120\113\111\061\045\060\043\006\003\125\004\012\023\034  
\145\115\165\144\150\162\141\040\124\145\143\150\156\157\154\157  
\147\151\145\163\040\114\151\155\151\164\145\144\061\034\060\032  
\006\003\125\004\003\023\023\145\155\123\151\147\156\040\122\157  
\157\164\040\103\101\040\055\040\107\061\060\202\001\042\060\015  
\006\011\052\206\110\206\367\015\001\001\001\005\000\003\202\001  
\017\000\060\202\001\012\002\202\001\001\000\223\113\273\351\146  
\212\356\235\133\325\064\223\320\033\036\303\347\236\270\144\063  
\177\143\170\150\264\315\056\161\165\327\233\040\306\115\051\274  
\266\150\140\212\367\041\232\126\065\132\363\166\275\330\315\232  
\377\223\126\113\245\131\006\241\223\064\051\335\026\064\165\116  
\362\201\264\307\226\116\255\031\025\122\112\376\074\160\165\160

\315\257\053\253\025\232\063\074\252\263\213\252\315\103\375\365  
\352\160\377\355\317\021\073\224\316\116\062\026\323\043\100\052  
\167\263\257\074\001\054\154\355\231\054\213\331\116\151\230\262  
\367\217\101\260\062\170\141\326\015\137\303\372\242\100\222\035  
\134\027\346\160\076\065\347\242\267\302\142\342\253\244\070\114  
\265\071\065\157\352\003\151\372\072\124\150\205\155\326\362\057  
\103\125\036\221\015\016\330\325\152\244\226\321\023\074\054\170  
\120\350\072\222\322\027\126\345\065\032\100\034\076\215\054\355  
\071\337\102\340\203\101\164\337\243\315\302\206\140\110\150\343  
\151\013\124\000\213\344\166\151\041\015\171\116\064\010\136\024  
\302\314\261\267\255\327\174\160\212\307\205\002\003\001\000\001  
\243\102\060\100\060\035\006\003\125\035\016\004\026\004\024\373  
\357\015\206\236\260\343\335\251\271\361\041\027\177\076\374\360  
\167\053\032\060\016\006\003\125\035\017\001\001\377\004\004\003  
\002\001\006\060\017\006\003\125\035\023\001\001\377\004\005\060  
\003\001\001\377\060\015\006\011\052\206\110\206\367\015\001\001  
\013\005\000\003\202\001\001\000\131\377\362\214\365\207\175\161  
\075\243\237\033\133\321\332\370\323\234\153\066\275\233\251\141  
\353\336\026\054\164\075\236\346\165\332\327\272\247\274\102\027  
\347\075\221\353\345\175\335\076\234\361\317\222\254\154\110\314  
\302\042\077\151\073\305\266\025\057\243\065\306\150\052\034\127  
\257\071\357\215\320\065\303\030\014\173\000\126\034\315\213\031  
\164\336\276\017\022\340\320\252\241\077\002\064\261\160\316\235  
\030\326\010\003\011\106\356\140\340\176\266\304\111\004\121\175  
\160\140\274\252\262\377\171\162\172\246\035\075\137\052\370\312  
\342\375\071\267\107\271\353\176\337\004\043\257\372\234\006\007  
\351\373\143\223\200\100\265\306\154\012\061\050\316\014\237\317  
\263\043\065\200\101\215\154\304\067\173\201\057\200\241\100\102  
\205\351\331\070\215\350\241\123\315\001\277\151\350\132\006\362  
\105\013\220\372\256\341\277\235\362\256\127\074\245\256\262\126  
\364\213\145\100\351\375\061\201\054\364\071\011\330\356\153\247  
\264\246\035\025\245\230\367\001\201\330\205\175\363\121\134\161  
\210\336\272\314\037\200\176\112

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "emSign Root CA - G1"

# Issuer: CN=emSign Root CA - G1,O=eMudhra Technologies Limited,OU=emSign PKI,C=IN

# Serial Number:31:f5:e4:62:0c:6c:58:ed:d6:d8

# Subject: CN=emSign Root CA - G1,O=eMudhra Technologies

Limited,OU=emSign PKI,C=IN

# Not Valid Before: Sun Feb 18 18:30:00 2018

# Not Valid After : Wed Feb 18 18:30:00 2043

# Fingerprint (SHA-256):

40:F6:AF:03:46:A9:9A:A1:CD:1D:55:5A:4E:9C:CE:62:C7:F9:63:46:03:EE:40:66:15:83:3D:C8:C8:D0:03:67

```

# Fingerprint (SHA1): 8A:C7:AD:8F:73:AC:4E:C1:B5:75:4D:A5:40:F4:FC:CF:7C:B5:8E:8C
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "emSign Root CA - G1"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\212\307\255\217\163\254\116\301\265\165\115\245\100\364\374\317
\174\265\216\214
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\234\102\204\127\335\313\013\247\056\225\255\266\363\332\274\254
END
CKA_ISSUER MULTILINE_OCTAL
\060\147\061\013\060\011\006\003\125\004\006\023\002\111\116\061
\023\060\021\006\003\125\004\013\023\012\145\155\123\151\147\156
\040\120\113\111\061\045\060\043\006\003\125\004\012\023\034\145
\115\165\144\150\162\141\040\124\145\143\150\156\157\154\157\147
\151\145\163\040\114\151\155\151\164\145\144\061\034\060\032\006
\003\125\004\003\023\023\145\155\123\151\147\156\040\122\157\157
\164\040\103\101\040\055\040\107\061
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\012\061\365\344\142\014\154\130\355\326\330
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "emSign ECC Root CA - G3"
#
# Issuer: CN=emSign ECC Root CA - G3,O=eMudhra Technologies Limited,OU=emSign PKI,C=IN
# Serial Number:3c:f6:07:a9:68:70:0e:da:8b:84
# Subject: CN=emSign ECC Root CA - G3,O=eMudhra Technologies Limited,OU=emSign PKI,C=IN
# Not Valid Before: Sun Feb 18 18:30:00 2018
# Not Valid After : Wed Feb 18 18:30:00 2043
# Fingerprint (SHA-256):
86:A1:EC:BA:08:9C:4A:8D:3B:BE:27:34:C6:12:BA:34:1D:81:3E:04:3C:F9:E8:A8:62:CD:5C:57:A3:6B:BE:6B
# Fingerprint (SHA1): 30:43:FA:4F:F2:57:DC:A0:C3:80:EE:2E:58:EA:78:B2:3F:E6:BB:C1
CKA_CLASS
CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "emSign ECC Root CA - G3"

```

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\153\061\013\060\011\006\003\125\004\006\023\002\111\116\061  
\023\060\021\006\003\125\004\013\023\012\145\155\123\151\147\156  
\040\120\113\111\061\045\060\043\006\003\125\004\012\023\034\145  
\115\165\144\150\162\141\040\124\145\143\150\156\157\154\157\147  
\151\145\163\040\114\151\155\151\164\145\144\061\040\060\036\006  
\003\125\004\003\023\027\145\155\123\151\147\156\040\105\103\103  
\040\122\157\157\164\040\103\101\040\055\040\107\063

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\153\061\013\060\011\006\003\125\004\006\023\002\111\116\061  
\023\060\021\006\003\125\004\013\023\012\145\155\123\151\147\156  
\040\120\113\111\061\045\060\043\006\003\125\004\012\023\034\145  
\115\165\144\150\162\141\040\124\145\143\150\156\157\154\157\147  
\151\145\163\040\114\151\155\151\164\145\144\061\040\060\036\006  
\003\125\004\003\023\027\145\155\123\151\147\156\040\105\103\103  
\040\122\157\157\164\040\103\101\040\055\040\107\063

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\012\074\366\007\251\150\160\016\332\213\204

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\002\116\060\202\001\323\240\003\002\001\002\002\012\074  
\366\007\251\150\160\016\332\213\204\060\012\006\010\052\206\110  
\316\075\004\003\003\060\153\061\013\060\011\006\003\125\004\006  
\023\002\111\116\061\023\060\021\006\003\125\004\013\023\012\145  
\155\123\151\147\156\040\120\113\111\061\045\060\043\006\003\125  
\004\012\023\034\145\115\165\144\150\162\141\040\124\145\143\150  
\156\157\154\157\147\151\145\163\040\114\151\155\151\164\145\144  
\061\040\060\036\006\003\125\004\003\023\027\145\155\123\151\147  
\156\040\105\103\103\040\122\157\157\164\040\103\101\040\055\040  
\107\063\060\036\027\015\061\070\060\062\061\070\061\070\063\060  
\060\060\132\027\015\064\063\060\062\061\070\061\070\063\060\060  
\060\132\060\153\061\013\060\011\006\003\125\004\006\023\002\111  
\116\061\023\060\021\006\003\125\004\013\023\012\145\155\123\151  
\147\156\040\120\113\111\061\045\060\043\006\003\125\004\012\023  
\034\145\115\165\144\150\162\141\040\124\145\143\150\156\157\154  
\157\147\151\145\163\040\114\151\155\151\164\145\144\061\040\060  
\036\006\003\125\004\003\023\027\145\155\123\151\147\156\040\105  
\103\103\040\122\157\157\164\040\103\101\040\055\040\107\063\060  
\166\060\020\006\007\052\206\110\316\075\002\001\006\005\053\201  
\004\000\042\003\142\000\004\043\245\014\270\055\022\365\050\363  
\261\262\335\342\002\022\200\236\071\137\111\115\237\311\045\064  
\131\164\354\273\006\034\347\300\162\257\350\256\057\341\101\124  
\207\024\250\112\262\350\174\202\346\133\152\265\334\263\165\316

```
\213\006\320\206\043\277\106\325\216\017\077\004\364\327\034\222
\176\366\245\143\302\365\137\216\056\117\241\030\031\002\053\062
\012\202\144\175\026\223\321\243\102\060\100\060\035\006\003\125
\035\016\004\026\004\024\174\135\002\204\023\324\314\212\233\201
\316\027\034\056\051\036\234\110\143\102\060\016\006\003\125\035
\017\001\001\377\004\004\003\002\001\006\060\017\006\003\125\035
\023\001\001\377\004\005\060\003\001\001\377\060\012\006\010\052
\206\110\316\075\004\003\003\003\151\000\060\146\002\061\000\276
\363\141\317\002\020\035\144\225\007\270\030\156\210\205\005\057
\203\010\027\220\312\037\212\114\350\015\033\172\261\255\325\201
\011\107\357\073\254\010\004\174\134\231\261\355\107\007\322\002
\061\000\235\272\125\374\251\112\350\355\355\346\166\001\102\173
\310\370\140\331\215\121\213\125\073\373\214\173\353\145\011\303
\370\226\315\107\250\202\362\026\125\167\044\176\022\020\225\004
\054\243
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "emSign ECC Root CA - G3"

# Issuer: CN=emSign ECC Root CA - G3,O=eMudhra Technologies Limited,OU=emSign  
PKI,C=IN

# Serial Number:3c:f6:07:a9:68:70:0e:da:8b:84

# Subject: CN=emSign ECC Root CA - G3,O=eMudhra Technologies Limited,OU=emSign PKI,C=IN

# Not Valid Before: Sun Feb 18 18:30:00 2018

# Not Valid After : Wed Feb 18 18:30:00 2043

# Fingerprint (SHA-256):

86:A1:EC:BA:08:9C:4A:8D:3B:BE:27:34:C6:12:BA:34:1D:81:3E:04:3C:F9:E8:A8:62:CD:5C:57:A3:6B:BE:6B

# Fingerprint (SHA1): 30:43:FA:4F:F2:57:DC:A0:C3:80:EE:2E:58:EA:78:B2:3F:E6:BB:C1

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "emSign ECC Root CA - G3"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\060\103\372\117\362\127\334\240\303\200\356\056\130\352\170\262
\077\346\273\301
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\316\013\162\321\237\210\216\320\120\003\350\343\270\213\147\100
```

END

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\153\061\013\060\011\006\003\125\004\006\023\002\111\116\061
\023\060\021\006\003\125\004\013\023\012\145\155\123\151\147\156
\040\120\113\111\061\045\060\043\006\003\125\004\012\023\034\145
\115\165\144\150\162\141\040\124\145\143\150\156\157\154\157\147
```

```
\151\145\163\040\114\151\155\151\164\145\144\061\040\060\036\006
\003\125\004\003\023\027\145\155\123\151\147\156\040\105\103\103
\040\122\157\157\164\040\103\101\040\055\040\107\063
```

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

```
\002\012\074\366\007\251\150\160\016\332\213\204
```

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "emSign Root CA - C1"

#

# Issuer: CN=emSign Root CA - C1,O=eMudhra Inc,OU=emSign PKI,C=US

# Serial Number:00:ae:cf:00:ba:c4:cf:32:f8:43:b2

# Subject: CN=emSign Root CA - C1,O=eMudhra Inc,OU=emSign PKI,C=US

# Not Valid Before: Sun Feb 18 18:30:00 2018

# Not Valid After : Wed Feb 18 18:30:00 2043

# Fingerprint (SHA-256):

```
12:56:09:AA:30:1D:A0:A2:49:B9:7A:82:39:CB:6A:34:21:6F:44:DC:AC:9F:39:54:B1:42:92:F2:E8:C8:60:8F
```

#

Fingerprint (SHA1): E7:2E:F1:DF:FC:B2:09:28:CF:5D:D4:D5:67:37:B1:51:CB:86:4F:01

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "emSign Root CA - C1"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

```
\060\126\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\023\060\021\006\003\125\004\013\023\012\145\155\123\151\147\156
\040\120\113\111\061\024\060\022\006\003\125\004\012\023\013\145
\115\165\144\150\162\141\040\111\156\143\061\034\060\032\006\003
\125\004\003\023\023\145\155\123\151\147\156\040\122\157\157\164
\040\103\101\040\055\040\103\061
```

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\126\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\023\060\021\006\003\125\004\013\023\012\145\155\123\151\147\156
\040\120\113\111\061\024\060\022\006\003\125\004\012\023\013\145
\115\165\144\150\162\141\040\111\156\143\061\034\060\032\006\003
\125\004\003\023\023\145\155\123\151\147\156\040\122\157\157\164
\040\103\101\040\055\040\103\061
```

END



CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\013\000\256\317\000\272\304\317\062\370\103\262

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\163\060\202\002\133\240\003\002\001\002\002\013\000  
\256\317\000\272\304\317\062\370\103\262\060\015\006\011\052\206  
\110\206\367\015\001\001\013\005\000\060\126\061\013\060\011\006  
\003\125\004\006\023\002\125\123\061\023\060\021\006\003\125\004  
\013\023\012\145\155\123\151\147\156\040\120\113\111\061\024\060  
\022\006\003\125\004\012\023\013\145\115\165\144\150\162\141\040  
\111\156\143\061\034\060\032\006\003\125\004\003\023\023\145\155  
\123\151\147\156\040\122\157\157\164\040\103\101\040\055\040\103  
\061\060\036\027\015\061\070\060\062\061\070\061\070\063\060\060\060  
\060\132\027\015\064\063\060\062\061\070\061\070\063\060\060\060  
\132\060\126\061\013\060\011\006\003\125\004\006\023\002\125\123  
\061\023\060\021\006\003\125\004\013\023\012\145\155\123\151\147  
\156\040\120\113\111\061\024\060\022\006\003\125\004\012\023\013  
\145\115\165\144\150\162\141\040\111\156\143\061\034\060\032\006  
\003\125\004\003\023\023\145\155\123\151\147\156\040\122\157\157  
\164\040\103\101\040\055\040\103\061\060\202\001\042\060\015\006  
\011\052\206\110\206\367\015\001\001\001\005\000\003\202\001\017  
\000\060\202\001\012\002\202\001\001\000\317\353\251\271\361\231  
\005\314\330\050\041\112\363\163\064\121\204\126\020\365\240\117  
\054\022\343\372\023\232\047\320\317\371\171\032\164\137\035\171  
\071\374\133\370\160\216\340\222\122\367\344\045\371\124\203\331  
\035\323\310\132\205\077\136\307\266\007\356\076\300\316\232\257  
\254\126\102\052\071\045\160\326\277\265\173\066\255\254\366\163  
\334\315\327\035\212\203\245\373\053\220\025\067\153\034\046\107  
\334\073\051\126\223\152\263\301\152\072\235\075\365\301\227\070  
\130\005\213\034\021\343\344\264\270\135\205\035\203\376\170\137  
\013\105\150\030\110\245\106\163\064\073\376\017\310\166\273\307  
\030\363\005\321\206\363\205\355\347\271\331\062\255\125\210\316  
\246\266\221\260\117\254\176\025\043\226\366\077\360\040\064\026  
\336\012\306\304\004\105\171\177\247\375\276\322\251\245\257\234  
\305\043\052\367\074\041\154\275\257\217\116\305\072\262\363\064  
\022\374\337\200\032\111\244\324\251\225\367\236\211\136\242\211  
\254\224\313\250\150\233\257\212\145\047\315\211\356\335\214\265  
\153\051\160\103\240\151\013\344\271\017\002\003\001\000\001\243  
\102\060\100\060\035\006\003\125\035\016\004\026\004\024\376\241  
\340\160\036\052\003\071\122\132\102\276\134\221\205\172\030\252  
\115\265\060\016\006\003\125\035\017\001\001\377\004\004\003\002  
\001\006\060\017\006\003\125\035\023\001\001\377\004\005\060\003  
\001\001\377\060\015\006\011\052\206\110\206\367\015\001\001\013  
\005\000\003\202\001\001\000\302\112\126\372\025\041\173\050\242  
\351\345\035\373\370\055\304\071\226\101\114\073\047\054\304\154  
\030\025\200\306\254\257\107\131\057\046\013\343\066\260\357\073  
\376\103\227\111\062\231\022\025\133\337\021\051\377\253\123\370

```
\273\301\170\017\254\234\123\257\127\275\150\214\075\151\063\360
\243\240\043\143\073\144\147\042\104\255\325\161\313\126\052\170
\222\243\117\022\061\066\066\342\336\376\000\304\243\140\017\047
\255\240\260\212\265\066\172\122\241\275\047\364\040\047\142\350
\115\224\044\023\344\012\004\351\074\253\056\310\103\011\112\306
\141\004\345\111\064\176\323\304\310\365\017\300\252\351\272\124
\136\363\143\053\117\117\120\324\376\271\173\231\214\075\300\056
\274\002\053\323\304\100\344\212\007\061\036\233\316\046\231\023
\373\021\352\232\042\014\021\031\307\136\033\201\120\060\310\226
\022\156\347\313\101\177\221\073\242\107\267\124\200\033\334\000
\314\232\220\352\303\303\120\006\142\014\060\300\025\110\247\250
\131\174\341\256\042\242\342\012\172\017\372\142\253\122\114\341
\361\337\312\276\203\015\102
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER

CK\_BBOOL CK\_FALSE

# Trust for "emSign Root CA - C1"

# Issuer: CN=emSign Root CA - C1,O=eMudhra Inc,OU=emSign PKI,C=US

# Serial Number:00:ae:cf:00:ba:c4:cf:32:f8:43:b2

# Subject: CN=emSign Root CA - C1,O=eMudhra Inc,OU=emSign PKI,C=US

# Not Valid Before: Sun Feb 18 18:30:00 2018

# Not Valid After : Wed Feb 18 18:30:00 2043

# Fingerprint (SHA-256):

12:56:09:AA:30:1D:A0:A2:49:B9:7A:82:39:CB:6A:34:21:6F:44:DC:AC:9F:39:54:B1:42:92:F2:E8:C8:60:8F

# Fingerprint (SHA1): E7:2E:F1:DF:FC:B2:09:28:CF:5D:D4:D5:67:37:B1:51:CB:86:4F:01

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "emSign Root CA - C1"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\347\056\361\337\374\262\011\050\317\135\324\325\147\067\261\121
\313\206\117\001
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\330\343\135\001\041\372\170\132\260\337\272\322\356\052\137\150
```

END

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\126\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\023\060\021\006\003\125\004\013\023\012\145\155\123\151\147\156
\040\120\113\111\061\024\060\022\006\003\125\004\012\023\013\145
\115\165\144\150\162\141\040\111\156\143\061\034\060\032\006\003
\125\004\003\023\023\145\155\123\151\147\156\040\122\157\157\164
\040\103\101\040\055\040\103\061
```

```

END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\013\000\256\317\000\272\304\317\062\370\103\262
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "emSign ECC Root CA - C3"
#
# Issuer: CN=emSign ECC Root CA - C3,O=eMudhra Inc,OU=emSign PKI,C=US
# Serial Number:7b:71:b6:82:56:b8:12:7c:9c:a8
# Subject: CN=emSign ECC Root CA - C3,O=eMudhra Inc,OU=emSign PKI,C=US
# Not Valid Before: Sun Feb 18 18:30:00 2018
# Not Valid After : Wed Feb 18 18:30:00 2043
# Fingerprint (SHA-256):
BC:4D:80:9B:15:18:9D:78:DB:3E:1D:8C:F4:F9:72:6A:79:5D:A1:64:3C:A5:F1:35:8E:1D:DB:0E:DC:0D:7E:B3
#
Fingerprint (SHA1): B6:AF:43:C2:9B:81:53:7D:F6:EF:6B:C3:1F:1F:60:15:0C:EE:48:66
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "emSign ECC Root CA - C3"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\132\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\023\060\021\006\003\125\004\013\023\012\145\155\123\151\147\156
\040\120\113\111\061\024\060\022\006\003\125\004\012\023\013\145
\115\165\144\150\162\141\040\111\156\143\061\040\060\036\006\003
\125\004\003\023\027\145\155\123\151\147\156\040\105\103\103\040
\122\157\157\164\040\103\101\040\055\040\103\063
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\132\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\023\060\021\006\003\125\004\013\023\012\145\155\123\151\147\156
\040\120\113\111\061\024\060\022\006\003\125\004\012\023\013\145
\115\165\144\150\162\141\040\111\156\143\061\040\060\036\006\003
\125\004\003\023\027\145\155\123\151\147\156\040\105\103\103\040
\122\157\157\164\040\103\101\040\055\040\103\063
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\012\173\161\266\202\126\270\022\174\234\250

```

END

CKA\_VALUE MULTILINE\_OCTAL

```
\060\202\002\053\060\202\001\261\240\003\002\001\002\002\012\173
\161\266\202\126\270\022\174\234\250\060\012\006\010\052\206\110
\316\075\004\003\003\060\132\061\013\060\011\006\003\125\004\006
\023\002\125\123\061\023\060\021\006\003\125\004\013\023\012\145
\155\123\151\147\156\040\120\113\111\061\024\060\022\006\003\125
\004\012\023\013\145\115\165\144\150\162\141\040\111\156\143\061
\040\060\036\006\003\125\004\003\023\027\145\155\123\151\147\156
\040\105\103\103\040\122\157\157\164\040\103\101\040\055\040\103
\063\060\036\027\015\061\070\060\062\061\070\061\070\063\060\060
\060\132\027\015\064\063\060\062\061\070\061\070\063\060\060\060
\132\060\132\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\023\060\021\006\003\125\004\013\023\012\145\155\123\151\147
\156\040\120\113\111\061\024\060\022\006\003\125\004\012\023\013
\145\115\165\144\150\162\141\040\111\156\143\061\040\060\036\006
\003\125\004\003\023\027\145\155\123\151\147\156\040\105\103\103
\040\122\157\157\164\040\103\101\040\055\040\103\063\060\166\060
\020\006\007\052\206\110\316\075\002\001\006\005\053\201\004\000
\042\003\142\000\004\375\245\141\256\173\046\020\035\351\267\042
\060\256\006\364\201\263\261\102\161\225\071\274\323\122\343\257
\257\371\362\227\065\222\066\106\016\207\225\215\271\071\132\351
\273\337\320\376\310\007\101\074\273\125\157\203\243\152\373\142
\260\201\211\002\160\175\110\305\112\343\351\042\124\042\115\223
\273\102\014\257\167\234\043\246\175\327\141\021\316\145\307\370
\177\376\365\362\251\243\102\060\100\060\035\006\003\125\035\016
\004\026\004\024\373\132\110\320\200\040\100\362\250\351\000\007
\151\031\167\247\346\303\364\317\060\016\006\003\125\035\017\001
\001\377\004\004\003\002\001\006\060\017\006\003\125\035\023\001
\001\377\004\005\060\003\001\001\377\060\012\006\010\052\206\110
\316\075\004\003\003\003\150\000\060\145\002\061\000\264\330\057
\002\211\375\266\114\142\272\103\116\023\204\162\265\256\335\034
\336\326\265\334\126\217\130\100\132\055\336\040\114\042\203\312
\223\250\176\356\022\100\307\326\207\117\370\337\205\002\060\034
\024\144\344\174\226\203\021\234\260\321\132\141\113\246\017\111
\323\000\374\241\374\344\245\377\177\255\327\060\320\307\167\177
\276\201\007\125\060\120\040\024\365\127\070\012\250\061\121
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "emSign ECC Root CA - C3"

# Issuer: CN=emSign ECC Root CA - C3,O=eMudhra Inc,OU=emSign PKI,C=US

# Serial Number:7b:71:b6:82:56:b8:12:7c:9c:a8

# Subject: CN=emSign ECC Root CA - C3,O=eMudhra Inc,OU=emSign PKI,C=US

# Not Valid Before: Sun Feb 18 18:30:00 2018

```
#
Not Valid After : Wed Feb 18 18:30:00 2043
# Fingerprint (SHA-256):
BC:4D:80:9B:15:18:9D:78:DB:3E:1D:8C:F4:F9:72:6A:79:5D:A1:64:3C:A5:F1:35:8E:1D:DB:0E:DC:0D:7E:B3
# Fingerprint (SHA1): B6:AF:43:C2:9B:81:53:7D:F6:EF:6B:C3:1F:1F:60:15:0C:EE:48:66
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "emSign ECC Root CA - C3"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\266\257\103\302\233\201\123\175\366\357\153\303\037\037\140\025
\014\356\110\146
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\076\123\263\243\201\356\327\020\370\323\260\035\027\222\365\325
END
CKA_ISSUER MULTILINE_OCTAL
\060\132\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\023\060\021\006\003\125\004\013\023\012\145\155\123\151\147\156
\040\120\113\111\061\024\060\022\006\003\125\004\012\023\013\145
\115\165\144\150\162\141\040\111\156\143\061\040\060\036\006\003
\125\004\003\023\027\145\155\123\151\147\156\040\105\103\103\040
\122\157\157\164\040\103\101\040\055\040\103\063
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\012\173\161\266\202\126\270\022\174\234\250
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
#
# Certificate "Hongkong Post Root CA 3"
#
# Issuer: CN=Hongkong Post Root CA 3,O=Hongkong Post,L=Hong Kong,ST=Hong Kong,C=HK
# Serial Number:08:16:5f:8a:4c:a5:ec:00:c9:93:40:df:c4:c6:ae:23:b8:1c:5a:a4
# Subject: CN=Hongkong Post Root CA 3,O=Hongkong Post,L=Hong Kong,ST=Hong Kong,C=HK
# Not Valid Before: Sat Jun 03 02:29:46 2017
# Not Valid After : Tue Jun 03 02:29:46 2042
# Fingerprint (SHA-256):
5A:2F:C0:3F:0C:83:B0:90:BB:FA:40:60:4B:09:88:44:6C:76:36:18:3D:F9:84:6E:17:10:1A:44:7F:B8:EF:D6
# Fingerprint (SHA1): 58:A2:D0:EC:20:52:81:5B:C1:F3:F8:64:02:24:4E:C2:8E:02:4B:02
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL
```

```
CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Hongkong Post Root CA 3"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\157\061\013\060\011\006\003\125\004\006\023\002\110\113\061
\022\060\020\006\003\125\004\010\023\011\110\157\156\147\040\113
\157\156\147\061\022\060\020\006\003\125\004\007\023\011\110\157
\156\147\040\113\157\156\147\061\026\060\024\006\003\125\004\012
\023\015\110\157\156\147\153\157\156\147\040\120\157\163\164\061
\040\060\036\006\003\125\004\003\023\027\110\157\156\147\153\157
\156\147\040\120\157\163\164\040\122\157\157\164\040\103\101\040
\063
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\157\061\013\060\011\006\003\125\004\006\023\002\110\113\061
\022\060\020\006\003\125\004\010\023\011\110\157\156\147\040\113
\157\156\147\061\022\060\020\006\003\125\004\007\023\011\110\157
\156\147\040\113\157\156\147\061\026\060\024\006\003\125\004\012
\023\015\110\157\156\147\153\157\156\147\040\120\157\163\164\061
\040\060\036\006\003\125\004\003\023\027\110\157\156\147\153\157
\156\147\040\120\157\163\164\040\122\157\157\164\040\103\101\040
\063
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\024\010\026\137\212\114\245\354\000\311\223\100\337\304\306
\256\043\270\034\132\244
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\317\060\202\003\267\240\003\002\001\002\002\024\010
\026\137\212\114\245\354\000\311\223\100\337\304\306\256\043\270
\034\132\244\060\015\006\011\052\206\110\206\367\015\001\001\013
\005\000\060\157\061\013\060\011\006\003\125\004\006\023\002\110
\113\061\022\060\020\006\003\125\004\010\023\011\110\157\156\147
\040\113\157\156\147\061\022\060\020\006\003\125\004\007\023\011
\110\157\156\147\040\113\157\156\147\061\026\060\024\006\003\125
\004\012\023\015\110\157\156\147\153\157\156\147\040\120\157\163
\164\061\040\060\036\006\003\125\004\003\023\027\110\157\156\147
\153\157\156\147\040\120\157\163\164\040\122\157\157\164\040\103
\101\040\063\060\036\027\015\061\067\060\066\060\063\060\062\062
\071\064\066\132\027\015\064\062\060\066\060\063\060\062\062\071
\064\066\132\060\157\061\013\060\011\006\003\125\004\006\023\002
\110\113\061\022\060\020\006\003\125\004\010\023\011\110\157\156
\147\040\113\157\156\147\061\022\060\020\006\003\125\004\007\023
\011\110\157\156\147\040\113\157\156\147\061\026\060\024\006\003
```

\125\004\012\023\015\110\157\156\147\153\157\156\147\040\120\157  
\163\164\061\040\060\036\006\003\125\004\003\023\027\110\157\156  
\147\153\157\156\147\040\120\157\163\164\040\122\157\157\164\040  
\103\101\040\063\060\202\002\042\060\015\006\011\052\206\110\206  
\367\015\001\001\001\005\000\003\202\002\017\000\060\202\002\012  
\002\202\002\001\000\263\210\327\352\316\017\040\116\276\346\326  
\003\155\356\131\374\302\127\337\051\150\241\203\016\076\150\307  
\150\130\234\034\140\113\211\103\014\271\324\025\262\356\301\116  
\165\351\265\247\357\345\351\065\231\344\314\034\347\113\137\215  
\063\060\040\063\123\331\246\273\325\076\023\216\351\037\207\111  
\255\120\055\120\312\030\276\001\130\242\023\160\226\273\211\210  
\126\200\134\370\275\054\074\341\114\127\210\273\323\271\225\357  
\313\307\366\332\061\164\050\246\346\124\211\365\101\061\312\345  
\046\032\315\202\340\160\332\073\051\273\325\003\365\231\272\125  
\365\144\321\140\016\263\211\111\270\212\057\005\322\204\105\050  
\174\217\150\120\022\170\374\013\265\123\313\302\230\034\204\243  
\236\260\276\043\244\332\334\310\053\036\332\156\105\036\211\230  
\332\371\000\056\006\351\014\073\160\325\120\045\210\231\313\315  
\163\140\367\325\377\065\147\305\241\274\136\253\315\112\270\105  
\353\310\150\036\015\015\024\106\022\343\322\144\142\212\102\230  
\274\264\306\010\010\370\375\250\114\144\234\166\001\275\057\251  
\154\063\017\330\077\050\270\074\151\001\102\206\176\151\301\311  
\006\312\345\172\106\145\351\302\326\120\101\056\077\267\344\355  
\154\327\277\046\001\021\242\026\051\112\153\064\006\220\354\023  
\322\266\373\152\166\322\074\355\360\326\055\335\341\025\354\243  
\233\057\054\311\076\053\344\151\073\377\162\045\261\066\206\133  
\307\177\153\213\125\033\112\305\040\141\075\256\313\120\341\010  
\072\276\260\217\143\101\123\060\010\131\074\230\035\167\272\143  
\221\172\312\020\120\140\277\360\327\274\225\207\217\227\305\376  
\227\152\001\224\243\174\133\205\035\052\071\072\320\124\241\321  
\071\161\235\375\041\371\265\173\360\342\340\002\217\156\226\044  
\045\054\240\036\054\250\304\211\247\357\355\231\006\057\266\012  
\114\117\333\242\314\067\032\257\107\205\055\212\137\304\064\064  
\114\000\375\030\223\147\023\321\067\346\110\264\213\006\305\127  
\173\031\206\012\171\313\000\311\122\257\102\377\067\217\341\243  
\036\172\075\120\253\143\006\347\025\265\077\266\105\067\224\067  
\261\176\362\110\303\177\305\165\376\227\215\105\217\032\247\032  
\162\050\032\100\017\002\003\001\000\001\243\143\060\141\060\017  
\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060  
\016\006\003\125\035\017\001\001\377\004\004\003\002\001\006\060  
\037\006\003\125\035\043\004\030\060\026\200\024\027\235\315\036  
\213\326\071\053\160\323\134\324\240\270\037\260\000\374\305\141  
\060\035\006\003\125\035\016\004\026\004\024\027\235\315\036\213  
\326\071\053\160\323\134\324\240\270\037\260\000\374\305\141\060  
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\003\202  
\002\001\000\126\325\173\156\346\042\001\322\102\233\030\325\016  
\327\146\043\134\343\376\240\307\222\322\351\224\255\113\242\306  
\354\022\174\164\325\110\322\131\024\231\300\353\271\321\353\364

\110\060\133\255\247\127\163\231\251\323\345\267\321\056\131\044  
\130\334\150\056\056\142\330\152\344\160\013\055\040\120\040\244  
\062\225\321\000\230\273\323\375\367\062\362\111\256\306\172\340  
\107\276\156\316\313\243\162\072\055\151\135\313\310\350\105\071  
\324\372\102\301\021\114\167\135\222\373\152\377\130\104\345\353  
\201\236\257\240\231\255\276\251\001\146\313\070\035\074\337\103  
\037\364\115\156\264\272\027\106\374\175\375\207\201\171\152\015  
\063\017\372\057\370\024\271\200\263\135\115\252\227\341\371\344  
\030\305\370\325\070\214\046\074\375\362\050\342\356\132\111\210  
\054\337\171\075\216\236\220\074\275\101\112\072\335\133\366\232  
\264\316\077\045\060\177\062\175\242\003\224\320\334\172\241\122  
\336\156\223\215\030\046\375\125\254\275\217\233\322\317\257\347  
\206\054\313\037\011\157\243\157\251\204\324\163\277\115\241\164  
\033\116\043\140\362\314\016\252\177\244\234\114\045\250\262\146  
\073\070\377\331\224\060\366\162\204\276\150\125\020\017\306\163  
\054\026\151\223\007\376\261\105\355\273\242\125\152\260\332\265  
\112\002\045\047\205\327\267\267\206\104\026\211\154\200\053\076  
\227\251\234\325\176\125\114\306\336\105\020\034\352\351\073\237  
\003\123\356\356\172\001\002\026\170\324\350\302\276\106\166\210  
\023\077\042\273\110\022\035\122\000\264\002\176\041\032\036\234  
\045\364\363\075\136\036\322\034\371\263\055\266\367\067\134\306  
\313\041\116\260\367\231\107\030\205\301\053\272\125\256\006\352  
\320\007\262\334\253\320\202\226\165\316\322\120\376\231\347\317  
\057\237\347\166\321\141\052\373\041\273\061\320\252\237\107\244  
\262\042\312\026\072\120\127\304\133\103\147\305\145\142\003\111  
\001\353\103\331\330\370\236\255\317\261\143\016\105\364\240\132  
\054\233\055\305\246\300\255\250\107\364\047\114\070\015\056\033  
\111\073\122\364\350\210\203\053\124\050\324\362\065\122\264\062  
\203\142\151\144\014\221\234\237\227\352\164\026\375\037\021\006  
\232\233\364

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "Hongkong Post Root CA 3"

# Issuer: CN=Hongkong Post Root CA 3,O=Hongkong Post,L=Hong Kong,ST=Hong Kong,C=HK

# Serial Number:08:16:5f:8a:4c:a5:ec:00:c9:93:40:df:c4:c6:ae:23:b8:1c:5a:a4

# Subject: CN=Hongkong Post Root CA 3,O=Hongkong Post,L=Hong Kong,ST=Hong Kong,C=HK

# Not Valid Before: Sat Jun 03 02:29:46 2017

# Not Valid After : Tue Jun 03 02:29:46 2042

# Fingerprint (SHA-256):

5A:2F:C0:3F:0C:83:B0:90:BB:FA:40:60:4B:09:88:44:6C:76:36:18:3D:F9:84:6E:17:10:1A:44:7F:B8:EF:D6

#

Fingerprint (SHA1): 58:A2:D0:EC:20:52:81:5B:C1:F3:F8:64:02:24:4E:C2:8E:02:4B:02

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE



```

CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Hongkong Post Root CA 3"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\130\242\320\354\040\122\201\133\301\363\370\144\002\044\116\302
\216\002\113\002
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\021\374\237\275\163\060\002\212\375\077\363\130\271\313\040\360
END
CKA_ISSUER MULTILINE_OCTAL
\060\157\061\013\060\011\006\003\125\004\006\023\002\110\113\061
\022\060\020\006\003\125\004\010\023\011\110\157\156\147\040\113
\157\156\147\061\022\060\020\006\003\125\004\007\023\011\110\157
\156\147\040\113\157\156\147\061\026\060\024\006\003\125\004\012
\023\015\110\157\156\147\153\157\156\147\040\120\157\163\164\061
\040\060\036\006\003\125\004\003\023\027\110\157\156\147\153\157
\156\147\040\120\157\163\164\040\122\157\157\164\040\103\101\040
\063
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\024\010\026\137\212\114\245\354\000\311\223\100\337\304\306
\256\043\270\034\132\244
END
CKA_TRUST_SERVER_AUTH
CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "Entrust Root Certification Authority - G4"
#
# Issuer: CN=Entrust Root Certification Authority - G4,OU="(c) 2015 Entrust, Inc. - for authorized use
only",OU=See www.entrust.net/legal-terms,O="Entrust, Inc.",C=US
# Serial Number:00:d9:b5:43:7f:af:a9:39:0f:00:00:00:00:55:65:ad:58
# Subject: CN=Entrust Root Certification Authority - G4,OU="(c) 2015 Entrust, Inc. - for authorized use
only",OU=See www.entrust.net/legal-terms,O="Entrust, Inc.",C=US
# Not Valid Before: Wed May 27 11:11:16 2015
# Not Valid After : Sun Dec 27 11:41:16 2037
# Fingerprint (SHA-256):
DB:35:17:D1:F6:73:2A:2D:5A:B9:7C:53:3E:C7:07:79:EE:32:70:A6:2F:B4:AC:42:38:37:24:60:E6:F0:1E:88
#
Fingerprint (SHA1): 14:88:4E:86:26:37:B0:26:AF:59:62:5C:40:77:EC:35:29:BA:96:01
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE

```

```
CKA_LABEL UTF8 "Entrust Root Certification Authority - G4"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\276\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\026\060\024\006\003\125\004\012\023\015\105\156\164\162\165
\163\164\054\040\111\156\143\056\061\050\060\046\006\003\125\004
\013\023\037\123\145\145\040\167\167\167\056\145\156\164\162\165
\163\164\056\156\145\164\057\154\145\147\141\154\055\164\145\162
\155\163\061\071\060\067\006\003\125\004\013\023\060\050\143\051
\040\062\060\061\065\040\105\156\164\162\165\163\164\054\040\111
\156\143\056\040\055\040\146\157\162\040\141\165\164\150\157\162
\151\172\145\144\040\165\163\145\040\157\156\154\171\061\062\060
\060\006\003\125\004\003\023\051\105\156\164\162\165\163\164\040
\122\157\157\164\040\103\145\162\164\151\146\151\143\141\164\151
\157\156\040\101\165\164\150\157\162\151\164\171\040\055\040\107
\064
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\276\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\026\060\024\006\003\125\004\012\023\015\105\156\164\162\165
\163\164\054\040\111\156\143\056\061\050\060\046\006\003\125\004
\013\023\037\123\145\145\040\167\167\167\056\145\156\164\162\165
\163\164\056\156\145\164\057\154\145\147\141\154\055\164\145\162
\155\163\061\071\060\067\006\003\125\004\013\023\060\050\143\051
\040\062\060\061\065\040\105\156\164\162\165\163\164\054\040\111
\156\143\056\040\055\040\146\157\162\040\141\165\164\150\157\162
\151\172\145\144\040\165\163\145\040\157\156\154\171\061\062\060
\060\006\003\125\004\003\023\051\105\156\164\162\165\163\164\040
\122\157\157\164\040\103\145\162\164\151\146\151\143\141\164\151
\157\156\040\101\165\164\150\157\162\151\164\171\040\055\040\107
\064
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\021\000\331\265\103\177\257\251\071\017\000\000\000\000\125
\145\255\130
END
CKA_VALUE
MULTILINE_OCTAL
\060\202\006\113\060\202\004\063\240\003\002\001\002\002\021\000
\331\265\103\177\257\251\071\017\000\000\000\000\125\145\255\130
\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060
\201\276\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\026\060\024\006\003\125\004\012\023\015\105\156\164\162\165\163
\164\054\040\111\156\143\056\061\050\060\046\006\003\125\004\013
\023\037\123\145\145\040\167\167\167\056\145\156\164\162\165\163
\164\056\156\145\164\057\154\145\147\141\154\055\164\145\162\155
```

\163\061\071\060\067\006\003\125\004\013\023\060\050\143\051\040  
\062\060\061\065\040\105\156\164\162\165\163\164\054\040\111\156  
\143\056\040\055\040\146\157\162\040\141\165\164\150\157\162\151  
\172\145\144\040\165\163\145\040\157\156\154\171\061\062\060\060  
\006\003\125\004\003\023\051\105\156\164\162\165\163\164\040\122  
\157\157\164\040\103\145\162\164\151\146\151\143\141\164\151\157  
\156\040\101\165\164\150\157\162\151\164\171\040\055\040\107\064  
\060\036\027\015\061\065\060\065\062\067\061\061\061\061\061\066  
\132\027\015\063\067\061\062\062\067\061\061\064\061\061\066\132  
\060\201\276\061\013\060\011\006\003\125\004\006\023\002\125\123  
\061\026\060\024\006\003\125\004\012\023\015\105\156\164\162\165  
\163\164\054\040\111\156\143\056\061\050\060\046\006\003\125\004  
\013\023\037\123\145\145\040\167\167\167\056\145\156\164\162\165  
\163\164\056\156\145\164\057\154\145\147\141\154\055\164\145\162  
\155\163\061\071\060\067\006\003\125\004\013\023\060\050\143\051  
\040\062\060\061\065\040\105\156\164\162\165\163\164\054\040\111  
\156\143\056\040\055\040\146\157\162\040\141\165\164\150\157\162  
\151\172\145\144\040\165\163\145\040\157\156\154\171\061\062\060  
\060\006\003\125\004\003\023\051\105\156\164\162\165\163\164\040  
\122\157\157\164\040\103\145\162\164\151\146\151\143\141\164\151  
\157\156\040\101\165\164\150\157\162\151\164\171\040\055\040\107  
\064\060\202\002\042\060\015\006\011\052\206\110\206\367\015\001  
\001\001\005\000\003\202\002\017\000\060\202\002\012\002\202\002  
\001\000\261\354\054\102\356\342\321\060\377\245\222\107\342\055  
\303\272\144\227\155\312\367\015\265\131\301\263\313\250\150\031  
\330\257\204\155\060\160\135\176\363\056\322\123\231\341\376\037  
\136\331\110\257\135\023\215\333\377\143\063\115\323\000\002\274  
\304\370\321\006\010\224\171\130\212\025\336\051\263\375\375\304  
\117\350\252\342\240\073\171\315\277\153\103\062\335\331\164\020  
\271\367\364\150\324\273\320\207\325\252\113\212\052\157\052\004  
\265\262\246\307\240\172\346\110\253\322\321\131\314\326\176\043  
\346\227\154\360\102\345\334\121\113\025\101\355\111\112\311\336  
\020\227\326\166\301\357\245\265\066\024\227\065\330\170\042\065  
\122\357\103\275\333\047\333\141\126\202\064\334\313\210\140\014  
\013\132\345\054\001\306\124\257\327\252\301\020\173\322\005\132  
\270\100\236\206\247\303\220\206\002\126\122\011\172\234\322\047  
\202\123\112\145\122\152\365\074\347\250\362\234\257\213\275\323  
\016\324\324\136\156\207\236\152\075\105\035\321\135\033\364\351  
\012\254\140\231\373\211\264\377\230\054\317\174\035\351\002\252  
\004\232\036\270\334\210\156\045\263\154\146\367\074\220\363\127  
\301\263\057\365\155\362\373\312\241\370\051\235\106\213\263\152  
\366\346\147\007\276\054\147\012\052\037\132\262\076\127\304\323  
\041\041\143\145\122\221\033\261\231\216\171\176\346\353\215\000  
\331\132\252\352\163\350\244\202\002\107\226\376\133\216\124\141  
\243\353\057\113\060\260\213\043\165\162\174\041\074\310\366\361  
\164\324\034\173\243\005\125\356\273\115\073\062\276\232\167\146  
\236\254\151\220\042\007\037\141\072\226\276\345\232\117\314\005  
\074\050\131\323\301\014\124\250\131\141\275\310\162\114\350\334

\237\207\177\275\234\110\066\136\225\243\016\271\070\044\125\374  
\165\146\353\002\343\010\064\051\112\306\343\053\057\063\240\332  
\243\206\245\022\227\375\200\053\332\024\102\343\222\275\076\362  
\135\136\147\164\056\034\210\107\051\064\137\342\062\250\234\045  
\067\214\272\230\000\227\213\111\226\036\375\045\212\254\334\332  
\330\135\164\156\146\260\377\104\337\241\030\306\276\110\057\067  
\224\170\370\225\112\077\177\023\136\135\131\375\164\206\103\143  
\163\111\002\003\001\000\001\243\102\060\100\060\017\006\003\125  
\035\023\001\001\377\004\005\060\003\001\001\377\060\016\006\003  
\125\035\017\001\001\377\004\004\003\002\001\006\060\035\006\003  
\125\035\016\004\026\004\024\237\070\304\126\043\303\071\350\240  
\161\154\350\124\114\344\350\072\261\277\147\060\015\006\011\052  
\206\110\206\367\015\001\001\013\005\000\003\202\002\001\000\022  
\345\102\246\173\213\017\014\344\106\245\266\140\100\207\214\045  
\176\255\270\150\056\133\306\100\166\074\003\370\311\131\364\363  
\253\142\316\020\215\264\132\144\214\150\300\260\162\103\064\322  
\033\013\366\054\123\322\312\220\113\206\146\374\252\203\042\364  
\213\032\157\046\110\254\166\167\010\277\305\230\134\364\046\211  
\236\173\303\271\144\062\001\177\323\303\335\130\155\354\261\253  
\204\125\164\167\204\004\047\122\153\206\114\316\335\271\145\377  
\326\306\136\237\232\020\231\113\165\152\376\152\351\227\040\344  
\344\166\172\306\320\044\252\220\315\040\220\272\107\144\373\177  
\007\263\123\170\265\012\142\362\163\103\316\101\053\201\152\056  
\205\026\224\123\324\153\137\162\042\253\121\055\102\325\000\234  
\231\277\336\273\224\073\127\375\232\365\206\313\126\073\133\210  
\001\345\174\050\113\003\371\111\203\174\262\177\174\343\355\216  
\241\177\140\123\216\125\235\120\064\022\017\267\227\173\154\207  
\112\104\347\365\155\354\200\067\360\130\031\156\112\150\166\360  
\037\222\344\352\265\222\323\141\121\020\013\255\247\331\137\307  
\137\334\037\243\134\214\241\176\233\267\236\323\126\157\146\136  
\007\226\040\355\013\164\373\146\116\213\021\025\351\201\111\176  
\157\260\324\120\177\042\327\137\145\002\015\246\364\205\036\330  
\256\006\113\112\247\322\061\146\302\370\316\345\010\246\244\002  
\226\104\150\127\304\325\063\317\031\057\024\304\224\034\173\244  
\331\360\237\016\261\200\342\321\236\021\144\251\210\021\072\166  
\202\345\142\302\200\330\244\203\355\223\357\174\057\220\260\062  
\114\226\025\150\110\122\324\231\010\300\044\350\034\343\263\245  
\041\016\222\300\220\037\317\040\137\312\073\070\307\267\155\072  
\363\346\104\270\016\061\153\210\216\160\353\234\027\122\250\101  
\224\056\207\266\347\246\022\305\165\337\133\300\012\156\173\244  
\344\136\206\371\066\224\337\167\303\351\015\300\071\361\171\273  
\106\216\253\103\131\047\267\040\273\043\351\126\100\041\354\061  
\075\145\252\103\362\075\337\160\104\341\272\115\046\020\073\230  
\237\363\310\216\033\070\126\041\152\121\223\323\221\312\106\332  
\211\267\075\123\203\054\010\037\213\217\123\335\377\254\037

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

# Trust for "Entrust Root Certification Authority - G4"

# Issuer: CN=Entrust Root Certification Authority - G4,OU="(c) 2015 Entrust, Inc. - for authorized use only",OU=See www.entrust.net/legal-terms,O="Entrust, Inc.",C=US

# Serial Number:00:d9:b5:43:7f:af:a9:39:0f:00:00:00:00:55:65:ad:58

#

Subject: CN=Entrust Root Certification Authority - G4,OU="(c) 2015 Entrust, Inc. - for authorized use only",OU=See www.entrust.net/legal-terms,O="Entrust, Inc.",C=US

# Not Valid Before: Wed May 27 11:11:16 2015

# Not Valid After : Sun Dec 27 11:41:16 2037

# Fingerprint (SHA-256):

DB:35:17:D1:F6:73:2A:2D:5A:B9:7C:53:3E:C7:07:79:EE:32:70:A6:2F:B4:AC:42:38:37:24:60:E6:F0:1E:88

# Fingerprint (SHA1): 14:88:4E:86:26:37:B0:26:AF:59:62:5C:40:77:EC:35:29:BA:96:01

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Entrust Root Certification Authority - G4"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\024\210\116\206\046\067\260\046\257\131\142\134\100\167\354\065  
\051\272\226\001

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\211\123\361\203\043\267\174\216\005\361\214\161\070\116\037\210

END

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\276\061\013\060\011\006\003\125\004\006\023\002\125\123  
\061\026\060\024\006\003\125\004\012\023\015\105\156\164\162\165  
\163\164\054\040\111\156\143\056\061\050\060\046\006\003\125\004  
\013\023\037\123\145\145\040\167\167\167\056\145\156\164\162\165  
\163\164\056\156\145\164\057\154\145\147\141\154\055\164\145\162  
\155\163\061\071\060\067\006\003\125\004\013\023\060\050\143\051  
\040\062\060\061\065\040\105\156\164\162\165\163\164\054\040\111  
\156\143\056\040\055\040\146\157\162\040\141\165\164\150\157\162  
\151\172\145\144\040\165\163\145\040\157\156\154\171\061\062\060  
\060\006\003\125\004\003\023\051\105\156\164\162\165\163\164\040  
\122\157\157\164\040\103\145\162\164\151\146\151\143\141\164\151  
\157\156\040\101\165\164\150\157\162\151\164\171\040\055\040\107  
\064

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\021\000\331\265\103\177\257\251\071\017\000\000\000\000\125  
\145\255\130

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED

CK\_BBOOL CK\_FALSE

#

# Certificate "Microsoft ECC Root Certificate Authority 2017"

#

# Issuer: CN=Microsoft ECC Root Certificate Authority 2017,O=Microsoft Corporation,C=US

# Serial Number:66:f2:3d:af:87:de:8b:b1:4a:ea:0c:57:31:01:c2:ec

# Subject: CN=Microsoft ECC Root Certificate Authority 2017,O=Microsoft Corporation,C=US

# Not Valid Before: Wed Dec 18 23:06:45 2019

# Not Valid After : Fri Jul 18 23:16:04 2042

# Fingerprint (SHA-256):

35:8D:F3:9D:76:4A:F9:E1:B7:66:E9:C9:72:DF:35:2E:E1:5C:FA:C2:27:AF:6A:D1:D7:0E:8E:4A:6E:DC:BA:02

# Fingerprint (SHA1): 99:9A:64:C3:7F:F4:7D:9F:AB:95:F1:47:69:89:14:60:EE:C4:C3:C5

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Microsoft ECC Root Certificate Authority 2017"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\145\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\036\060\034\006\003\125\004\012\023\025\115\151\143\162\157\163  
\157\146\164\040\103\157\162\160\157\162\141\164\151\157\156\061  
\066\060\064\006\003\125\004\003\023\055\115\151\143\162\157\163  
\157\146\164\040\105\103\103\040\122\157\157\164\040\103\145\162  
\164\151\146\151\143\141\164\145\040\101\165\164\150\157\162\151  
\164\171\040\062\060\061\067

END

CKA\_ID

UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\145\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\036\060\034\006\003\125\004\012\023\025\115\151\143\162\157\163  
\157\146\164\040\103\157\162\160\157\162\141\164\151\157\156\061  
\066\060\064\006\003\125\004\003\023\055\115\151\143\162\157\163  
\157\146\164\040\105\103\103\040\122\157\157\164\040\103\145\162  
\164\151\146\151\143\141\164\145\040\101\165\164\150\157\162\151  
\164\171\040\062\060\061\067

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\146\362\075\257\207\336\213\261\112\352\014\127\061\001  
\302\354

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\002\131\060\202\001\337\240\003\002\001\002\002\020\146  
\362\075\257\207\336\213\261\112\352\014\127\061\001\302\354\060

\012\006\010\052\206\110\316\075\004\003\003\060\145\061\013\060  
\011\006\003\125\004\006\023\002\125\123\061\036\060\034\006\003  
\125\004\012\023\025\115\151\143\162\157\163\157\146\164\040\103  
\157\162\160\157\162\141\164\151\157\156\061\066\060\064\006\003  
\125\004\003\023\055\115\151\143\162\157\163\157\146\164\040\105  
\103\103\040\122\157\157\164\040\103\145\162\164\151\146\151\143  
\141\164\145\040\101\165\164\150\157\162\151\164\171\040\062\060  
\061\067\060\036\027\015\061\071\061\062\061\070\062\063\060\066  
\064\065\132\027\015\064\062\060\067\061\070\062\063\061\066\060  
\064\132\060\145\061\013\060\011\006\003\125\004\006\023\002\125  
\123\061\036\060\034\006\003\125\004\012\023\025\115\151\143\162  
\157\163\157\146\164\040\103\157\162\160\157\162\141\164\151\157  
\156\061\066\060\064\006\003\125\004\003\023\055\115\151\143\162  
\157\163\157\146\164\040\105\103\103\040\122\157\157\164\040\103  
\145\162\164\151\146\151\143\141\164\145\040\101\165\164\150\157  
\162\151\164\171\040\062\060\061\067\060\166\060\020\006\007\052  
\206\110\316\075\002\001\006\005\053\201\004\000\042\003\142\000  
\004\324\274\075\002\102\165\101\023\043\315\200\004\206\002\121  
\057\152\250\201\142\013\145\314\366\312\235\036\157\112\146\121  
\242\003\331\235\221\372\266\026\261\214\156\336\174\315\333\171  
\246\057\316\273\316\161\057\345\245\253\050\354\143\004\146\231  
\370\372\362\223\020\005\341\201\050\102\343\306\150\364\346\033  
\204\140\112\211\257\355\171\017\073\316\361\366\104\365\001\170  
\300\243\124\060\122\060\016\006\003\125\035\017\001\001\377\004  
\004\003\002\001\206\060\017\006\003\125\035\023\001\001\377\004  
\005\060\003\001\001\377\060\035\006\003\125\035\016\004\026\004  
\024\310\313\231\162\160\122\014\370\346\276\262\004\127\051\052  
\317\102\020\355\065\060\020\006\011\053\006\001\004\001\202\067  
\025\001\004\003\002\001\000\060\012\006\010\052\206\110\316\075  
\004\003\003\003\150\000\060\145\002\060\130\362\115\352\014\371  
\137\136\356\140\051\313\072\362\333\326\062\204\031\077\174\325  
\057\302\261\314\223\256\120\273\011\062\306\306\355\176\311\066  
\224\022\344\150\205\006\242\033\320\057\002\061\000\231\351\026  
\264\016\372\126\110\324\244\060\026\221\170\333\124\214\145\001  
\212\347\120\146\302\061\267\071\272\270\032\042\007\116\374\153  
\124\026\040\377\053\265\347\114\014\115\246\117\163

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "Microsoft ECC Root Certificate Authority 2017"

# Issuer: CN=Microsoft ECC Root Certificate Authority 2017,O=Microsoft Corporation,C=US

# Serial Number:66:f2:3d:af:87:de:8b:b1:4a:ea:0c:57:31:01:c2:ec

# Subject: CN=Microsoft ECC Root Certificate Authority 2017,O=Microsoft Corporation,C=US

# Not Valid Before: Wed Dec 18 23:06:45 2019

# Not Valid After : Fri Jul 18 23:16:04 2042

```

# Fingerprint (SHA-256):
35:8D:F3:9D:76:4A:F9:E1:B7:66:E9:C9:72:DF:35:2E:E1:5C:FA:C2:27:AF:6A:D1:D7:0E:8E:4A:6E:DC:BA:02
#
Fingerprint (SHA1): 99:9A:64:C3:7F:F4:7D:9F:AB:95:F1:47:69:89:14:60:EE:C4:C3:C5
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Microsoft ECC Root Certificate Authority 2017"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\231\232\144\303\177\364\175\237\253\225\361\107\151\211\024\140
\356\304\303\305
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\335\241\003\346\112\223\020\321\277\360\031\102\313\376\355\147
END
CKA_ISSUER MULTILINE_OCTAL
\060\145\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\036\060\034\006\003\125\004\012\023\025\115\151\143\162\157\163
\157\146\164\040\103\157\162\160\157\162\141\164\151\157\156\061
\066\060\064\006\003\125\004\003\023\055\115\151\143\162\157\163
\157\146\164\040\105\103\103\040\122\157\157\164\040\103\145\162
\164\151\146\151\143\141\164\145\040\101\165\164\150\157\162\151
\164\171\040\062\060\061\067
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\146\362\075\257\207\336\213\261\112\352\014\127\061\001
\302\354
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "Microsoft RSA Root Certificate Authority 2017"
#
# Issuer: CN=Microsoft RSA Root Certificate Authority 2017,O=Microsoft Corporation,C=US
# Serial Number: 1e:d3:97:09:5f:d8:b4:b3:47:70:1e:aa:be:7f:45:b3
# Subject: CN=Microsoft RSA Root Certificate Authority 2017,O=Microsoft Corporation,C=US
# Not Valid Before: Wed Dec 18 22:51:22 2019
# Not Valid After : Fri Jul 18 23:00:23 2042
# Fingerprint (SHA-256):
C7:41:F7:0F:4B:2A:8D:88:BF:2E:71:C1:41:22:EF:53:EF:10:EB:A0:CF:A5:E6:4C:FA:20:F4:18:85:30:73:E0
# Fingerprint (SHA1): 73:A5:E6:4A:3B:FF:83:16:FF:0E:DC:CC:61:8A:90:6E:4E:AE:4D:74
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL

```



```
CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Microsoft RSA Root Certificate Authority 2017"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\145\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\036\060\034\006\003\125\004\012\023\025\115\151\143\162\157\163
\157\146\164\040\103\157\162\160\157\162\141\164\151\157\156\061
\066\060\064\006\003\125\004\003\023\055\115\151\143\162\157\163
\157\146\164\040\122\123\101\040\122\157\157\164\040\103\145\162
\164\151\146\151\143\141\164\145\040\101\165\164\150\157\162\151
\164\171\040\062\060\061\067
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\145\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\036\060\034\006\003\125\004\012\023\025\115\151\143\162\157\163
\157\146\164\040\103\157\162\160\157\162\141\164\151\157\156\061
\066\060\064\006\003\125\004\003\023\055\115\151\143\162\157\163
\157\146\164\040\122\123\101\040\122\157\157\164\040\103\145\162
\164\151\146\151\143\141\164\145\040\101\165\164\150\157\162\151
\164\171\040\062\060\061\067
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\036\323\227\011\137\330\264\263\107\160\036\252\276\177
\105\263
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\250\060\202\003\220\240\003\002\001\002\002\020\036
\323\227\011\137\330\264\263\107\160\036\252\276\177\105\263\060
\015\006\011\052\206\110\206\367\015\001\001\014\005\000\060\145
\061\013\060\011\006\003\125\004\006\023\002\125\123\061\036\060
\034\006\003\125\004\012\023\025\115\151\143\162\157\163\157\146
\164\040\103\157\162\160\157\162\141\164\151\157\156\061\066\060
\064\006\003\125\004\003\023\055\115\151\143\162\157\163\157\146
\164\040\122\123\101\040\122\157\157\164\040\103\145\162\164\151
\146\151\143\141\164\145\040\101\165\164\150\157\162\151\164\171
\040\062\060\061\067\060\036\027\015\061\071\061\062\061\070\062
\062\065\061\062\062\132\027\015\064\062\060\067\061\070\062\063
\060\060\062\063\132\060\145\061\013\060\011\006\003\125\004\006
\023\002\125\123\061\036\060\034\006\003\125\004\012\023\025\115
\151\143\162\157\163\157\146\164\040\103\157\162\160\157\162\141
\164\151\157\156\061\066\060\064\006\003\125\004\003\023\055\115
\151\143\162\157\163\157\146\164\040\122\123\101\040\122\157\157
\164\040\103\145\162\164\151\146\151\143\141\164\145\040\101\165
\164\150\157\162\151\164\171\040\062\060\061\067\060\202\002\042
```

\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003  
\202\002\017\000\060\202\002\012\002\202\002\001\000\312\133\276  
\224\063\214\051\225\221\026\012\225\275\107\142\301\211\363\231  
\066\337\106\220\311\245\355\170\152\157\107\221\150\370\047\147  
\120\063\035\241\246\373\340\345\103\243\204\002\127\001\135\234  
\110\100\202\123\020\274\277\307\073\150\220\266\202\055\345\364  
\145\320\314\155\031\314\225\371\173\254\112\224\255\016\336\113  
\103\035\207\007\222\023\220\200\203\144\065\071\004\374\345\351  
\154\263\266\037\120\224\070\145\120\134\027\106\271\266\205\265  
\034\265\027\350\326\105\235\330\262\046\260\312\304\160\112\256  
\140\244\335\263\331\354\374\073\325\127\162\274\077\310\311\262  
\336\113\153\370\043\154\003\300\005\275\225\307\315\163\073\146  
\200\144\343\032\254\056\371\107\005\362\006\266\233\163\365\170  
\063\133\307\241\373\047\052\241\264\232\221\214\221\323\072\202  
\076\166\100\264\315\122\141\121\160\050\077\305\305\132\362\311  
\214\111\273\024\133\115\310\377\147\115\114\022\226\255\365\376  
\170\250\227\207\327\375\136\040\200\334\241\113\042\373\324\211  
\255\272\316\107\227\107\125\173\217\105\310\147\050\204\225\034  
\150\060\357\357\111\340\065\173\144\347\230\260\224\332\115\205  
\073\076\125\304\050\257\127\363\236\023\333\106\047\237\036\242  
\136\104\203\244\245\312\325\023\263\113\077\304\343\302\346\206  
\141\244\122\060\271\172\040\117\157\017\070\123\313\063\014\023  
\053\217\326\232\275\052\310\055\261\034\175\113\121\312\107\321  
\110\047\162\135\207\353\325\105\346\110\145\235\257\122\220\272  
\133\242\030\145\127\022\237\150\271\324\025\153\224\304\151\042  
\230\364\063\340\355\371\121\216\101\120\311\064\117\166\220\254  
\374\070\301\330\341\173\271\343\343\224\341\106\151\313\016\012  
\120\153\023\272\254\017\067\132\267\022\265\220\201\036\126\256  
\127\042\206\331\311\322\321\327\121\343\253\073\306\125\375\036  
\016\323\164\012\321\332\252\352\151\270\227\050\217\110\304\007  
\370\122\103\072\364\312\125\065\054\260\246\152\300\234\371\362  
\201\341\022\152\300\105\331\147\263\316\377\043\242\211\012\124  
\324\024\271\052\250\327\354\371\253\315\045\130\062\171\217\220  
\133\230\071\304\010\006\301\254\177\016\075\000\245\002\003\001  
\000\001\243\124\060\122\060\016\006\003\125\035\017\001\001\377  
\004\004\003\002\001\206\060\017\006\003\125\035\023\001\001\377  
\004\005\060\003\001\001\377\060\035\006\003\125\035\016\004\026  
\004\024\011\313\131\177\206\262\160\217\032\303\071\343\300\331  
\351\277\273\115\262\043\060\020\006\011\053\006\001\004\001\202  
\067\025\001\004\003\002\001\000\060\015\006\011\052\206\110\206  
\367\015\001\001\014\005\000\003\202\002\001\000\254\257\076\135  
\302\021\226\211\216\243\347\222\326\227\025\270\023\242\246\102  
\056\002\315\026\005\131\047\312\040\350\272\270\350\032\354\115  
\250\227\126\256\145\103\261\217\000\233\122\315\125\315\123\071  
\155\142\114\213\015\133\174\056\104\277\203\020\217\363\123\202  
\200\303\117\072\307\156\021\077\346\343\026\221\204\373\155\204  
\177\064\164\255\211\247\316\271\327\327\237\204\144\222\276\225  
\241\255\011\123\063\335\356\012\352\112\121\216\157\125\253\272

\265\224\106\256\214\177\330\242\120\045\145\140\200\106\333\063  
\004\256\154\265\230\164\124\045\334\223\344\370\343\125\025\075  
\270\155\303\012\244\022\301\151\205\156\337\144\361\123\231\341  
\112\165\040\235\225\017\344\326\334\003\361\131\030\350\107\211  
\262\127\132\224\266\251\330\027\053\027\111\345\166\313\301\126  
\231\072\067\261\377\151\054\221\221\223\341\337\114\243\067\166  
\115\241\237\370\155\036\035\323\372\354\373\364\105\035\023\155  
\317\367\131\345\042\047\162\053\206\363\127\273\060\355\044\115  
\334\175\126\273\243\263\370\064\171\211\301\340\362\002\141\367  
\246\374\017\273\034\027\013\256\101\331\174\275\047\243\375\056  
\072\321\223\224\261\163\035\044\213\257\133\040\211\255\267\147  
\146\171\365\072\306\246\226\063\376\123\222\310\106\261\021\221  
\306\231\177\217\311\326\146\061\040\101\020\207\055\014\326\301  
\257\064\230\312\144\203\373\023\127\321\301\360\074\172\214\245  
\301\375\225\041\240\161\301\223\147\161\022\352\217\210\012\151  
\031\144\231\043\126\373\254\052\056\160\276\146\304\014\204\357  
\345\213\363\223\001\370\152\220\223\147\113\262\150\243\265\142  
\217\351\077\214\172\073\136\017\347\214\270\306\174\357\067\375  
\164\342\310\117\063\162\341\224\071\155\275\022\257\276\014\116  
\160\174\033\157\215\263\062\223\163\104\026\155\350\364\367\340  
\225\200\217\226\135\070\244\364\253\336\012\060\207\223\330\115  
\000\161\142\105\047\113\072\102\204\133\177\145\267\147\064\122  
\055\234\026\153\252\250\330\173\243\102\114\161\307\014\312\076  
\203\344\246\357\267\001\060\136\121\243\171\365\160\151\246\101  
\104\017\206\260\054\221\306\075\352\256\017\204

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "Microsoft RSA Root Certificate Authority 2017"

# Issuer: CN=Microsoft RSA Root Certificate Authority 2017,O=Microsoft Corporation,C=US

# Serial Number: 1e:d3:97:09:5f:d8:b4:b3:47:70:1e:aa:be:7f:45:b3

# Subject: CN=Microsoft RSA Root Certificate Authority 2017,O=Microsoft Corporation,C=US

# Not Valid Before: Wed Dec 18 22:51:22 2019

# Not Valid After : Fri Jul 18 23:00:23 2042

# Fingerprint (SHA-256):

C7:41:F7:0F:4B:2A:8D:88:BF:2E:71:C1:41:22:EF:53:EF:10:EB:A0:CF:A5:E6:4C:FA:20:F4:18:85:30:73:E0

# Fingerprint (SHA1): 73:A5:E6:4A:3B:FF:83:16:FF:0E:DC:CC:61:8A:90:6E:4E:AE:4D:74

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL

CK\_FALSE

CKA\_LABEL UTF8 "Microsoft RSA Root Certificate Authority 2017"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\163\245\346\112\073\377\203\026\377\016\334\314\141\212\220\156

```

\116\256\115\164
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\020\377\000\377\317\311\370\307\172\300\356\065\216\311\017\107
END
CKA_ISSUER MULTILINE_OCTAL
\060\145\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\036\060\034\006\003\125\004\012\023\025\115\151\143\162\157\163
\157\146\164\040\103\157\162\160\157\162\141\164\151\157\156\061
\066\060\064\006\003\125\004\003\023\055\115\151\143\162\157\163
\157\146\164\040\122\123\101\040\122\157\157\164\040\103\145\162
\164\151\146\151\143\141\164\145\040\101\165\164\150\157\162\151
\164\171\040\062\060\061\067
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\036\323\227\011\137\330\264\263\107\160\036\252\276\177
\105\263
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING
CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "e-Szigno Root CA 2017"
#
# Issuer: CN=e-Szigno Root CA 2017,OID.2.5.4.97=VATHU-23584497,O=Microsec Ltd.,L=Budapest,C=HU
# Serial Number:01:54:48:ef:21:fd:97:59:0d:f5:04:0a
# Subject: CN=e-Szigno Root CA 2017,OID.2.5.4.97=VATHU-23584497,O=Microsec Ltd.,L=Budapest,C=HU
# Not Valid Before: Tue Aug 22 12:07:06 2017
# Not Valid After : Fri Aug 22 12:07:06 2042
# Fingerprint (SHA-256):
BE:B0:0B:30:83:9B:9B:C3:2C:32:E4:44:79:05:95:06:41:F2:64:21:B1:5E:D0:89:19:8B:51:8A:E2:EA:1B:99
# Fingerprint (SHA1): 89:D4:83:03:4F:9E:9A:48:80:5F:72:37:D4:A9:A6:EF:CB:7C:1F:D1
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "e-Szigno Root CA 2017"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\161\061\013\060\011\006\003\125\004\006\023\002\110\125\061
\021\060\017\006\003\125\004\007\014\010\102\165\144\141\160\145
\163\164\061\026\060\024\006\003\125\004\012\014\015\115\151\143
\162\157\163\145\143\040\114\164\144\056\061\027\060\025\006\003
\125\004\141\014\016\126\101\124\110\125\055\062\063\065\070\064
\064\071\067\061\036\060\034\006\003\125\004\003\014\025\145\055

```

```
\123\172\151\147\156\157\040\122\157\157\164\040\103\101\040\062
\060\061\067
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\161\061\013\060\011\006\003\125\004\006\023\002\110\125\061
\021\060\017\006\003\125\004\007\014\010\102\165\144\141\160\145
\163\164\061\026\060\024\006\003\125\004\012\014\015\115\151\143
\162\157\163\145\143\040\114\164\144\056\061\027\060\025\006\003
\125\004\141\014\016\126\101\124\110\125\055\062\063\065\070\064
\064\071\067\061\036\060\034\006\003\125\004\003\014\025\145\055
\123\172\151\147\156\157\040\122\157\157\164\040\103\101\040\062
\060\061\067
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\014\001\124\110\357\041\375\227\131\015\365\004\012
END
CKA_VALUE
MULTILINE_OCTAL
\060\202\002\100\060\202\001\345\240\003\002\001\002\002\014\001
\124\110\357\041\375\227\131\015\365\004\012\060\012\006\010\052
\206\110\316\075\004\003\002\060\161\061\013\060\011\006\003\125
\004\006\023\002\110\125\061\021\060\017\006\003\125\004\007\014
\010\102\165\144\141\160\145\163\164\061\026\060\024\006\003\125
\004\012\014\015\115\151\143\162\157\163\145\143\040\114\164\144
\056\061\027\060\025\006\003\125\004\141\014\016\126\101\124\110
\125\055\062\063\065\070\064\064\071\067\061\036\060\034\006\003
\125\004\003\014\025\145\055\123\172\151\147\156\157\040\122\157
\157\164\040\103\101\040\062\060\061\067\060\036\027\015\061\067
\060\070\062\062\061\062\060\067\060\066\132\027\015\064\062\060
\070\062\062\061\062\060\067\060\066\132\060\161\061\013\060\011
\006\003\125\004\006\023\002\110\125\061\021\060\017\006\003\125
\004\007\014\010\102\165\144\141\160\145\163\164\061\026\060\024
\006\003\125\004\012\014\015\115\151\143\162\157\163\145\143\040
\114\164\144\056\061\027\060\025\006\003\125\004\141\014\016\126
\101\124\110\125\055\062\063\065\070\064\064\071\067\061\036\060
\034\006\003\125\004\003\014\025\145\055\123\172\151\147\156\157
\040\122\157\157\164\040\103\101\040\062\060\061\067\060\131\060
\023\006\007\052\206\110\316\075\002\001\006\010\052\206\110\316
\075\003\001\007\003\102\000\004\226\334\075\212\330\260\173\157
\306\047\276\104\220\261\263\126\025\173\216\103\044\175\032\204
\131\356\143\150\262\306\136\207\320\025\110\036\250\220\255\275
\123\242\332\336\072\220\246\140\137\150\062\265\206\101\337\207
\133\054\173\305\376\174\172\332\243\143\060\141\060\017\006\003
\125\035\023\001\001\377\004\005\060\003\001\001\377\060\016\006
\003\125\035\017\001\001\377\004\004\003\002\001\006\060\035\006
\003\125\035\016\004\026\004\024\207\021\025\010\321\252\301\170
```

```
\014\261\257\316\306\311\220\357\277\060\004\300\060\037\006\003
\125\035\043\004\030\060\026\200\024\207\021\025\010\321\252\301
\170\014\261\257\316\306\311\220\357\277\060\004\300\060\012\006
\010\052\206\110\316\075\004\003\002\003\111\000\060\106\002\041
\000\265\127\335\327\212\125\013\066\341\206\104\372\324\331\150
\215\270\334\043\212\212\015\324\057\175\352\163\354\277\115\154
\250\002\041\000\313\245\264\022\372\347\265\350\317\176\223\374
\363\065\217\157\116\132\174\264\274\116\262\374\162\252\133\131
\371\347\334\061
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "e-Szigno Root CA 2017"

# Issuer: CN=e-Szigno Root CA 2017,OID.2.5.4.97=VATHU-23584497,O=Microsec Ltd.,L=Budapest,C=HU

# Serial Number:01:54:48:ef:21:fd:97:59:0d:f5:04:0a

# Subject: CN=e-Szigno Root CA 2017,OID.2.5.4.97=VATHU-23584497,O=Microsec Ltd.,L=Budapest,C=HU

# Not Valid Before: Tue Aug 22 12:07:06 2017

# Not Valid After : Fri Aug 22 12:07:06 2042

# Fingerprint (SHA-256):

BE:B0:0B:30:83:9B:9B:C3:2C:32:E4:44:79:05:95:06:41:F2:64:21:B1:5E:D0:89:19:8B:51:8A:E2:EA:1B:99

#

Fingerprint (SHA1): 89:D4:83:03:4F:9E:9A:48:80:5F:72:37:D4:A9:A6:EF:CB:7C:1F:D1

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "e-Szigno Root CA 2017"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\211\324\203\003\117\236\232\110\200\137\162\067\324\251\246\357
\313\174\037\321
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\336\037\366\236\204\256\247\264\041\316\036\130\175\321\204\230
```

END

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\161\061\013\060\011\006\003\125\004\006\023\002\110\125\061
\021\060\017\006\003\125\004\007\014\010\102\165\144\141\160\145
\163\164\061\026\060\024\006\003\125\004\012\014\015\115\151\143
\162\157\163\145\143\040\114\164\144\056\061\027\060\025\006\003
\125\004\141\014\016\126\101\124\110\125\055\062\063\065\070\064
\064\071\067\061\036\060\034\006\003\125\004\003\014\025\145\055
\123\172\151\147\156\157\040\122\157\157\164\040\103\101\040\062
\060\061\067
```

END

CKA\_SERIAL\_NUMBER

```

MULTILINE_OCTAL
\002\014\001\124\110\357\041\375\227\131\015\365\004\012
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "certSIGN Root CA G2"
#
# Issuer: OU=certSIGN ROOT CA G2,O=CERTSIGN SA,C=RO
# Serial Number:11:00:34:b6:4e:c6:36:2d:36
# Subject: OU=certSIGN ROOT CA G2,O=CERTSIGN SA,C=RO
# Not Valid Before: Mon Feb 06 09:27:35 2017
# Not Valid After : Thu Feb 06 09:27:35 2042
# Fingerprint (SHA-256):
65:7C:FE:2F:A7:3F:AA:38:46:25:71:F3:32:A2:36:3A:46:FC:E7:02:09:51:71:07:02:CD:FB:B6:EE:DA:33:05
# Fingerprint (SHA1): 26:F9:93:B4:ED:3D:28:27:B0:B9:4B:A7:E9:15:1D:A3:8D:92:E5:32
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "certSIGN Root CA G2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT
MULTILINE_OCTAL
\060\101\061\013\060\011\006\003\125\004\006\023\002\122\117\061
\024\060\022\006\003\125\004\012\023\013\103\105\122\124\123\111
\107\116\040\123\101\061\034\060\032\006\003\125\004\013\023\023
\143\145\162\164\123\111\107\116\040\122\117\117\124\040\103\101
\040\107\062
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\101\061\013\060\011\006\003\125\004\006\023\002\122\117\061
\024\060\022\006\003\125\004\012\023\013\103\105\122\124\123\111
\107\116\040\123\101\061\034\060\032\006\003\125\004\013\023\023
\143\145\162\164\123\111\107\116\040\122\117\117\124\040\103\101
\040\107\062
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\011\021\000\064\266\116\306\066\055\066
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\107\060\202\003\057\240\003\002\001\002\002\011\021
\000\064\266\116\306\066\055\066\060\015\006\011\052\206\110\206
\367\015\001\001\013\005\000\060\101\061\013\060\011\006\003\125

```

\004\006\023\002\122\117\061\024\060\022\006\003\125\004\012\023  
\013\103\105\122\124\123\111\107\116\040\123\101\061\034\060\032  
\006\003\125\004\013\023\023\143\145\162\164\123\111\107\116\040  
\122\117\117\124\040\103\101\040\107\062\060\036\027\015\061\067  
\060\062\060\066\060\071\062\067\063\065\132\027\015\064\062\060  
\062\060\066\060\071\062\067\063\065\132\060\101\061\013\060\011  
\006\003\125\004\006\023\002\122\117\061\024\060\022\006\003\125  
\004\012\023\013\103\105\122\124\123\111\107\116\040\123\101\061  
\034\060\032\006\003\125\004\013\023\023\143\145\162\164\123\111  
\107\116\040\122\117\117\124\040\103\101\040\107\062\060\202\002  
\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000  
\003\202\002\017\000\060\202\002\012\002\202\002\001\000\300\305  
\165\031\221\175\104\164\164\207\376\016\073\226\334\330\001\026  
\314\356\143\221\347\013\157\316\073\012\151\032\174\302\343\257  
\202\216\206\327\136\217\127\353\323\041\131\375\071\067\102\060  
\276\120\352\266\017\251\210\330\056\055\151\041\347\321\067\030  
\116\175\221\325\026\137\153\133\000\302\071\103\015\066\205\122  
\271\123\145\017\035\102\345\217\317\005\323\356\334\014\032\331  
\270\213\170\042\147\344\151\260\150\305\074\344\154\132\106\347  
\315\307\372\357\304\354\113\275\152\244\254\375\314\050\121\357  
\222\264\051\253\253\065\232\114\344\304\010\306\046\314\370\151  
\237\344\234\360\051\323\134\371\306\026\045\236\043\303\040\301  
\075\017\077\070\100\260\376\202\104\070\252\132\032\212\153\143  
\130\070\264\025\323\266\021\151\173\036\124\356\214\032\042\254  
\162\227\077\043\131\233\311\042\204\301\007\117\314\177\342\127  
\312\022\160\273\246\145\363\151\165\143\275\225\373\033\227\315  
\344\250\257\366\321\116\250\331\212\161\044\315\066\075\274\226  
\304\361\154\251\256\345\317\015\156\050\015\260\016\265\312\121  
\173\170\024\303\040\057\177\373\024\125\341\021\231\375\325\012  
\241\236\002\343\142\137\353\065\113\054\270\162\350\076\075\117  
\254\054\273\056\206\342\243\166\217\345\223\052\317\245\253\310  
\134\215\113\006\377\022\106\254\170\313\024\007\065\340\251\337  
\213\351\257\025\117\026\211\133\275\366\215\306\131\256\210\205  
\016\301\211\353\037\147\305\105\216\377\155\067\066\053\170\146  
\203\221\121\053\075\377\121\167\166\142\241\354\147\076\076\201  
\203\340\126\251\120\037\037\172\231\253\143\277\204\027\167\361  
\015\073\337\367\234\141\263\065\230\212\072\262\354\074\032\067  
\077\176\217\222\317\331\022\024\144\332\020\002\025\101\377\117  
\304\353\034\243\311\372\231\367\106\351\341\030\331\261\270\062  
\055\313\024\014\120\330\203\145\203\356\271\134\317\313\005\132  
\114\372\031\227\153\326\135\023\323\302\134\124\274\062\163\240  
\170\365\361\155\036\313\237\245\246\237\042\334\321\121\236\202  
\171\144\140\051\023\076\243\375\117\162\152\253\342\324\345\270  
\044\125\054\104\113\212\210\104\234\312\204\323\052\073\002\003  
\001\000\001\243\102\060\100\060\017\006\003\125\035\023\001\001  
\377\004\005\060\003\001\001\377\060\016\006\003\125\035\017\001  
\001\377\004\004\003\002\001\006\060\035\006\003\125\035\016\004  
\026\004\024\202\041\055\146\306\327\240\340\025\353\316\114\011



\167\304\140\236\124\156\003\060\015\006\011\052\206\110\206\367  
\015\001\001\013\005\000\003\202\002\001\000\140\336\032\270\347  
\362\140\202\325\003\063\201\313\006\212\361\042\111\351\350\352  
\221\177\306\063\136\150\031\003\206\073\103\001\317\007\160\344  
\010\036\145\205\221\346\021\042\267\365\002\043\216\256\271\036  
\175\037\176\154\346\275\045\325\225\032\362\005\246\257\205\002  
\157\256\370\326\061\377\045\311\112\310\307\212\251\331\237\113  
\111\233\021\127\231\222\103\021\336\266\063\244\314\327\215\144  
\175\324\315\074\050\054\264\232\226\352\115\365\304\104\304\045  
\252\040\200\330\051\125\367\340\101\374\006\046\377\271\066\365  
\103\024\003\146\170\341\021\261\332\040\137\106\000\170\000\041  
\245\036\000\050\141\170\157\250\001\001\217\235\064\232\377\364  
\070\220\373\270\321\263\162\006\311\161\346\201\305\171\355\013  
\246\171\362\023\013\234\367\135\016\173\044\223\264\110\333\206  
\137\336\120\206\170\347\100\346\061\250\220\166\160\141\257\234  
\067\054\021\265\202\267\252\256\044\064\133\162\014\151\015\315  
\131\237\366\161\257\234\013\321\012\070\371\006\042\203\123\045  
\014\374\121\304\346\276\342\071\225\013\044\255\257\321\225\344  
\226\327\164\144\153\161\116\002\074\252\205\363\040\243\103\071  
\166\133\154\120\376\232\234\024\036\145\024\212\025\275\243\202  
\105\132\111\126\152\322\234\261\143\062\345\141\340\123\042\016  
\247\012\111\352\313\176\037\250\342\142\200\366\020\105\122\230  
\006\030\336\245\315\057\177\252\324\351\076\010\162\354\043\003  
\002\074\246\252\330\274\147\164\075\024\027\373\124\113\027\343  
\323\171\075\155\153\111\311\050\016\056\164\120\277\014\331\106  
\072\020\206\311\247\077\351\240\354\177\353\245\167\130\151\161  
\346\203\012\067\362\206\111\152\276\171\010\220\366\002\026\144  
\076\345\332\114\176\014\064\311\371\137\266\263\050\121\247\247  
\053\252\111\372\215\145\051\116\343\153\023\247\224\243\055\121  
\155\170\014\104\313\337\336\010\157\316\243\144\253\323\225\204  
\324\271\122\124\162\173\226\045\314\274\151\343\110\156\015\320  
\307\235\047\232\252\370\023\222\335\036\337\143\237\065\251\026  
\066\354\214\270\203\364\075\211\217\315\264\027\136\327\263\027  
\101\020\135\047\163\140\205\127\111\042\007

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "certSIGN Root CA G2"

# Issuer: OU=certSIGN ROOT CA G2,O=CERTSIGN SA,C=RO

# Serial Number:11:00:34:b6:4e:c6:36:2d:36

# Subject: OU=certSIGN ROOT CA G2,O=CERTSIGN SA,C=RO

# Not Valid Before: Mon Feb 06 09:27:35 2017

# Not Valid After : Thu Feb 06 09:27:35 2042

# Fingerprint (SHA-256):

65:7C:FE:2F:A7:3F:AA:38:46:25:71:F3:32:A2:36:3A:46:FC:E7:02:09:51:71:07:02:CD:FB:B6:EE:DA:33:05

```

# Fingerprint (SHA1): 26:F9:93:B4:ED:3D:28:27:B0:B9:4B:A7:E9:15:1D:A3:8D:92:E5:32
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8
"certSIGN Root CA G2"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\046\371\223\264\355\075\050\047\260\271\113\247\351\025\035\243
\215\222\345\062
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\214\361\165\212\306\031\317\224\267\367\145\040\207\303\227\307
END
CKA_ISSUER MULTILINE_OCTAL
\060\101\061\013\060\011\006\003\125\004\006\023\002\122\117\061
\024\060\022\006\003\125\004\012\023\013\103\105\122\124\123\111
\107\116\040\123\101\061\034\060\032\006\003\125\004\013\023\023
\143\145\162\164\123\111\107\116\040\122\117\117\124\040\103\101
\040\107\062
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\011\021\000\064\266\116\306\066\055\066
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "Trustwave Global Certification Authority"
#
# Issuer: CN=Trustwave Global Certification Authority,O="Trustwave Holdings,
Inc.",L=Chicago,ST=Illinois,C=US
#
Serial Number:05:f7:0e:86:da:49:f3:46:35:2e:ba:b2
# Subject: CN=Trustwave Global Certification Authority,O="Trustwave Holdings,
Inc.",L=Chicago,ST=Illinois,C=US
# Not Valid Before: Wed Aug 23 19:34:12 2017
# Not Valid After : Sat Aug 23 19:34:12 2042
# Fingerprint (SHA-256):
97:55:20:15:F5:DD:FC:3C:87:88:C0:06:94:45:55:40:88:94:45:00:84:F1:00:86:70:86:BC:1A:2B:B5:8D:C8
# Fingerprint (SHA1): 2F:8F:36:4F:E1:58:97:44:21:59:87:A5:2A:9A:D0:69:95:26:7F:B5
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Trustwave Global Certification Authority"

```

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\201\210\061\013\060\011\006\003\125\004\006\023\002\125\123  
\061\021\060\017\006\003\125\004\010\014\010\111\154\154\151\156  
\157\151\163\061\020\060\016\006\003\125\004\007\014\007\103\150  
\151\143\141\147\157\061\041\060\037\006\003\125\004\012\014\030  
\124\162\165\163\164\167\141\166\145\040\110\157\154\144\151\156  
\147\163\054\040\111\156\143\056\061\061\060\057\006\003\125\004  
\003\014\050\124\162\165\163\164\167\141\166\145\040\107\154\157  
\142\141\154\040\103\145\162\164\151\146\151\143\141\164\151\157  
\156\040\101\165\164\150\157\162\151\164\171

END

CKA\_ID

UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\210\061\013\060\011\006\003\125\004\006\023\002\125\123  
\061\021\060\017\006\003\125\004\010\014\010\111\154\154\151\156  
\157\151\163\061\020\060\016\006\003\125\004\007\014\007\103\150  
\151\143\141\147\157\061\041\060\037\006\003\125\004\012\014\030  
\124\162\165\163\164\167\141\166\145\040\110\157\154\144\151\156  
\147\163\054\040\111\156\143\056\061\061\060\057\006\003\125\004  
\003\014\050\124\162\165\163\164\167\141\166\145\040\107\154\157  
\142\141\154\040\103\145\162\164\151\146\151\143\141\164\151\157  
\156\040\101\165\164\150\157\162\151\164\171

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\014\005\367\016\206\332\111\363\106\065\056\272\262

END

CKA\_VALUE

MULTILINE\_OCTAL

\060\202\005\332\060\202\003\302\240\003\002\001\002\002\014\005  
\367\016\206\332\111\363\106\065\056\272\262\060\015\006\011\052  
\206\110\206\367\015\001\001\013\005\000\060\201\210\061\013\060  
\011\006\003\125\004\006\023\002\125\123\061\021\060\017\006\003  
\125\004\010\014\010\111\154\154\151\156\157\151\163\061\020\060  
\016\006\003\125\004\007\014\007\103\150\151\143\141\147\157\061  
\041\060\037\006\003\125\004\012\014\030\124\162\165\163\164\167  
\141\166\145\040\110\157\154\144\151\156\147\163\054\040\111\156  
\143\056\061\061\060\057\006\003\125\004\003\014\050\124\162\165  
\163\164\167\141\166\145\040\107\154\157\142\141\154\040\103\145  
\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150  
\157\162\151\164\171\060\036\027\015\061\067\060\070\062\063\061  
\071\063\064\061\062\132\027\015\064\062\060\070\062\063\061\071  
\063\064\061\062\132\060\201\210\061\013\060\011\006\003\125\004  
\006\023\002\125\123\061\021\060\017\006\003\125\004\010\014\010  
\111\154\154\151\156\157\151\163\061\020\060\016\006\003\125\004  
\007\014\007\103\150\151\143\141\147\157\061\041\060\037\006\003  
\125\004\012\014\030\124\162\165\163\164\167\141\166\145\040\110

\157\154\144\151\156\147\163\054\040\111\156\143\056\061\061\060  
\057\006\003\125\004\003\014\050\124\162\165\163\164\167\141\166  
\145\040\107\154\157\142\141\154\040\103\145\162\164\151\146\151  
\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171  
\060\202\002\042\060\015\006\011\052\206\110\206\367\015\001\001  
\001\005\000\003\202\002\017\000\060\202\002\012\002\202\002\001  
\000\271\135\121\050\113\074\067\222\321\202\316\275\035\275\315  
\335\270\253\317\012\076\341\135\345\334\252\011\271\127\002\076  
\346\143\141\337\362\017\202\143\256\243\367\254\163\321\174\347  
\263\013\257\010\000\011\131\177\315\051\052\210\223\207\027\030  
\200\355\210\262\264\266\020\037\055\326\137\125\242\023\135\321  
\306\353\006\126\211\210\376\254\062\235\375\134\303\005\307\156  
\356\206\211\272\210\003\235\162\041\206\220\256\217\003\245\334  
\237\210\050\313\243\222\111\017\354\320\017\342\155\104\117\200  
\152\262\324\347\240\012\123\001\272\216\227\221\166\156\274\374  
\325\153\066\346\100\210\326\173\057\137\005\350\054\155\021\363  
\347\262\276\222\104\114\322\227\244\376\322\162\201\103\007\234  
\351\021\076\365\213\032\131\175\037\150\130\335\004\000\054\226  
\363\103\263\176\230\031\164\331\234\163\331\030\276\101\307\064  
\171\331\364\142\302\103\271\263\047\260\042\313\371\075\122\307  
\060\107\263\311\076\270\152\342\347\350\201\160\136\102\213\117  
\046\245\376\072\302\040\156\273\370\026\216\315\014\251\264\033  
\154\166\020\341\130\171\106\076\124\316\200\250\127\011\067\051  
\033\231\023\217\014\310\326\054\034\373\005\350\010\225\075\145  
\106\334\356\315\151\342\115\217\207\050\116\064\013\076\317\024  
\331\273\335\266\120\232\255\167\324\031\326\332\032\210\310\116  
\033\047\165\330\262\010\361\256\203\060\271\021\016\315\207\360  
\204\215\025\162\174\241\357\314\362\210\141\272\364\151\273\014  
\214\013\165\127\004\270\116\052\024\056\075\017\034\036\062\246  
\142\066\356\146\342\042\270\005\100\143\020\042\363\063\035\164  
\162\212\054\365\071\051\240\323\347\033\200\204\055\305\075\343  
\115\261\375\032\157\272\145\007\073\130\354\102\105\046\373\330  
\332\045\162\304\366\000\261\042\171\275\343\174\131\142\112\234  
\005\157\075\316\346\326\107\143\231\306\044\157\162\022\310\254  
\177\220\264\013\221\160\350\267\346\026\020\161\027\316\336\006  
\117\110\101\175\065\112\243\211\362\311\113\173\101\021\155\147  
\267\010\230\114\345\021\031\256\102\200\334\373\220\005\324\370  
\120\312\276\344\255\307\302\224\327\026\235\346\027\217\257\066  
\373\002\003\001\000\001\243\102\060\100\060\017\006\003\125\035  
\023\001\001\377\004\005\060\003\001\001\377\060\035\006\003\125  
\035\016\004\026\004\024\231\340\031\147\015\142\333\166\263\332  
\075\270\133\350\375\102\322\061\016\207\060\016\006\003\125\035  
\017\001\001\377\004\004\003\002\001\006\060\015\006\011\052\206  
\110\206\367\015\001\001\013\005\000\003\202\002\001\000\230\163  
\160\342\260\323\355\071\354\114\140\331\251\022\206\027\036\226  
\320\350\124\050\073\144\055\041\246\370\235\126\023\152\110\075  
\117\307\076\051\333\155\130\203\124\075\207\175\043\005\324\344  
\034\334\350\070\145\206\305\165\247\132\333\065\005\275\167\336

\273\051\067\100\005\007\303\224\122\237\312\144\335\361\033\053  
\334\106\012\020\002\061\375\112\150\015\007\144\220\346\036\365  
\052\241\250\273\074\135\371\243\010\013\021\014\361\077\055\020  
\224\157\376\342\064\207\203\326\317\345\033\065\155\322\003\341  
\260\015\250\240\252\106\047\202\066\247\025\266\010\246\102\124  
\127\266\231\132\342\013\171\220\327\127\022\121\065\031\210\101  
\150\045\324\067\027\204\025\373\001\162\334\225\336\122\046\040  
\230\046\342\166\365\047\157\372\000\073\112\141\331\015\313\121  
\223\052\375\026\006\226\247\043\232\043\110\376\121\275\266\304  
\260\261\124\316\336\154\101\255\026\147\176\333\375\070\315\271  
\070\116\262\301\140\313\235\027\337\130\236\172\142\262\046\217  
\164\225\233\344\133\035\322\017\335\230\034\233\131\271\043\323  
\061\240\246\377\070\335\317\040\117\351\130\126\072\147\303\321  
\366\231\231\235\272\066\266\200\057\210\107\117\206\277\104\072  
\200\344\067\034\246\272\352\227\230\021\320\204\142\107\144\036  
\252\356\100\277\064\261\234\217\116\341\362\222\117\037\216\363  
\236\227\336\363\246\171\152\211\161\117\113\047\027\110\376\354  
\364\120\017\117\111\175\314\105\343\275\172\100\305\101\334\141  
\126\047\006\151\345\162\101\201\323\266\001\211\240\057\072\162  
\171\376\072\060\277\101\354\307\142\076\221\113\307\331\061\166  
\102\371\367\074\143\354\046\214\163\014\175\032\035\352\250\174  
\207\250\302\047\174\341\063\101\017\317\317\374\000\240\042\200  
\236\112\247\157\000\260\101\105\267\042\312\150\110\305\102\242  
\256\335\035\362\340\156\116\005\130\261\300\220\026\052\244\075  
\020\100\276\217\142\143\203\251\234\202\175\055\002\351\203\060  
\174\313\047\311\375\036\146\000\260\056\323\041\057\216\063\026  
\154\230\355\020\250\007\326\314\223\317\333\321\151\034\344\312  
\311\340\266\234\351\316\161\161\336\154\077\026\244\171

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "Trustwave Global Certification Authority"

# Issuer: CN=Trustwave Global Certification Authority,O="Trustwave Holdings,  
Inc.",L=Chicago,ST=Illinois,C=US

# Serial Number:05:f7:0e:86:da:49:f3:46:35:2e:ba:b2

# Subject: CN=Trustwave Global Certification Authority,O="Trustwave Holdings,  
Inc.",L=Chicago,ST=Illinois,C=US

# Not Valid Before: Wed Aug 23 19:34:12 2017

# Not Valid After : Sat Aug 23 19:34:12 2042

# Fingerprint (SHA-256):

97:55:20:15:F5:DD:FC:3C:87:88:C0:06:94:45:55:40:88:94:45:00:84:F1:00:86:70:86:BC:1A:2B:B5:8D:C8

# Fingerprint (SHA1): 2F:8F:36:4F:E1:58:97:44:21:59:87:A5:2A:9A:D0:69:95:26:7F:B5

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE

```

CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Trustwave Global Certification Authority"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\057\217\066\117\341\130\227\104\041\131\207\245\052\232\320\151
\225\046\177\265
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\370\034\030\055\057\272\137\155\241\154\274\307\253\221\307\016
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\210\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\021\060\017\006\003\125\004\010\014\010\111\154\154\151\156
\157\151\163\061\020\060\016\006\003\125\004\007\014\007\103\150
\151\143\141\147\157\061\041\060\037\006\003\125\004\012\014\030
\124\162\165\163\164\167\141\166\145\040\110\157\154\144\151\156
\147\163\054\040\111\156\143\056\061\061\060\057\006\003\125\004
\003\014\050\124\162\165\163\164\167\141\166\145\040\107\154\157
\142\141\154\040\103\145\162\164\151\146\151\143\141\164\151\157
\156\040\101\165\164\150\157\162\151\164\171
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\014\005\367\016\206\332\111\363\106\065\056\272\262
END
CKA_TRUST_SERVER_AUTH
CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "Trustwave Global ECC P256 Certification Authority"
#
# Issuer: CN=Trustwave Global ECC P256 Certification Authority,O="Trustwave Holdings,
Inc.",L=Chicago,ST=Illinois,C=US
# Serial Number:0d:6a:5f:08:3f:28:5c:3e:51:95:df:5d
# Subject: CN=Trustwave Global ECC P256 Certification Authority,O="Trustwave Holdings,
Inc.",L=Chicago,ST=Illinois,C=US
# Not Valid Before: Wed Aug 23 19:35:10 2017
# Not Valid After : Sat Aug 23 19:35:10 2042
# Fingerprint (SHA-256):
94:5B:BC:82:5E:A5:54:F4:89:D1:FD:51:A7:3D:DF:2E:A6:24:AC:70:19:A0:52:05:22:5C:22:A7:8C:CF:A8:B4
# Fingerprint (SHA1): B4:90:82:DD:45:0C:BE:8B:5B:B1:66:D3:E2:A4:08:26:CD:ED:42:CF
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE

```

CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Trustwave Global ECC P256 Certification Authority"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\201\221\061\013\060\011\006\003\125\004\006\023\002\125\123  
\061\021\060\017\006\003\125\004\010\023\010\111\154\154\151\156  
\157\151\163\061\020\060\016\006\003\125\004\007\023\007\103\150  
\151\143\141\147\157\061\041\060\037\006\003\125\004\012\023\030  
\124\162\165\163\164\167\141\166\145\040\110\157\154\144\151\156  
\147\163\054\040\111\156\143\056\061\072\060\070\006\003\125\004  
\003\023\061\124\162\165\163\164\167\141\166\145\040\107\154\157  
\142\141\154\040\105\103\103\040\120\062\065\066\040\103\145\162  
\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157  
\162\151\164\171

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\221\061\013\060\011\006\003\125\004\006\023\002\125\123  
\061\021\060\017\006\003\125\004\010\023\010\111\154\154\151\156  
\157\151\163\061\020\060\016\006\003\125\004\007\023\007\103\150  
\151\143\141\147\157\061\041\060\037\006\003\125\004\012\023\030  
\124\162\165\163\164\167\141\166\145\040\110\157\154\144\151\156  
\147\163\054\040\111\156\143\056\061\072\060\070\006\003\125\004  
\003\023\061\124\162\165\163\164\167\141\166\145\040\107\154\157  
\142\141\154\040\105\103\103\040\120\062\065\066\040\103\145\162  
\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157  
\162\151\164\171

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\014\015\152\137\010\077\050\134\076\121\225\337\135

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\002\140\060\202\002\007\240\003\002\001\002\002\014\015  
\152\137\010\077\050\134\076\121\225\337\135\060\012\006\010\052  
\206\110\316\075\004\003\002\060\201\221\061\013\060\011\006\003  
\125\004\006\023\002\125\123\061\021\060\017\006\003\125\004\010  
\023\010\111\154\154\151\156\157\151\163\061\020\060\016\006\003  
\125\004\007\023\007\103\150\151\143\141\147\157\061\041\060\037  
\006\003\125\004\012\023\030\124\162\165\163\164\167\141\166\145  
\040\110\157\154\144\151\156\147\163\054\040\111\156\143\056\061  
\072\060\070\006\003\125\004\003\023\061\124\162\165\163\164\167  
\141\166\145\040\107\154\157\142\141\154\040\105\103\103\040\120  
\062\065\066\040\103\145\162\164\151\146\151\143\141\164\151\157  
\156\040\101\165\164\150\157\162\151\164\171\060\036\027\015\061  
\067\060\070\062\063\061\071\063\065\061\060\132\027\015\064\062  
\060\070\062\063\061\071\063\065\061\060\132\060\201\221\061\013  
\060\011\006\003\125\004\006\023\002\125\123\061\021\060\017\006

```
\003\125\004\010\023\010\111\154\154\151\156\157\151\163\061\020
\060\016\006\003\125\004\007\023\007\103\150\151\143\141\147\157
\061\041\060\037\006\003\125\004\012\023\030\124\162\165\163\164
\167\141\166\145\040\110\157\154\144\151\156\147\163\054\040\111
\156\143\056\061\072\060\070\006\003\125\004\003\023\061\124\162
\165\163\164\167\141\166\145\040\107\154\157\142\141\154\040\105
\103\103\040\120\062\065\066\040\103\145\162\164\151\146\151\143
\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171\060
\131\060\023\006\007\052\206\110\316\075\002\001\006\010\052\206
\110\316\075\003\001\007\003\102\000\004\176\373\154\346\043\343
\163\062\010\312\140\346\123\234\272\164\215\030\260\170\220\122
\200\335\070\300\112\035\321\250\314\223\244\227\006\070\312\015
\025\142\306\216\001\052\145\235\252\337\064\221\056\201\301\344
\063\222\061\304\375\011\072\246\077\255\243\103\060\101\060\017
\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060
\017\006\003\125\035\017\001\001\377\004\005\003\003\007\006\000
\060\035\006\003\125\035\016\004\026\004\024\243\101\006\254\220
\155\321\112\353\165\245\112\020\231\263\261\241\213\112\367\060
\012\006\010\052\206\110\316\075\004\003\002\003\107\000\060\104
\002\040\007\346\124\332\016\240\132\262\256\021\237\207\305\266
\377\151\336\045\276\370\240\267\010\363\104\316\052\337\010\041
\014\067\002\040\055\046\003\240\005\275\153\321\366\134\370\145
\314\206\155\263\234\064\110\143\204\011\305\215\167\032\342\314
\234\341\164\173
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "Trustwave Global ECC P256 Certification Authority"

# Issuer: CN=Trustwave Global ECC P256 Certification Authority,O="Trustwave Holdings,  
Inc.",L=Chicago,ST=Illinois,C=US

# Serial Number:0d:6a:5f:08:3f:28:5c:3e:51:95:df:5d

# Subject: CN=Trustwave Global ECC P256 Certification Authority,O="Trustwave Holdings,  
Inc.",L=Chicago,ST=Illinois,C=US

# Not Valid Before: Wed Aug 23 19:35:10 2017

# Not Valid After : Sat Aug 23 19:35:10 2042

# Fingerprint (SHA-256):

94:5B:BC:82:5E:A5:54:F4:89:D1:FD:51:A7:3D:DF:2E:A6:24:AC:70:19:A0:52:05:22:5C:22:A7:8C:CF:A8:B4

# Fingerprint (SHA1): B4:90:82:DD:45:0C:BE:8B:5B:B1:66:D3:E2:A4:08:26:CD:ED:42:CF

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Trustwave Global ECC

P256 Certification Authority"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL



\264\220\202\335\105\014\276\213\133\261\146\323\342\244\010\046

\315\355\102\317

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\133\104\343\215\135\066\206\046\350\015\005\322\131\247\203\124

END

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\221\061\013\060\011\006\003\125\004\006\023\002\125\123

\061\021\060\017\006\003\125\004\010\023\010\111\154\154\151\156

\157\151\163\061\020\060\016\006\003\125\004\007\023\007\103\150

\151\143\141\147\157\061\041\060\037\006\003\125\004\012\023\030

\124\162\165\163\164\167\141\166\145\040\110\157\154\144\151\156

\147\163\054\040\111\156\143\056\061\072\060\070\006\003\125\004

\003\023\061\124\162\165\163\164\167\141\166\145\040\107\154\157

\142\141\154\040\105\103\103\040\120\062\065\066\040\103\145\162

\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157

\162\151\164\171

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\014\015\152\137\010\077\050\134\076\121\225\337\135

END

CKA\_TRUST\_SERVER\_AUTH

CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "Trustwave Global ECC P384 Certification Authority"

#

# Issuer: CN=Trustwave Global ECC P384 Certification Authority,O="Trustwave Holdings, Inc.",L=Chicago,ST=Illinois,C=US

# Serial Number:08:bd:85:97:6c:99:27:a4:80:68:47:3b

# Subject: CN=Trustwave Global ECC P384 Certification Authority,O="Trustwave Holdings, Inc.",L=Chicago,ST=Illinois,C=US

# Not Valid Before: Wed Aug 23 19:36:43 2017

# Not Valid After : Sat Aug 23 19:36:43 2042

# Fingerprint (SHA-256):

55:90:38:59:C8:C0:C3:EB:B8:75:9E:CE:4E:25:57:22:5F:F5:75:8B:BD:38:EB:D4:82:76:60:1E:1B:D5:80:97

# Fingerprint (SHA1): E7:F3:A3:C8:CF:6F:C3:04:2E:6D:0E:67:32:C5:9E:68:95:0D:5E:D2

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL

UTF8 "Trustwave Global ECC P384 Certification Authority"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\201\221\061\013\060\011\006\003\125\004\006\023\002\125\123  
\061\021\060\017\006\003\125\004\010\023\010\111\154\154\151\156  
\157\151\163\061\020\060\016\006\003\125\004\007\023\007\103\150  
\151\143\141\147\157\061\041\060\037\006\003\125\004\012\023\030  
\124\162\165\163\164\167\141\166\145\040\110\157\154\144\151\156  
\147\163\054\040\111\156\143\056\061\072\060\070\006\003\125\004  
\003\023\061\124\162\165\163\164\167\141\166\145\040\107\154\157  
\142\141\154\040\105\103\103\040\120\063\070\064\040\103\145\162  
\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157  
\162\151\164\171

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\221\061\013\060\011\006\003\125\004\006\023\002\125\123  
\061\021\060\017\006\003\125\004\010\023\010\111\154\154\151\156  
\157\151\163\061\020\060\016\006\003\125\004\007\023\007\103\150  
\151\143\141\147\157\061\041\060\037\006\003\125\004\012\023\030  
\124\162\165\163\164\167\141\166\145\040\110\157\154\144\151\156  
\147\163\054\040\111\156\143\056\061\072\060\070\006\003\125\004  
\003\023\061\124\162\165\163\164\167\141\166\145\040\107\154\157  
\142\141\154\040\105\103\103\040\120\063\070\064\040\103\145\162  
\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157  
\162\151\164\171

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\014\010\275\205\227\154\231\047\244\200\150\107\073

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\002\235\060\202\002\044\240\003\002\001\002\002\014\010  
\275\205\227\154\231\047\244\200\150\107\073\060\012\006\010\052  
\206\110\316\075\004\003\003\060\201\221\061\013\060\011\006\003  
\125\004\006\023\002\125\123\061\021\060\017\006\003\125\004\010  
\023\010\111\154\154\151\156\157\151\163\061\020\060\016\006\003  
\125\004\007\023\007\103\150\151\143\141\147\157\061\041\060\037  
\006\003\125\004\012\023\030\124\162\165\163\164\167\141\166\145  
\040\110\157\154\144\151\156\147\163\054\040\111\156\143\056\061  
\072\060\070\006\003\125\004\003\023\061\124\162\165\163\164\167  
\141\166\145\040\107\154\157\142\141\154\040\105\103\103\040\120  
\063\070\064\040\103\145\162\164\151\146\151\143\141\164\151\157  
\156\040\101\165\164\150\157\162\151\164\171\060\036\027\015\061  
\067\060\070\062\063\061\071\063\066\064\063\132\027\015\064\062  
\060\070\062\063\061\071\063\066\064\063\132\060\201\221\061\013  
\060\011\006\003\125\004\006\023\002\125\123\061\021\060\017\006  
\003\125\004\010\023\010\111\154\154\151\156\157\151\163\061\020  
\060\016\006\003\125\004\007\023\007\103\150\151\143\141\147\157  
\061\041\060\037\006\003\125\004\012\023\030\124\162\165\163\164  
\167\141\166\145\040\110\157\154\144\151\156\147\163\054\040\111

\156\143\056\061\072\060\070\006\003\125\004\003\023\061\124\162  
\165\163\164\167\141\166\145\040\107\154\157\142\141\154\040\105  
\103\103\040\120\063\070\064\040\103\145\162\164\151\146\151\143  
\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171\060  
\166\060\020\006\007\052\206\110\316\075\002\001\006\005\053\201  
\004\000\042\003\142\000\004\153\332\015\165\065\010\061\107\005  
\256\105\231\125\361\021\023\056\112\370\020\061\043\243\176\203  
\323\177\050\010\072\046\032\072\317\227\202\037\200\267\047\011  
\217\321\216\060\304\012\233\016\254\130\004\253\367\066\175\224  
\043\244\233\012\212\213\253\353\375\071\045\146\361\136\376\214  
\256\215\101\171\235\011\140\316\050\251\323\212\155\363\326\105  
\324\362\230\204\070\145\240\243\103\060\101\060\017\006\003\125  
\035\023\001\001\377\004\005\060\003\001\001\377\060\017\006\003  
\125\035\017\001\001\377\004\005\003\003\007\006\000\060\035\006  
\003\125\035\016\004\026\004\024\125\251\204\211\322\301\062\275  
\030\313\154\246\007\116\310\347\235\276\202\220\060\012\006\010  
\052\206\110\316\075\004\003\003\003\147\000\060\144\002\060\067  
\001\222\227\105\022\176\240\363\076\255\031\072\162\335\364\120  
\223\003\022\276\104\322\117\101\244\214\234\235\037\243\366\302  
\222\347\110\024\376\116\233\245\221\127\256\306\067\162\273\002  
\060\147\045\012\261\014\136\356\251\143\222\157\345\220\013\376  
\146\042\312\107\375\212\061\367\203\376\172\277\020\276\030\053  
\036\217\366\051\036\224\131\357\216\041\067\313\121\230\245\156  
\113

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "Trustwave Global ECC P384 Certification Authority"

# Issuer: CN=Trustwave Global ECC P384 Certification Authority,O="Trustwave Holdings, Inc.",L=Chicago,ST=Illinois,C=US

# Serial Number:08:bd:85:97:6c:99:27:a4:80:68:47:3b

# Subject: CN=Trustwave Global ECC P384 Certification Authority,O="Trustwave Holdings, Inc.",L=Chicago,ST=Illinois,C=US

# Not Valid Before: Wed Aug 23 19:36:43 2017

# Not Valid After : Sat Aug 23 19:36:43 2042

# Fingerprint (SHA-256):

55:90:38:59:C8:C0:C3:EB:B8:75:9E:CE:4E:25:57:22:5F:F5:75:8B:BD:38:EB:D4:82:76:60:1E:1B:D5:80:97

# Fingerprint (SHA1): E7:F3:A3:C8:CF:6F:C3:04:2E:6D:0E:67:32:C5:9E:68:95:0D:5E:D2

CKA\_CLASS

CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Trustwave Global ECC P384 Certification Authority"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```

\347\363\243\310\317\157\303\004\056\155\016\147\062\305\236\150
\225\015\136\322
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\352\317\140\304\073\271\025\051\100\241\227\355\170\047\223\326
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\221\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\021\060\017\006\003\125\004\010\023\010\111\154\154\151\156
\157\151\163\061\020\060\016\006\003\125\004\007\023\007\103\150
\151\143\141\147\157\061\041\060\037\006\003\125\004\012\023\030
\124\162\165\163\164\167\141\166\145\040\110\157\154\144\151\156
\147\163\054\040\111\156\143\056\061\072\060\070\006\003\125\004
\003\023\061\124\162\165\163\164\167\141\166\145\040\107\154\157
\142\141\154\040\105\103\103\040\120\063\070\064\040\103\145\162
\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157
\162\151\164\171
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\014\010\275\205\227\154\231\047\244\200\150\107\073
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "NAVER Global Root Certification Authority"
#
# Issuer: CN=NAVER Global Root Certification Authority,O=NAVER BUSINESS PLATFORM Corp.,C=KR
# Serial Number:01:94:30:1e:a2:0b:dd:f5:c5:33:2a:b1:43:44:71:f8:d6:50:4d:0d
# Subject: CN=NAVER Global Root Certification Authority,O=NAVER BUSINESS PLATFORM Corp.,C=KR
# Not Valid Before: Fri Aug 18 08:58:42 2017
# Not Valid After : Tue Aug 18 23:59:59 2037
# Fingerprint (SHA-256):
88:F4:38:DC:F8:FF:D1:FA:8F:42:91:15:FF:E5:F8:2A:E1:E0:6E:0C:70:C3:75:FA:AD:71:7B:34:A4:9E:72:65
# Fingerprint (SHA1): 8F:6B:F2:A9:27:4A:DA:14:A0:C4:F4:8E:61:27:F9:C0:1E:78:5D:D1
CKA_CLASS
CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "NAVER Global Root Certification Authority"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\151\061\013\060\011\006\003\125\004\006\023\002\113\122\061
\046\060\044\006\003\125\004\012\014\035\116\101\126\105\122\040

```

\102\125\123\111\116\105\123\123\040\120\114\101\124\106\117\122  
\115\040\103\157\162\160\056\061\062\060\060\006\003\125\004\003  
\014\051\116\101\126\105\122\040\107\154\157\142\141\154\040\122  
\157\157\164\040\103\145\162\164\151\146\151\143\141\164\151\157  
\156\040\101\165\164\150\157\162\151\164\171

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\151\061\013\060\011\006\003\125\004\006\023\002\113\122\061  
\046\060\044\006\003\125\004\012\014\035\116\101\126\105\122\040  
\102\125\123\111\116\105\123\123\040\120\114\101\124\106\117\122  
\115\040\103\157\162\160\056\061\062\060\060\006\003\125\004\003  
\014\051\116\101\126\105\122\040\107\154\157\142\141\154\040\122  
\157\157\164\040\103\145\162\164\151\146\151\143\141\164\151\157  
\156\040\101\165\164\150\157\162\151\164\171

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\024\001\224\060\036\242\013\335\365\305\063\052\261\103\104  
\161\370\326\120\115\015

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\242\060\202\003\212\240\003\002\001\002\002\024\001  
\224\060\036\242\013\335\365\305\063\052\261\103\104\161\370\326  
\120\115\015\060\015\006\011\052\206\110\206\367\015\001\001\014  
\005\000\060\151\061\013\060\011\006\003\125\004\006\023\002\113  
\122\061\046\060\044\006\003\125\004\012\014\035\116\101\126\105  
\122\040\102\125\123\111\116\105\123\123\040\120\114\101\124\106  
\117\122\115\040\103\157\162\160\056\061\062\060\060\006\003\125  
\004\003\014\051\116\101\126\105\122\040\107\154\157\142\141\154  
\040\122\157\157\164\040\103\145\162\164\151\146\151\143\141\164  
\151\157\156\040\101\165\164\150\157\162\151\164\171\060\036\027  
\015\061\067\060\070\061\070\060\070\065\070\064\062\132\027\015  
\063\067\060\070\061\070\062\063\065\071\065\071\132\060\151\061  
\013\060\011\006\003\125\004\006\023\002\113\122\061\046\060\044  
\006\003\125\004\012\014\035\116\101\126\105\122\040\102\125\123  
\111\116\105\123\123\040\120\114\101\124\106\117\122\115\040\103  
\157\162\160\056\061\062\060\060\006\003\125\004\003\014\051\116  
\101\126\105\122\040\107\154\157\142\141\154\040\122\157\157\164  
\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101  
\165\164\150\157\162\151\164\171\060\202\002\042\060\015\006\011  
\052\206\110\206\367\015\001\001\001\005\000\003\202\002\017\000  
\060\202\002\012\002\202\002\001\000\266\324\361\223\134\265\100  
\211\012\253\015\220\133\120\143\256\220\224\164\027\105\162\326  
\173\145\132\051\113\247\126\240\113\270\057\102\165\351\331\173  
\044\132\061\145\253\027\027\321\063\072\331\021\334\100\066\207  
\337\307\152\351\046\136\131\212\167\343\350\110\234\061\026\372  
\076\221\261\312\311\243\342\237\316\041\123\243\002\066\060\313

\122\002\345\332\062\135\303\305\346\371\356\021\307\213\311\104  
\036\204\223\030\112\264\237\345\022\144\151\320\046\205\142\001  
\266\311\002\035\276\203\121\273\134\332\370\255\025\152\231\367  
\222\124\367\064\133\351\277\352\051\201\022\324\123\221\226\263  
\221\132\335\376\220\163\050\373\060\106\265\312\010\007\307\161  
\162\311\146\323\064\227\366\214\364\030\112\341\320\075\132\105  
\266\151\247\051\373\043\316\210\330\022\234\000\110\250\246\017  
\263\073\222\215\161\016\164\305\213\310\114\371\364\233\216\270  
\074\151\355\157\073\120\057\130\355\304\260\320\034\033\152\014  
\342\274\104\252\330\315\024\135\224\170\141\277\016\156\332\052  
\274\057\014\013\161\246\263\026\077\234\346\371\314\237\123\065  
\342\003\240\240\030\277\273\361\276\364\326\214\207\015\102\367  
\006\271\361\155\355\004\224\250\376\266\323\006\306\100\141\337  
\235\235\363\124\166\316\123\072\001\246\222\101\354\004\243\217  
\015\242\325\011\312\326\313\232\361\357\103\135\300\253\245\101  
\317\134\123\160\160\311\210\246\055\324\153\141\163\120\046\206  
\141\016\137\033\302\053\342\214\325\273\235\301\003\102\272\224  
\332\137\251\260\312\314\115\012\357\107\151\003\057\042\373\361  
\050\316\277\135\120\145\250\220\155\263\164\260\010\307\254\250  
\321\353\076\234\374\135\032\203\056\053\313\265\363\104\235\072  
\247\027\141\226\242\161\323\160\226\025\115\267\114\163\356\031  
\134\305\133\076\101\376\254\165\140\073\033\143\316\000\335\332  
\010\220\142\264\345\055\356\110\247\153\027\231\124\276\207\112  
\343\251\136\004\114\353\020\155\124\326\357\361\350\362\142\026  
\313\200\153\355\075\355\365\037\060\245\256\113\311\023\355\212  
\001\001\311\270\121\130\300\146\072\261\146\113\304\325\061\002  
\142\351\164\204\014\333\115\106\055\002\003\001\000\001\243\102  
\060\100\060\035\006\003\125\035\016\004\026\004\024\322\237\210  
\337\241\315\054\275\354\365\073\001\001\223\063\047\262\353\140  
\113\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001  
\006\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001  
\001\377\060\015\006\011\052\206\110\206\367\015\001\001\014\005  
\000\003\202\002\001\000\062\312\200\263\235\075\124\006\335\322  
\322\056\360\244\001\041\013\147\110\312\155\216\340\310\252\015  
\252\215\041\127\217\306\076\172\312\333\121\324\122\263\324\226  
\204\245\130\140\177\345\013\216\037\365\334\012\025\201\345\073  
\266\267\042\057\011\234\023\026\261\154\014\065\010\155\253\143  
\162\355\334\276\354\307\127\346\060\040\161\326\327\020\301\023  
\125\001\214\052\103\344\101\361\317\072\172\123\222\316\242\003  
\005\015\070\337\002\273\020\056\331\073\322\233\172\300\241\246  
\370\265\061\346\364\165\311\271\123\231\165\107\042\132\024\025  
\307\170\033\266\235\351\014\370\033\166\361\205\204\336\241\332  
\022\357\244\342\020\227\172\170\336\014\121\227\250\041\100\213  
\206\275\015\360\136\116\113\066\273\073\040\037\212\102\126\341  
\013\032\277\173\320\042\103\054\104\214\373\345\052\264\154\034  
\034\272\224\340\023\176\041\346\232\302\313\305\102\144\264\036  
\224\173\010\045\310\161\314\207\105\127\205\323\237\051\142\042  
\203\121\227\000\030\227\167\152\230\222\311\174\140\154\337\154

```
\175\112\344\160\114\302\236\270\035\367\320\064\307\017\314\373
\247\377\003\276\255\160\220\332\013\335\310\155\227\137\232\177
\011\062\101\375\315\242\314\132\155\114\362\252\111\376\146\370
\351\330\065\353\016\050\036\356\110\057\072\320\171\011\070\174
\246\042\202\223\225\320\003\276\276\002\240\005\335\040\042\343
\157\035\210\064\140\306\346\012\271\011\165\013\360\007\350\151
\226\065\307\373\043\201\216\070\071\270\105\053\103\170\242\321
\054\024\377\015\050\162\162\225\233\136\011\333\211\104\230\252
\241\111\273\161\122\362\277\366\377\047\241\066\257\270\266\167
\210\335\072\244\155\233\064\220\334\024\135\060\277\267\353\027
\344\207\267\161\320\241\327\167\025\324\102\327\362\363\061\231
\135\233\335\026\155\077\352\006\043\370\106\242\042\355\223\366
\335\232\346\052\207\261\230\124\361\042\367\153\105\343\342\216
\166\035\232\215\304\006\215\066\267\024\363\235\124\151\267\216
\074\325\244\155\223\201\267\255\366\275\144\173\302\311\150\071
\240\222\234\315\064\206\221\220\372\144\121\235\376\376\353\245
\365\165\336\211\367\162
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "NAVER Global Root Certification Authority"

# Issuer: CN=NAVER Global Root Certification Authority,O=NAVER BUSINESS PLATFORM Corp.,C=KR

# Serial Number:01:94:30:1e:a2:0b:dd:f5:c5:33:2a:b1:43:44:71:f8:d6:50:4d:0d

# Subject: CN=NAVER Global Root Certification Authority,O=NAVER BUSINESS PLATFORM Corp.,C=KR

# Not Valid Before: Fri Aug 18 08:58:42 2017

# Not Valid After : Tue Aug 18 23:59:59 2037

# Fingerprint (SHA-256):

88:F4:38:DC:F8:FF:D1:FA:8F:42:91:15:FF:E5:F8:2A:E1:E0:6E:0C:70:C3:75:FA:AD:71:7B:34:A4:9E:72:65

# Fingerprint (SHA1): 8F:6B:F2:A9:27:4A:DA:14:A0:C4:F4:8E:61:27:F9:C0:1E:78:5D:D1

CKA\_CLASS

CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "NAVER Global Root Certification Authority"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\217\153\362\251\047\112\332\024\240\304\364\216\141\047\371\300
\036\170\135\321
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\310\176\101\366\045\073\365\011\263\027\350\106\075\277\320\233
```

END

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\151\061\013\060\011\006\003\125\004\006\023\002\113\122\061
\046\060\044\006\003\125\004\012\014\035\116\101\126\105\122\040
```

```

\102\125\123\111\116\105\123\123\040\120\114\101\124\106\117\122
\115\040\103\157\162\160\056\061\062\060\060\006\003\125\004\003
\014\051\116\101\126\105\122\040\107\154\157\142\141\154\040\122
\157\157\164\040\103\145\162\164\151\146\151\143\141\164\151\157
\156\040\101\165\164\150\157\162\151\164\171
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\024\001\224\060\036\242\013\335\365\305\063\052\261\103\104
\161\370\326\120\115\015
END
CKA_TRUST_SERVER_AUTH
CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "AC RAIZ FNMT-RCM SERVIDORES SEGUROS"
#
# Issuer: CN=AC RAIZ FNMT-RCM SERVIDORES SEGUROS,OID.2.5.4.97=VATES-
Q2826004J,OU=Ceres,O=FNMT-RCM,C=ES
# Serial Number:62:f6:32:6c:e5:c4:e3:68:5c:1b:62:dd:9c:2e:9d:95
# Subject: CN=AC RAIZ FNMT-RCM SERVIDORES SEGUROS,OID.2.5.4.97=VATES-
Q2826004J,OU=Ceres,O=FNMT-RCM,C=ES
# Not Valid Before: Thu Dec 20 09:37:33 2018
# Not Valid After : Sun Dec 20 09:37:33 2043
# Fingerprint (SHA-256):
55:41:53:B1:3D:2C:F9:DD:B7:53:BF:BE:1A:4E:0A:E0:8D:0A:A4:18:70:58:FE:60:A2:B8:62:B2:E4:B8:7B:CB
# Fingerprint (SHA1): 62:FF:D9:9E:C0:65:0D:03:CE:75:93:D2:ED:3F:2D:32:C9:E3:E5:4A
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8
"AC RAIZ FNMT-RCM SERVIDORES SEGUROS"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\170\061\013\060\011\006\003\125\004\006\023\002\105\123\061
\021\060\017\006\003\125\004\012\014\010\106\116\115\124\055\122
\103\115\061\016\060\014\006\003\125\004\013\014\005\103\145\162
\145\163\061\030\060\026\006\003\125\004\141\014\017\126\101\124
\105\123\055\121\062\070\062\066\060\060\064\112\061\054\060\052
\006\003\125\004\003\014\043\101\103\040\122\101\111\132\040\106
\116\115\124\055\122\103\115\040\123\105\122\126\111\104\117\122
\105\123\040\123\105\107\125\122\117\123
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL

```



\060\170\061\013\060\011\006\003\125\004\006\023\002\105\123\061  
\021\060\017\006\003\125\004\012\014\010\106\116\115\124\055\122  
\103\115\061\016\060\014\006\003\125\004\013\014\005\103\145\162  
\145\163\061\030\060\026\006\003\125\004\141\014\017\126\101\124  
\105\123\055\121\062\070\062\066\060\060\064\112\061\054\060\052  
\006\003\125\004\003\014\043\101\103\040\122\101\111\132\040\106  
\116\115\124\055\122\103\115\040\123\105\122\126\111\104\117\122  
\105\123\040\123\105\107\125\122\117\123

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\020\142\366\062\154\345\304\343\150\134\033\142\335\234\056  
\235\225

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\002\156\060\202\001\363\240\003\002\001\002\002\020\142  
\366\062\154\345\304\343\150\134\033\142\335\234\056\235\225\060  
\012\006\010\052\206\110\316\075\004\003\003\060\170\061\013\060  
\011\006\003\125\004\006\023\002\105\123\061\021\060\017\006\003  
\125\004\012\014\010\106\116\115\124\055\122\103\115\061\016\060  
\014\006\003\125\004\013\014\005\103\145\162\145\163\061\030\060  
\026\006\003\125\004\141\014\017\126\101\124\105\123\055\121\062  
\070\062\066\060\060\064\112\061\054\060\052\006\003\125\004\003  
\014\043\101\103\040\122\101\111\132\040\106\116\115\124\055\122  
\103\115\040\123\105\122\126\111\104\117\122\105\123\040\123\105  
\107\125\122\117\123\060\036\027\015\064\063\061\062\062\060\060  
\071\063\067\063\063\132\027\015\064\063\061\062\062\060\060\071  
\063\067\063\063\132\060\170\061\013\060\011\006\003\125\004\006  
\023\002\105\123\061\021\060\017\006\003\125\004\012\014\010\106  
\116\115\124\055\122\103\115\061\016\060\014\006\003\125\004\013  
\014\005\103\145\162\145\163\061\030\060\026\006\003\125\004\141  
\014\017\126\101\124\105\123\055\121\062\070\062\066\060\060\064  
\112\061\054\060\052\006\003\125\004\003\014\043\101\103\040\122  
\101\111\132\040\106\116\115\124\055\122\103\115\040\123\105\122  
\126\111\104\117\122\105\123\040\123\105\107\125\122\117\123\060  
\166\060\020\006\007\052\206\110\316\075\002\001\006\005\053\201  
\004\000\042\003\142\000\004\366\272\127\123\310\312\253\337\066  
\112\122\041\344\227\322\203\147\236\360\145\121\320\136\207\307  
\107\261\131\362\127\107\233\000\002\223\104\027\151\333\102\307  
\261\262\072\030\016\264\135\214\263\146\135\241\064\371\066\054  
\111\333\363\106\374\263\104\151\104\023\146\375\327\305\375\257  
\066\115\316\003\115\007\161\317\257\152\005\322\242\103\132\012  
\122\157\001\003\116\216\213\243\102\060\100\060\017\006\003\125  
\035\023\001\001\377\004\005\060\003\001\001\377\060\016\006\003  
\125\035\017\001\001\377\004\004\003\002\001\006\060\035\006\003  
\125\035\016\004\026\004\024\001\271\057\357\277\021\206\140\362  
\117\320\101\156\253\163\037\347\322\156\111\060\012\006\010\052  
\206\110\316\075\004\003\003\003\151\000\060\146\002\061\000\256

```
\112\343\053\100\303\164\021\362\225\255\026\043\336\116\014\032
\346\135\245\044\136\153\104\173\374\070\342\117\313\234\105\027
\021\114\024\047\046\125\071\165\112\003\314\023\220\237\222\002
\061\000\372\112\154\140\210\163\363\356\270\230\142\251\316\053
\302\331\212\246\160\061\035\257\260\224\114\353\117\306\343\321
\363\142\247\074\377\223\056\007\134\111\001\147\151\022\002\162
\277\347
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "AC

RAIZ FNMT-RCM SERVIDORES SEGUROS"

# Issuer: CN=AC RAIZ FNMT-RCM SERVIDORES SEGUROS,OID.2.5.4.97=VATES-  
Q2826004J,OU=Ceres,O=FNMT-RCM,C=ES

# Serial Number:62:f6:32:6c:e5:c4:e3:68:5c:1b:62:dd:9c:2e:9d:95

# Subject: CN=AC RAIZ FNMT-RCM SERVIDORES SEGUROS,OID.2.5.4.97=VATES-  
Q2826004J,OU=Ceres,O=FNMT-RCM,C=ES

# Not Valid Before: Thu Dec 20 09:37:33 2018

# Not Valid After : Sun Dec 20 09:37:33 2043

# Fingerprint (SHA-256):

55:41:53:B1:3D:2C:F9:DD:B7:53:BF:BE:1A:4E:0A:E0:8D:0A:A4:18:70:58:FE:60:A2:B8:62:B2:E4:B8:7B:CB

# Fingerprint (SHA1): 62:FF:D9:9E:C0:65:0D:03:CE:75:93:D2:ED:3F:2D:32:C9:E3:E5:4A

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "AC RAIZ FNMT-RCM SERVIDORES SEGUROS"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\142\377\331\236\300\145\015\003\316\165\223\322\355\077\055\062
\311\343\345\112
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\031\066\234\122\003\057\322\321\273\043\314\335\036\022\125\273
```

END

CKA\_ISSUER

MULTILINE\_OCTAL

```
\060\170\061\013\060\011\006\003\125\004\006\023\002\105\123\061
\021\060\017\006\003\125\004\012\014\010\106\116\115\124\055\122
\103\115\061\016\060\014\006\003\125\004\013\014\005\103\145\162
\145\163\061\030\060\026\006\003\125\004\141\014\017\126\101\124
\105\123\055\121\062\070\062\066\060\060\064\112\061\054\060\052
\006\003\125\004\003\014\043\101\103\040\122\101\111\132\040\106
\116\115\124\055\122\103\115\040\123\105\122\126\111\104\117\122
\105\123\040\123\105\107\125\122\117\123
```

END

```

CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\142\366\062\154\345\304\343\150\134\033\142\335\234\056
\235\225
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "GlobalSign Secure Mail Root R45"
#
# Issuer: CN=GlobalSign Secure Mail Root R45,O=GlobalSign nv-sa,C=BE
# Serial Number:76:53:fe:a8:4c:50:ab:9f:8d:32:b5:1d:03:8f:57:dc
#
Subject: CN=GlobalSign Secure Mail Root R45,O=GlobalSign nv-sa,C=BE
# Not Valid Before: Wed Mar 18 00:00:00 2020
# Not Valid After : Sat Mar 18 00:00:00 2045
# Fingerprint (SHA-256):
31:9A:F0:A7:72:9E:6F:89:26:9C:13:1E:A6:A3:A1:6F:CD:86:38:9F:DC:AB:3C:47:A4:A6:75:C1:61:A3:F9:74
# Fingerprint (SHA1): 76:18:D1:F3:80:24:3D:52:40:C6:11:6A:AD:57:77:09:7D:81:30:A0
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "GlobalSign Secure Mail Root R45"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\122\061\013\060\011\006\003\125\004\006\023\002\102\105\061
\031\060\027\006\003\125\004\012\023\020\107\154\157\142\141\154
\123\151\147\156\040\156\166\055\163\141\061\050\060\046\006\003
\125\004\003\023\037\107\154\157\142\141\154\123\151\147\156\040
\123\145\143\165\162\145\040\115\141\151\154\040\122\157\157\164
\040\122\064\065
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\122\061\013\060\011\006\003\125\004\006\023\002\102\105\061
\031\060\027\006\003\125\004\012\023\020\107\154\157\142\141\154
\123\151\147\156\040\156\166\055\163\141\061\050\060\046\006\003
\125\004\003\023\037\107\154\157\142\141\154\123\151\147\156\040
\123\145\143\165\162\145\040\115\141\151\154\040\122\157\157\164
\040\122\064\065
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\166\123\376\250\114\120\253\237\215\062\265\035\003\217
\127\334

```

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\160\060\202\003\130\240\003\002\001\002\002\020\166  
\123\376\250\114\120\253\237\215\062\265\035\003\217\127\334\060  
\015\006\011\052\206\110\206\367\015\001\001\014\005\000\060\122  
\061\013\060\011\006\003\125\004\006\023\002\102\105\061\031\060  
\027\006\003\125\004\012\023\020\107\154\157\142\141\154\123\151  
\147\156\040\156\166\055\163\141\061\050\060\046\006\003\125\004  
\003\023\037\107\154\157\142\141\154\123\151\147\156\040\123\145  
\143\165\162\145\040\115\141\151\154\040\122\157\157\164\040\122  
\064\065\060\036\027\015\062\060\060\063\061\070\060\060\060\060  
\060\060\132\027\015\064\065\060\063\061\070\060\060\060\060\060  
\060\132\060\122\061\013\060\011\006\003\125\004\006\023\002\102  
\105\061\031\060\027\006\003\125\004\012\023\020\107\154\157\142  
\141\154\123\151\147\156\040\156\166\055\163\141\061\050\060\046  
\006\003\125\004\003\023\037\107\154\157\142\141\154\123\151\147  
\156\040\123\145\143\165\162\145\040\115\141\151\154\040\122\157  
\157\164\040\122\064\065\060\202\002\042\060\015\006\011\052\206  
\110\206\367\015\001\001\001\005\000\003\202\002\017\000\060\202  
\002\012\002\202\002\001\000\334\171\314\155\006\371\155\273\340  
\126\004\154\177\340\165\314\055\005\111\350\113\334\124\354\133  
\167\225\162\277\177\142\235\205\251\212\044\120\137\123\345\333  
\164\157\244\051\133\023\052\011\255\232\305\057\302\367\166\073  
\241\105\106\252\103\346\044\376\053\260\157\062\160\031\106\132  
\171\046\057\374\075\175\137\144\313\127\314\141\141\250\331\225  
\156\343\225\240\156\177\107\022\030\326\357\003\311\373\212\372  
\232\275\202\025\251\125\167\113\021\117\131\340\153\303\161\363  
\014\330\124\325\201\150\076\023\271\025\056\207\212\074\104\047  
\066\142\044\156\370\054\005\162\060\141\275\102\221\043\304\235  
\045\247\331\124\232\024\243\061\255\200\171\014\247\143\154\230  
\243\254\127\107\063\037\145\226\341\320\322\065\332\371\161\367  
\241\246\045\265\101\135\337\076\140\330\321\366\237\245\362\270  
\314\023\252\217\371\262\156\341\203\055\223\335\076\205\032\335  
\350\261\134\046\001\313\111\205\374\374\322\324\177\205\142\206  
\164\371\313\354\065\042\242\014\060\217\073\253\171\353\126\362  
\372\102\363\355\371\037\105\211\100\051\255\352\222\164\352\122  
\375\126\264\053\332\242\355\165\302\156\253\316\122\220\113\366  
\336\360\111\217\232\110\324\210\031\155\105\346\314\214\271\335  
\144\140\140\002\100\370\271\317\274\130\353\075\205\271\306\012  
\323\234\007\146\217\307\030\071\043\106\341\074\036\243\057\120  
\141\222\013\075\053\154\361\243\107\070\127\221\253\015\217\306  
\235\115\004\322\046\122\134\345\245\375\052\055\026\052\001\151  
\347\251\175\341\066\267\261\052\305\331\261\215\275\271\213\316  
\314\213\241\076\013\110\315\120\225\064\304\330\010\131\330\153  
\046\364\276\365\324\042\027\000\127\311\256\233\004\060\063\237  
\013\373\337\126\242\311\156\124\166\332\261\227\142\047\131\017  
\021\212\042\033\144\226\077\250\361\267\044\112\215\074\123\174  
\155\203\166\075\262\046\110\163\365\104\026\001\055\011\052\216

\026\226\120\320\163\006\135\273\042\110\202\114\012\106\132\077  
\200\377\134\362\362\232\254\054\010\340\326\352\360\022\070\201  
\117\246\020\355\106\253\314\026\234\013\317\144\246\231\002\205  
\104\147\106\255\375\115\347\002\003\001\000\001\243\102\060\100  
\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001\206  
\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001  
\377\060\035\006\003\125\035\016\004\026\004\024\240\223\025\050  
\156\356\217\010\262\065\306\236\142\171\164\247\261\016\053\173  
\060\015\006\011\052\206\110\206\367\015\001\001\014\005\000\003  
\202\002\001\000\105\012\370\321\134\254\142\201\320\004\327\266  
\377\127\121\211\013\014\313\336\044\145\067\373\253\236\355\146  
\364\352\014\031\151\211\270\031\261\060\126\264\331\366\367\276  
\306\256\227\313\105\366\021\214\072\060\144\114\301\237\131\300  
\106\102\010\006\107\144\027\170\340\225\007\006\326\214\242\254  
\251\331\077\323\173\126\117\374\304\207\050\337\266\053\026\043  
\300\237\037\133\343\326\104\136\042\117\043\004\214\065\026\265  
\171\007\206\134\057\227\342\366\010\144\246\334\333\250\212\343  
\244\173\167\015\321\051\223\050\040\264\123\243\113\116\137\336  
\301\366\165\043\374\037\074\170\117\160\061\170\057\242\065\124  
\161\004\254\310\304\155\303\366\221\261\376\315\356\104\156\201  
\366\100\305\076\052\001\277\253\114\261\003\077\015\021\344\017  
\322\044\343\042\210\233\237\137\107\075\121\111\340\011\067\176  
\027\041\061\166\267\147\161\110\050\113\045\327\020\350\237\141  
\131\026\305\076\062\116\037\014\316\243\314\017\344\307\021\007  
\042\057\070\010\335\133\227\353\102\154\131\232\232\356\172\320  
\235\337\305\333\011\103\056\012\252\031\075\153\350\152\060\172  
\127\346\277\263\152\071\251\217\343\361\117\145\150\266\275\237  
\050\217\241\026\132\011\120\072\062\056\035\057\104\021\102\246  
\000\346\061\230\377\055\241\017\346\244\140\126\317\171\327\262  
\116\327\260\372\156\014\127\043\307\316\037\245\261\114\155\031  
\111\236\016\177\160\217\161\077\130\050\237\165\335\141\340\072  
\267\071\266\356\227\324\065\121\373\213\111\140\310\074\146\256  
\227\356\215\046\131\127\273\170\360\172\120\060\011\260\140\252  
\237\116\334\311\076\036\072\334\142\223\063\260\072\124\164\157  
\054\061\105\321\153\021\062\152\150\166\366\075\366\152\023\136  
\044\230\347\352\035\232\317\170\202\007\140\367\115\020\323\201  
\232\105\215\236\257\233\334\200\307\103\262\225\150\244\303\016  
\350\012\107\025\277\124\063\334\001\347\325\246\036\163\330\172  
\262\277\057\255\343\125\060\236\337\016\101\274\340\021\365\241  
\014\250\042\341\343\000\243\116\160\174\222\343\004\321\172\102  
\212\165\220\131\343\233\321\114\242\144\275\163\171\233\157\362  
\263\301\366\074

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

```

# Trust for "GlobalSign Secure Mail Root R45"
# Issuer: CN=GlobalSign Secure Mail Root R45,O=GlobalSign nv-sa,C=BE
# Serial Number:76:53:fe:a8:4c:50:ab:9f:8d:32:b5:1d:03:8f:57:dc
# Subject: CN=GlobalSign Secure Mail Root R45,O=GlobalSign nv-sa,C=BE
# Not Valid Before: Wed Mar 18 00:00:00 2020
# Not Valid After : Sat Mar 18 00:00:00 2045
# Fingerprint (SHA-256):
31:9A:F0:A7:72:9E:6F:89:26:9C:13:1E:A6:A3:A1:6F:CD:86:38:9F:DC:AB:3C:47:A4:A6:75:C1:61:A3:F9:74
# Fingerprint (SHA1): 76:18:D1:F3:80:24:3D:52:40:C6:11:6A:AD:57:77:09:7D:81:30:A0
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE
CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "GlobalSign Secure Mail Root R45"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\166\030\321\363\200\044\075\122\100\306\021\152\255\127\167\011
\175\201\060\240
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\223\304\173\263\016\124\107\034\103\054\213\276\160\205\142\051
END
CKA_ISSUER MULTILINE_OCTAL
\060\122\061\013\060\011\006\003\125\004\006\023\002\102\105\061
\031\060\027\006\003\125\004\012\023\020\107\154\157\142\141\154
\123\151\147\156\040\156\166\055\163\141\061\050\060\046\006\003
\125\004\003\023\037\107\154\157\142\141\154\123\151\147\156\040
\123\145\143\165\162\145\040\115\141\151\154\040\122\157\157\164
\040\122\064\065
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\166\123\376\250\114\120\253\237\215\062\265\035\003\217
\127\334
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL
CK_FALSE

#
# Certificate "GlobalSign Secure Mail Root E45"
#
# Issuer: CN=GlobalSign Secure Mail Root E45,O=GlobalSign nv-sa,C=BE
# Serial Number:76:53:fe:aa:27:1d:95:46:5d:d6:f1:9e:e5:b8:90:0a
# Subject: CN=GlobalSign Secure Mail Root E45,O=GlobalSign nv-sa,C=BE
# Not Valid Before: Wed Mar 18 00:00:00 2020
# Not Valid After : Sat Mar 18 00:00:00 2045

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```
# Fingerprint (SHA-256):
5C:BF:6F:B8:1F:D4:17:EA:41:28:CD:6F:81:72:A3:C9:40:20:94:F7:4A:B2:ED:3A:06:B4:40:5D:04:F3:0B:19
# Fingerprint (SHA1): 18:2E:1F:32:4F:89:DF:BE:FE:88:89:F0:93:C2:C4:A0:2B:67:75:21
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "GlobalSign Secure Mail Root E45"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\122\061\013\060\011\006\003\125\004\006\023\002\102\105\061
\031\060\027\006\003\125\004\012\023\020\107\154\157\142\141\154
\123\151\147\156\040\156\166\055\163\141\061\050\060\046\006\003
\125\004\003\023\037\107\154\157\142\141\154\123\151\147\156\040
\123\145\143\165\162\145\040\115\141\151\154\040\122\157\157\164
\040\105\064\065
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\122\061\013\060\011\006\003\125\004\006\023\002\102\105\061
\031\060\027\006\003\125\004\012\023\020\107\154\157\142\141\154
\123\151\147\156\040\156\166\055\163\141\061\050\060\046\006\003
\125\004\003\023\037\107\154\157\142\141\154\123\151\147\156\040
\123\145\143\165\162\145\040\115\141\151\154\040\122\157\157\164
\040\105\064\065
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\166\123\376\252\047\035\225\106\135\326\361\236\345\270
\220\012
END
CKA_VALUE MULTILINE_OCTAL
\060\202\002\041\060\202\001\247\240\003\002\001\002\002\020\166
\123\376\252\047\035\225\106\135\326\361\236\345\270\220\012\060
\012\006\010\052\206\110\316\075\004\003\003\060\122\061\013\060
\011\006\003\125\004\006\023\002\102\105\061\031\060\027\006\003
\125\004\012\023\020\107\154\157\142\141\154\123\151\147\156\040
\156\166\055\163\141\061\050\060\046\006\003\125\004\003\023\037
\107\154\157\142\141\154\123\151\147\156\040\123\145\143\165\162
\145\040\115\141\151\154\040\122\157\157\164\040\105\064\065\060
\036\027\015\062\060\060\063\061\070\060\060\060\060\060\060\132
\027\015\064\065\060\063\061\070\060\060\060\060\060\060\132\060
\122\061\013\060\011\006\003\125\004\006\023\002\102\105\061\031
\060\027\006\003\125\004\012\023\020\107\154\157\142\141\154\123
\151\147\156\040\156\166\055\163\141\061\050\060\046\006\003\125
\004\003\023\037\107\154\157\142\141\154\123\151\147\156\040\123
\145\143\165\162\145\040\115\141\151\154\040\122\157\157\164\040
\105\064\065\060\166\060\020\006\007\052\206\110\316\075\002\001
```

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\006\005\053\201\004\000\042\003\142\000\004\371\171\213\201\107
\067\211\226\077\105\111\120\177\032\046\013\223\062\176\056\300
\300\247\010\232\303\156\217\233\076\013\042\354\067\123\267\157
\212\260\274\047\067\113\155\251\106\073\331\037\377\245\241\104
\273\055\163\277\236\101\007\134\123\233\121\010\072\132\273\157
\070\307\026\221\170\302\112\023\151\035\202\337\132\057\000\210
\226\242\056\034\164\371\235\176\146\067\212\243\102\060\100\060
\016\006\003\125\035\017\001\001\377\004\004\003\002\001\206\060
\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377
\060\035\006\003\125\035\016\004\026\004\024\337\023\136\213\137
\302\100\002\375\126\267\224\114\266\036\325\246\261\024\226\060
\012\006\010\052\206\110\316\075\004\003\003\003\150\000\060\145
\002\060\023\260\276\327\161\040\076\344\253\234\316\066\022\175
\137\114\037\052\265\151\105\063\137\323\055\132\262\344\210\307
\336\012\066\102\062\171\235\246\153\272\341\371\104\052\173\212
\303\022\002\061\000\240\146\034\116\207\235\207\311\355\231\114
\033\012\356\055\140\303\067\307\035\315\265\162\260\331\306\357
\274\362\377\077\360\122\335\010\347\252\144\171\303\344\151\127
\221\057\244\313\174
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER

CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "GlobalSign Secure Mail Root E45"

# Issuer: CN=GlobalSign Secure Mail Root E45,O=GlobalSign nv-sa,C=BE

# Serial Number:76:53:fe:aa:27:1d:95:46:5d:d6:f1:9e:e5:b8:90:0a

# Subject: CN=GlobalSign Secure Mail Root E45,O=GlobalSign nv-sa,C=BE

# Not Valid Before: Wed Mar 18 00:00:00 2020

# Not Valid After : Sat Mar 18 00:00:00 2045

# Fingerprint (SHA-256):

5C:BF:6F:B8:1F:D4:17:EA:41:28:CD:6F:81:72:A3:C9:40:20:94:F7:4A:B2:ED:3A:06:B4:40:5D:04:F3:0B:19

# Fingerprint (SHA1): 18:2E:1F:32:4F:89:DF:BE:FE:88:89:F0:93:C2:C4:A0:2B:67:75:21

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "GlobalSign Secure Mail Root E45"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\030\056\037\062\117\211\337\276\376\210\211\360\223\302\304\240
\053\147\165\041
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\305\374\306\056\237\364\122\055\052\250\244\272\373\147\062\377
```

END

CKA\_ISSUER



```

MULTILINE_OCTAL
\060\122\061\013\060\011\006\003\125\004\006\023\002\102\105\061
\031\060\027\006\003\125\004\012\023\020\107\154\157\142\141\154
\123\151\147\156\040\156\166\055\163\141\061\050\060\046\006\003
\125\004\003\023\037\107\154\157\142\141\154\123\151\147\156\040
\123\145\143\165\162\145\040\115\141\151\154\040\122\157\157\164
\040\105\064\065
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\166\123\376\252\047\035\225\106\135\326\361\236\345\270
\220\012
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "GlobalSign Root R46"
#
# Issuer: CN=GlobalSign Root R46,O=GlobalSign nv-sa,C=BE
# Serial Number:11:d2:bb:b9:d7:23:18:9e:40:5f:0a:9d:2d:d0:df:25:67:d1
# Subject: CN=GlobalSign Root R46,O=GlobalSign nv-sa,C=BE
# Not Valid Before: Wed Mar 20 00:00:00 2019
# Not
  Valid After : Tue Mar 20 00:00:00 2046
# Fingerprint (SHA-256):
4F:A3:12:6D:8D:3A:11:D1:C4:85:5A:4F:80:7C:BA:D6:CF:91:9D:3A:5A:88:B0:3B:EA:2C:63:72:D9:3C:40:C9
# Fingerprint (SHA1): 53:A2:B0:4B:CA:6B:D6:45:E6:39:8A:8E:C4:0D:D2:BF:77:C3:A2:90
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "GlobalSign Root R46"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\106\061\013\060\011\006\003\125\004\006\023\002\102\105\061
\031\060\027\006\003\125\004\012\023\020\107\154\157\142\141\154
\123\151\147\156\040\156\166\055\163\141\061\034\060\032\006\003
\125\004\003\023\023\107\154\157\142\141\154\123\151\147\156\040
\122\157\157\164\040\122\064\066
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\106\061\013\060\011\006\003\125\004\006\023\002\102\105\061
\031\060\027\006\003\125\004\012\023\020\107\154\157\142\141\154
\123\151\147\156\040\156\166\055\163\141\061\034\060\032\006\003
\125\004\003\023\023\107\154\157\142\141\154\123\151\147\156\040

```

\122\157\157\164\040\122\064\066

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\022\021\322\273\271\327\043\030\236\100\137\012\235\055\320  
\337\045\147\321

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\132\060\202\003\102\240\003\002\001\002\002\022\021  
\322\273\271\327\043\030\236\100\137\012\235\055\320\337\045\147  
\321\060\015\006\011\052\206\110\206\367\015\001\001\014\005\000  
\060\106\061\013\060\011\006\003\125\004\006\023\002\102\105\061  
\031\060\027\006\003\125\004\012\023\020\107\154\157\142\141\154  
\123\151\147\156\040\156\166\055\163\141\061\034\060\032\006\003  
\125\004\003\023\023\107\154\157\142\141\154\123\151\147\156\040  
\122\157\157\164\040\122\064\066\060\036\027\015\061\071\060\063  
\062\060\060\060\060\060\060\060\132\027\015\064\066\060\063\062  
\060\060\060\060\060\060\060\132\060\106\061\013\060\011\006\003  
\125\004\006\023\002\102\105\061\031\060\027\006\003\125\004\012  
\023\020\107\154\157\142\141\154\123\151\147\156\040\156\166\055  
\163\141\061\034\060\032\006\003\125\004\003\023\023\107\154\157  
\142\141\154\123\151\147\156\040\122\157\157\164\040\122\064\066  
\060\202\002\042\060\015\006\011\052\206\110\206\367\015\001\001  
\001\005\000\003\202\002\017\000\060\202\002\012\002\202\002\001  
\000\254\254\164\062\350\263\145\345\272\355\103\046\035\246\211  
\015\105\272\051\210\262\244\035\143\335\323\301\054\011\127\211  
\071\241\125\351\147\064\167\014\156\344\125\035\122\045\322\023  
\153\136\341\035\251\267\175\211\062\137\015\236\237\054\172\143  
\140\100\037\246\260\266\170\217\231\124\226\010\130\256\344\006  
\274\142\005\002\026\277\257\250\043\003\266\224\017\274\156\154  
\302\313\325\246\273\014\351\366\301\002\373\041\336\146\335\027  
\253\164\102\357\360\164\057\045\364\352\153\125\133\220\333\235  
\337\136\207\012\100\373\255\031\153\373\367\312\140\210\336\332  
\301\217\326\256\325\177\324\074\203\356\327\026\114\203\105\063  
\153\047\320\206\320\034\055\153\363\253\175\361\205\251\365\050  
\322\255\357\363\204\113\034\207\374\023\243\072\162\242\132\021  
\053\326\047\161\047\355\201\055\155\146\201\222\207\264\033\130  
\172\314\077\012\372\106\117\115\170\134\370\053\110\343\004\204  
\313\135\366\264\152\263\145\374\102\236\121\046\043\040\313\075  
\024\371\201\355\145\026\000\117\032\144\227\146\010\317\214\173  
\343\053\300\235\371\024\362\033\361\126\152\026\277\054\205\205  
\315\170\070\232\353\102\152\002\064\030\203\027\116\224\126\370  
\266\202\265\363\226\335\075\363\276\177\040\167\076\173\031\043  
\153\054\324\162\163\103\127\175\340\370\327\151\117\027\066\004  
\371\300\220\140\067\105\336\346\014\330\164\215\256\234\242\155  
\164\135\102\276\006\365\331\144\156\002\020\254\211\260\114\073  
\007\115\100\176\044\305\212\230\202\171\216\244\247\202\040\215  
\043\372\047\161\311\337\306\101\164\240\115\366\221\026\334\106

\214\137\051\143\061\131\161\014\330\157\302\266\062\175\373\346  
\135\123\246\176\025\374\273\165\174\135\354\370\366\027\034\354  
\307\153\031\313\363\173\360\053\007\245\331\154\171\124\166\154  
\235\034\246\156\016\351\171\014\250\043\152\243\337\033\060\061  
\237\261\124\173\376\152\313\146\252\334\145\320\242\236\112\232  
\007\041\153\201\217\333\304\131\372\336\042\300\004\234\343\252  
\133\066\223\350\075\275\172\241\235\013\166\261\013\307\235\375  
\317\230\250\006\302\370\052\243\241\203\240\267\045\162\245\002  
\343\002\003\001\000\001\243\102\060\100\060\016\006\003\125\035  
\017\001\001\377\004\004\003\002\001\206\060\017\006\003\125\035  
\023\001\001\377\004\005\060\003\001\001\377\060\035\006\003\125  
\035\016\004\026\004\024\003\134\253\163\201\207\250\314\260\246  
\325\224\342\066\226\111\377\005\231\054\060\015\006\011\052\206  
\110\206\367\015\001\001\014\005\000\003\202\002\001\000\174\170  
\354\366\002\054\273\133\176\222\053\135\071\334\276\330\035\242  
\102\063\115\371\357\244\052\073\104\151\036\254\331\105\243\116  
\074\247\330\044\121\262\124\034\223\116\304\357\173\223\205\140  
\046\352\011\110\340\365\273\307\351\150\322\273\152\061\161\314  
\171\256\021\250\360\231\375\345\037\274\057\250\314\127\353\166  
\304\041\246\107\123\125\115\150\277\005\244\356\327\046\253\142  
\332\103\067\113\342\306\265\345\262\203\031\072\307\323\333\115  
\236\010\172\363\356\317\076\142\373\254\350\140\314\321\307\241  
\134\203\105\304\105\314\363\027\153\024\311\004\002\076\322\044  
\246\171\351\036\316\242\347\301\131\025\237\035\342\113\232\076  
\237\166\010\055\153\330\272\127\024\332\203\352\376\214\125\351  
\320\116\251\314\167\061\261\104\021\172\134\261\076\323\024\105  
\025\030\142\044\023\322\313\115\316\134\203\301\066\362\020\265  
\016\210\155\270\341\126\237\211\336\226\146\071\107\144\054\156  
\115\256\142\173\277\140\164\031\270\126\254\222\254\026\062\355  
\255\150\125\376\230\272\323\064\336\364\311\141\303\016\206\366  
\113\204\140\356\015\173\265\062\130\171\221\125\054\201\103\263  
\164\037\172\252\045\236\035\327\241\213\271\315\102\056\004\244  
\146\203\115\211\065\266\154\250\066\112\171\041\170\042\320\102  
\274\321\100\061\220\241\276\004\317\312\147\355\365\360\200\323  
\140\311\203\052\042\005\320\007\073\122\277\014\236\252\053\371  
\273\346\037\217\045\272\205\215\027\036\002\376\135\120\004\127  
\317\376\055\274\357\134\300\032\253\266\237\044\306\337\163\150  
\110\220\054\024\364\077\122\032\344\322\313\024\303\141\151\317  
\342\371\030\305\272\063\237\024\243\004\135\271\161\367\265\224  
\330\366\063\301\132\301\064\213\174\233\335\223\072\347\023\242  
\160\141\237\257\217\353\330\305\165\370\063\146\324\164\147\072  
\067\167\234\347\335\244\017\166\103\146\212\103\362\237\373\014  
\102\170\143\321\342\017\157\173\324\241\075\164\227\205\267\110  
\071\101\326\040\374\320\072\263\372\350\157\304\212\272\161\067  
\276\213\227\261\170\061\117\263\347\266\003\023\316\124\235\256  
\045\131\314\177\065\137\010\367\100\105\061\170\052\172

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

```

CK_BBOOL CK_TRUE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

#
Trust for "GlobalSign Root R46"
# Issuer: CN=GlobalSign Root R46,O=GlobalSign nv-sa,C=BE
# Serial Number:11:d2:bb:b9:d7:23:18:9e:40:5f:0a:9d:2d:d0:df:25:67:d1
# Subject: CN=GlobalSign Root R46,O=GlobalSign nv-sa,C=BE
# Not Valid Before: Wed Mar 20 00:00:00 2019
# Not Valid After : Tue Mar 20 00:00:00 2046
# Fingerprint (SHA-256):
4F:A3:12:6D:8D:3A:11:D1:C4:85:5A:4F:80:7C:BA:D6:CF:91:9D:3A:5A:88:B0:3B:EA:2C:63:72:D9:3C:40:C9
# Fingerprint (SHA1): 53:A2:B0:4B:CA:6B:D6:45:E6:39:8A:8E:C4:0D:D2:BF:77:C3:A2:90
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "GlobalSign Root R46"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\123\242\260\113\312\153\326\105\346\071\212\216\304\015\322\277
\167\303\242\220
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\304\024\060\344\372\146\103\224\052\152\033\044\137\031\320\357
END
CKA_ISSUER MULTILINE_OCTAL
\060\106\061\013\060\011\006\003\125\004\006\023\002\102\105\061
\031\060\027\006\003\125\004\012\023\020\107\154\157\142\141\154
\123\151\147\156\040\156\166\055\163\141\061\034\060\032\006\003
\125\004\003\023\023\107\154\157\142\141\154\123\151\147\156\040
\122\157\157\164\040\122\064\066
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\022\021\322\273\271\327\043\030\236\100\137\012\235\055\320
\337\045\147\321
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "GlobalSign Root E46"
#
# Issuer: CN=GlobalSign Root E46,O=GlobalSign nv-sa,C=BE
# Serial Number:11:d2:bb:ba:33:6e:d4:bc:e6:24:68:c5:0d:84:1d:98:e8:43

```

```
# Subject: CN=GlobalSign Root E46,O=GlobalSign nv-sa,C=BE
# Not Valid Before: Wed Mar 20 00:00:00 2019
# Not Valid After : Tue Mar 20 00:00:00 2046
# Fingerprint (SHA-256):
CB:B9:C4:4D:84:B8:04:3E:10:50:EA:31:A6:9F:51:49:55:D7:BF:D2:E2:C6:B4:93:01:01:9A:D6:1D:9F:50:58
#
Fingerprint (SHA1): 39:B4:6C:D5:FE:80:06:EB:E2:2F:4A:BB:08:33:A0:AF:DB:B9:DD:84
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "GlobalSign Root E46"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\106\061\013\060\011\006\003\125\004\006\023\002\102\105\061
\031\060\027\006\003\125\004\012\023\020\107\154\157\142\141\154
\123\151\147\156\040\156\166\055\163\141\061\034\060\032\006\003
\125\004\003\023\023\107\154\157\142\141\154\123\151\147\156\040
\122\157\157\164\040\105\064\066
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\106\061\013\060\011\006\003\125\004\006\023\002\102\105\061
\031\060\027\006\003\125\004\012\023\020\107\154\157\142\141\154
\123\151\147\156\040\156\166\055\163\141\061\034\060\032\006\003
\125\004\003\023\023\107\154\157\142\141\154\123\151\147\156\040
\122\157\157\164\040\105\064\066
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\022\021\322\273\272\063\156\324\274\346\044\150\305\015\204
\035\230\350\103
END
CKA_VALUE
MULTILINE_OCTAL
\060\202\002\013\060\202\001\221\240\003\002\001\002\002\022\021
\322\273\272\063\156\324\274\346\044\150\305\015\204\035\230\350
\103\060\012\006\010\052\206\110\316\075\004\003\003\060\106\061
\013\060\011\006\003\125\004\006\023\002\102\105\061\031\060\027
\006\003\125\004\012\023\020\107\154\157\142\141\154\123\151\147
\156\040\156\166\055\163\141\061\034\060\032\006\003\125\004\003
\023\023\107\154\157\142\141\154\123\151\147\156\040\122\157\157
\164\040\105\064\066\060\036\027\015\061\071\060\063\062\060\060
\060\060\060\060\060\132\027\015\064\066\060\063\062\060\060\060
\060\060\060\060\132\060\106\061\013\060\011\006\003\125\004\006
\023\002\102\105\061\031\060\027\006\003\125\004\012\023\020\107
\154\157\142\141\154\123\151\147\156\040\156\166\055\163\141\061
\034\060\032\006\003\125\004\003\023\023\107\154\157\142\141\154
\123\151\147\156\040\122\157\157\164\040\105\064\066\060\166\060
```

```
\020\006\007\052\206\110\316\075\002\001\006\005\053\201\004\000
\042\003\142\000\004\234\016\261\317\267\350\236\122\167\165\064
\372\245\106\247\255\062\031\062\264\007\251\047\312\224\273\014
\322\012\020\307\332\211\260\227\014\160\023\011\001\216\330\352
\107\352\276\262\200\053\315\374\050\015\333\254\274\244\206\067
\355\160\010\000\165\352\223\013\173\056\122\234\043\150\043\006
\103\354\222\057\123\204\333\373\107\024\007\350\137\224\147\135
\311\172\201\074\040\243\102\060\100\060\016\006\003\125\035\017
\001\001\377\004\004\003\002\001\206\060\017\006\003\125\035\023
\001\001\377\004\005\060\003\001\001\377\060\035\006\003\125\035
\016\004\026\004\024\061\012\220\217\266\306\235\322\104\113\200
\265\242\346\037\261\022\117\033\225\060\012\006\010\052\206\110
\316\075\004\003\003\003\150\000\060\145\002\061\000\337\124\220
\355\233\357\213\224\002\223\027\202\231\276\263\236\054\366\013
\221\214\237\112\024\261\366\144\274\273\150\121\023\014\003\367
\025\213\204\140\271\213\377\122\216\347\214\274\034\002\060\074
\371\021\324\214\116\300\301\141\302\025\114\252\253\035\013\061
\137\073\034\342\000\227\104\061\346\376\163\226\057\332\226\323
\376\010\007\263\064\211\274\005\237\367\036\206\356\213\160
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "GlobalSign Root E46"

# Issuer: CN=GlobalSign Root E46,O=GlobalSign nv-sa,C=BE

# Serial Number:11:d2:bb:ba:33:6e:d4:bc:e6:24:68:c5:0d:84:1d:98:e8:43

# Subject: CN=GlobalSign Root E46,O=GlobalSign nv-sa,C=BE

# Not Valid Before: Wed Mar 20 00:00:00 2019

# Not Valid After : Tue Mar 20 00:00:00 2046

# Fingerprint (SHA-256):

CB:B9:C4:4D:84:B8:04:3E:10:50:EA:31:A6:9F:51:49:55:D7:BF:D2:E2:C6:B4:93:01:01:9A:D6:1D:9F:50:58

# Fingerprint (SHA1): 39:B4:6C:D5:FE:80:06:EB:E2:2F:4A:BB:08:33:A0:AF:DB:B9:DD:84

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL

CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "GlobalSign Root E46"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\071\264\154\325\376\200\006\353\342\057\112\273\010\063\240\257
\333\271\335\204
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\265\270\146\355\336\010\203\343\311\342\001\064\006\254\121\157
```

END

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\106\061\013\060\011\006\003\125\004\006\023\002\102\105\061
\031\060\027\006\003\125\004\012\023\020\107\154\157\142\141\154
\123\151\147\156\040\156\166\055\163\141\061\034\060\032\006\003
\125\004\003\023\023\107\154\157\142\141\154\123\151\147\156\040
\122\157\157\164\040\105\064\066
```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

```
\002\022\021\322\273\272\063\156\324\274\346\044\150\305\015\204
\035\230\350\103
```

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "GLOBALTRUST

2020"

#

# Issuer: CN=GLOBALTRUST 2020,O=e-commerce monitoring GmbH,C=AT

# Serial Number:5a:4b:bd:5a:fb:4f:8a:5b:fa:65:e5

# Subject: CN=GLOBALTRUST 2020,O=e-commerce monitoring GmbH,C=AT

# Not Valid Before: Mon Feb 10 00:00:00 2020

# Not Valid After : Sun Jun 10 00:00:00 2040

# Fingerprint (SHA-256):

9A:29:6A:51:82:D1:D4:51:A2:E3:7F:43:9B:74:DA:AF:A2:67:52:33:29:F9:0F:9A:0D:20:07:C3:34:E2:3C:9A

# Fingerprint (SHA1): D0:67:C1:13:51:01:0C:AA:D0:C7:6A:65:37:31:16:26:4F:53:71:A2

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "GLOBALTRUST 2020"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

```
\060\115\061\013\060\011\006\003\125\004\006\023\002\101\124\061
\043\060\041\006\003\125\004\012\023\032\145\055\143\157\155\155
\145\162\143\145\040\155\157\156\151\164\157\162\151\156\147\040
\107\155\142\110\061\031\060\027\006\003\125\004\003\023\020\107
\114\117\102\101\114\124\122\125\123\124\040\062\060\062\060
```

END

CKA\_ID

UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\115\061\013\060\011\006\003\125\004\006\023\002\101\124\061
\043\060\041\006\003\125\004\012\023\032\145\055\143\157\155\155
\145\162\143\145\040\155\157\156\151\164\157\162\151\156\147\040
\107\155\142\110\061\031\060\027\006\003\125\004\003\023\020\107
\114\117\102\101\114\124\122\125\123\124\040\062\060\062\060
```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\013\132\113\275\132\373\117\212\133\372\145\345

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\202\060\202\003\152\240\003\002\001\002\002\013\132  
\113\275\132\373\117\212\133\372\145\345\060\015\006\011\052\206  
\110\206\367\015\001\001\013\005\000\060\115\061\013\060\011\006  
\003\125\004\006\023\002\101\124\061\043\060\041\006\003\125\004  
\012\023\032\145\055\143\157\155\155\145\162\143\145\040\155\157  
\156\151\164\157\162\151\156\147\040\107\155\142\110\061\031\060  
\027\006\003\125\004\003\023\020\107\114\117\102\101\114\124\122  
\125\123\124\040\062\060\062\060\060\036\027\015\062\060\060\062  
\061\060\060\060\060\060\060\060\132\027\015\064\060\060\066\061  
\060\060\060\060\060\060\060\132\060\115\061\013\060\011\006\003  
\125\004\006\023\002\101\124\061\043\060\041\006\003\125\004\012  
\023\032\145\055\143\157\155\155\145\162\143\145\040\155\157\156  
\151\164\157\162\151\156\147\040\107\155\142\110\061\031\060\027  
\006\003\125\004\003\023\020\107\114\117\102\101\114\124\122\125  
\123\124\040\062\060\062\060\060\202\002\042\060\015\006\011\052  
\206\110\206\367\015\001\001\001\005\000\003\202\002\017\000\060  
\202\002\012\002\202\002\001\000\256\056\126\255\033\034\357\366  
\225\217\240\167\033\053\323\143\217\204\115\105\242\017\237\133  
\105\253\131\173\121\064\371\354\213\212\170\305\335\153\257\275  
\304\337\223\105\036\277\221\070\013\256\016\026\347\101\163\370  
\333\273\321\270\121\340\313\203\073\163\070\156\167\212\017\131  
\143\046\315\247\052\316\124\373\270\342\300\174\107\316\140\174  
\077\262\163\362\300\031\266\212\222\207\065\015\220\050\242\344  
\025\004\143\076\272\257\356\174\136\314\246\213\120\262\070\367  
\101\143\312\316\377\151\217\150\016\225\066\345\314\271\214\011  
\312\113\335\061\220\226\310\314\037\375\126\226\064\333\216\034  
\352\054\276\205\056\143\335\252\251\225\323\375\051\225\023\360  
\310\230\223\331\055\026\107\220\021\203\242\072\042\242\050\127  
\242\353\376\300\214\050\240\246\175\347\052\102\073\202\200\143  
\245\143\037\031\314\174\262\146\250\302\323\155\067\157\342\176  
\006\121\331\105\204\037\022\316\044\122\144\205\013\110\200\116  
\207\261\042\042\060\252\353\256\276\340\002\340\100\350\260\102  
\200\003\121\252\264\176\252\104\327\103\141\363\242\153\026\211  
\111\244\243\244\053\212\002\304\170\364\150\212\301\344\172\066  
\261\157\033\226\033\167\111\215\324\311\006\162\217\317\123\343  
\334\027\205\040\112\334\230\047\323\221\046\053\107\036\151\007  
\257\336\242\344\344\324\153\013\263\136\174\324\044\200\107\051  
\151\073\156\350\254\375\100\353\330\355\161\161\053\362\350\130  
\035\353\101\227\042\305\037\324\071\320\047\217\207\343\030\364  
\340\251\106\015\365\164\072\202\056\320\156\054\221\243\061\134  
\073\106\352\173\004\020\126\136\200\035\365\245\145\350\202\374  
\342\007\214\142\105\365\040\336\106\160\206\241\274\223\323\036  
\164\246\154\260\054\367\003\014\210\014\313\324\162\123\206\274



\140\106\363\230\152\302\361\277\103\371\160\040\167\312\067\101  
\171\125\122\143\215\133\022\237\305\150\304\210\235\254\362\060  
\253\267\243\061\227\147\255\217\027\017\154\307\163\355\044\224  
\153\310\203\232\320\232\067\111\004\253\261\026\310\154\111\111  
\055\253\241\320\214\222\362\101\112\171\041\045\333\143\327\266  
\234\247\176\102\151\373\072\143\002\003\001\000\001\243\143\060  
\141\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001  
\001\377\060\016\006\003\125\035\017\001\001\377\004\004\003\002  
\001\006\060\035\006\003\125\035\016\004\026\004\024\334\056\037  
\321\141\067\171\344\253\325\325\263\022\161\150\075\152\150\234  
\042\060\037\006\003\125\035\043\004\030\060\026\200\024\334\056  
\037\321\141\067\171\344\253\325\325\263\022\161\150\075\152\150  
\234\042\060\015\006\011\052\206\110\206\367\015\001\001\013\005  
\000\003\202\002\001\000\221\360\102\002\150\100\356\303\150\300  
\124\057\337\354\142\303\303\236\212\240\061\050\252\203\216\244  
\126\226\022\020\206\126\272\227\162\322\124\060\174\255\031\325  
\035\150\157\373\024\102\330\215\016\363\265\321\245\343\002\102  
\136\334\350\106\130\007\065\002\060\340\274\164\112\301\103\052  
\377\333\032\320\260\257\154\303\375\313\263\365\177\155\003\056  
\131\126\235\055\055\065\214\262\326\103\027\054\222\012\313\135  
\350\214\017\113\160\103\320\202\377\250\314\277\244\224\300\276  
\207\275\212\343\223\173\306\217\233\026\235\047\145\274\172\305  
\102\202\154\134\007\320\251\301\210\140\104\351\230\205\026\137  
\370\217\312\001\020\316\045\303\371\140\033\240\305\227\303\323  
\054\210\061\242\275\060\354\320\320\300\022\361\301\071\343\345  
\365\370\326\112\335\064\315\373\157\301\117\343\000\213\126\342  
\222\367\050\262\102\167\162\043\147\307\077\021\025\262\304\003  
\005\276\273\021\173\012\277\250\156\347\377\130\103\317\233\147  
\240\200\007\266\035\312\255\155\352\101\021\176\055\164\223\373  
\302\274\276\121\104\305\357\150\045\047\200\343\310\240\324\022  
\354\331\245\067\035\067\174\264\221\312\332\324\261\226\201\357  
\150\134\166\020\111\257\176\245\067\200\261\034\122\275\063\201  
\114\217\371\335\145\331\024\315\212\045\130\364\342\305\203\245  
\011\220\324\154\024\143\265\100\337\353\300\374\304\130\176\015  
\024\026\207\124\047\156\126\344\160\204\270\154\062\022\176\202  
\061\103\276\327\335\174\241\255\256\326\253\040\022\357\012\303  
\020\214\111\226\065\334\013\165\136\261\117\325\117\064\016\021  
\040\007\165\103\105\351\243\021\332\254\243\231\302\266\171\047  
\342\271\357\310\342\366\065\051\172\164\372\305\177\202\005\142  
\246\012\352\150\262\171\107\006\156\362\127\250\025\063\306\367  
\170\112\075\102\173\153\176\376\367\106\352\321\353\216\357\210  
\150\133\350\301\331\161\176\375\144\357\377\147\107\210\130\045  
\057\076\206\007\275\373\250\345\202\250\254\245\323\151\103\315  
\061\210\111\204\123\222\300\261\071\033\071\203\001\060\304\362  
\251\372\320\003\275\162\067\140\126\037\066\174\275\071\221\365  
\155\015\277\173\327\222

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

```

CK_BBOOL CK_TRUE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

# Trust for "GLOBALTRUST 2020"
# Issuer: CN=GLOBALTRUST 2020,O=e-commerce monitoring GmbH,C=AT
# Serial Number:5a:4b:bd:5a:fb:4f:8a:5b:fa:65:e5
# Subject: CN=GLOBALTRUST 2020,O=e-commerce monitoring GmbH,C=AT
# Not Valid Before: Mon Feb 10 00:00:00 2020
# Not Valid After : Sun Jun 10 00:00:00 2040
# Fingerprint (SHA-256):
9A:29:6A:51:82:D1:D4:51:A2:E3:7F:43:9B:74:DA:AF:A2:67:52:33:29:F9:0F:9A:0D:20:07:C3:34:E2:3C:9A
# Fingerprint (SHA1): D0:67:C1:13:51:01:0C:AA:D0:C7:6A:65:37:31:16:26:4F:53:71:A2
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE
CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "GLOBALTRUST 2020"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\320\147\301\023\121\001\014\252\320\307\152\145\067\061\026\046
\117\123\161\242
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\212\307\157\313\155\343\314\242\361\174\203\372\016\170\327\350
END
CKA_ISSUER MULTILINE_OCTAL
\060\115\061\013\060\011\006\003\125\004\006\023\002\101\124\061
\043\060\041\006\003\125\004\012\023\032\145\055\143\157\155\155
\145\162\143\145\040\155\157\156\151\164\157\162\151\156\147\040
\107\155\142\110\061\031\060\027\006\003\125\004\003\023\020\107
\114\117\102\101\114\124\122\125\123\124\040\062\060\062\060
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\013\132\113\275\132\373\117\212\133\372\145\345
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "ANF
Secure Server Root CA"
#
# Issuer: CN=ANF Secure Server Root CA,OU=ANF CA Raiz,O=ANF Autoridad de
Certificacion,C=ES,serialNumber=G63287510
# Serial Number:0d:d3:e3:bc:6c:f9:6b:b1

```

```
# Subject: CN=ANF Secure Server Root CA,OU=ANF CA Raiz,O=ANF Autoridad de
Certificacion,C=ES,serialNumber=G63287510
# Not Valid Before: Wed Sep 04 10:00:38 2019
# Not Valid After : Tue Aug 30 10:00:38 2039
# Fingerprint (SHA-256):
FB:8F:EC:75:91:69:B9:10:6B:1E:51:16:44:C6:18:C5:13:04:37:3F:6C:06:43:08:8D:8B:EF:FD:1B:99:75:99
# Fingerprint (SHA1): 5B:6E:68:D0:CC:15:B6:A0:5F:1E:C1:5F:AE:02:FC:6B:2F:5D:6F:74
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "ANF Secure Server Root CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\204\061\022\060\020\006\003\125\004\005\023\011\107\066
\063\062\070\067\065\061\060\061\013\060\011\006\003\125\004\006
\023\002\105\123\061\047\060\045\006\003\125\004\012\023\036\101
\116\106\040\101\165\164\157\162\151\144\141\144\040\144\145\040
\103\145\162\164\151\146\151\143\141\143\151\157\156\061\024\060
\022\006\003\125\004\013\023\013\101\116\106\040\103\101\040\122
\141\151\172\061\042\060\040\006\003\125\004\003\023\031\101\116
\106\040\123\145\143\165\162\145\040\123\145\162\166\145\162\040
\122\157\157\164\040\103\101
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\204\061\022\060\020\006\003\125\004\005\023\011\107\066
\063\062\070\067\065\061\060\061\013\060\011\006\003\125\004\006
\023\002\105\123\061\047\060\045\006\003\125\004\012\023\036\101
\116\106\040\101\165\164\157\162\151\144\141\144\040\144\145\040
\103\145\162\164\151\146\151\143\141\143\151\157\156\061\024\060
\022\006\003\125\004\013\023\013\101\116\106\040\103\101\040\122
\141\151\172\061\042\060\040\006\003\125\004\003\023\031\101\116
\106\040\123\145\143\165\162\145\040\123\145\162\166\145\162\040
\122\157\157\164\040\103\101
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\010\015\323\343\274\154\371\153\261
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\357\060\202\003\327\240\003\002\001\002\002\010\015
\323\343\274\154\371\153\261\060\015\006\011\052\206\110\206\367
\015\001\001\013\005\000\060\201\204\061\022\060\020\006\003\125
\004\005\023\011\107\066\063\062\070\067\065\061\060\061\013\060
\011\006\003\125\004\006\023\002\105\123\061\047\060\045\006\003
\125\004\012\023\036\101\116\106\040\101\165\164\157\162\151\144
```

\141\144\040\144\145\040\103\145\162\164\151\146\151\143\141\143  
\151\157\156\061\024\060\022\006\003\125\004\013\023\013\101\116  
\106\040\103\101\040\122\141\151\172\061\042\060\040\006\003\125  
\004\003\023\031\101\116\106\040\123\145\143\165\162\145\040\123  
\145\162\166\145\162\040\122\157\157\164\040\103\101\060\036\027  
\015\061\071\060\071\060\064\061\060\060\060\063\070\132\027\015  
\063\071\060\070\063\060\061\060\060\060\063\070\132\060\201\204  
\061\022\060\020\006\003\125\004\005\023\011\107\066\063\062\070  
\067\065\061\060\061\013\060\011\006\003\125\004\006\023\002\105  
\123\061\047\060\045\006\003\125\004\012\023\036\101\116\106\040  
\101\165\164\157\162\151\144\141\144\040\144\145\040\103\145\162  
\164\151\146\151\143\141\143\151\157\156\061\024\060\022\006\003  
\125\004\013\023\013\101\116\106\040\103\101\040\122\141\151\172  
\061\042\060\040\006\003\125\004\003\023\031\101\116\106\040\123  
\145\143\165\162\145\040\123\145\162\166\145\162\040\122\157\157  
\164\040\103\101\060\202\002\042\060\015\006\011\052\206\110\206  
\367\015\001\001\001\005\000\003\202\002\017\000\060\202\002\012  
\002\202\002\001\000\333\353\153\053\346\144\124\225\202\220\243  
\162\244\031\001\235\234\013\201\137\163\111\272\247\254\363\004  
\116\173\226\013\354\021\340\133\246\034\316\033\322\015\203\034  
\053\270\236\035\176\105\062\140\017\007\351\167\130\176\237\152  
\310\141\116\266\046\301\114\215\377\114\357\064\262\037\145\330  
\271\170\365\255\251\161\271\357\117\130\035\245\336\164\040\227  
\241\355\150\114\336\222\027\113\274\253\377\145\232\236\373\107  
\331\127\162\363\011\241\256\166\104\023\156\234\055\104\071\274  
\371\307\073\244\130\075\101\275\264\302\111\243\310\015\322\227  
\057\007\145\122\000\247\156\310\257\150\354\364\024\226\266\127  
\037\126\303\071\237\053\155\344\363\076\366\065\144\332\014\034  
\241\204\113\057\113\113\342\054\044\235\155\223\100\353\265\043  
\216\062\312\157\105\323\250\211\173\036\317\036\372\133\103\213  
\315\315\250\017\152\312\014\136\271\236\107\217\360\331\266\012  
\013\130\145\027\063\271\043\344\167\031\175\313\112\056\222\173  
\117\057\020\167\261\215\057\150\234\142\314\340\120\370\354\221  
\247\124\114\127\011\325\166\143\305\350\145\036\356\155\152\317  
\011\235\372\174\117\255\140\010\375\126\231\017\025\054\173\251  
\200\253\214\141\217\112\007\166\102\336\075\364\335\262\044\063  
\133\270\265\243\104\311\254\177\167\074\035\043\354\202\251\246  
\342\310\006\114\002\376\254\134\231\231\013\057\020\212\246\364  
\177\325\207\164\015\131\111\105\366\360\161\134\071\051\326\277  
\112\043\213\365\137\001\143\322\207\163\050\265\113\012\365\370  
\253\202\054\176\163\045\062\035\013\143\012\027\201\000\377\266  
\166\136\347\264\261\100\312\041\273\325\200\121\345\110\122\147  
\054\322\141\211\007\015\017\316\102\167\300\104\163\234\104\120  
\240\333\020\012\055\225\034\201\257\344\034\345\024\036\361\066  
\101\001\002\057\175\163\247\336\102\314\114\351\211\015\126\367  
\237\221\324\003\306\154\311\217\333\330\034\340\100\230\135\146  
\231\230\200\156\055\377\001\305\316\313\106\037\254\002\306\103  
\346\256\242\204\074\305\116\036\075\155\311\024\114\343\056\101

\273\312\071\277\066\074\052\031\252\101\207\116\245\316\113\062  
\171\335\220\111\177\002\003\001\000\001\243\143\060\141\060\037  
\006\003\125\035\043\004\030\060\026\200\024\234\137\320\154\143  
\243\137\223\312\223\230\010\255\214\207\245\054\134\301\067\060  
\035\006\003\125\035\016\004\026\004\024\234\137\320\154\143\243  
\137\223\312\223\230\010\255\214\207\245\054\134\301\067\060\016  
\006\003\125\035\017\001\001\377\004\004\003\002\001\206\060\017  
\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060  
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\003\202  
\002\001\000\116\036\271\212\306\240\230\077\156\303\151\300\152  
\134\111\122\254\313\053\135\170\070\301\325\124\204\237\223\360  
\207\031\075\054\146\211\353\015\102\374\314\360\165\205\077\213  
\364\200\135\171\345\027\147\275\065\202\342\362\074\216\175\133  
\066\313\132\200\000\051\362\316\053\054\361\217\252\155\005\223  
\154\162\307\126\353\337\120\043\050\345\105\020\075\350\147\243  
\257\016\125\017\220\011\142\357\113\131\242\366\123\361\300\065  
\344\057\301\044\275\171\057\116\040\042\073\375\032\040\260\244  
\016\054\160\355\164\077\270\023\225\006\121\310\350\207\046\312  
\244\133\152\026\041\222\335\163\140\236\020\030\336\074\201\352  
\350\030\303\174\211\362\213\120\076\275\021\342\025\003\250\066  
\175\063\001\154\110\025\327\210\220\231\004\305\314\346\007\364  
\274\364\220\355\023\342\352\213\303\217\243\063\017\301\051\114  
\023\116\332\025\126\161\163\162\202\120\366\232\063\174\242\261  
\250\032\064\164\145\134\316\321\353\253\123\340\032\200\330\352  
\072\111\344\046\060\233\345\034\212\250\251\025\062\206\231\222  
\012\020\043\126\022\340\366\316\114\342\273\276\333\215\222\163  
\001\146\057\142\076\262\162\047\105\066\355\115\126\343\227\231  
\377\072\065\076\245\124\112\122\131\113\140\333\356\376\170\021  
\177\112\334\024\171\140\266\153\144\003\333\025\203\341\242\276  
\366\043\227\120\360\011\063\066\247\161\226\045\363\271\102\175  
\333\070\077\054\130\254\350\102\341\016\330\323\073\114\056\202  
\351\203\056\153\061\331\335\107\206\117\155\227\221\056\117\342  
\050\161\065\026\321\362\163\376\045\053\007\107\044\143\047\310  
\370\366\331\153\374\022\061\126\010\300\123\102\257\234\320\063  
\176\374\006\360\061\104\003\024\361\130\352\362\152\015\251\021  
\262\203\276\305\032\277\007\352\131\334\243\210\065\357\234\166  
\062\074\115\006\042\316\025\345\335\236\330\217\332\336\322\304  
\071\345\027\201\317\070\107\353\177\210\155\131\033\337\237\102  
\024\256\176\317\250\260\146\145\332\067\257\237\252\075\352\050  
\266\336\325\061\130\026\202\133\352\273\031\165\002\163\032\312  
\110\032\041\223\220\012\216\223\204\247\175\073\043\030\222\211  
\240\215\254

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

```

# Trust for "ANF Secure Server Root CA"
# Issuer: CN=ANF Secure Server Root CA,OU=ANF CA Raiz,O=ANF Autoridad de
Certificacion,C=ES,serialNumber=G63287510
# Serial Number:0d:d3:e3:bc:6c:f9:6b:b1
# Subject: CN=ANF Secure Server Root CA,OU=ANF CA Raiz,O=ANF Autoridad de
Certificacion,C=ES,serialNumber=G63287510
# Not Valid Before: Wed Sep 04 10:00:38 2019
# Not Valid After : Tue Aug 30 10:00:38 2039
# Fingerprint (SHA-256):
FB:8F:EC:75:91:69:B9:10:6B:1E:51:16:44:C6:18:C5:13:04:37:3F:6C:06:43:08:8D:8B:EF:FD:1B:99:75:99
# Fingerprint (SHA1): 5B:6E:68:D0:CC:15:B6:A0:5F:1E:C1:5F:AE:02:FC:6B:2F:5D:6F:74
CKA_CLASS
CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "ANF Secure Server Root CA"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\133\156\150\320\314\025\266\240\137\036\301\137\256\002\374\153
\057\135\157\164
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\046\246\104\132\331\257\116\057\262\035\266\145\260\116\350\226
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\204\061\022\060\020\006\003\125\004\005\023\011\107\066
\063\062\070\067\065\061\060\061\013\060\011\006\003\125\004\006
\023\002\105\123\061\047\060\045\006\003\125\004\012\023\036\101
\116\106\040\101\165\164\157\162\151\144\141\144\040\144\145\040
\103\145\162\164\151\146\151\143\141\143\151\157\156\061\024\060
\022\006\003\125\004\013\023\013\101\116\106\040\103\101\040\122
\141\151\172\061\042\060\040\006\003\125\004\003\023\031\101\116
\106\040\123\145\143\165\162\145\040\123\145\162\166\145\162\040
\122\157\157\164\040\103\101
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\010\015\323\343\274\154\371\153\261
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "Certum EC-384 CA"
#
# Issuer: CN=Certum EC-384 CA,OU=Certum Certification Authority,O=Asseco Data Systems S.A.,C=PL

```

```
# Serial Number:78:8f:27:5c:81:12:52:20:a5:04:d0:2d:dd:ba:73:f4
# Subject: CN=Certum EC-384 CA,OU=Certum Certification Authority,O=Asseco Data Systems S.A.,C=PL
# Not Valid Before: Mon Mar 26 07:24:54 2018
# Not Valid After : Thu Mar 26 07:24:54 2043
# Fingerprint (SHA-256):
6B:32:80:85:62:53:18:AA:50:D1:73:C9:8D:8B:DA:09:D5:7E:27:41:3D:11:4C:F7:87:A0:F5:D0:6C:03:0C:F6
# Fingerprint (SHA1): F3:3E:78:3C:AC:DF:F4:A2:CC:AC:67:55:69:56:D7:E5:16:3C:E1:ED
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE
CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Certum EC-384 CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\164\061\013\060\011\006\003\125\004\006\023\002\120\114\061
\041\060\037\006\003\125\004\012\023\030\101\163\163\145\143\157
\040\104\141\164\141\040\123\171\163\164\145\155\163\040\123\056
\101\056\061\047\060\045\006\003\125\004\013\023\036\103\145\162
\164\165\155\040\103\145\162\164\151\146\151\143\141\164\151\157
\156\040\101\165\164\150\157\162\151\164\171\061\031\060\027\006
\003\125\004\003\023\020\103\145\162\164\165\155\040\105\103\055
\063\070\064\040\103\101
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\164\061\013\060\011\006\003\125\004\006\023\002\120\114\061
\041\060\037\006\003\125\004\012\023\030\101\163\163\145\143\157
\040\104\141\164\141\040\123\171\163\164\145\155\163\040\123\056
\101\056\061\047\060\045\006\003\125\004\013\023\036\103\145\162
\164\165\155\040\103\145\162\164\151\146\151\143\141\164\151\157
\156\040\101\165\164\150\157\162\151\164\171\061\031\060\027\006
\003\125\004\003\023\020\103\145\162\164\165\155\040\105\103\055
\063\070\064\040\103\101
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\170\217\047\134\201\022\122\040\245\004\320\055\335\272
\163\364
END
CKA_VALUE MULTILINE_OCTAL
\060\202\002\145\060\202\001\353\240\003\002\001\002\002\020\170
\217\047\134\201\022\122\040\245\004\320\055\335\272\163\364\060
\012\006\010\052\206\110\316\075\004\003\003\060\164\061\013\060
\011\006\003\125\004\006\023\002\120\114\061\041\060\037\006\003
\125\004\012\023\030\101\163\163\145\143\157\040\104\141\164\141
\040\123\171\163\164\145\155\163\040\123\056\101\056\061\047\060
\045\006\003\125\004\013\023\036\103\145\162\164\165\155\040\103
```

\145\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164  
\150\157\162\151\164\171\061\031\060\027\006\003\125\004\003\023  
\020\103\145\162\164\165\155\040\105\103\055\063\070\064\040\103  
\101\060\036\027\015\061\070\060\063\062\066\060\067\062\064\065  
\064\132\027\015\064\063\060\063\062\066\060\067\062\064\065\064  
\132\060\164\061\013\060\011\006\003\125\004\006\023\002\120\114  
\061\041\060\037\006\003\125\004\012\023\030\101\163\163\145\143  
\157\040\104\141\164\141\040\123\171\163\164\145\155\163\040\123  
\056\101\056\061\047\060\045\006\003\125\004\013\023\036\103\145  
\162\164\165\155\040\103\145\162\164\151\146\151\143\141\164\151  
\157\156\040\101\165\164\150\157\162\151\164\171\061\031\060\027  
\006\003\125\004\003\023\020\103\145\162\164\165\155\040\105\103  
\055\063\070\064\040\103\101\060\166\060\020\006\007\052\206\110  
\316\075\002\001\006\005\053\201\004\000\042\003\142\000\004\304  
\050\216\253\030\133\152\276\156\144\067\143\344\315\354\253\072  
\367\314\241\270\016\202\111\327\206\051\237\241\224\362\343\140  
\170\230\201\170\006\115\362\354\232\016\127\140\203\237\264\346  
\027\057\032\263\135\002\133\211\043\074\302\021\005\052\247\210  
\023\030\363\120\204\327\275\064\054\047\211\125\377\316\114\347  
\337\246\037\050\304\360\124\303\271\174\267\123\255\353\302\243  
\102\060\100\060\017\006\003\125\035\023\001\001\377\004\005\060  
\003\001\001\377\060\035\006\003\125\035\016\004\026\004\024\215  
\006\146\164\044\166\072\363\211\367\274\326\275\107\175\057\274  
\020\137\113\060\016\006\003\125\035\017\001\001\377\004\004\003  
\002\001\006\060\012\006\010\052\206\110\316\075\004\003\003\003  
\150\000\060\145\002\060\003\125\055\246\346\030\304\174\357\311  
\120\156\301\047\017\234\207\257\156\325\033\010\030\275\222\051  
\301\357\224\221\170\322\072\034\125\211\142\345\033\011\036\272  
\144\153\361\166\264\324\002\061\000\264\102\204\231\377\253\347  
\236\373\221\227\047\135\334\260\133\060\161\316\136\070\032\152  
\331\045\347\352\367\141\222\126\370\352\332\066\302\207\145\226  
\056\162\045\057\177\337\303\023\311

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "Certum EC-384 CA"

# Issuer: CN=Certum EC-384

CA,OU=Certum Certification Authority,O=Asseco Data Systems S.A.,C=PL

# Serial Number:78:8f:27:5c:81:12:52:20:a5:04:d0:2d:dd:ba:73:f4

# Subject: CN=Certum EC-384 CA,OU=Certum Certification Authority,O=Asseco Data Systems S.A.,C=PL

# Not Valid Before: Mon Mar 26 07:24:54 2018

# Not Valid After : Thu Mar 26 07:24:54 2043

# Fingerprint (SHA-256):

6B:32:80:85:62:53:18:AA:50:D1:73:C9:8D:8B:DA:09:D5:7E:27:41:3D:11:4C:F7:87:A0:F5:D0:6C:03:0C:F6

# Fingerprint (SHA1): F3:3E:78:3C:AC:DF:F4:A2:CC:AC:67:55:69:56:D7:E5:16:3C:E1:ED



```

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Certum EC-384 CA"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\363\076\170\074\254\337\364\242\314\254\147\125\151\126\327\345
\026\074\341\355
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\266\145\263\226\140\227\022\241\354\116\341\075\243\306\311\361
END
CKA_ISSUER MULTILINE_OCTAL
\060\164\061\013\060\011\006\003\125\004\006\023\002\120\114\061
\041\060\037\006\003\125\004\012\023\030\101\163\163\145\143\157
\040\104\141\164\141\040\123\171\163\164\145\155\163\040\123\056
\101\056\061\047\060\045\006\003\125\004\013\023\036\103\145\162
\164\165\155\040\103\145\162\164\151\146\151\143\141\164\151\157
\156\040\101\165\164\150\157\162\151\164\171\061\031\060\027\006
\003\125\004\003\023\020\103\145\162\164\165\155\040\105\103\055
\063\070\064\040\103\101
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\170\217\047\134\201\022\122\040\245\004\320\055\335\272
\163\364
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "Certum Trusted Root CA"
#
# Issuer: CN=Certum Trusted Root CA,OU=Certum Certification Authority,O=Asseco Data Systems S.A.,C=PL
# Serial Number:1e:bf:59:50:b8:c9:80:37:4c:06:f7:eb:55:4f:b5:ed
# Subject: CN=Certum Trusted Root
CA,OU=Certum Certification Authority,O=Asseco Data Systems S.A.,C=PL
# Not Valid Before: Fri Mar 16 12:10:13 2018
# Not Valid After : Mon Mar 16 12:10:13 2043
# Fingerprint (SHA-256):
FE:76:96:57:38:55:77:3E:37:A9:5E:7A:D4:D9:CC:96:C3:01:57:C1:5D:31:76:5B:A9:B1:57:04:E1:AE:78:FD
# Fingerprint (SHA1): C8:83:44:C0:18:AE:9F:CC:F1:87:B7:8F:22:D1:C5:D7:45:84:BA:E5
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE

```

```
CKA_LABEL UTF8 "Certum Trusted Root CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\172\061\013\060\011\006\003\125\004\006\023\002\120\114\061
\041\060\037\006\003\125\004\012\023\030\101\163\163\145\143\157
\040\104\141\164\141\040\123\171\163\164\145\155\163\040\123\056
\101\056\061\047\060\045\006\003\125\004\013\023\036\103\145\162
\164\165\155\040\103\145\162\164\151\146\151\143\141\164\151\157
\156\040\101\165\164\150\157\162\151\164\171\061\037\060\035\006
\003\125\004\003\023\026\103\145\162\164\165\155\040\124\162\165
\163\164\145\144\040\122\157\157\164\040\103\101
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\172\061\013\060\011\006\003\125\004\006\023\002\120\114\061
\041\060\037\006\003\125\004\012\023\030\101\163\163\145\143\157
\040\104\141\164\141\040\123\171\163\164\145\155\163\040\123\056
\101\056\061\047\060\045\006\003\125\004\013\023\036\103\145\162
\164\165\155\040\103\145\162\164\151\146\151\143\141\164\151\157
\156\040\101\165\164\150\157\162\151\164\171\061\037\060\035\006
\003\125\004\003\023\026\103\145\162\164\165\155\040\124\162\165
\163\164\145\144\040\122\157\157\164\040\103\101
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\036\277\131\120\270\311\200\067\114\006\367\353\125\117
\265\355
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\300\060\202\003\250\240\003\002\001\002\002\020\036
\277\131\120\270\311\200\067\114\006\367\353\125\117\265\355\060
\015\006\011\052\206\110\206\367\015\001\001\015\005\000\060\172
\061\013\060\011\006\003\125\004\006\023\002\120\114\061\041\060
\037\006\003\125\004\012\023\030\101\163\163\145\143\157\040\104
\141\164\141\040\123\171\163\164\145\155\163\040\123\056\101\056
\061\047\060\045\006\003\125\004\013\023\036\103\145\162\164\165
\155\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040
\101\165\164\150\157\162\151\164\171\061\037\060\035\006\003\125
\004\003\023\026\103\145\162\164\165\155\040\124\162\165\163\164
\145\144\040\122\157\157\164\040\103\101\060\036\027\015\061\070
\060\063\061\066\061\062\061\060\061\063\132\027\015\064\063\060
\063\061\066\061\062\061\060\061\063\132\060\172\061\013\060\011
\006\003\125\004\006\023\002\120\114\061\041\060\037\006\003\125
\004\012\023\030\101\163\163\145\143\157\040\104\141\164\141\040
\123\171\163\164\145\155\163\040\123\056\101\056\061\047\060\045
\006\003\125\004\013\023\036\103\145\162\164\165\155\040\103\145
\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150
\157\162\151\164\171\061\037\060\035\006\003\125\004\003\023\026
```

\103\145\162\164\165\155\040\124\162\165\163\164\145\144\040\122  
\157\157\164\040\103\101\060\202\002\042\060\015\006\011\052\206  
\110\206\367\015\001\001\001\005\000\003\202\002\017\000\060\202  
\002\012\002\202\002\001\000\321\055\216\273\267\066\352\155\067  
\221\237\116\223\247\005\344\051\003\045\316\034\202\367\174\231  
\237\101\006\315\355\243\272\300\333\011\054\301\174\337\051\176  
\113\145\057\223\247\324\001\153\003\050\030\243\330\235\005\301  
\052\330\105\361\221\336\337\073\320\200\002\214\317\070\017\352  
\247\134\170\021\244\301\310\205\134\045\323\323\262\347\045\317  
\021\124\227\253\065\300\036\166\034\357\000\123\237\071\334\024  
\245\054\042\045\263\162\162\374\215\263\345\076\010\036\024\052  
\067\013\210\074\312\260\364\310\302\241\256\274\301\276\051\147  
\125\342\374\255\131\134\376\275\127\054\260\220\215\302\355\067  
\266\174\231\210\265\325\003\232\075\025\015\075\072\250\250\105  
\360\225\116\045\131\035\315\230\151\273\323\314\062\311\215\357  
\201\376\255\175\211\273\272\140\023\312\145\225\147\240\363\031  
\366\003\126\324\152\323\047\342\241\255\203\360\112\022\042\167  
\034\005\163\342\031\161\102\300\354\165\106\232\220\130\340\152  
\216\053\245\106\060\004\216\031\262\027\343\276\251\272\177\126  
\361\044\003\327\262\041\050\166\016\066\060\114\171\325\101\232  
\232\250\270\065\272\014\072\362\104\033\040\210\367\305\045\327  
\075\306\343\076\103\335\207\376\304\352\365\123\076\114\145\377  
\073\112\313\170\132\153\027\137\015\307\303\117\116\232\052\242  
\355\127\115\042\342\106\232\077\017\221\064\044\175\125\343\214  
\225\067\323\032\360\011\053\054\322\311\215\264\015\000\253\147  
\051\050\330\001\365\031\004\266\035\276\166\376\162\134\304\205  
\312\322\200\101\337\005\250\243\325\204\220\117\013\363\340\077  
\233\031\322\067\211\077\362\173\122\034\214\366\341\367\074\007  
\227\214\016\242\131\201\014\262\220\075\323\343\131\106\355\017  
\251\247\336\200\153\132\252\007\266\031\313\274\127\363\227\041  
\172\014\261\053\164\076\353\332\247\147\055\114\304\230\236\066  
\011\166\146\146\374\032\077\352\110\124\034\276\060\275\200\120  
\277\174\265\316\000\366\014\141\331\347\044\003\340\343\001\201  
\016\275\330\205\064\210\275\262\066\250\173\134\010\345\104\200  
\214\157\370\057\325\041\312\035\034\320\373\304\265\207\321\072  
\116\307\166\265\065\110\265\002\003\001\000\001\243\102\060\100  
\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001  
\377\060\035\006\003\125\035\016\004\026\004\024\214\373\034\165  
\274\002\323\237\116\056\110\331\371\140\124\252\304\263\117\372  
\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001\006  
\060\015\006\011\052\206\110\206\367\015\001\001\015\005\000\003  
\202\002\001\000\110\242\325\000\013\056\320\077\274\034\325\265  
\124\111\036\132\153\364\344\362\340\100\067\340\314\024\173\271  
\311\372\065\265\165\027\223\152\005\151\205\234\315\117\031\170  
\133\031\201\363\143\076\303\316\133\217\365\057\136\001\166\023  
\077\054\000\271\315\226\122\071\111\155\004\116\305\351\017\206  
\015\341\372\263\137\202\022\361\072\316\146\006\044\064\053\350  
\314\312\347\151\334\207\235\302\064\327\171\321\323\167\270\252

\131\130\376\235\046\372\070\206\076\235\212\207\144\127\345\027  
\072\342\371\215\271\343\063\170\301\220\330\270\335\267\203\121  
\344\304\314\043\325\006\174\346\121\323\315\064\061\300\366\106  
\273\013\255\374\075\020\005\052\073\112\221\045\356\214\324\204  
\207\200\052\274\011\214\252\072\023\137\350\064\171\120\301\020  
\031\371\323\050\036\324\321\121\060\051\263\256\220\147\326\037  
\012\143\261\305\251\306\102\061\143\027\224\357\151\313\057\372  
\214\024\175\304\103\030\211\331\360\062\100\346\200\342\106\137  
\345\343\301\000\131\250\371\350\040\274\211\054\016\107\064\013  
\352\127\302\123\066\374\247\324\257\061\315\376\002\345\165\372  
\271\047\011\371\363\365\073\312\175\237\251\042\313\210\311\252  
\321\107\075\066\167\250\131\144\153\047\317\357\047\301\343\044  
\265\206\367\256\176\062\115\260\171\150\321\071\350\220\130\303  
\203\274\017\054\326\227\353\316\014\341\040\307\332\267\076\303  
\077\277\057\334\064\244\373\053\041\315\147\217\113\364\343\352  
\324\077\347\117\272\271\245\223\105\034\146\037\041\372\144\136  
\157\340\166\224\062\313\165\365\156\345\366\217\307\270\244\314  
\250\226\175\144\373\044\132\112\003\154\153\070\306\350\003\103  
\232\367\127\271\263\051\151\223\070\364\003\362\273\373\202\153  
\007\040\321\122\037\232\144\002\173\230\146\333\134\115\132\017  
\320\204\225\240\074\024\103\006\312\312\333\270\101\066\332\152  
\104\147\207\257\257\343\105\021\025\151\010\262\276\026\071\227  
\044\157\022\105\321\147\135\011\250\311\025\332\372\322\246\137  
\023\141\037\277\205\254\264\255\255\005\224\010\203\036\165\027  
\323\161\073\223\120\043\131\240\355\074\221\124\235\166\000\305  
\303\270\070\333

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "Certum Trusted Root CA"

# Issuer: CN=Certum

Trusted Root CA,OU=Certum Certification Authority,O=Asseco Data Systems S.A.,C=PL

# Serial Number: 1e:bf:59:50:b8:c9:80:37:4c:06:f7:eb:55:4f:b5:ed

# Subject: CN=Certum Trusted Root CA,OU=Certum Certification Authority,O=Asseco Data Systems S.A.,C=PL

# Not Valid Before: Fri Mar 16 12:10:13 2018

# Not Valid After : Mon Mar 16 12:10:13 2043

# Fingerprint (SHA-256):

FE:76:96:57:38:55:77:3E:37:A9:5E:7A:D4:D9:CC:96:C3:01:57:C1:5D:31:76:5B:A9:B1:57:04:E1:AE:78:FD

# Fingerprint (SHA1): C8:83:44:C0:18:AE:9F:CC:F1:87:B7:8F:22:D1:C5:D7:45:84:BA:E5

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Certum Trusted Root CA"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\310\203\104\300\030\256\237\314\361\207\267\217\042\321\305\327  
\105\204\272\345

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\121\341\302\347\376\114\204\257\131\016\057\364\124\157\352\051

END

CKA\_ISSUER MULTILINE\_OCTAL

\060\172\061\013\060\011\006\003\125\004\006\023\002\120\114\061  
\041\060\037\006\003\125\004\012\023\030\101\163\163\145\143\157  
\040\104\141\164\141\040\123\171\163\164\145\155\163\040\123\056  
\101\056\061\047\060\045\006\003\125\004\013\023\036\103\145\162  
\164\165\155\040\103\145\162\164\151\146\151\143\141\164\151\157  
\156\040\101\165\164\150\157\162\151\164\171\061\037\060\035\006  
\003\125\004\003\023\026\103\145\162\164\165\155\040\124\162\165  
\163\164\145\144\040\122\157\157\164\040\103\101

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\020\036\277\131\120\270\311\200\067\114\006\367\353\125\117  
\265\355

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "TunTrust Root CA"

#

# Issuer: CN=TunTrust Root CA,O=Agence Nationale de Certification Electronique,C=TN

# Serial Number:13:02:d5:e2:40:4c:92:46:86:16:67:5d:b4:bb:bb:b2:6b:3e:fc:13

#

Subject: CN=TunTrust Root CA,O=Agence Nationale de Certification Electronique,C=TN

# Not Valid Before: Fri Apr 26 08:57:56 2019

# Not Valid After : Tue Apr 26 08:57:56 2044

# Fingerprint (SHA-256):

2E:44:10:2A:B5:8C:B8:54:19:45:1C:8E:19:D9:AC:F3:66:2C:AF:BC:61:4B:6A:53:96:0A:30:F7:D0:E2:EB:41

# Fingerprint (SHA1): CF:E9:70:84:0F:E0:73:0F:9D:F6:0C:7F:2C:4B:EE:20:46:34:9C:BB

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "TunTrust Root CA"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\141\061\013\060\011\006\003\125\004\006\023\002\124\116\061  
\067\060\065\006\003\125\004\012\014\056\101\147\145\156\143\145  
\040\116\141\164\151\157\156\141\154\145\040\144\145\040\103\145

\162\164\151\146\151\143\141\164\151\157\156\040\105\154\145\143  
\164\162\157\156\151\161\165\145\061\031\060\027\006\003\125\004  
\003\014\020\124\165\156\124\162\165\163\164\040\122\157\157\164  
\040\103\101

END

CKA\_ID

UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\141\061\013\060\011\006\003\125\004\006\023\002\124\116\061  
\067\060\065\006\003\125\004\012\014\056\101\147\145\156\143\145  
\040\116\141\164\151\157\156\141\154\145\040\144\145\040\103\145  
\162\164\151\146\151\143\141\164\151\157\156\040\105\154\145\143  
\164\162\157\156\151\161\165\145\061\031\060\027\006\003\125\004  
\003\014\020\124\165\156\124\162\165\163\164\040\122\157\157\164  
\040\103\101

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\024\023\002\325\342\100\114\222\106\206\026\147\135\264\273  
\273\262\153\076\374\023

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\263\060\202\003\233\240\003\002\001\002\002\024\023  
\002\325\342\100\114\222\106\206\026\147\135\264\273\273\262\153  
\076\374\023\060\015\006\011\052\206\110\206\367\015\001\001\013  
\005\000\060\141\061\013\060\011\006\003\125\004\006\023\002\124  
\116\061\067\060\065\006\003\125\004\012\014\056\101\147\145\156  
\143\145\040\116\141\164\151\157\156\141\154\145\040\144\145\040  
\103\145\162\164\151\146\151\143\141\164\151\157\156\040\105\154  
\145\143\164\162\157\156\151\161\165\145\061\031\060\027\006\003  
\125\004\003\014\020\124\165\156\124\162\165\163\164\040\122\157  
\157\164\040\103\101\060\036\027\015\061\071\060\064\062\066\060  
\070\065\067\065\066\132\027\015\064\064\060\064\062\066\060\070  
\065\067\065\066\132\060\141\061\013\060\011\006\003\125\004\006  
\023\002\124\116\061\067\060\065\006\003\125\004\012\014\056\101  
\147\145\156\143\145\040\116\141\164\151\157\156\141\154\145\040  
\144\145\040\103\145\162\164\151\146\151\143\141\164\151\157\156  
\040\105\154\145\143\164\162\157\156\151\161\165\145\061\031\060  
\027\006\003\125\004\003\014\020\124\165\156\124\162\165\163\164  
\040\122\157\157\164\040\103\101\060\202\002\042\060\015\006\011  
\052\206\110\206\367\015\001\001\001\005\000\003\202\002\017\000  
\060\202\002\012\002\202\002\001\000\303\315\323\374\275\004\123  
\335\014\040\072\325\210\056\005\113\101\365\203\202\176\367\131  
\237\236\236\143\350\163\332\366\006\251\117\037\264\371\013\037  
\071\214\232\040\320\176\006\324\354\064\331\206\274\165\133\207  
\210\360\322\331\324\243\012\262\154\033\353\111\054\076\254\135  
\330\224\003\240\354\064\345\060\304\065\175\373\046\115\033\156  
\060\124\330\365\200\105\234\071\255\234\311\045\004\115\232\220  
\076\116\100\156\212\153\315\051\147\306\314\055\340\164\350\005

\127\012\110\120\372\172\103\332\176\354\133\232\016\142\166\376  
\352\235\035\205\162\354\021\273\065\350\037\047\277\301\241\307  
\273\110\026\335\126\327\314\116\240\341\271\254\333\325\203\031  
\032\205\321\224\227\327\312\243\145\013\363\070\371\002\256\335  
\366\147\317\311\077\365\212\054\107\032\231\157\005\015\375\320  
\035\202\061\374\051\314\000\130\227\221\114\200\000\034\063\205  
\226\057\313\101\302\213\020\204\303\011\044\211\037\265\017\331  
\331\167\107\030\222\224\140\134\307\231\003\074\376\367\225\247  
\175\120\241\200\302\251\203\255\130\226\125\041\333\206\131\324  
\257\306\274\335\201\156\007\333\140\142\376\354\020\156\332\150  
\001\364\203\033\251\076\242\133\043\327\144\306\337\334\242\175  
\330\113\272\202\322\121\370\146\277\006\106\344\171\052\046\066  
\171\217\037\116\231\035\262\217\014\016\034\377\311\135\300\375  
\220\020\246\261\067\363\315\072\044\156\264\205\220\277\200\271  
\014\214\325\233\326\310\361\126\077\032\200\211\172\251\342\033  
\062\121\054\076\362\337\173\366\135\172\051\031\216\345\310\275  
\066\161\213\135\114\302\035\077\255\130\242\317\075\160\115\246  
\120\230\045\334\043\371\270\130\101\010\161\277\117\270\204\240  
\217\000\124\025\374\221\155\130\247\226\073\353\113\226\047\315  
\153\242\241\206\254\015\174\124\346\146\114\146\137\220\276\041  
\232\002\106\055\344\203\302\200\271\317\113\076\350\177\074\001  
\354\217\136\315\177\322\050\102\001\225\212\342\227\075\020\041  
\175\366\235\034\305\064\241\354\054\016\012\122\054\022\125\160  
\044\075\313\302\024\065\103\135\047\116\276\300\275\252\174\226  
\347\374\236\141\255\104\323\000\227\002\003\001\000\001\243\143  
\060\141\060\035\006\003\125\035\016\004\026\004\024\006\232\233  
\037\123\175\361\365\244\310\323\206\076\241\163\131\264\367\104  
\041\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001  
\001\377\060\037\006\003\125\035\043\004\030\060\026\200\024\006  
\232\233\037\123\175\361\365\244\310\323\206\076\241\163\131\264  
\367\104\041\060\016\006\003\125\035\017\001\001\377\004\004\003  
\002\001\006\060\015\006\011\052\206\110\206\367\015\001\001\013  
\005\000\003\202\002\001\000\252\005\156\266\335\025\311\277\263  
\306\040\366\006\107\260\206\223\045\323\215\271\310\000\077\227  
\365\122\047\210\161\311\164\375\353\312\144\333\133\357\036\135  
\272\277\321\353\356\134\151\272\026\310\363\271\217\323\066\056  
\100\111\007\015\131\336\213\020\260\111\005\342\377\221\077\113  
\267\335\002\216\370\201\050\134\314\334\155\257\137\024\234\175  
\130\170\015\366\200\011\271\351\016\227\051\031\270\267\353\370  
\026\313\125\022\344\306\175\273\304\354\370\265\034\116\076\147  
\277\305\137\033\155\155\107\050\252\004\130\141\326\166\277\042  
\177\320\007\152\247\144\123\360\227\215\235\200\077\273\301\007  
\333\145\257\346\233\062\232\303\124\223\304\034\010\303\104\373  
\173\143\021\103\321\152\032\141\152\171\155\220\117\051\216\107  
\005\301\022\151\151\326\306\066\061\341\374\372\200\272\134\117  
\304\353\267\062\254\370\165\141\027\327\020\031\271\361\322\011  
\357\172\102\235\133\132\013\324\306\225\116\052\316\377\007\327  
\117\176\030\006\210\361\031\265\331\230\273\256\161\304\034\347

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\164\131\130\357\014\211\317\213\037\165\223\032\004\024\222\110
\120\251\353\127\051\000\026\343\066\034\310\370\277\360\063\325
\101\017\304\314\074\335\351\063\103\001\221\020\053\036\321\271
\135\315\062\031\213\217\214\040\167\327\042\304\102\334\204\026
\233\045\155\350\264\125\161\177\260\174\263\323\161\111\271\317
\122\244\004\077\334\075\240\273\257\063\236\012\060\140\216\333
\235\135\224\250\275\140\347\142\200\166\201\203\014\214\314\060
\106\111\342\014\322\250\257\353\141\161\357\347\042\142\251\367
\134\144\154\237\026\214\147\066\047\105\365\011\173\277\366\020
\012\361\260\215\124\103\214\004\272\243\077\357\342\065\307\371
\164\340\157\064\101\320\277\163\145\127\040\371\233\147\172\146
\150\044\116\200\145\275\020\231\006\131\362\145\257\270\306\107
\273\375\220\170\213\101\163\056\257\125\037\334\073\222\162\156
\204\323\320\141\114\015\314\166\127\342\055\205\042\025\066\015
\353\001\235\353\330\353\304\204\231\373\300\014\314\062\350\343
\167\332\203\104\213\236\125\050\300\213\130\323\220\076\116\033
\000\361\025\255\203\053\232
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "TunTrust Root CA"

# Issuer: CN=TunTrust Root CA,O=Agence Nationale de Certification Electronique,C=TN

# Serial Number:13:02:d5:e2:40:4c:92:46:86:16:67:5d:b4:bb:bb:b2:6b:3e:fc:13

# Subject: CN=TunTrust Root CA,O=Agence Nationale de Certification Electronique,C=TN

#

Not Valid Before: Fri Apr 26 08:57:56 2019

# Not Valid After : Tue Apr 26 08:57:56 2044

# Fingerprint (SHA-256):

2E:44:10:2A:B5:8C:B8:54:19:45:1C:8E:19:D9:AC:F3:66:2C:AF:BC:61:4B:6A:53:96:0A:30:F7:D0:E2:EB:41

# Fingerprint (SHA1): CF:E9:70:84:0F:E0:73:0F:9D:F6:0C:7F:2C:4B:EE:20:46:34:9C:BB

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "TunTrust Root CA"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

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\317\351\160\204\017\340\163\017\235\366\014\177\054\113\356\040
\106\064\234\273
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END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

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\205\023\271\220\133\066\134\266\136\270\132\370\340\061\127\264
```

END

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\141\061\013\060\011\006\003\125\004\006\023\002\124\116\061
\067\060\065\006\003\125\004\012\014\056\101\147\145\156\143\145
```



```
\040\116\141\164\151\157\156\141\154\145\040\144\145\040\103\145
\162\164\151\146\151\143\141\164\151\157\156\040\105\154\145\143
\164\162\157\156\151\161\165\145\061\031\060\027\006\003\125\004
\003\014\020\124\165\156\124\162\165\163\164\040\122\157\157\164
\040\103\101
```

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

```
\002\024\023\002\325\342\100\114\222\106\206\026\147\135\264\273
\273\262\153\076\374\023
```

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "HARICA TLS RSA Root CA 2021"

#

# Issuer: CN=HARICA TLS RSA Root CA 2021,O=Hellenic Academic and Research Institutions CA,C=GR

# Serial Number:39:ca:93:1c:ef:43:f3:c6:8e:93:c7:f4:64:89:38:7e

# Subject: CN=HARICA TLS RSA Root CA 2021,O=Hellenic Academic and Research Institutions CA,C=GR

# Not Valid Before: Fri Feb 19 10:55:38 2021

# Not Valid After : Mon Feb 13 10:55:37 2045

# Fingerprint (SHA-256):

D9:5D:0E:8E:DA:79:52:5B:F9:BE:B1:1B:14:D2:10:0D:32:94:98:5F:0C:62:D9:FA:BD:9C:D9:99:EC:CB:7B:1D

# Fingerprint

(SHA1): 02:2D:05:82:FA:88:CE:14:0C:06:79:DE:7F:14:10:E9:45:D7:A5:6D

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "HARICA TLS RSA Root CA 2021"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

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\060\154\061\013\060\011\006\003\125\004\006\023\002\107\122\061
\067\060\065\006\003\125\004\012\014\056\110\145\154\154\145\156
\151\143\040\101\143\141\144\145\155\151\143\040\141\156\144\040
\122\145\163\145\141\162\143\150\040\111\156\163\164\151\164\165
\164\151\157\156\163\040\103\101\061\044\060\042\006\003\125\004
\003\014\033\110\101\122\111\103\101\040\124\114\123\040\122\123
\101\040\122\157\157\164\040\103\101\040\062\060\062\061
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END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

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\060\154\061\013\060\011\006\003\125\004\006\023\002\107\122\061
\067\060\065\006\003\125\004\012\014\056\110\145\154\154\145\156
\151\143\040\101\143\141\144\145\155\151\143\040\141\156\144\040
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\122\145\163\145\141\162\143\150\040\111\156\163\164\151\164\165  
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\003\014\033\110\101\122\111\103\101\040\124\114\123\040\122\123  
\101\040\122\157\157\164\040\103\101\040\062\060\062\061

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\020\071\312\223\034\357\103\363\306\216\223\307\364\144\211  
\070\176

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\244\060\202\003\214\240\003\002\001\002\002\020\071  
\312\223\034\357\103\363\306\216\223\307\364\144\211\070\176\060  
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\154  
\061\013\060\011\006\003\125\004\006\023\002\107\122\061\067\060  
\065\006\003\125\004\012\014\056\110\145\154\154\145\156\151\143  
\040\101\143\141\144\145\155\151\143\040\141\156\144\040\122\145  
\163\145\141\162\143\150\040\111\156\163\164\151\164\165\164\151  
\157\156\163\040\103\101\061\044\060\042\006\003\125\004\003\014  
\033\110\101\122\111\103\101\040\124\114\123\040\122\123\101\040  
\122\157\157\164\040\103\101\040\062\060\062\061\060\036\027\015  
\062\061\060\062\061\071\061\060\065\065\063\070\132\027\015\064  
\065\060\062\061\063\061\060\065\065\063\067\132\060\154\061\013  
\060\011\006\003\125\004\006\023\002\107\122\061\067\060\065\006  
\003\125\004\012\014\056\110\145\154\154\145\156\151\143\040\101  
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\163\040\103\101\061\044\060\042\006\003\125\004\003\014\033\110  
\101\122\111\103\101\040\124\114\123\040\122\123\101\040\122\157  
\157\164\040\103\101\040\062\060\062\061\060\202\002\042\060\015  
\006\011\052\206\110\206\367\015\001\001\001\005\000\003\202\002  
\017\000\060\202\002\012\002\202\002\001\000\213\302\347\257\145  
\233\005\147\226\311\015\044\271\320\016\144\374\316\342\044\030  
\054\204\177\167\121\313\004\021\066\270\136\355\151\161\247\236  
\344\045\011\227\147\301\107\302\317\221\026\066\142\075\070\004  
\341\121\202\377\254\322\264\151\335\056\354\021\243\105\356\153  
\153\073\114\277\214\215\244\036\235\021\271\351\070\371\172\016  
\014\230\342\043\035\321\116\143\324\347\270\101\104\373\153\257  
\153\332\037\323\305\221\210\133\244\211\222\321\201\346\214\071  
\130\240\326\151\103\251\255\230\122\130\156\333\012\373\153\317  
\150\372\343\244\136\072\105\163\230\007\352\137\002\162\336\014  
\245\263\237\256\251\035\267\035\263\374\212\131\347\156\162\145  
\255\365\060\224\043\007\363\202\026\113\065\230\234\123\273\057  
\312\344\132\331\307\215\035\374\230\231\373\054\244\202\153\360  
\052\037\216\013\137\161\134\134\256\102\173\051\211\201\313\003  
\243\231\312\210\236\013\100\011\101\063\333\346\130\172\375\256  
\231\160\300\132\017\326\023\206\161\057\166\151\374\220\335\333  
\055\156\321\362\233\365\032\153\236\157\025\214\172\360\113\050

\240\042\070\200\044\154\066\244\073\362\060\221\363\170\023\317  
\301\077\065\253\361\035\021\043\265\103\042\236\001\222\267\030  
\002\345\021\321\202\333\025\000\314\141\067\301\052\174\232\341  
\320\272\263\120\106\356\202\254\235\061\370\373\043\342\003\000  
\110\160\243\011\046\171\025\123\140\363\070\134\255\070\352\201  
\000\143\024\271\063\136\335\013\333\240\105\007\032\063\011\370  
\115\264\247\002\246\151\364\302\131\005\210\145\205\126\256\113  
\313\340\336\074\175\055\032\310\351\373\037\243\141\112\326\052  
\023\255\167\114\032\030\233\221\017\130\330\006\124\305\227\370  
\252\077\040\212\246\205\246\167\366\246\374\034\342\356\156\224  
\063\052\203\120\204\012\345\117\206\370\120\105\170\000\201\353  
\133\150\343\046\215\314\173\134\121\364\024\054\100\276\032\140  
\035\172\162\141\035\037\143\055\210\252\316\242\105\220\010\374  
\153\276\263\120\052\132\375\250\110\030\106\326\220\100\222\220  
\012\204\136\150\061\370\353\355\015\323\035\306\175\231\030\125  
\126\047\145\056\215\105\305\044\354\316\343\002\003\001\000\001  
\243\102\060\100\060\017\006\003\125\035\023\001\001\377\004\005  
\060\003\001\001\377\060\035\006\003\125\035\016\004\026\004\024  
\012\110\043\246\140\244\222\012\063\352\223\133\305\127\352\045  
\115\275\022\356\060\016\006\003\125\035\017\001\001\377\004\004  
\003\002\001\206\060\015\006\011\052\206\110\206\367\015\001\001  
\013\005\000\003\202\002\001\000\076\220\110\252\156\142\025\045  
\146\173\014\325\214\213\211\235\327\355\116\007\357\234\320\024  
\137\136\120\275\150\226\220\244\024\021\252\150\155\011\065\071  
\100\011\332\364\011\054\064\245\173\131\204\111\051\227\164\310  
\007\036\107\155\362\316\034\120\046\343\236\075\100\123\077\367  
\177\226\166\020\305\106\245\320\040\113\120\364\065\073\030\364  
\125\152\101\033\107\006\150\074\273\011\010\142\331\137\125\102  
\252\254\123\205\254\225\126\066\126\253\344\005\214\305\250\332  
\037\243\151\275\123\017\304\377\334\312\343\176\362\114\210\206  
\107\106\032\363\000\365\200\221\242\334\103\102\224\233\040\360  
\321\315\262\353\054\123\302\123\170\112\117\004\224\101\232\217  
\047\062\301\345\111\031\277\361\362\302\213\250\012\071\061\050  
\264\175\142\066\054\115\354\037\063\266\176\167\155\176\120\360  
\237\016\327\021\217\317\030\305\343\047\376\046\357\005\235\317  
\317\067\305\320\173\332\073\260\026\204\014\072\223\326\276\027  
\333\017\076\016\031\170\011\307\251\002\162\042\113\367\067\166  
\272\165\304\205\003\132\143\325\261\165\005\302\271\275\224\255  
\214\025\231\247\223\175\366\305\363\252\164\317\004\205\224\230  
\000\364\342\371\312\044\145\277\340\142\257\310\305\372\262\311  
\236\126\110\332\171\375\226\166\025\276\243\216\126\304\263\064  
\374\276\107\364\301\264\250\374\325\060\210\150\356\313\256\311  
\143\304\166\276\254\070\030\341\136\134\317\256\072\042\121\353  
\321\213\263\363\053\063\007\124\207\372\264\262\023\173\272\123  
\004\142\001\235\361\300\117\356\341\072\324\213\040\020\372\002  
\127\346\357\301\013\267\220\106\234\031\051\214\334\157\240\112  
\151\151\224\267\044\145\240\377\254\077\316\001\373\041\056\375  
\150\370\233\362\245\317\061\070\134\025\252\346\227\000\301\337

```
\132\245\247\071\252\351\204\177\074\121\250\072\331\224\133\214
\277\117\010\161\345\333\250\134\324\322\246\376\000\243\306\026
\307\017\350\200\316\034\050\144\164\031\010\323\102\343\316\000
\135\177\261\334\023\260\341\005\313\321\040\252\206\164\236\071
\347\221\375\377\133\326\367\255\246\057\003\013\155\343\127\124
\353\166\123\030\215\021\230\272
```

END

CKA\_NSS\_Mozilla\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "HARICA TLS RSA Root CA 2021"

# Issuer: CN=HARICA TLS RSA Root CA 2021,O=Hellenic Academic and Research Institutions CA,C=GR

# Serial Number:39:ca:93:1c:ef:43:f3:c6:8e:93:c7:f4:64:89:38:7e

# Subject: CN=HARICA TLS RSA Root CA 2021,O=Hellenic Academic and Research Institutions CA,C=GR

# Not Valid Before: Fri Feb 19 10:55:38 2021

# Not Valid After : Mon Feb 13 10:55:37 2045

# Fingerprint (SHA-256):

D9:5D:0E:8E:DA:79:52:5B:F9:BE:B1:1B:14:D2:10:0D:32:94:98:5F:0C:62:D9:FA:BD:9C:D9:99:EC:CB:7B:1D

# Fingerprint (SHA1): 02:2D:05:82:FA:88:CE:14:0C:06:79:DE:7F:14:10:E9:45:D7:A5:6D

CKA\_CLASS

CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "HARICA TLS RSA Root CA 2021"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\002\055\005\202\372\210\316\024\014\006\171\336\177\024\020\351
\105\327\245\155
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\145\107\233\130\206\335\054\360\374\242\204\037\036\226\304\221
```

END

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\154\061\013\060\011\006\003\125\004\006\023\002\107\122\061
\067\060\065\006\003\125\004\012\014\056\110\145\154\154\145\156
\151\143\040\101\143\141\144\145\155\151\143\040\141\156\144\040
\122\145\163\145\141\162\143\150\040\111\156\163\164\151\164\165
\164\151\157\156\163\040\103\101\061\044\060\042\006\003\125\004
\003\014\033\110\101\122\111\103\101\040\124\114\123\040\122\123
\101\040\122\157\157\164\040\103\101\040\062\060\062\061
```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

```
\002\020\071\312\223\034\357\103\363\306\216\223\307\364\144\211
\070\176
```

END

CKA\_TRUST\_SERVER\_AUTH

```

CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "HARICA TLS ECC Root CA 2021"
#
# Issuer: CN=HARICA TLS ECC Root CA 2021,O=Hellenic Academic and Research Institutions CA,C=GR
# Serial Number:67:74:9d:8d:77:d8:3b:6a:db:22:f4:ff:59:e2:bf:ce
# Subject: CN=HARICA TLS ECC Root CA 2021,O=Hellenic Academic and Research Institutions CA,C=GR
# Not Valid Before: Fri Feb 19 11:01:10 2021
# Not Valid After : Mon Feb 13 11:01:09 2045
# Fingerprint (SHA-256):
3F:99:CC:47:4A:CF:CE:4D:FE:D5:87:94:66:5E:47:8D:15:47:73:9F:2E:78:0F:1B:B4:CA:9B:13:30:97:D4:01
# Fingerprint (SHA1): BC:B0:C1:9D:E9:98:92:70:19:38:57:E9:8D:A7:B4:5D:6E:EE:01:48
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "HARICA TLS ECC Root
CA 2021"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\154\061\013\060\011\006\003\125\004\006\023\002\107\122\061
\067\060\065\006\003\125\004\012\014\056\110\145\154\154\145\156
\151\143\040\101\143\141\144\145\155\151\143\040\141\156\144\040
\122\145\163\145\141\162\143\150\040\111\156\163\164\151\164\165
\164\151\157\156\163\040\103\101\061\044\060\042\006\003\125\004
\003\014\033\110\101\122\111\103\101\040\124\114\123\040\105\103
\103\040\122\157\157\164\040\103\101\040\062\060\062\061
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\154\061\013\060\011\006\003\125\004\006\023\002\107\122\061
\067\060\065\006\003\125\004\012\014\056\110\145\154\154\145\156
\151\143\040\101\143\141\144\145\155\151\143\040\141\156\144\040
\122\145\163\145\141\162\143\150\040\111\156\163\164\151\164\165
\164\151\157\156\163\040\103\101\061\044\060\042\006\003\125\004
\003\014\033\110\101\122\111\103\101\040\124\114\123\040\105\103
\103\040\122\157\157\164\040\103\101\040\062\060\062\061
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\147\164\235\215\167\330\073\152\333\042\364\377\131\342
\277\316
END
CKA_VALUE MULTILINE_OCTAL

```

\060\202\002\124\060\202\001\333\240\003\002\001\002\002\020\147  
\164\235\215\167\330\073\152\333\042\364\377\131\342\277\316\060  
\012\006\010\052\206\110\316\075\004\003\003\060\154\061\013\060  
\011\006\003\125\004\006\023\002\107\122\061\067\060\065\006\003  
\125\004\012\014\056\110\145\154\154\145\156\151\143\040\101\143  
\141\144\145\155\151\143\040\141\156\144\040\122\145\163\145\141  
\162\143\150\040\111\156\163\164\151\164\165\164\151\157\156\163  
\040\103\101\061\044\060\042\006\003\125\004\003\014\033\110\101  
\122\111\103\101\040\124\114\123\040\105\103\103\040\122\157\157  
\164\040\103\101\040\062\060\062\061\060\036\027\015\062\061\060  
\062\061\071\061\061\060\061\061\060\132\027\015\064\065\060\062  
\061\063\061\061\060\061\060\071\132\060\154\061\013\060\011\006  
\003\125\004\006\023\002\107\122\061\067\060\065\006\003\125\004  
\012\014\056\110\145\154\154\145\156\151\143\040\101\143\141\144  
\145\155\151\143\040\141\156\144\040\122\145\163\145\141\162\143  
\150\040\111\156\163\164\151\164\165\164\151\157\156\163\040\103  
\101\061\044\060\042\006\003\125\004\003\014\033\110\101\122\111  
\103\101\040\124\114\123\040\105\103\103\040\122\157\157\164\040  
\103\101\040\062\060\062\061\060\166\060\020\006\007\052\206\110  
\316\075\002\001\006\005\053\201\004\000\042\003\142\000\004\070  
\010\376\261\240\226\322\172\254\257\111\072\320\300\340\303\073  
\050\252\361\162\155\145\000\107\210\204\374\232\046\153\252\113  
\272\154\004\012\210\136\027\362\125\207\374\060\260\064\342\064  
\130\127\032\204\123\351\060\331\251\362\226\164\303\121\037\130  
\111\061\314\230\116\140\021\207\165\323\162\224\220\117\233\020  
\045\052\250\170\055\276\220\101\130\220\025\162\247\241\267\243  
\102\060\100\060\017\006\003\125\035\023\001\001\377\004\005\060  
\003\001\001\377\060\035\006\003\125\035\016\004\026\004\024\311  
\033\123\201\022\376\004\325\026\321\252\274\232\157\267\240\225  
\031\156\312\060\016\006\003\125\035\017\001\001\377\004\004\003  
\002\001\206\060\012\006\010\052\206\110\316\075\004\003\003\003  
\147\000\060\144\002\060\021\336\256\370\334\116\210\260\251\360  
\042\255\302\121\100\357\140\161\055\356\217\002\304\135\003\160  
\111\244\222\352\305\024\210\160\246\323\015\260\252\312\054\100  
\234\373\351\202\156\232\002\060\053\107\232\007\306\321\302\201  
\174\312\013\226\030\101\033\243\364\060\011\236\265\043\050\015  
\237\024\266\074\123\242\114\006\151\175\372\154\221\306\052\111  
\105\346\354\267\023\341\072\154

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "HARICA TLS ECC Root CA 2021"

# Issuer: CN=HARICA TLS ECC Root CA 2021,O=Hellenic Academic and Research Institutions CA,C=GR

# Serial Number:67:74:9d:8d:77:d8:3b:6a:db:22:f4:ff:59:e2:bf:ce

# Subject: CN=HARICA TLS ECC Root CA 2021,O=Hellenic

```
Academic and Research Institutions CA,C=GR
# Not Valid Before: Fri Feb 19 11:01:10 2021
# Not Valid After : Mon Feb 13 11:01:09 2045
# Fingerprint (SHA-256):
3F:99:CC:47:4A:CF:CE:4D:FE:D5:87:94:66:5E:47:8D:15:47:73:9F:2E:78:0F:1B:B4:CA:9B:13:30:97:D4:01
# Fingerprint (SHA1): BC:B0:C1:9D:E9:98:92:70:19:38:57:E9:8D:A7:B4:5D:6E:EE:01:48
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "HARICA TLS ECC Root CA 2021"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\274\260\301\235\351\230\222\160\031\070\127\351\215\247\264\135
\156\356\001\110
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\256\367\114\345\146\065\321\267\233\214\042\223\164\323\113\260
END
CKA_ISSUER MULTILINE_OCTAL
\060\154\061\013\060\011\006\003\125\004\006\023\002\107\122\061
\067\060\065\006\003\125\004\012\014\056\110\145\154\154\145\156
\151\143\040\101\143\141\144\145\155\151\143\040\141\156\144\040
\122\145\163\145\141\162\143\150\040\111\156\163\164\151\164\165
\164\151\157\156\163\040\103\101\061\044\060\042\006\003\125\004
\003\014\033\110\101\122\111\103\101\040\124\114\123\040\105\103
\103\040\122\157\157\164\040\103\101\040\062\060\062\061
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\147\164\235\215\167\330\073\152\333\042\364\377\131\342
\277\316
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "HARICA Client RSA Root CA 2021"
#
# Issuer: CN=HARICA Client RSA Root CA 2021,O=Hellenic Academic and Research Institutions CA,C=GR
# Serial Number:55:52:f8:1e:db:1b:24:2c:9e:bb:96:18:cd:02:28:3e
# Subject: CN=HARICA Client RSA Root CA 2021,O=Hellenic Academic and Research Institutions CA,C=GR
# Not Valid Before: Fri Feb 19 10:58:46 2021
# Not Valid After : Mon Feb 13 10:58:45 2045
# Fingerprint (SHA-256):
1B:E7:AB:E3:06:86:B1:63:48:AF:D1:C6:1B:68:66:A0:EA:7F:48:21:E6:7D:5E:8A:F9:37:CF:80:11:BC:75:0D
#
```

Fingerprint (SHA1): 46:C6:90:0A:77:3A:B6:BC:F4:65:AD:AC:FC:E3:F7:07:00:6E:DE:6E

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE  
CKA\_TOKEN CK\_BBOOL CK\_TRUE  
CKA\_PRIVATE CK\_BBOOL CK\_FALSE  
CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE  
CKA\_LABEL UTF8 "HARICA Client RSA Root CA 2021"  
CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509  
CKA\_SUBJECT MULTILINE\_OCTAL  
\060\157\061\013\060\011\006\003\125\004\006\023\002\107\122\061  
\067\060\065\006\003\125\004\012\014\056\110\145\154\154\145\156  
\151\143\040\101\143\141\144\145\155\151\143\040\141\156\144\040  
\122\145\163\145\141\162\143\150\040\111\156\163\164\151\164\165  
\164\151\157\156\163\040\103\101\061\047\060\045\006\003\125\004  
\003\014\036\110\101\122\111\103\101\040\103\154\151\145\156\164  
\040\122\123\101\040\122\157\157\164\040\103\101\040\062\060\062  
\061  
END

CKA\_ID UTF8 "0"  
CKA\_ISSUER MULTILINE\_OCTAL  
\060\157\061\013\060\011\006\003\125\004\006\023\002\107\122\061  
\067\060\065\006\003\125\004\012\014\056\110\145\154\154\145\156  
\151\143\040\101\143\141\144\145\155\151\143\040\141\156\144\040  
\122\145\163\145\141\162\143\150\040\111\156\163\164\151\164\165  
\164\151\157\156\163\040\103\101\061\047\060\045\006\003\125\004  
\003\014\036\110\101\122\111\103\101\040\103\154\151\145\156\164  
\040\122\123\101\040\122\157\157\164\040\103\101\040\062\060\062  
\061  
END

CKA\_SERIAL\_NUMBER  
MULTILINE\_OCTAL  
\002\020\125\122\370\036\333\033\044\054\236\273\226\030\315\002  
\050\076  
END

CKA\_VALUE MULTILINE\_OCTAL  
\060\202\005\252\060\202\003\222\240\003\002\001\002\002\020\125  
\122\370\036\333\033\044\054\236\273\226\030\315\002\050\076\060  
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\157  
\061\013\060\011\006\003\125\004\006\023\002\107\122\061\067\060  
\065\006\003\125\004\012\014\056\110\145\154\154\145\156\151\143  
\040\101\143\141\144\145\155\151\143\040\141\156\144\040\122\145  
\163\145\141\162\143\150\040\111\156\163\164\151\164\165\164\151  
\157\156\163\040\103\101\061\047\060\045\006\003\125\004\003\014  
\036\110\101\122\111\103\101\040\103\154\151\145\156\164\040\122  
\123\101\040\122\157\157\164\040\103\101\040\062\060\062\061\060  
\036\027\015\062\061\060\062\061\071\061\060\065\070\064\066\132  
\027\015\064\065\060\062\061\063\061\060\065\070\064\065\132\060  
\157\061\013\060\011\006\003\125\004\006\023\002\107\122\061\067  
\060\065\006\003\125\004\012\014\056\110\145\154\154\145\156\151



\143\040\101\143\141\144\145\155\151\143\040\141\156\144\040\122  
\145\163\145\141\162\143\150\040\111\156\163\164\151\164\165\164  
\151\157\156\163\040\103\101\061\047\060\045\006\003\125\004\003  
\014\036\110\101\122\111\103\101\040\103\154\151\145\156\164\040  
\122\123\101\040\122\157\157\164\040\103\101\040\062\060\062\061  
\060\202\002\042\060\015\006\011\052\206\110\206\367\015\001\001  
\001\005\000\003\202\002\017\000\060\202\002\012\002\202\002\001  
\000\201\333\127\102\220\054\164\065\364\370\270\164\031\115\253  
\011\132\167\105\201\163\142\260\065\237\370\320\267\063\000\207  
\023\266\226\253\016\124\022\060\007\274\233\267\110\327\321\031  
\203\256\216\330\251\361\251\000\204\260\214\136\236\350\014\217  
\124\151\277\366\324\010\117\046\160\376\030\101\143\032\263\062  
\213\100\370\007\253\127\061\360\306\026\166\147\232\264\335\057  
\362\321\153\305\320\222\204\221\161\156\017\056\143\351\037\123  
\244\335\122\023\314\011\203\051\201\014\305\123\165\104\261\016  
\147\123\030\320\303\037\210\113\237\224\044\264\051\274\273\350  
\116\375\157\322\025\035\111\334\215\160\362\021\032\040\121\125  
\021\272\210\157\304\367\120\171\326\252\061\342\204\075\136\062  
\310\167\052\120\161\345\013\057\351\266\352\357\253\012\063\071  
\016\375\217\245\147\103\202\216\230\151\011\011\033\100\315\070  
\147\107\352\311\354\227\161\022\336\044\365\162\074\321\367\103  
\114\046\367\220\262\211\351\105\113\125\075\061\005\172\101\342  
\225\272\103\300\027\305\266\205\075\031\215\144\160\363\133\254  
\315\237\323\051\165\207\113\225\147\152\246\370\321\335\274\220  
\206\211\103\051\251\067\133\365\135\260\046\132\123\102\166\220  
\053\317\236\126\154\053\124\317\134\232\145\337\133\213\110\140  
\070\174\373\305\013\317\166\004\143\002\063\052\175\365\203\147  
\347\372\306\103\375\053\017\324\046\057\167\244\062\301\044\352  
\144\235\277\263\070\161\061\104\362\107\270\242\146\101\241\373  
\233\173\274\307\106\152\165\277\132\242\214\350\152\104\301\270  
\226\265\300\062\010\055\173\164\065\163\262\312\306\376\257\021  
\162\030\366\347\310\302\317\245\052\352\173\326\131\350\174\240  
\262\152\100\011\151\016\245\226\333\321\000\271\361\210\156\066  
\360\210\262\235\361\122\362\303\174\277\060\211\074\012\151\371  
\042\244\145\341\233\340\164\306\261\205\227\226\054\256\224\217  
\120\246\071\022\037\276\107\362\201\170\323\165\066\236\175\132  
\040\227\342\122\256\231\237\306\174\233\146\363\376\330\317\356  
\275\227\006\035\055\205\334\076\066\123\226\173\040\272\350\310  
\341\255\226\142\076\021\174\263\000\204\236\247\114\161\253\112  
\067\002\003\001\000\001\243\102\060\100\060\017\006\003\125\035  
\023\001\001\377\004\005\060\003\001\001\377\060\035\006\003\125  
\035\016\004\026\004\024\240\326\007\075\136\044\367\173\240\104  
\056\044\122\015\031\252\053\004\221\247\060\016\006\003\125\035  
\017\001\001\377\004\004\003\002\001\206\060\015\006\011\052\206  
\110\206\367\015\001\001\013\005\000\003\202\002\001\000\015\107  
\371\011\146\061\122\354\171\356\302\250\362\150\076\355\226\105  
\313\072\246\230\143\077\352\053\115\116\003\320\034\202\341\313  
\323\345\326\253\133\147\050\274\235\376\014\231\012\200\125\247

\316\033\043\141\015\260\127\360\376\340\312\276\346\220\333\203  
\054\276\203\216\364\171\266\376\320\015\102\247\130\037\151\352  
\201\365\005\245\376\106\150\353\154\170\311\340\352\347\346\336  
\061\305\322\325\054\202\143\050\235\135\250\032\176\210\346\347  
\053\361\054\325\320\005\236\334\055\275\067\146\324\004\242\247  
\255\277\072\302\250\073\255\377\215\235\063\340\271\232\204\241  
\207\037\166\364\202\164\327\016\371\060\110\076\133\210\076\252  
\134\153\326\057\014\350\216\163\302\030\221\203\071\266\146\132  
\320\037\140\047\135\115\343\366\072\015\146\120\234\170\173\253  
\363\023\020\256\017\057\253\350\144\263\030\040\235\106\065\144  
\045\163\352\233\020\134\130\065\211\261\106\110\247\364\254\324  
\035\236\133\314\251\245\032\023\117\044\120\252\331\033\155\261  
\100\373\235\335\130\164\304\302\157\024\162\354\333\065\237\270  
\124\165\105\303\246\310\032\050\065\072\256\145\362\251\230\316  
\257\133\311\070\214\061\073\177\314\334\226\375\342\133\326\320  
\131\364\166\272\013\313\117\203\020\307\100\320\035\140\351\052  
\345\110\130\167\014\105\151\276\031\161\004\044\342\343\044\037  
\112\310\301\076\231\365\226\230\070\110\045\241\025\260\033\327  
\342\204\030\133\366\161\065\232\150\173\100\314\030\134\014\044  
\235\324\225\365\231\252\106\352\256\254\277\364\024\031\044\350  
\214\354\343\365\274\006\150\212\052\014\005\137\012\227\165\247  
\334\176\300\375\327\172\030\337\060\321\070\113\037\260\230\160  
\277\314\174\163\360\156\304\061\245\244\227\035\254\277\316\154  
\041\112\276\047\043\147\363\006\126\201\012\221\216\266\341\003  
\005\063\054\332\064\010\115\116\120\043\255\037\245\305\324\172  
\376\352\011\354\247\050\140\213\106\174\265\352\233\335\117\371  
\347\153\025\306\210\317\103\333\345\047\334\004\126\156\157\106  
\025\361\126\055\350\134\014\163\303\043\201\070\040\313\311\014  
\151\317\054\253\073\204\140\063\031\122\375\151\024\063

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "HARICA Client RSA Root CA 2021"

# Issuer: CN=HARICA Client RSA Root CA 2021,O=Hellenic Academic and Research Institutions CA,C=GR

# Serial Number:55:52:f8:1e:db:1b:24:2c:9e:bb:96:18:cd:02:28:3e

# Subject: CN=HARICA Client RSA Root CA 2021,O=Hellenic Academic and Research Institutions CA,C=GR

# Not Valid Before: Fri Feb 19 10:58:46 2021

# Not Valid After : Mon Feb 13 10:58:45 2045

# Fingerprint (SHA-256):

1B:E7:AB:E3:06:86:B1:63:48:AF:D1:C6:1B:68:66:A0:EA:7F:48:21:E6:7D:5E:8A:F9:37:CF:80:11:BC:75:0D

#

Fingerprint (SHA1): 46:C6:90:0A:77:3A:B6:BC:F4:65:AD:AC:FC:E3:F7:07:00:6E:DE:6E

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

```

CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "HARICA Client RSA Root CA 2021"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\106\306\220\012\167\072\266\274\364\145\255\254\374\343\367\007
\000\156\336\156
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\157\355\134\327\210\314\070\251\334\351\335\331\135\333\330\355
END
CKA_ISSUER MULTILINE_OCTAL
\060\157\061\013\060\011\006\003\125\004\006\023\002\107\122\061
\067\060\065\006\003\125\004\012\014\056\110\145\154\154\145\156
\151\143\040\101\143\141\144\145\155\151\143\040\141\156\144\040
\122\145\163\145\141\162\143\150\040\111\156\163\164\151\164\165
\164\151\157\156\163\040\103\101\061\047\060\045\006\003\125\004
\003\014\036\110\101\122\111\103\101\040\103\154\151\145\156\164
\040\122\123\101\040\122\157\157\164\040\103\101\040\062\060\062
\061
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\125\122\370\036\333\033\044\054\236\273\226\030\315\002
\050\076
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "HARICA Client ECC Root CA 2021"
#
# Issuer: CN=HARICA Client ECC Root CA 2021,O=Hellenic Academic and Research Institutions CA,C=GR
# Serial Number:31:68:d9:d8:e1:62:57:1e:d2:19:44:88:e6:10:7d:f0
# Subject: CN=HARICA Client ECC Root CA 2021,O=Hellenic Academic and Research Institutions CA,C=GR
# Not Valid Before: Fri Feb 19 11:03:34 2021
# Not Valid After : Mon Feb 13 11:03:33 2045
# Fingerprint (SHA-256):
8D:D4:B5:37:3C:B0:DE:36:76:9C:12:33:92:80:D8:27:46:B3:AA:6C:D4:26:E7:97:A3:1B:AB:E4:27:9C:F0:0B
# Fingerprint (SHA1): BE:64:D3:DA:14:4B:D2:6B:CD:AF:8F:DB:A6:A6:72:F8:DE:26:F9:00
CKA_CLASS
CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "HARICA Client ECC Root CA 2021"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL

```

\060\157\061\013\060\011\006\003\125\004\006\023\002\107\122\061  
\067\060\065\006\003\125\004\012\014\056\110\145\154\154\145\156  
\151\143\040\101\143\141\144\145\155\151\143\040\141\156\144\040  
\122\145\163\145\141\162\143\150\040\111\156\163\164\151\164\165  
\164\151\157\156\163\040\103\101\061\047\060\045\006\003\125\004  
\003\014\036\110\101\122\111\103\101\040\103\154\151\145\156\164  
\040\105\103\103\040\122\157\157\164\040\103\101\040\062\060\062  
\061

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\157\061\013\060\011\006\003\125\004\006\023\002\107\122\061  
\067\060\065\006\003\125\004\012\014\056\110\145\154\154\145\156  
\151\143\040\101\143\141\144\145\155\151\143\040\141\156\144\040  
\122\145\163\145\141\162\143\150\040\111\156\163\164\151\164\165  
\164\151\157\156\163\040\103\101\061\047\060\045\006\003\125\004  
\003\014\036\110\101\122\111\103\101\040\103\154\151\145\156\164  
\040\105\103\103\040\122\157\157\164\040\103\101\040\062\060\062  
\061

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\020\061\150\331\330\341\142\127\036\322\031\104\210\346\020  
\175\360

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\002\132\060\202\001\341\240\003\002\001\002\002\020\061  
\150\331\330\341\142\127\036\322\031\104\210\346\020\175\360\060  
\012\006\010\052\206\110\316\075\004\003\003\060\157\061\013\060  
\011\006\003\125\004\006\023\002\107\122\061\067\060\065\006\003  
\125\004\012\014\056\110\145\154\154\145\156\151\143\040\101\143  
\141\144\145\155\151\143\040\141\156\144\040\122\145\163\145\141  
\162\143\150\040\111\156\163\164\151\164\165\164\151\157\156\163  
\040\103\101\061\047\060\045\006\003\125\004\003\014\036\110\101  
\122\111\103\101\040\103\154\151\145\156\164\040\105\103\103\040  
\122\157\157\164\040\103\101\040\062\060\062\061\060\036\027\015  
\062\061\060\062\061\071\061\061\060\063\063\064\132\027\015\064  
\065\060\062\061\063\061\061\060\063\063\063\132\060\157\061\013  
\060\011\006\003\125\004\006\023\002\107\122\061\067\060\065\006  
\003\125\004\012\014\056\110\145\154\154\145\156\151\143\040\101  
\143\141\144\145\155\151\143\040\141\156\144\040\122\145\163\145  
\141\162\143\150\040\111\156\163\164\151\164\165\164\151\157\156  
\163\040\103\101\061\047\060\045\006\003\125\004\003\014\036\110  
\101\122\111\103\101\040\103\154\151\145\156\164\040\105\103\103  
\040\122\157\157\164\040\103\101\040\062\060\062\061\060\166\060  
\020\006\007\052\206\110\316\075\002\001\006\005\053\201\004\000  
\042\003\142\000\004\007\030\255\225\226\224\320\134\017\202\367  
\052\100\372\002\311\311\075\066\246\243\004\152\301\155\225\001

```
\210\140\022\124\154\134\242\053\156\023\072\210\225\014\034\046
\206\066\112\211\031\267\030\336\073\350\250\120\037\312\337\133
\277\111\200\025\333\343\060\341\035\132\307\052\212\001\007\376
\155\054\064\357\050\050\227\274\301\371\127\206\225\213\065\317
\236\132\321\150\225\243\102\060\100\060\017\006\003\125\035\023
\001\001\377\004\005\060\003\001\001\377\060\035\006\003\125\035
\016\004\026\004\024\122\010\322\276\062\201\045\375\365\032\227
\354\116\137\032\273\123\315\220\255\060\016\006\003\125\035\017
\001\001\377\004\004\003\002\001\206\060\012\006\010\052\206\110
\316\075\004\003\003\003\147\000\060\144\002\060\114\061\105\106
\117\250\346\276\303\167\262\032\030\113\055\210\173\130\346\253
\224\153\104\003\260\027\377\337\202\163\104\121\054\375\223\035
\006\173\024\322\211\354\100\014\357\041\001\056\002\060\057\311
\056\132\154\054\035\331\225\340\236\260\271\134\122\174\366\370
\070\312\056\361\324\035\362\242\111\242\225\370\301\130\136\117
\376\163\012\357\061\260\253\043\130\023\214\213\336\073
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "HARICA

Client ECC Root CA 2021"

# Issuer: CN=HARICA Client ECC Root CA 2021,O=Hellenic Academic and Research Institutions CA,C=GR

# Serial Number:31:68:d9:d8:e1:62:57:1e:d2:19:44:88:e6:10:7d:f0

# Subject: CN=HARICA Client ECC Root CA 2021,O=Hellenic Academic and Research Institutions CA,C=GR

# Not Valid Before: Fri Feb 19 11:03:34 2021

# Not Valid After : Mon Feb 13 11:03:33 2045

# Fingerprint (SHA-256):

8D:D4:B5:37:3C:B0:DE:36:76:9C:12:33:92:80:D8:27:46:B3:AA:6C:D4:26:E7:97:A3:1B:AB:E4:27:9C:F0:0B

# Fingerprint (SHA1): BE:64:D3:DA:14:4B:D2:6B:CD:AF:8F:DB:A6:A6:72:F8:DE:26:F9:00

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "HARICA Client ECC Root CA 2021"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\276\144\323\332\024\113\322\153\315\257\217\333\246\246\162\370
\336\046\371\000
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\255\270\120\246\251\202\172\154\075\032\252\244\322\143\244\104
```

END

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\157\061\013\060\011\006\003\125\004\006\023\002\107\122\061
\067\060\065\006\003\125\004\012\014\056\110\145\154\154\145\156
\151\143\040\101\143\141\144\145\155\151\143\040\141\156\144\040
```

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\122\145\163\145\141\162\143\150\040\111\156\163\164\151\164\165
\164\151\157\156\163\040\103\101\061\047\060\045\006\003\125\004
\003\014\036\110\101\122\111\103\101\040\103\154\151\145\156\164
\040\105\103\103\040\122\157\157\164\040\103\101\040\062\060\062
\061
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\061\150\331\330\341\142\127\036\322\031\104\210\346\020
\175\360
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "Autoridad de Certificacion Firmaprofesional CIF A62634068"
#
# Issuer: CN=Autoridad de Certificacion Firmaprofesional CIF A62634068,C=ES
# Serial Number:1b:70:e9:d2:ff:ae:6c:71
#
Subject: CN=Autoridad de Certificacion Firmaprofesional CIF A62634068,C=ES
# Not Valid Before: Tue Sep 23 15:22:07 2014
# Not Valid After : Mon May 05 15:22:07 2036
# Fingerprint (SHA-256):
57:DE:05:83:EF:D2:B2:6E:03:61:DA:99:DA:9D:F4:64:8D:EF:7E:E8:44:1C:3B:72:8A:FA:9B:CD:E0:F9:B2:6A
# Fingerprint (SHA1): 0B:BE:C2:27:22:49:CB:39:AA:DB:35:5C:53:E3:8C:AE:78:FF:B6:FE
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Autoridad de Certificacion Firmaprofesional CIF A62634068 1"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\121\061\013\060\011\006\003\125\004\006\023\002\105\123\061
\102\060\100\006\003\125\004\003\014\071\101\165\164\157\162\151
\144\141\144\040\144\145\040\103\145\162\164\151\146\151\143\141
\143\151\157\156\040\106\151\162\155\141\160\162\157\146\145\163
\151\157\156\141\154\040\103\111\106\040\101\066\062\066\063\064
\060\066\070
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\121\061\013\060\011\006\003\125\004\006\023\002\105\123\061
\102\060\100\006\003\125\004\003\014\071\101\165\164\157\162\151
\144\141\144\040\144\145\040\103\145\162\164\151\146\151\143\141

```

\143\151\157\156\040\106\151\162\155\141\160\162\157\146\145\163  
\151\157\156\141\154\040\103\111\106\040\101\066\062\066\063\064  
\060\066\070  
END  
CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL  
\002\010\033\160\351\322\377\256\154\161  
END  
CKA\_VALUE MULTILINE\_OCTAL  
\060\202\006\024\060\202\003\374\240\003\002\001\002\002\010\033  
\160\351\322\377\256\154\161\060\015\006\011\052\206\110\206\367  
\015\001\001\013\005\000\060\121\061\013\060\011\006\003\125\004  
\006\023\002\105\123\061\102\060\100\006\003\125\004\003\014\071  
\101\165\164\157\162\151\144\141\144\040\144\145\040\103\145\162  
\164\151\146\151\143\141\143\151\157\156\040\106\151\162\155\141  
\160\162\157\146\145\163\151\157\156\141\154\040\103\111\106\040  
\101\066\062\066\063\064\060\066\070\060\036\027\015\061\064\060  
\071\062\063\061\065\062\062\060\067\132\027\015\063\066\060\065  
\060\065\061\065\062\062\060\067\132\060\121\061\013\060\011\006  
\003\125\004\006\023\002\105\123\061\102\060\100\006\003\125\004  
\003\014\071\101\165\164\157\162\151\144\141\144\040\144\145\040  
\103\145\162\164\151\146\151\143\141\143\151\157\156\040\106\151  
\162\155\141\160\162\157\146\145\163\151\157\156\141\154\040\103  
\111\106\040\101\066\062\066\063\064\060\066\070\060\202\002\042  
\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003  
\202\002\017\000\060\202\002\012\002\202\002\001\000\312\226\153  
\216\352\370\373\361\242\065\340\177\114\332\340\303\122\327\175  
\266\020\310\002\136\263\103\052\304\117\152\262\312\034\135\050  
\232\170\021\032\151\131\127\257\265\040\102\344\213\017\346\337  
\133\246\003\222\057\365\021\344\142\327\062\161\070\331\004\014  
\161\253\075\121\176\017\007\337\143\005\134\351\277\224\157\301  
\051\202\300\264\332\121\260\301\074\273\255\067\112\134\312\361  
\113\066\016\044\253\277\303\204\167\375\250\120\364\261\347\306  
\057\322\055\131\215\172\012\116\226\151\122\002\252\066\230\354  
\374\372\024\203\014\067\037\311\222\067\177\327\201\055\345\304  
\271\340\076\064\376\147\364\076\146\321\323\364\100\317\136\142  
\064\017\160\006\076\040\030\132\316\367\162\033\045\154\223\164  
\024\223\243\163\261\016\252\207\020\043\131\137\040\005\031\107  
\355\150\216\222\022\312\135\374\326\053\262\222\074\040\317\341  
\137\257\040\276\240\166\177\166\345\354\032\206\141\063\076\347  
\173\264\077\240\017\216\242\271\152\157\271\207\046\157\101\154  
\210\246\120\375\152\143\013\365\223\026\033\031\217\262\355\233  
\233\311\220\365\001\014\337\031\075\017\076\070\043\311\057\217  
\014\321\002\376\033\125\326\116\320\215\074\257\117\244\363\376  
\257\052\323\005\235\171\010\241\313\127\061\264\234\310\220\262  
\147\364\030\026\223\072\374\107\330\321\170\226\061\037\272\053  
\014\137\135\231\255\143\211\132\044\040\166\330\337\375\253\116  
\246\042\252\235\136\346\047\212\175\150\051\243\347\212\270\332  
\021\273\027\055\231\235\023\044\106\367\305\342\330\237\216\177

\307\217\164\155\132\262\350\162\365\254\356\044\020\255\057\024  
\332\377\055\232\106\161\107\276\102\337\273\001\333\364\177\323  
\050\217\061\131\133\323\311\002\246\264\122\312\156\227\373\103  
\305\010\046\157\212\364\273\375\237\050\252\015\325\105\363\023  
\072\035\330\300\170\217\101\147\074\036\224\144\256\173\013\305  
\350\331\001\210\071\032\227\206\144\101\325\073\207\014\156\372  
\017\306\275\110\024\277\071\115\324\236\101\266\217\226\035\143  
\226\223\331\225\006\170\061\150\236\067\006\073\200\211\105\141  
\071\043\307\033\104\243\025\345\034\370\222\060\273\002\003\001  
\000\001\243\201\357\060\201\354\060\035\006\003\125\035\016\004  
\026\004\024\145\315\353\253\065\036\000\076\176\325\164\300\034  
\264\163\107\016\032\144\057\060\022\006\003\125\035\023\001\001  
\377\004\010\060\006\001\001\377\002\001\001\060\201\246\006\003  
\125\035\040\004\201\236\060\201\233\060\201\230\006\004\125\035  
\040\000\060\201\217\060\057\006\010\053\006\001\005\005\007\002  
\001\026\043\150\164\164\160\072\057\057\167\167\167\056\146\151  
\162\155\141\160\162\157\146\145\163\151\157\156\141\154\056\143  
\157\155\057\143\160\163\060\134\006\010\053\006\001\005\005\007  
\002\002\060\120\036\116\000\120\000\141\000\163\000\145\000\157  
\000\040\000\144\000\145\000\040\000\154\000\141\000\040\000\102  
\000\157\000\156\000\141\000\156\000\157\000\166\000\141\000\040  
\000\064\000\067\000\040\000\102\000\141\000\162\000\143\000\145  
\000\154\000\157\000\156\000\141\000\040\000\060\000\070\000\060  
\000\061\000\067\060\016\006\003\125\035\017\001\001\377\004\004  
\003\002\001\006\060\015\006\011\052\206\110\206\367\015\001\001  
\013\005\000\003\202\002\001\000\164\207\050\002\053\167\037\146  
\211\144\355\217\164\056\106\034\273\250\370\370\013\035\203\266  
\072\247\350\105\212\007\267\340\076\040\313\341\010\333\023\010  
\370\050\241\065\262\200\263\013\121\300\323\126\232\215\063\105  
\111\257\111\360\340\075\007\172\105\023\132\377\310\227\330\323  
\030\054\175\226\370\335\242\145\103\160\223\220\025\272\220\337  
\350\031\260\333\054\212\140\017\267\157\224\007\036\035\246\311  
\205\366\275\064\370\100\170\142\020\160\072\276\175\113\071\201  
\251\020\324\226\101\273\370\137\034\013\035\010\362\261\260\211  
\172\362\367\240\340\304\217\213\170\265\073\130\245\043\216\117  
\125\376\066\073\340\014\267\312\052\060\101\040\264\200\315\256  
\374\166\146\163\250\256\156\341\174\332\003\350\224\040\346\042  
\243\320\037\220\135\040\123\024\046\127\332\124\227\337\026\104  
\020\001\036\210\146\217\162\070\223\335\040\267\064\276\327\361  
\356\143\216\107\171\050\006\374\363\131\105\045\140\042\063\033  
\243\137\250\272\052\332\032\075\315\100\352\214\356\005\025\225  
\325\245\054\040\057\247\230\050\356\105\374\361\270\210\000\054  
\217\102\332\121\325\234\345\023\150\161\105\103\213\236\013\041  
\074\113\134\005\334\032\237\230\216\332\275\042\236\162\315\255  
\012\313\314\243\147\233\050\164\304\233\327\032\074\004\130\246  
\202\235\255\307\173\157\377\200\226\351\370\215\152\275\030\220  
\035\377\111\032\220\122\067\223\057\074\002\135\202\166\013\121  
\347\026\307\127\370\070\371\247\315\233\042\124\357\143\260\025



```
\155\123\145\003\112\136\112\240\262\247\216\111\000\131\070\325
\307\364\200\144\365\156\225\120\270\021\176\025\160\070\112\260
\177\320\304\062\160\300\031\377\311\070\055\024\054\146\364\102
\104\346\125\166\033\200\025\127\377\300\247\247\252\071\252\330
\323\160\320\056\272\353\224\152\372\137\064\206\347\142\265\375
\212\360\060\205\224\311\257\044\002\057\157\326\335\147\376\343
\260\125\117\004\230\117\244\101\126\342\223\320\152\350\326\363
\373\145\340\316\165\304\061\131\014\356\202\310\014\140\063\112
\031\272\204\147\047\017\274\102\135\275\044\124\015\354\035\160
\006\137\244\274\372\040\174\125
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "Autoridad de

Certificacion Firmaprofesional CIF A62634068"

# Issuer: CN=Autoridad de Certificacion Firmaprofesional CIF A62634068,C=ES

# Serial Number:1b:70:e9:d2:ff:ae:6c:71

# Subject: CN=Autoridad de Certificacion Firmaprofesional CIF A62634068,C=ES

# Not Valid Before: Tue Sep 23 15:22:07 2014

# Not Valid After : Mon May 05 15:22:07 2036

# Fingerprint (SHA-256):

57:DE:05:83:EF:D2:B2:6E:03:61:DA:99:DA:9D:F4:64:8D:EF:7E:E8:44:1C:3B:72:8A:FA:9B:CD:E0:F9:B2:6A

# Fingerprint (SHA1): 0B:BE:C2:27:22:49:CB:39:AA:DB:35:5C:53:E3:8C:AE:78:FF:B6:FE

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Autoridad de Certificacion Firmaprofesional CIF A62634068 1"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\013\276\302\047\042\111\1313\071\252\333\065\134\123\343\214\256
```

```
\170\377\266\376
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\116\156\233\124\114\312\267\372\110\344\220\261\025\113\034\243
```

END

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\121\061\013\060\011\006\003\125\004\006\023\002\105\123\061
```

```
\102\060\100\006\003\125\004\003\014\071\101\165\164\157\162\151
```

```
\144\141\144\040\144\145\040\103\145\162\164\151\146\151\143\141
```

```
\143\151\157\156\040\106\151\162\155\141\160\162\157\146\145\163
```

```
\151\157\156\141\154\040\103\111\106\040\101\066\062\066\063\064
```

```
\060\066\070
```

END

CKA\_SERIAL\_NUMBER

```

MULTILINE_OCTAL
\002\010\033\160\351\322\377\256\154\161
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "vTrus ECC Root CA"
#
# Issuer: CN=vTrus ECC Root CA,O="iTrusChina Co.,Ltd.",C=CN
# Serial Number:6e:6a:bc:59:aa:53:be:98:39:67:a2:d2:6b:a4:3b:e6:6d:1c:d6:da
# Subject: CN=vTrus ECC Root CA,O="iTrusChina Co.,Ltd.",C=CN
# Not Valid Before: Tue Jul 31 07:26:44 2018
# Not Valid After : Fri Jul 31 07:26:44 2043
# Fingerprint (SHA-256):
30:FB:BA:2C:32:23:8E:2A:98:54:7A:F9:79:31:E5:50:42:8B:9B:3F:1C:8E:EB:66:33:DC:FA:86:C5:B2:7D:D3
#
Fingerprint (SHA1): F6:9C:DB:B0:FC:F6:02:13:B6:52:32:A6:A3:91:3F:16:70:DA:C3:E1
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "vTrus ECC Root CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\107\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\034\060\032\006\003\125\004\012\023\023\151\124\162\165\163\103
\150\151\156\141\040\103\157\056\054\114\164\144\056\061\032\060
\030\006\003\125\004\003\023\021\166\124\162\165\163\040\105\103
\103\040\122\157\157\164\040\103\101
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\107\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\034\060\032\006\003\125\004\012\023\023\151\124\162\165\163\103
\150\151\156\141\040\103\157\056\054\114\164\144\056\061\032\060
\030\006\003\125\004\003\023\021\166\124\162\165\163\040\105\103
\103\040\122\157\157\164\040\103\101
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\024\156\152\274\131\252\123\276\230\071\147\242\322\153\244
\073\346\155\034\326\332
END
CKA_VALUE MULTILINE_OCTAL
\060\202\002\017\060\202\001\225\240\003\002\001\002\002\024\156

```

\152\274\131\252\123\276\230\071\147\242\322\153\244\073\346\155  
\034\326\332\060\012\006\010\052\206\110\316\075\004\003\003\060  
\107\061\013\060\011\006\003\125\004\006\023\002\103\116\061\034  
\060\032\006\003\125\004\012\023\023\151\124\162\165\163\103\150  
\151\156\141\040\103\157\056\054\114\164\144\056\061\032\060\030  
\006\003\125\004\003\023\021\166\124\162\165\163\040\105\103\103  
\040\122\157\157\164\040\103\101\060\036\027\015\061\070\060\067  
\063\061\060\067\062\066\064\064\132\027\015\064\063\060\067\063  
\061\060\067\062\066\064\064\132\060\107\061\013\060\011\006\003  
\125\004\006\023\002\103\116\061\034\060\032\006\003\125\004\012  
\023\023\151\124\162\165\163\103\150\151\156\141\040\103\157\056  
\054\114\164\144\056\061\032\060\030\006\003\125\004\003\023\021  
\166\124\162\165\163\040\105\103\103\040\122\157\157\164\040\103  
\101\060\166\060\020\006\007\052\206\110\316\075\002\001\006\005  
\053\201\004\000\042\003\142\000\004\145\120\112\256\214\171\226  
\112\252\034\010\303\243\242\315\376\131\126\101\167\375\046\224  
\102\273\035\315\010\333\163\262\133\165\363\317\234\116\202\364  
\277\370\141\046\205\154\326\205\133\162\160\322\375\333\142\264  
\337\123\213\275\261\104\130\142\102\011\307\372\177\133\020\347  
\376\100\375\300\330\303\053\062\347\160\246\267\246\040\125\035  
\173\200\135\113\217\147\114\361\020\243\102\060\100\060\035\006  
\003\125\035\016\004\026\004\024\230\071\315\276\330\262\214\367  
\262\253\341\255\044\257\173\174\241\333\037\317\060\017\006\003  
\125\035\023\001\001\377\004\005\060\003\001\001\377\060\016\006  
\003\125\035\017\001\001\377\004\004\003\002\001\006\060\012\006  
\010\052\206\110\316\075\004\003\003\003\150\000\060\145\002\060  
\127\235\335\126\361\307\343\351\270\111\120\153\233\151\303\157  
\354\303\175\045\344\127\225\023\100\233\122\323\073\363\100\031  
\274\046\307\055\006\236\265\173\066\237\365\045\324\143\153\000  
\002\061\000\351\323\306\236\126\232\052\314\241\332\077\310\146  
\053\323\130\234\040\205\372\253\221\212\160\160\021\070\140\144  
\013\142\011\221\130\000\371\115\373\064\150\332\011\255\041\006  
\030\224\316

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "vTrus ECC Root CA"

# Issuer: CN=vTrus ECC Root CA,O="iTrusChina Co.,Ltd.",C=CN

# Serial Number:6e:6a:bc:59:aa:53:be:98:39:67:a2:d2:6b:a4:3b:e6:6d:1c:d6:da

# Subject: CN=vTrus ECC Root CA,O="iTrusChina Co.,Ltd.",C=CN

# Not Valid Before: Tue Jul 31 07:26:44 2018

# Not Valid After : Fri Jul 31 07:26:44 2043

# Fingerprint (SHA-256):

30:FB:BA:2C:32:23:8E:2A:98:54:7A:F9:79:31:E5:50:42:8B:9B:3F:1C:8E:EB:66:33:DC:FA:86:C5:B2:7D:D3

# Fingerprint (SHA1): F6:9C:DB:B0:FC:F6:02:13:B6:52:32:A6:A3:91:3F:16:70:DA:C3:E1

```

CKA_CLASS
CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "vTrus ECC Root CA"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\366\234\333\260\374\366\002\023\266\122\062\246\243\221\077\026
\160\332\303\341
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\336\113\301\365\122\214\233\103\341\076\217\125\124\027\215\205
END
CKA_ISSUER MULTILINE_OCTAL
\060\107\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\034\060\032\006\003\125\004\012\023\023\151\124\162\165\163\103
\150\151\156\141\040\103\157\056\054\114\164\144\056\061\032\060
\030\006\003\125\004\003\023\021\166\124\162\165\163\040\105\103
\103\040\122\157\157\164\040\103\101
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\024\156\152\274\131\252\123\276\230\071\147\242\322\153\244
\073\346\155\034\326\332
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING
CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "vTrus Root CA"
#
# Issuer: CN=vTrus Root CA,O="iTrusChina Co.,Ltd.",C=CN
# Serial Number:43:e3:71:13:d8:b3:59:14:5d:b7:ce:8c:fd:35:fd:6f:bc:05:8d:45
# Subject: CN=vTrus Root CA,O="iTrusChina Co.,Ltd.",C=CN
# Not Valid Before: Tue Jul 31 07:24:05 2018
# Not Valid After : Fri Jul 31 07:24:05 2043
# Fingerprint (SHA-256):
8A:71:DE:65:59:33:6F:42:6C:26:E5:38:80:D0:0D:88:A1:8D:A4:C6:A9:1F:0D:CB:61:94:E2:06:C5:C9:63:87
# Fingerprint (SHA1): 84:1A:69:FB:F5:CD:1A:25:34:13:3D:E3:F8:FC:B8:99:D0:C9:14:B7
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "vTrus Root CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL

```

\060\103\061\013\060\011\006\003\125\004\006\023\002\103\116\061  
\034\060\032\006\003\125\004\012\023\023\151\124\162\165\163\103  
\150\151\156\141\040\103\157\056\054\114\164\144\056\061\026\060  
\024\006\003\125\004\003\023\015\166\124\162\165\163\040\122\157  
\157\164\040\103\101

END

CKA\_ID

UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\103\061\013\060\011\006\003\125\004\006\023\002\103\116\061  
\034\060\032\006\003\125\004\012\023\023\151\124\162\165\163\103  
\150\151\156\141\040\103\157\056\054\114\164\144\056\061\026\060  
\024\006\003\125\004\003\023\015\166\124\162\165\163\040\122\157  
\157\164\040\103\101

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\024\103\343\161\023\330\263\131\024\135\267\316\214\375\065  
\375\157\274\005\215\105

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\126\060\202\003\076\240\003\002\001\002\002\024\103  
\343\161\023\330\263\131\024\135\267\316\214\375\065\375\157\274  
\005\215\105\060\015\006\011\052\206\110\206\367\015\001\001\013  
\005\000\060\103\061\013\060\011\006\003\125\004\006\023\002\103  
\116\061\034\060\032\006\003\125\004\012\023\023\151\124\162\165  
\163\103\150\151\156\141\040\103\157\056\054\114\164\144\056\061  
\026\060\024\006\003\125\004\003\023\015\166\124\162\165\163\040  
\122\157\157\164\040\103\101\060\036\027\015\061\070\060\067\063  
\061\060\067\062\064\060\065\132\027\015\064\063\060\067\063\061  
\060\067\062\064\060\065\132\060\103\061\013\060\011\006\003\125  
\004\006\023\002\103\116\061\034\060\032\006\003\125\004\012\023  
\023\151\124\162\165\163\103\150\151\156\141\040\103\157\056\054  
\114\164\144\056\061\026\060\024\006\003\125\004\003\023\015\166  
\124\162\165\163\040\122\157\157\164\040\103\101\060\202\002\042  
\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003  
\202\002\017\000\060\202\002\012\002\202\002\001\000\275\125\174  
\141\323\270\035\004\142\005\240\256\154\267\160\264\101\352\113  
\003\136\020\077\220\132\034\213\073\260\146\213\154\110\246\034  
\042\272\325\100\222\356\063\262\043\131\311\216\274\130\332\213  
\236\320\031\362\057\131\306\214\143\132\272\237\243\013\260\263  
\232\134\272\021\270\022\351\014\273\317\156\154\200\207\051\024  
\003\054\215\044\232\310\144\203\265\152\254\023\054\063\361\237  
\334\054\141\074\032\077\160\125\233\255\000\122\177\317\004\271  
\376\066\372\234\300\026\256\142\376\226\114\103\176\125\024\276  
\032\263\322\155\302\257\166\146\225\153\052\260\224\167\205\136  
\004\017\142\035\143\165\367\153\347\313\133\232\160\354\076\147  
\005\360\376\007\010\200\317\050\333\005\306\024\047\057\206\175  
\360\047\336\377\346\176\063\110\347\013\036\130\321\047\053\123

\016\127\112\145\327\373\242\200\140\374\114\274\065\123\001\152  
\227\162\202\257\361\035\160\350\234\365\357\136\302\154\307\107  
\176\132\224\205\046\115\073\272\353\114\350\260\011\302\145\302  
\235\235\011\233\116\265\227\005\254\365\006\240\367\066\005\176  
\364\220\262\153\304\264\371\144\352\351\032\012\310\015\250\355  
\047\311\324\347\263\271\253\202\042\220\047\075\052\350\174\220  
\357\274\117\375\342\012\044\247\336\145\044\244\135\352\300\166  
\060\323\167\120\370\015\004\233\224\066\001\163\312\006\130\246  
\323\073\334\372\004\106\023\125\212\311\104\107\270\121\071\032  
\056\350\064\342\171\313\131\112\012\177\274\246\357\037\003\147  
\152\131\053\045\142\223\331\123\031\146\074\047\142\051\206\115  
\244\153\356\377\324\116\272\325\264\342\216\110\132\000\031\011  
\361\005\331\316\221\261\367\353\351\071\117\366\157\004\103\232  
\125\365\076\005\024\275\277\263\131\264\330\216\063\204\243\220  
\122\252\263\002\225\140\371\014\114\150\371\356\325\027\015\370  
\161\127\265\045\344\051\356\145\135\257\321\356\074\027\013\132  
\103\305\245\206\352\044\236\342\005\007\334\064\102\022\221\326  
\071\164\256\114\101\202\333\362\246\110\321\263\233\363\063\252  
\363\246\300\305\116\365\364\235\166\143\346\002\306\042\113\301  
\225\077\120\144\054\124\345\266\360\074\051\317\127\002\003\001  
\000\001\243\102\060\100\060\035\006\003\125\035\016\004\026\004  
\024\124\142\160\143\361\165\204\103\130\216\321\026\040\261\306  
\254\032\274\366\211\060\017\006\003\125\035\023\001\001\377\004  
\005\060\003\001\001\377\060\016\006\003\125\035\017\001\001\377  
\004\004\003\002\001\006\060\015\006\011\052\206\110\206\367\015  
\001\001\013\005\000\003\202\002\001\000\051\272\222\111\247\255  
\360\361\160\303\344\227\360\237\251\045\325\153\236\064\376\346  
\032\144\366\072\153\122\262\020\170\032\237\114\332\212\332\354  
\034\067\122\340\102\113\373\154\166\312\044\013\071\022\025\235  
\237\021\055\374\171\144\334\340\340\365\335\340\127\311\245\262  
\166\160\120\244\376\267\012\160\325\240\064\361\165\327\115\111  
\272\021\321\263\330\354\202\377\353\016\304\277\144\055\175\143  
\156\027\170\354\135\174\210\310\353\216\127\166\331\131\004\372  
\274\122\037\105\254\360\172\200\354\354\157\166\256\221\333\020  
\216\004\334\222\337\240\366\346\256\111\323\301\154\022\033\314  
\051\252\371\010\245\342\067\024\312\261\270\146\357\032\202\344  
\360\370\361\247\026\151\267\333\251\141\074\237\365\061\313\344  
\000\106\302\057\164\261\261\327\201\356\250\046\225\274\210\257  
\114\065\007\052\002\312\170\024\155\107\053\100\126\351\313\052  
\140\241\147\003\240\316\214\274\260\162\147\304\061\316\333\064  
\345\045\003\140\045\173\161\230\344\300\033\053\137\164\102\322  
\113\305\131\010\007\207\276\305\303\177\347\226\331\341\334\050  
\227\326\217\005\343\365\233\116\312\035\120\107\005\123\260\312  
\071\347\205\240\211\301\005\073\001\067\323\077\111\342\167\353  
\043\310\210\146\073\075\071\166\041\106\361\354\137\043\270\353  
\242\146\165\164\301\100\367\330\150\232\223\342\055\251\056\275  
\034\243\036\310\164\306\244\055\172\040\253\073\270\260\106\375  
\157\335\137\122\125\165\142\360\227\240\174\327\070\375\045\337

```
\315\240\233\020\317\213\270\070\136\136\305\264\246\002\066\241
\036\137\034\317\342\226\235\051\252\375\230\256\122\341\363\101
\122\373\251\056\162\226\237\047\343\252\163\175\370\032\043\146
\173\073\253\145\260\062\001\113\025\076\075\242\117\014\053\065
\242\306\331\147\022\065\060\315\166\056\026\263\231\236\115\117
\116\055\073\064\103\341\232\016\015\244\146\227\272\322\034\112
\114\054\052\213\213\201\117\161\032\251\335\134\173\173\010\305
\000\015\067\100\343\174\173\124\137\057\205\137\166\366\367\247
\260\034\127\126\301\162\350\255\242\257\215\063\111\272\037\212
\334\346\164\174\140\206\157\207\227\173
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "vTrus Root CA"

# Issuer: CN=vTrus Root CA,O="iTrusChina Co.,Ltd.",C=CN

# Serial Number:43:e3:71:13:d8:b3:59:14:5d:b7:ce:8c:fd:35:fd:6f:bc:05:8d:45

# Subject: CN=vTrus Root CA,O="iTrusChina Co.,Ltd.",C=CN

# Not Valid Before: Tue Jul 31 07:24:05 2018

# Not Valid After : Fri Jul 31 07:24:05 2043

# Fingerprint (SHA-256):

8A:71:DE:65:59:33:6F:42:6C:26:E5:38:80:D0:0D:88:A1:8D:A4:C6:A9:1F:0D:CB:61:94:E2:06:C5:C9:63:87

# Fingerprint (SHA1): 84:1A:69:FB:F5:CD:1A:25:34:13:3D:E3:F8:FC:B8:99:D0:C9:14:B7

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "vTrus Root CA"

CKA\_CERT\_SHA1\_HASH

MULTILINE\_OCTAL

```
\204\032\151\373\365\315\032\045\064\023\075\343\370\374\270\231
\320\311\024\267
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\270\311\067\337\372\153\061\204\144\305\352\021\152\033\165\374
```

END

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\103\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\034\060\032\006\003\125\004\012\023\023\151\124\162\165\163\103
\150\151\156\141\040\103\157\056\054\114\164\144\056\061\026\060
\024\006\003\125\004\003\023\015\166\124\162\165\163\040\122\157
\157\164\040\103\101
```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

```
\002\024\103\343\161\023\330\263\131\024\135\267\316\214\375\065
\375\157\274\005\215\105
```

```

END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "ISRG Root X2"
#
# Issuer: CN=ISRG Root X2,O=Internet Security Research Group,C=US
# Serial Number:41:d2:9d:d1:72:ea:ee:a7:80:c1:2c:6c:e9:2f:87:52
#
# Subject: CN=ISRG Root X2,O=Internet Security Research Group,C=US
# Not Valid Before: Fri Sep 04 00:00:00 2020
# Not Valid After : Mon Sep 17 16:00:00 2040
# Fingerprint (SHA-256):
69:72:9B:8E:15:A8:6E:FC:17:7A:57:AF:B7:17:1D:FC:64:AD:D2:8C:2F:CA:8C:F1:50:7E:34:45:3C:CB:14:70
# Fingerprint (SHA1): BD:B1:B9:3C:D5:97:8D:45:C6:26:14:55:F8:DB:95:C7:5A:D1:53:AF
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "ISRG Root X2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\117\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\051\060\047\006\003\125\004\012\023\040\111\156\164\145\162\156
\145\164\040\123\145\143\165\162\151\164\171\040\122\145\163\145
\141\162\143\150\040\107\162\157\165\160\061\025\060\023\006\003
\125\004\003\023\014\111\123\122\107\040\122\157\157\164\040\130
\062
END
CKA_ID UTF8
"0"
CKA_ISSUER MULTILINE_OCTAL
\060\117\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\051\060\047\006\003\125\004\012\023\040\111\156\164\145\162\156
\145\164\040\123\145\143\165\162\151\164\171\040\122\145\163\145
\141\162\143\150\040\107\162\157\165\160\061\025\060\023\006\003
\125\004\003\023\014\111\123\122\107\040\122\157\157\164\040\130
\062
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\101\322\235\321\162\352\356\247\200\301\054\154\351\057
\207\122
END
CKA_VALUE MULTILINE_OCTAL
\060\202\002\033\060\202\001\241\240\003\002\001\002\002\020\101

```



\322\235\321\162\352\356\247\200\301\054\154\351\057\207\122\060  
\012\006\010\052\206\110\316\075\004\003\003\060\117\061\013\060  
\011\006\003\125\004\006\023\002\125\123\061\051\060\047\006\003  
\125\004\012\023\040\111\156\164\145\162\156\145\164\040\123\145  
\143\165\162\151\164\171\040\122\145\163\145\141\162\143\150\040  
\107\162\157\165\160\061\025\060\023\006\003\125\004\003\023\014  
\111\123\122\107\040\122\157\157\164\040\130\062\060\036\027\015  
\062\060\060\071\060\064\060\060\060\060\060\132\027\015\064  
\060\060\071\061\067\061\066\060\060\060\060\132\060\117\061\013  
\060\011\006\003\125\004\006\023\002\125\123\061\051\060\047\006  
\003\125\004\012\023\040\111\156\164\145\162\156\145\164\040\123  
\145\143\165\162\151\164\171\040\122\145\163\145\141\162\143\150  
\040\107\162\157\165\160\061\025\060\023\006\003\125\004\003\023  
\014\111\123\122\107\040\122\157\157\164\040\130\062\060\166\060  
\020\006\007\052\206\110\316\075\002\001\006\005\053\201\004\000  
\042\003\142\000\004\315\233\325\237\200\203\012\354\011\112\363  
\026\112\076\134\317\167\254\336\147\005\015\035\007\266\334\026  
\373\132\213\024\333\342\161\140\304\272\105\225\021\211\216\352  
\006\337\367\052\026\034\244\271\305\305\062\340\003\340\036\202  
\030\070\213\327\105\330\012\152\156\346\000\167\373\002\121\175  
\042\330\012\156\232\133\167\337\360\372\101\354\071\334\165\312  
\150\007\014\037\352\243\102\060\100\060\016\006\003\125\035\017  
\001\001\377\004\004\003\002\001\006\060\017\006\003\125\035\023  
\001\001\377\004\005\060\003\001\001\377\060\035\006\003\125\035  
\016\004\026\004\024\174\102\226\256\336\113\110\073\372\222\370  
\236\214\317\155\213\251\162\067\225\060\012\006\010\052\206\110  
\316\075\004\003\003\003\150\000\060\145\002\060\173\171\116\106  
\120\204\302\104\207\106\033\105\160\377\130\231\336\364\375\244  
\322\125\246\040\055\164\326\064\274\101\243\120\137\001\047\126  
\264\276\047\165\006\257\022\056\165\230\215\374\002\061\000\213  
\365\167\154\324\310\145\252\340\013\054\356\024\235\047\067\244  
\371\123\245\121\344\051\203\327\370\220\061\133\102\237\012\365  
\376\256\000\150\347\214\111\017\266\157\133\133\025\362\347

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "ISRG Root X2"

# Issuer: CN=ISRG Root X2,O=Internet Security Research Group,C=US

# Serial Number:41:d2:9d:d1:72:ea:ee:a7:80:c1:2c:6c:e9:2f:87:52

#

Subject: CN=ISRG Root X2,O=Internet Security Research Group,C=US

# Not Valid Before: Fri Sep 04 00:00:00 2020

# Not Valid After : Mon Sep 17 16:00:00 2040

# Fingerprint (SHA-256):

69:72:9B:8E:15:A8:6E:FC:17:7A:57:AF:B7:17:1D:FC:64:AD:D2:8C:2F:CA:8C:F1:50:7E:34:45:3C:CB:14:70

```
# Fingerprint (SHA1): BD:B1:B9:3C:D5:97:8D:45:C6:26:14:55:F8:DB:95:C7:5A:D1:53:AF
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "ISRG Root X2"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\275\261\271\074\325\227\215\105\306\046\024\125\370\333\225\307
\132\321\123\257
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\323\236\304\036\043\074\246\337\317\243\176\155\340\024\346\345
END
CKA_ISSUER MULTILINE_OCTAL
\060\117\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\051\060\047\006\003\125\004\012\023\040\111\156\164\145\162\156
\145\164\040\123\145\143\165\162\151\164\171\040\122\145\163\145
\141\162\143\150\040\107\162\157\165\160\061\025\060\023\006\003
\125\004\003\023\014\111\123\122\107\040\122\157\157\164\040\130
\062
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\101\322\235\321\162\352\356\247\200\301\054\154\351\057
\207\122
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
#
# Certificate "HiPKI Root CA - G1"
#
# Issuer: CN=HiPKI Root CA - G1,O="Chunghwa Telecom Co., Ltd.",C=TW
# Serial Number:2d:dd:ac:ce:62:97:94:a1:43:e8:b0:cd:76:6a:5e:60
# Subject: CN=HiPKI Root CA - G1,O="Chunghwa Telecom Co., Ltd.",C=TW
# Not Valid Before: Fri Feb 22 09:46:04 2019
# Not Valid After : Thu Dec 31 15:59:59 2037
# Fingerprint (SHA-256):
F0:15:CE:3C:C2:39:BF:EF:06:4B:E9:F1:D2:C4:17:E1:A0:26:4A:0A:94:BE:1F:0C:8D:12:18:64:EB:69:49:CC
# Fingerprint (SHA1): 6A:92:E4:A8:EE:1B:EC:96:45:37:E3:29:57:49:CD:96:E3:E5:D2:60
CKA_CLASS CK_OBJECT_CLASS
CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "HiPKI Root CA - G1"
```

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\117\061\013\060\011\006\003\125\004\006\023\002\124\127\061  
\043\060\041\006\003\125\004\012\014\032\103\150\165\156\147\150  
\167\141\040\124\145\154\145\143\157\155\040\103\157\056\054\040  
\114\164\144\056\061\033\060\031\006\003\125\004\003\014\022\110  
\151\120\113\111\040\122\157\157\164\040\103\101\040\055\040\107  
\061

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\117\061\013\060\011\006\003\125\004\006\023\002\124\127\061  
\043\060\041\006\003\125\004\012\014\032\103\150\165\156\147\150  
\167\141\040\124\145\154\145\143\157\155\040\103\157\056\054\040  
\114\164\144\056\061\033\060\031\006\003\125\004\003\014\022\110  
\151\120\113\111\040\122\157\157\164\040\103\101\040\055\040\107  
\061

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\055\335\254\316\142\227\224\241\103\350\260\315\166\152  
\136\140

END

CKA\_VALUE

MULTILINE\_OCTAL

\060\202\005\152\060\202\003\122\240\003\002\001\002\002\020\055  
\335\254\316\142\227\224\241\103\350\260\315\166\152\136\140\060  
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\117  
\061\013\060\011\006\003\125\004\006\023\002\124\127\061\043\060  
\041\006\003\125\004\012\014\032\103\150\165\156\147\150\167\141  
\040\124\145\154\145\143\157\155\040\103\157\056\054\040\114\164  
\144\056\061\033\060\031\006\003\125\004\003\014\022\110\151\120  
\113\111\040\122\157\157\164\040\103\101\040\055\040\107\061\060  
\036\027\015\061\071\060\062\062\062\060\071\064\066\060\064\132  
\027\015\063\067\061\062\063\061\061\065\065\071\065\071\132\060  
\117\061\013\060\011\006\003\125\004\006\023\002\124\127\061\043  
\060\041\006\003\125\004\012\014\032\103\150\165\156\147\150\167  
\141\040\124\145\154\145\143\157\155\040\103\157\056\054\040\114  
\164\144\056\061\033\060\031\006\003\125\004\003\014\022\110\151  
\120\113\111\040\122\157\157\164\040\103\101\040\055\040\107\061  
\060\202\002\042\060\015\006\011\052\206\110\206\367\015\001\001  
\001\005\000\003\202\002\017\000\060\202\002\012\002\202\002\001  
\000\364\036\177\122\163\062\014\163\344\275\023\164\243\324\060  
\250\320\256\113\330\266\337\165\107\146\364\174\347\071\004\036  
\152\160\040\322\132\107\162\147\125\364\245\350\235\325\036\041  
\241\360\147\272\314\041\150\276\104\123\277\215\371\342\334\057  
\125\310\067\077\037\244\300\234\263\344\167\134\240\106\376\167  
\372\032\240\070\352\355\232\162\336\053\275\224\127\072\272\354  
\171\347\137\175\102\144\071\172\046\066\367\044\360\325\057\272

\225\230\021\146\255\227\065\326\165\001\200\340\257\364\204\141  
\214\015\036\137\174\207\226\136\101\257\353\207\352\370\135\361  
\056\210\005\076\114\042\273\332\037\052\335\122\106\144\071\363  
\102\316\331\236\014\263\260\167\227\144\234\300\364\243\056\037  
\225\007\260\027\337\060\333\000\030\226\114\241\201\113\335\004  
\155\123\243\075\374\007\254\324\305\067\202\353\344\225\010\031  
\050\202\322\102\072\243\330\123\354\171\211\140\110\140\310\162  
\222\120\334\003\217\203\077\262\102\127\132\333\152\351\021\227  
\335\205\050\274\060\114\253\343\302\261\105\104\107\037\340\212  
\026\007\226\322\041\017\123\300\355\251\176\324\116\354\233\011  
\354\257\102\254\060\326\277\321\020\105\340\246\026\262\245\305  
\323\117\163\224\063\161\002\241\152\243\326\063\227\117\041\143  
\036\133\217\331\301\136\105\161\167\017\201\135\137\041\232\255  
\203\314\372\136\326\215\043\137\033\075\101\257\040\165\146\132  
\112\366\237\373\253\030\367\161\300\266\035\061\354\073\040\353  
\313\342\270\365\256\222\262\367\341\204\113\362\242\362\223\232  
\042\236\323\024\157\066\124\275\037\136\131\025\271\163\250\301  
\174\157\173\142\351\026\154\107\132\145\363\016\021\233\106\331  
\375\155\334\326\234\300\264\175\245\260\335\077\126\157\241\371  
\366\344\022\110\375\006\177\022\127\266\251\043\117\133\003\303  
\340\161\052\043\267\367\260\261\073\274\230\275\326\230\250\014  
\153\366\216\022\147\246\362\262\130\344\002\011\023\074\251\273  
\020\264\322\060\105\361\354\367\000\021\337\145\370\334\053\103  
\125\277\026\227\304\017\325\054\141\204\252\162\206\376\346\072  
\176\302\077\175\356\374\057\024\076\346\205\335\120\157\267\111  
\355\002\003\001\000\001\243\102\060\100\060\017\006\003\125\035  
\023\001\001\377\004\005\060\003\001\001\377\060\035\006\003\125  
\035\016\004\026\004\024\362\167\027\372\136\250\376\366\075\161  
\325\150\272\311\106\014\070\330\257\260\060\016\006\003\125\035  
\017\001\001\377\004\004\003\002\001\206\060\015\006\011\052\206  
\110\206\367\015\001\001\013\005\000\003\202\002\001\000\120\121  
\360\165\334\160\004\343\377\252\165\324\161\242\313\236\217\250  
\251\323\257\165\307\124\317\072\034\004\231\042\254\304\021\342  
\357\063\112\246\043\035\016\015\107\330\067\307\157\257\064\177  
\117\201\153\065\117\351\162\245\061\342\170\347\367\116\224\030  
\133\100\175\317\153\041\124\206\346\225\172\373\306\312\352\234  
\110\116\127\011\135\057\254\364\245\264\227\063\130\325\254\171  
\251\314\137\371\205\372\122\305\215\370\221\024\353\072\015\027  
\320\122\302\173\343\302\163\216\106\170\006\070\054\350\134\332  
\146\304\364\244\360\126\031\063\051\132\145\222\005\107\106\112  
\253\204\303\036\047\241\037\021\222\231\047\165\223\017\274\066  
\073\227\127\217\046\133\014\273\234\017\324\156\060\007\324\334  
\137\066\150\146\071\203\226\047\046\212\310\304\071\376\232\041  
\157\325\162\206\351\177\142\345\227\116\320\044\320\100\260\320  
\165\010\216\275\150\356\010\327\156\174\020\160\106\033\174\340  
\210\262\236\162\206\231\001\343\277\237\111\031\264\045\276\126  
\145\256\027\143\345\036\337\350\377\107\245\277\341\046\005\204  
\344\260\300\257\347\010\231\250\014\136\046\200\105\324\370\150

```
\057\226\217\256\342\112\034\234\026\014\023\157\070\207\366\273
\310\064\137\222\003\121\171\160\246\337\313\365\231\115\171\315
\116\274\127\237\103\116\153\056\053\030\370\152\163\214\272\305
\065\357\071\152\101\036\317\161\250\242\262\206\007\133\072\311
\341\357\077\145\004\200\107\062\104\160\225\116\061\147\152\164
\133\020\105\165\352\260\237\320\346\065\376\116\237\213\314\053
\222\105\133\156\045\140\205\106\315\321\252\260\166\146\223\167
\226\276\203\276\070\266\044\116\046\013\314\355\172\126\032\340
\351\132\306\144\255\114\172\000\110\104\057\271\100\273\023\076
\276\025\170\235\205\201\112\052\127\336\325\031\103\332\333\312
\133\107\206\203\013\077\266\015\166\170\163\171\042\136\261\200
\037\317\276\321\077\126\020\230\053\225\207\241\037\235\144\024
\140\071\054\263\000\125\056\344\365\263\016\127\304\221\101\000
\234\077\350\245\337\352\366\377\310\360\255\155\122\250\027\253
\233\141\374\022\121\065\344\045\375\257\252\152\206\071
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "HiPKI Root CA - G1"

# Issuer: CN=HiPKI Root CA - G1,O="Chunghwa Telecom Co., Ltd.",C=TW

# Serial Number:2d:dd:ac:ce:62:97:94:a1:43:e8:b0:cd:76:6a:5e:60

#

Subject: CN=HiPKI Root CA - G1,O="Chunghwa Telecom Co., Ltd.",C=TW

# Not Valid Before: Fri Feb 22 09:46:04 2019

# Not Valid After : Thu Dec 31 15:59:59 2037

# Fingerprint (SHA-256):

F0:15:CE:3C:C2:39:BF:EF:06:4B:E9:F1:D2:C4:17:E1:A0:26:4A:0A:94:BE:1F:0C:8D:12:18:64:EB:69:49:CC

# Fingerprint (SHA1): 6A:92:E4:A8:EE:1B:EC:96:45:37:E3:29:57:49:CD:96:E3:E5:D2:60

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "HiPKI Root CA - G1"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\152\222\344\250\356\033\354\226\105\067\343\051\127\111\315\226
\343\345\322\140
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\151\105\337\026\145\113\350\150\232\217\166\137\377\200\236\323
```

END

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\117\061\013\060\011\006\003\125\004\006\023\002\124\127\061
\043\060\041\006\003\125\004\012\014\032\103\150\165\156\147\150
\167\141\040\124\145\154\145\143\157\155\040\103\157\056\054\040
\114\164\144\056\061\033\060\031\006\003\125\004\003\014\022\110
```

```
\151\120\113\111\040\122\157\157\164\040\103\101\040\055\040\107
\061
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\055\335\254\316\142\227\224\241\103\350\260\315\166\152
\136\140
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "GlobalSign ECC Root CA - R4"
#
# Issuer: CN=GlobalSign,O=GlobalSign,OU=GlobalSign ECC Root CA - R4
# Serial Number:02:03:e5:7e:f5:3f:93:fd:a5:09:21:b2:a6
# Subject: CN=GlobalSign,O=GlobalSign,OU=GlobalSign ECC Root CA - R4
# Not Valid Before: Tue Nov 13 00:00:00 2012
# Not Valid After : Tue Jan 19 03:14:07 2038
# Fingerprint (SHA-256):
B0:85:D7:0B:96:4F:19:1A:73:E4:AF:0D:54:AE:7A:0E:07:AA:FD:AF:9B:71:DD:08:62:13:8A:B7:32:5A:24:A2
# Fingerprint (SHA1): 6B:A0:B0:98:E1:71:EF:5A:AD:FE:48:15:80:77:10:F4:BD:6F:0B:28
CKA_CLASS
CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "GlobalSign ECC Root CA - R4"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\120\061\044\060\042\006\003\125\004\013\023\033\107\154\157
\142\141\154\123\151\147\156\040\105\103\103\040\122\157\157\164
\040\103\101\040\055\040\122\064\061\023\060\021\006\003\125\004
\012\023\012\107\154\157\142\141\154\123\151\147\156\061\023\060
\021\006\003\125\004\003\023\012\107\154\157\142\141\154\123\151
\147\156
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\120\061\044\060\042\006\003\125\004\013\023\033\107\154\157
\142\141\154\123\151\147\156\040\105\103\103\040\122\157\157\164
\040\103\101\040\055\040\122\064\061\023\060\021\006\003\125\004
\012\023\012\107\154\157\142\141\154\123\151\147\156\061\023\060
\021\006\003\125\004\003\023\012\107\154\157\142\141\154\123\151
\147\156
END
```

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\015\002\003\345\176\365\077\223\375\245\011\041\262\246

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\001\334\060\202\001\203\240\003\002\001\002\002\015\002

\003\345\176\365\077\223\375\245\011\041\262\246\060\012\006\010

\052\206\110\316\075\004\003\002\060\120\061\044\060\042\006\003

\125\004\013\023\033\107\154\157\142\141\154\123\151\147\156\040

\105\103\103\040\122\157\157\164\040\103\101\040\055\040\122\064

\061\023\060\021\006\003\125\004\012\023\012\107\154\157\142\141

\154\123\151\147\156\061\023\060\021\006\003\125\004\003\023\012

\107\154\157\142\141\154\123\151\147\156\060\036\027\015\061\062

\061\061\061\063\060\060\060\060\060\060\132\027\015\063\070\060

\061\061\071\060\063\061\064\060\067\132\060\120\061\044\060\042

\006\003\125\004\013\023\033\107\154\157\142\141\154\123\151\147

\156\040\105\103\103\040\122\157\157\164\040\103\101\040\055\040

\122\064\061\023\060\021\006\003\125\004\012\023\012\107\154\157

\142\141\154\123\151\147\156\061\023\060\021\006\003\125\004\003

\023\012\107\154\157\142\141\154\123\151\147\156\060\131\060\023

\006\007\052\206\110\316\075\002\001\006\010\052\206\110\316\075

\003\001\007\003\102\000\004\270\306\171\323\217\154\045\016\237

\056\071\031\034\003\244\256\232\345\071\007\011\026\312\143\261

\271\206\370\212\127\301\127\316\102\372\163\241\367\145\102\377

\036\301\000\262\156\163\016\377\307\041\345\030\244\252\331\161

\077\250\324\271\316\214\035\243\102\060\100\060\016\006\003\125

\035\017\001\001\377\004\004\003\002\001\206\060\017\006\003\125

\035\023\001\001\377\004\005\060\003\001\001\377\060\035\006\003

\125\035\016\004\026\004\024\124\260\173\255\105\270\342\100\177

\373\012\156\373\276\063\311\074\243\204\325\060\012\006\010\052

\206\110\316\075\004\003\002\003\107\000\060\104\002\040\042\117

\164\162\271\140\257\361\346\234\240\026\005\120\137\303\136\073

\156\141\164\357\276\001\304\276\030\110\131\141\202\062\002\040

\046\235\124\143\100\336\067\140\120\317\310\330\355\235\202\256

\067\230\274\243\217\114\114\251\064\053\154\357\373\225\233\046

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "GlobalSign ECC Root CA - R4"

# Issuer: CN=GlobalSign,O=GlobalSign,OU=GlobalSign ECC Root CA - R4

# Serial Number:02:03:e5:7e:f5:3f:93:fd:a5:09:21:b2:a6

# Subject: CN=GlobalSign,O=GlobalSign,OU=GlobalSign ECC Root CA - R4

# Not Valid Before: Tue Nov 13 00:00:00 2012

# Not Valid After : Tue Jan 19 03:14:07 2038

# Fingerprint (SHA-256):

```

B0:85:D7:0B:96:4F:19:1A:73:E4:AF:0D:54:AE:7A:0E:07:AA:FD:AF:9B:71:DD:08:62:13:8A:B7:32:5A:24:A2
# Fingerprint (SHA1): 6B:A0:B0:98:E1:71:EF:5A:AD:FE:48:15:80:77:10:F4:BD:6F:0B:28
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "GlobalSign ECC Root CA - R4"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\153\240\260\230\341\161\357\132\255\376\110\025\200\167\020\364
\275\157\013\050
END
CKA_CERT_MD5_HASH
MULTILINE_OCTAL
\046\051\370\155\341\210\277\242\145\177\252\304\315\017\177\374
END
CKA_ISSUER MULTILINE_OCTAL
\060\120\061\044\060\042\006\003\125\004\013\023\033\107\154\157
\142\141\154\123\151\147\156\040\105\103\103\040\122\157\157\164
\040\103\101\040\055\040\122\064\061\023\060\021\006\003\125\004
\012\023\012\107\154\157\142\141\154\123\151\147\156\061\023\060
\021\006\003\125\004\003\023\012\107\154\157\142\141\154\123\151
\147\156
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\015\002\003\345\176\365\077\223\375\245\011\041\262\246
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "GTS Root R1"
#
# Issuer: CN=GTS Root R1,O=Google Trust Services LLC,C=US
# Serial Number:02:03:e5:93:6f:31:b0:13:49:88:6b:a2:17
# Subject: CN=GTS Root R1,O=Google
Trust Services LLC,C=US
# Not Valid Before: Wed Jun 22 00:00:00 2016
# Not Valid After : Sun Jun 22 00:00:00 2036
# Fingerprint (SHA-256):
D9:47:43:2A:BD:E7:B7:FA:90:FC:2E:6B:59:10:1B:12:80:E0:E1:C7:E4:E4:0F:A3:C6:88:7F:FF:57:A7:F4:CF
# Fingerprint (SHA1): E5:8C:1C:C4:91:3B:38:63:4B:E9:10:6E:E3:AD:8E:6B:9D:D9:81:4A
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "GTS Root R1"

```



CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\107\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\042\060\040\006\003\125\004\012\023\031\107\157\157\147\154\145  
\040\124\162\165\163\164\040\123\145\162\166\151\143\145\163\040  
\114\114\103\061\024\060\022\006\003\125\004\003\023\013\107\124  
\123\040\122\157\157\164\040\122\061

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\107\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\042\060\040\006\003\125\004\012\023\031\107\157\157\147\154\145  
\040\124\162\165\163\164\040\123\145\162\166\151\143\145\163\040  
\114\114\103\061\024\060\022\006\003\125\004\003\023\013\107\124  
\123\040\122\157\157\164\040\122\061

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\015\002\003\345\223\157\061\260\023\111\210\153\242\027

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\127\060\202\003\077\240\003\002\001\002\002\015\002  
\003\345\223\157\061\260\023\111\210\153\242\027\060\015\006\011  
\052\206\110\206\367\015\001\001\014\005\000\060\107\061\013\060  
\011\006\003\125\004\006\023\002\125\123\061\042\060\040\006\003  
\125\004\012\023\031\107\157\157\147\154\145\040\124\162\165\163  
\164\040\123\145\162\166\151\143\145\163\040\114\114\103\061\024  
\060\022\006\003\125\004\003\023\013\107\124\123\040\122\157\157  
\164\040\122\061\060\036\027\015\061\066\060\066\062\062\060\060  
\060\060\060\060\132\027\015\063\066\060\066\062\062\060\060\060  
\060\060\060\132\060\107\061\013\060\011\006\003\125\004\006\023  
\002\125\123\061\042\060\040\006\003\125\004\012\023\031\107\157  
\157\147\154\145\040\124\162\165\163\164\040\123\145\162\166\151  
\143\145\163\040\114\114\103\061\024\060\022\006\003\125\004\003  
\023\013\107\124\123\040\122\157\157\164\040\122\061\060\202\002  
\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000  
\003\202\002\017\000\060\202\002\012\002\202\002\001\000\266\021  
\002\213\036\343\241\167\233\073\334\277\224\076\267\225\247\100  
\074\241\375\202\371\175\062\006\202\161\366\366\214\177\373\350  
\333\274\152\056\227\227\243\214\113\371\053\366\261\371\316\204  
\035\261\371\305\227\336\357\271\362\243\351\274\022\211\136\247  
\252\122\253\370\043\047\313\244\261\234\143\333\327\231\176\360  
\012\136\353\150\246\364\306\132\107\015\115\020\063\343\116\261  
\023\243\310\030\154\113\354\374\011\220\337\235\144\051\045\043  
\007\241\264\322\075\056\140\340\317\322\011\207\273\315\110\360  
\115\302\302\172\210\212\273\272\317\131\031\326\257\217\260\007  
\260\236\061\361\202\301\300\337\056\246\155\154\031\016\265\330  
\176\046\032\105\003\075\260\171\244\224\050\255\017\177\046\345

\250\010\376\226\350\074\150\224\123\356\203\072\210\053\025\226  
\011\262\340\172\214\056\165\326\234\353\247\126\144\217\226\117  
\150\256\075\227\302\204\217\300\274\100\300\013\134\275\366\207  
\263\065\154\254\030\120\177\204\340\114\315\222\323\040\351\063  
\274\122\231\257\062\265\051\263\045\052\264\110\371\162\341\312  
\144\367\346\202\020\215\350\235\302\212\210\372\070\146\212\374  
\143\371\001\371\170\375\173\134\167\372\166\207\372\354\337\261  
\016\171\225\127\264\275\046\357\326\001\321\353\026\012\273\216  
\013\265\305\305\212\125\253\323\254\352\221\113\051\314\031\244  
\062\045\116\052\361\145\104\320\002\316\252\316\111\264\352\237  
\174\203\260\100\173\347\103\253\247\154\243\217\175\211\201\372  
\114\245\377\325\216\303\316\113\340\265\330\263\216\105\317\166  
\300\355\100\053\375\123\017\260\247\325\073\015\261\212\242\003  
\336\061\255\314\167\352\157\173\076\326\337\221\042\022\346\276  
\372\330\062\374\020\143\024\121\162\336\135\326\026\223\275\051  
\150\063\357\072\146\354\007\212\046\337\023\327\127\145\170\047  
\336\136\111\024\000\242\000\177\232\250\041\266\251\261\225\260  
\245\271\015\026\021\332\307\154\110\074\100\340\176\015\132\315  
\126\074\321\227\005\271\313\113\355\071\113\234\304\077\322\125  
\023\156\044\260\326\161\372\364\301\272\314\355\033\365\376\201  
\101\330\000\230\075\072\310\256\172\230\067\030\005\225\002\003  
\001\000\001\243\102\060\100\060\016\006\003\125\035\017\001\001  
\377\004\004\003\002\001\206\060\017\006\003\125\035\023\001\001  
\377\004\005\060\003\001\001\377\060\035\006\003\125\035\016\004  
\026\004\024\344\257\053\046\161\032\053\110\047\205\057\122\146  
\054\357\360\211\023\161\076\060\015\006\011\052\206\110\206\367  
\015\001\001\014\005\000\003\202\002\001\000\237\252\102\046\333  
\013\233\276\377\036\226\222\056\076\242\145\112\152\230\272\042  
\313\175\301\072\330\202\012\006\306\366\245\336\300\116\207\146  
\171\241\371\246\130\234\252\371\265\346\140\347\340\350\261\036  
\102\101\063\013\067\075\316\211\160\025\312\265\044\250\317\153  
\265\322\100\041\230\317\042\064\317\073\305\042\204\340\305\016  
\212\174\135\210\344\065\044\316\233\076\032\124\036\156\333\262  
\207\247\374\363\372\201\125\024\142\012\131\251\042\005\061\076  
\202\326\356\333\127\064\274\063\225\323\027\033\350\047\242\213  
\173\116\046\032\172\132\144\266\321\254\067\361\375\240\363\070  
\354\162\360\021\165\235\313\064\122\215\346\166\153\027\306\337  
\206\253\047\216\111\053\165\146\201\020\041\246\352\076\364\256  
\045\377\174\025\336\316\214\045\077\312\142\160\012\367\057\011  
\146\007\310\077\034\374\360\333\105\060\337\142\210\301\265\017  
\235\303\237\112\336\131\131\107\305\207\042\066\346\202\247\355  
\012\271\342\007\240\215\173\172\112\074\161\322\342\003\241\037  
\062\007\335\033\344\102\316\014\000\105\141\200\265\013\040\131  
\051\170\275\371\125\313\143\305\074\114\364\266\377\333\152\137  
\061\153\231\236\054\301\153\120\244\327\346\030\024\275\205\077  
\147\253\106\237\240\377\102\247\072\177\134\313\135\260\160\035  
\053\064\365\324\166\011\014\353\170\114\131\005\363\063\102\303  
\141\025\020\033\167\115\316\042\214\324\205\362\105\175\267\123

```
\352\357\100\132\224\012\134\040\137\116\100\135\142\042\166\337
\377\316\141\275\214\043\170\322\067\002\340\216\336\321\021\067
\211\366\277\355\111\007\142\256\222\354\100\032\257\024\011\331
\320\116\262\242\367\276\356\356\330\377\334\032\055\336\270\066
\161\342\374\171\267\224\045\321\110\163\133\241\065\347\263\231
\147\165\301\031\072\053\107\116\323\102\216\375\061\310\026\146
\332\322\014\074\333\263\216\311\241\015\200\017\173\026\167\024
\277\377\333\011\224\262\223\274\040\130\025\351\333\161\103\363
\336\020\303\000\334\250\052\225\266\302\326\077\220\153\166\333
\154\376\214\274\362\160\065\014\334\231\031\065\334\327\310\106
\143\325\066\161\256\127\373\267\202\155\334
```

END

CKA\_NSS\_Mozilla\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER

CK\_BBOOL CK\_FALSE

# Trust for "GTS Root R1"

# Issuer: CN=GTS Root R1,O=Google Trust Services LLC,C=US

# Serial Number:02:03:e5:93:6f:31:b0:13:49:88:6b:a2:17

# Subject: CN=GTS Root R1,O=Google Trust Services LLC,C=US

# Not Valid Before: Wed Jun 22 00:00:00 2016

# Not Valid After : Sun Jun 22 00:00:00 2036

# Fingerprint (SHA-256):

D9:47:43:2A:BD:E7:B7:FA:90:FC:2E:6B:59:10:1B:12:80:E0:E1:C7:E4:E4:0F:A3:C6:88:7F:FF:57:A7:F4:CF

# Fingerprint (SHA1): E5:8C:1C:C4:91:3B:38:63:4B:E9:10:6E:E3:AD:8E:6B:9D:D9:81:4A

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "GTS Root R1"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\345\214\034\304\221\073\070\143\113\351\020\156\343\255\216\153
\235\331\201\112
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\005\376\320\277\161\250\243\166\143\332\001\340\330\122\334\100
```

END

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\107\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\042\060\040\006\003\125\004\012\023\031\107\157\157\147\154\145
\040\124\162\165\163\164\040\123\145\162\166\151\143\145\163\040
\114\114\103\061\024\060\022\006\003\125\004\003\023\013\107\124
\123\040\122\157\157\164\040\122\061
```

END

CKA\_SERIAL\_NUMBER

```

MULTILINE_OCTAL
\002\015\002\003\345\223\157\061\260\023\111\210\153\242\027
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "GTS Root R2"
#
# Issuer: CN=GTS Root R2,O=Google Trust Services LLC,C=US
# Serial Number:02:03:e5:ae:c5:8d:04:25:1a:ab:11:25:aa
# Subject: CN=GTS Root R2,O=Google Trust Services LLC,C=US
# Not Valid Before: Wed Jun 22 00:00:00 2016
# Not Valid After : Sun Jun 22 00:00:00 2036
# Fingerprint (SHA-256):
8D:25:CD:97:22:9D:BF:70:35:6B:DA:4E:B3:CC:73:40:31:E2:4C:F0:0F:AF:CF:D3:2D:C7:6E:B5:84:1C:7E:A8
# Fingerprint (SHA1):
9A:44:49:76:32:DB:DE:FA:D0:BC:FB:5A:7B:17:BD:9E:56:09:24:94
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "GTS Root R2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\107\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\042\060\040\006\003\125\004\012\023\031\107\157\157\147\154\145
\040\124\162\165\163\164\040\123\145\162\166\151\143\145\163\040
\114\114\103\061\024\060\022\006\003\125\004\003\023\013\107\124
\123\040\122\157\157\164\040\122\062
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\107\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\042\060\040\006\003\125\004\012\023\031\107\157\157\147\154\145
\040\124\162\165\163\164\040\123\145\162\166\151\143\145\163\040
\114\114\103\061\024\060\022\006\003\125\004\003\023\013\107\124
\123\040\122\157\157\164\040\122\062
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\015\002\003\345\256\305\215\004\045\032\253\021\045\252
END
CKA_VALUE
MULTILINE_OCTAL
\060\202\005\127\060\202\003\077\240\003\002\001\002\002\015\002
\003\345\256\305\215\004\045\032\253\021\045\252\060\015\006\011

```

\052\206\110\206\367\015\001\001\014\005\000\060\107\061\013\060  
\011\006\003\125\004\006\023\002\125\123\061\042\060\040\006\003  
\125\004\012\023\031\107\157\157\147\154\145\040\124\162\165\163  
\164\040\123\145\162\166\151\143\145\163\040\114\114\103\061\024  
\060\022\006\003\125\004\003\023\013\107\124\123\040\122\157\157  
\164\040\122\062\060\036\027\015\061\066\060\066\062\062\060\060  
\060\060\060\060\132\027\015\063\066\060\066\062\062\060\060\060  
\060\060\060\132\060\107\061\013\060\011\006\003\125\004\006\023  
\002\125\123\061\042\060\040\006\003\125\004\012\023\031\107\157  
\157\147\154\145\040\124\162\165\163\164\040\123\145\162\166\151  
\143\145\163\040\114\114\103\061\024\060\022\006\003\125\004\003  
\023\013\107\124\123\040\122\157\157\164\040\122\062\060\202\002  
\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000  
\003\202\002\017\000\060\202\002\012\002\202\002\001\000\316\336  
\375\246\373\354\354\024\064\074\007\006\132\154\131\367\031\065  
\335\367\301\235\125\252\323\315\073\244\223\162\357\012\372\155  
\235\366\360\205\200\133\241\110\122\237\071\305\267\356\050\254  
\357\313\166\150\024\271\337\255\001\154\231\037\304\042\035\237  
\376\162\167\340\054\133\257\344\004\277\117\162\240\032\064\230  
\350\071\150\354\225\045\173\166\241\346\151\271\205\031\275\211  
\214\376\255\355\066\352\163\274\377\203\342\313\175\301\322\316  
\112\263\215\005\236\213\111\223\337\301\133\320\156\136\360\056  
\060\056\202\374\372\274\264\027\012\110\345\210\233\305\233\153  
\336\260\312\264\003\360\332\364\220\270\145\144\367\134\114\255  
\350\176\146\136\231\327\270\302\076\310\320\023\235\255\356\344  
\105\173\211\125\367\212\037\142\122\204\022\263\302\100\227\343  
\212\037\107\221\246\164\132\322\370\261\143\050\020\270\263\011  
\270\126\167\100\242\046\230\171\306\376\337\045\356\076\345\240  
\177\324\141\017\121\113\074\077\214\332\341\160\164\330\302\150  
\241\371\301\014\351\241\342\177\273\125\074\166\006\356\152\116  
\314\222\210\060\115\232\275\117\013\110\232\204\265\230\243\325  
\373\163\301\127\141\335\050\126\165\023\256\207\216\347\014\121  
\011\020\165\210\114\274\215\371\173\074\324\042\110\037\052\334  
\353\153\273\104\261\313\063\161\062\106\257\255\112\361\214\350  
\164\072\254\347\032\042\163\200\322\060\367\045\102\307\042\073  
\073\022\255\226\056\306\303\166\007\252\040\267\065\111\127\351  
\222\111\350\166\026\162\061\147\053\226\176\212\243\307\224\126  
\042\277\152\113\176\001\041\262\043\062\337\344\232\104\155\131  
\133\135\365\000\240\034\233\306\170\227\215\220\377\233\310\252  
\264\257\021\121\071\136\331\373\147\255\325\133\021\235\062\232  
\033\275\325\272\133\245\311\313\045\151\123\125\047\134\340\312  
\066\313\210\141\373\036\267\320\313\356\026\373\323\246\114\336  
\222\245\324\342\337\365\006\124\336\056\235\113\264\223\060\252  
\201\316\335\032\334\121\163\015\117\160\351\345\266\026\041\031  
\171\262\346\211\013\165\144\312\325\253\274\011\301\030\241\377  
\324\124\241\205\074\375\024\044\003\262\207\323\244\267\002\003  
\001\000\001\243\102\060\100\060\016\006\003\125\035\017\001\001  
\377\004\004\003\002\001\206\060\017\006\003\125\035\023\001\001

\377\004\005\060\003\001\001\377\060\035\006\003\125\035\016\004  
\026\004\024\273\377\312\216\043\237\117\231\312\333\342\150\246  
\245\025\047\027\036\331\016\060\015\006\011\052\206\110\206\367  
\015\001\001\014\005\000\003\202\002\001\000\037\312\316\335\307  
\276\241\237\331\047\114\013\334\027\230\021\152\210\336\075\346  
\161\126\162\262\236\032\116\234\325\053\230\044\135\233\153\173  
\260\063\202\011\275\337\045\106\352\230\236\266\033\376\203\074  
\322\142\141\301\004\355\316\340\305\311\310\023\023\125\347\250  
\143\255\214\173\001\376\167\060\341\316\150\233\005\370\022\356  
\171\061\240\101\105\065\050\012\161\244\044\117\214\334\074\202  
\007\137\146\334\175\020\376\014\141\263\005\225\356\341\256\201  
\017\250\370\307\217\115\250\043\002\046\153\035\203\122\125\316  
\265\057\000\312\200\100\340\341\164\254\140\365\207\200\235\256  
\066\144\221\135\260\150\030\352\212\141\311\167\250\227\304\311  
\307\245\374\125\113\363\360\177\271\145\075\047\150\320\314\153  
\372\123\235\341\221\032\311\135\032\226\155\062\207\355\003\040  
\310\002\316\132\276\331\352\375\262\115\304\057\033\337\137\172  
\365\370\213\306\356\061\072\045\121\125\147\215\144\062\173\351  
\236\303\202\272\052\055\351\036\264\340\110\006\242\374\147\257  
\037\042\002\163\373\040\012\257\235\124\113\241\315\377\140\107  
\260\077\135\357\033\126\275\227\041\226\055\012\321\136\235\070  
\002\107\154\271\364\366\043\045\270\240\152\232\053\167\010\372  
\304\261\050\220\046\130\010\074\342\176\252\327\075\157\272\061  
\210\012\005\353\047\265\241\111\356\240\105\124\173\346\047\145  
\231\040\041\250\243\274\373\030\226\273\122\157\014\355\203\121  
\114\351\131\342\040\140\305\302\145\222\202\214\363\020\037\016  
\212\227\276\167\202\155\077\217\035\135\274\111\047\275\314\117  
\017\341\316\166\206\004\043\305\300\214\022\133\375\333\204\240  
\044\361\110\377\144\174\320\276\134\026\321\357\231\255\300\037  
\373\313\256\274\070\042\006\046\144\332\332\227\016\077\050\025  
\104\250\117\000\312\360\232\314\317\164\152\264\076\074\353\225  
\354\265\323\132\330\201\231\351\103\030\067\353\263\273\321\130  
\142\101\363\146\322\217\252\170\225\124\040\303\132\056\164\053  
\325\321\276\030\151\300\254\325\244\317\071\272\121\204\003\145  
\351\142\300\142\376\330\115\125\226\342\320\021\372\110\064\021  
\354\236\355\005\035\344\310\326\035\206\313

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "GTS Root R2"

# Issuer: CN=GTS Root R2,O=Google Trust Services LLC,C=US

# Serial Number:02:03:e5:ae:c5:8d:04:25:1a:ab:11:25:aa

# Subject: CN=GTS Root R2,O=Google Trust Services LLC,C=US

# Not Valid Before:

```

Wed Jun 22 00:00:00 2016
# Not Valid After : Sun Jun 22 00:00:00 2036
# Fingerprint (SHA-256):
8D:25:CD:97:22:9D:BF:70:35:6B:DA:4E:B3:CC:73:40:31:E2:4C:F0:0F:AF:CF:D3:2D:C7:6E:B5:84:1C:7E:A8
# Fingerprint (SHA1): 9A:44:49:76:32:DB:DE:FA:D0:BC:FB:5A:7B:17:BD:9E:56:09:24:94
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "GTS Root R2"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\232\104\111\166\062\333\336\372\320\274\373\132\173\027\275\236
\126\011\044\224
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\036\071\300\123\346\036\051\202\013\312\122\125\066\135\127\334
END
CKA_ISSUER MULTILINE_OCTAL
\060\107\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\042\060\040\006\003\125\004\012\023\031\107\157\157\147\154\145
\040\124\162\165\163\164\040\123\145\162\166\151\143\145\163\040
\114\114\103\061\024\060\022\006\003\125\004\003\023\013\107\124
\123\040\122\157\157\164\040\122\062
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\015\002\003\345\256\305\215\004\045\032\253\021\045\252
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "GTS Root R3"
#
# Issuer: CN=GTS Root R3,O=Google Trust Services LLC,C=US
# Serial Number:02:03:e5:b8:82:eb:20:f8:25:27:6d:3d:66
# Subject: CN=GTS Root R3,O=Google Trust Services LLC,C=US
# Not Valid Before: Wed Jun 22 00:00:00 2016
# Not Valid After : Sun Jun 22 00:00:00 2036
# Fingerprint (SHA-256):
34:D8:A7:3E:E2:08:D9:BC:DB:0D:95:65:20:93:4B:4E:40:E6:94:82:59:6E:8B:6F:73:C8:42:6B:01:0A:6F:48
# Fingerprint (SHA1): ED:E5:71:80:2B:C8:92:B9:5B:83:3C:D2:32:68:3F:09:CD:A0:1E:46
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE

```

CKA\_LABEL UTF8 "GTS Root R3"  
CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE  
CKC\_X\_509  
CKA\_SUBJECT MULTILINE\_OCTAL  
\060\107\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\042\060\040\006\003\125\004\012\023\031\107\157\157\147\154\145  
\040\124\162\165\163\164\040\123\145\162\166\151\143\145\163\040  
\114\114\103\061\024\060\022\006\003\125\004\003\023\013\107\124  
\123\040\122\157\157\164\040\122\063  
END  
CKA\_ID UTF8 "0"  
CKA\_ISSUER MULTILINE\_OCTAL  
\060\107\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\042\060\040\006\003\125\004\012\023\031\107\157\157\147\154\145  
\040\124\162\165\163\164\040\123\145\162\166\151\143\145\163\040  
\114\114\103\061\024\060\022\006\003\125\004\003\023\013\107\124  
\123\040\122\157\157\164\040\122\063  
END  
CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL  
\002\015\002\003\345\270\202\353\040\370\045\047\155\075\146  
END  
CKA\_VALUE MULTILINE\_OCTAL  
\060\202\002\011\060\202\001\216\240\003\002\001\002\002\015\002  
\003\345\270\202\353\040\370\045\047\155\075\146\060\012\006\010  
\052\206\110\316\075\004\003\003\060\107\061\013\060\011\006\003  
\125\004\006\023\002\125\123\061\042\060\040\006\003\125\004\012  
\023\031\107\157\157\147\154\145\040\124\162\165\163\164\040\123  
\145\162\166\151\143\145\163\040\114\114\103\061\024\060\022\006  
\003\125\004\003\023\013\107\124\123\040\122\157\157\164\040\122  
\063\060\036\027\015\061\066\060\066\062\062\060\060\060\060\060  
\060\132\027\015\063\066\060\066\062\062\060\060\060\060\060\060  
\132\060\107\061\013\060\011\006\003\125\004\006\023\002\125\123  
\061\042\060\040\006\003\125\004\012\023\031\107\157\157\147\154  
\145\040\124\162\165\163\164\040\123\145\162\166\151\143\145\163  
\040\114\114\103\061\024\060\022\006\003\125\004\003\023\013\107  
\124\123\040\122\157\157\164\040\122\063\060\166\060\020\006\007  
\052\206\110\316\075\002\001\006\005\053\201\004\000\042\003\142  
\000\004\037\117\063\207\063\051\212\241\204\336\313\307\041\130  
\101\211\352\126\235\053\113\205\306\035\114\047\274\177\046\121  
\162\157\342\237\326\243\312\314\105\024\106\213\255\357\176\206  
\214\354\261\176\057\377\251\161\235\030\204\105\004\101\125\156  
\053\352\046\177\273\220\001\343\113\031\272\344\124\226\105\011  
\261\325\154\221\104\255\204\023\216\232\214\015\200\014\062\366  
\340\047\243\102\060\100\060\016\006\003\125\035\017\001\001\377  
\004\004\003\002\001\206\060\017\006\003\125\035\023\001\001\377  
\004\005\060\003\001\001\377\060\035\006\003\125\035\016\004\026  
\004\024\301\361\046\272\240\055\256\205\201\317\323\361\052\022  
\275\270\012\147\375\274\060\012\006\010\052\206\110\316\075\004



```
\003\003\003\151\000\060\146\002\061\000\366\341\040\225\024\173
\124\243\220\026\021\277\204\310\352\157\153\027\236\036\106\230
\040\233\237\323\015\331\254\323\057\315\174\370\133\056\125\273
\277\335\222\367\244\014\334\061\341\242\002\061\000\374\227\146
\146\345\103\026\023\203\335\307\337\057\276\024\070\355\001\316
\261\027\032\021\165\351\275\003\217\046\176\204\345\311\140\246
\225\327\124\131\267\347\021\054\211\324\271\356\027
```

END

CKA\_NSS\_Mozilla\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER

CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "GTS Root R3"

# Issuer: CN=GTS Root R3,O=Google Trust Services LLC,C=US

# Serial Number:02:03:e5:b8:82:eb:20:f8:25:27:6d:3d:66

# Subject: CN=GTS Root R3,O=Google Trust Services LLC,C=US

# Not Valid Before: Wed Jun 22 00:00:00 2016

# Not Valid After : Sun Jun 22 00:00:00 2036

# Fingerprint (SHA-256):

34:D8:A7:3E:E2:08:D9:BC:DB:0D:95:65:20:93:4B:4E:40:E6:94:82:59:6E:8B:6F:73:C8:42:6B:01:0A:6F:48

# Fingerprint (SHA1): ED:E5:71:80:2B:C8:92:B9:5B:83:3C:D2:32:68:3F:09:CD:A0:1E:46

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "GTS Root R3"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\355\345\161\200\053\310\222\271\133\203\074\322\062\150\077\011
\315\240\036\106
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\076\347\235\130\002\224\106\121\224\345\340\042\112\213\347\163
```

END

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\107\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\042\060\040\006\003\125\004\012\023\031\107\157\157\147\154\145
\040\124\162\165\163\164\040\123\145\162\166\151\143\145\163\040
\114\114\103\061\024\060\022\006\003\125\004\003\023\013\107\124
\123\040\122\157\157\164\040\122\063
```

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

```
\002\015\002\003\345\270\202\353\040\370\045\047\155\075\146
```

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST  
CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "GTS Root R4"

#

# Issuer: CN=GTS Root R4,O=Google Trust Services LLC,C=US

# Serial Number:02:03:e5:c0:68:ef:63:1a:9c:72:90:50:52

# Subject: CN=GTS Root R4,O=Google Trust Services LLC,C=US

# Not Valid Before: Wed Jun 22 00:00:00 2016

# Not Valid After : Sun Jun 22 00:00:00 2036

# Fingerprint (SHA-256):

34:9D:FA:40:58:C5:E2:63:12:3B:39:8A:E7:95:57:3C:4E:13:13:C8:3F:E6:8F:93:55:6C:D5:E8:03:1B:3C:7D

#

Fingerprint (SHA1): 77:D3:03:67:B5:E0:0C:15:F6:0C:38:61:DF:7C:E1:3B:92:46:4D:47

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "GTS Root R4"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\107\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\042\060\040\006\003\125\004\012\023\031\107\157\157\147\154\145  
\040\124\162\165\163\164\040\123\145\162\166\151\143\145\163\040  
\114\114\103\061\024\060\022\006\003\125\004\003\023\013\107\124  
\123\040\122\157\157\164\040\122\064

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\107\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\042\060\040\006\003\125\004\012\023\031\107\157\157\147\154\145  
\040\124\162\165\163\164\040\123\145\162\166\151\143\145\163\040  
\114\114\103\061\024\060\022\006\003\125\004\003\023\013\107\124  
\123\040\122\157\157\164\040\122\064

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\015\002\003\345\300\150\357\143\032\234\162\220\120\122

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\002\011\060\202\001\216\240\003\002\001\002\002\015\002  
\003\345\300\150\357\143\032\234\162\220\120\122\060\012\006\010  
\052\206\110\316\075\004\003\003\060\107\061\013\060\011\006\003  
\125\004\006\023\002\125\123\061\042\060\040\006\003\125\004\012  
\023\031\107\157\157\147\154\145\040\124\162\165\163\164\040\123  
\145\162\166\151\143\145\163\040\114\114\103\061\024\060\022\006  
\003\125\004\003\023\013\107\124\123\040\122\157\157\164\040\122

\064\060\036\027\015\061\066\060\066\062\062\060\060\060\060\060  
\060\132\027\015\063\066\060\066\062\062\060\060\060\060\060\060  
\132\060\107\061\013\060\011\006\003\125\004\006\023\002\125\123  
\061\042\060\040\006\003\125\004\012\023\031\107\157\157\147\154  
\145\040\124\162\165\163\164\040\123\145\162\166\151\143\145\163  
\040\114\114\103\061\024\060\022\006\003\125\004\003\023\013\107  
\124\123\040\122\157\157\164\040\122\064\060\166\060\020\006\007  
\052\206\110\316\075\002\001\006\005\053\201\004\000\042\003\142  
\000\004\363\164\163\247\150\213\140\256\103\270\065\305\201\060  
\173\113\111\235\373\301\141\316\346\336\106\275\153\325\141\030  
\065\256\100\335\163\367\211\221\060\132\353\074\356\205\174\242  
\100\166\073\251\306\270\107\330\052\347\222\221\152\163\351\261  
\162\071\237\051\237\242\230\323\137\136\130\206\145\017\241\204  
\145\006\321\334\213\311\307\163\310\214\152\057\345\304\253\321  
\035\212\243\102\060\100\060\016\006\003\125\035\017\001\001\377  
\004\004\003\002\001\206\060\017\006\003\125\035\023\001\001\377  
\004\005\060\003\001\001\377\060\035\006\003\125\035\016\004\026  
\004\024\200\114\326\353\164\377\111\066\243\325\330\374\265\076  
\305\152\360\224\035\214\060\012\006\010\052\206\110\316\075\004  
\003\003\003\151\000\060\146\002\061\000\350\100\377\203\336\003  
\364\237\256\035\172\247\056\271\257\117\366\203\035\016\055\205  
\001\035\321\331\152\354\017\302\257\307\136\126\136\134\325\034  
\130\042\050\013\367\060\266\057\261\174\002\061\000\360\141\074  
\247\364\240\202\343\041\325\204\035\163\206\234\055\257\312\064  
\233\361\237\271\043\066\342\274\140\003\235\200\263\232\126\310  
\341\342\273\024\171\312\315\041\324\224\265\111\103

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "GTS Root R4"

# Issuer: CN=GTS Root R4,O=Google Trust Services LLC,C=US

# Serial Number:02:03:e5:c0:68:ef:63:1a:9c:72:90:50:52

# Subject: CN=GTS Root R4,O=Google Trust Services LLC,C=US

# Not Valid Before: Wed Jun 22 00:00:00 2016

# Not Valid After : Sun Jun 22 00:00:00 2036

# Fingerprint (SHA-256):

34:9D:FA:40:58:C5:E2:63:12:3B:39:8A:E7:95:57:3C:4E:13:13:C8:3F:E6:8F:93:55:6C:D5:E8:03:1B:3C:7D

# Fingerprint (SHA1): 77:D3:03:67:B5:E0:0C:15:F6:0C:38:61:DF:7C:E1:3B:92:46:4D:47

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE

CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "GTS Root R4"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\167\323\003\147\265\340\014\025\366\014\070\141\337\174\341\073

\222\106\115\107

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\103\226\203\167\031\115\166\263\235\145\122\344\035\042\245\350

END

CKA\_ISSUER MULTILINE\_OCTAL

\060\107\061\013\060\011\006\003\125\004\006\023\002\125\123\061

\042\060\040\006\003\125\004\012\023\031\107\157\157\147\154\145

\040\124\162\165\163\164\040\123\145\162\166\151\143\145\163\040

\114\114\103\061\024\060\022\006\003\125\004\003\023\013\107\124

\123\040\122\157\157\164\040\122\064

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\015\002\003\345\300\150\357\143\032\234\162\220\120\122

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "Telia Root CA v2"

#

# Issuer: CN=Telia Root CA v2,O=Telia Finland

Oyj,C=FI

# Serial Number:01:67:5f:27:d6:fe:7a:e3:e4:ac:be:09:5b:05:9e

# Subject: CN=Telia Root CA v2,O=Telia Finland Oyj,C=FI

# Not Valid Before: Thu Nov 29 11:55:54 2018

# Not Valid After : Sun Nov 29 11:55:54 2043

# Fingerprint (SHA-256):

24:2B:69:74:2F:CB:1E:5B:2A:BF:98:89:8B:94:57:21:87:54:4E:5B:4D:99:11:78:65:73:62:1F:6A:74:B8:2C

# Fingerprint (SHA1): B9:99:CD:D1:73:50:8A:C4:47:05:08:9C:8C:88:FB:BE:A0:2B:40:CD

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Telia Root CA v2"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\104\061\013\060\011\006\003\125\004\006\023\002\106\111\061

\032\060\030\006\003\125\004\012\014\021\124\145\154\151\141\040

\106\151\156\154\141\156\144\040\117\171\152\061\031\060\027\006

\003\125\004\003\014\020\124\145\154\151\141\040\122\157\157\164

\040\103\101\040\166\062

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\104\061\013\060\011\006\003\125\004\006\023\002\106\111\061  
\032\060\030\006\003\125\004\012\014\021\124\145\154\151\141\040  
\106\151\156\154\141\156\144\040\117\171\152\061\031\060\027\006  
\003\125\004\003\014\020\124\145\154\151\141\040\122\157\157\164  
\040\103\101\040\166\062

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\017\001\147\137\047\326\376\172\343\344\254\276\011\133\005  
\236

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\164\060\202\003\134\240\003\002\001\002\002\017\001  
\147\137\047\326\376\172\343\344\254\276\011\133\005\236\060\015  
\006\011\052\206\110\206\367\015\001\001\013\005\000\060\104\061  
\013\060\011\006\003\125\004\006\023\002\106\111\061\032\060\030  
\006\003\125\004\012\014\021\124\145\154\151\141\040\106\151\156  
\154\141\156\144\040\117\171\152\061\031\060\027\006\003\125\004  
\003\014\020\124\145\154\151\141\040\122\157\157\164\040\103\101  
\040\166\062\060\036\027\015\061\070\061\061\062\071\061\061\065  
\065\065\064\132\027\015\064\063\061\061\062\071\061\061\065\065  
\065\064\132\060\104\061\013\060\011\006\003\125\004\006\023\002  
\106\111\061\032\060\030\006\003\125\004\012\014\021\124\145\154  
\151\141\040\106\151\156\154\141\156\144\040\117\171\152\061\031  
\060\027\006\003\125\004\003\014\020\124\145\154\151\141\040\122  
\157\157\164\040\103\101\040\166\062\060\202\002\042\060\015\006  
\011\052\206\110\206\367\015\001\001\001\005\000\003\202\002\017  
\000\060\202\002\012\002\202\002\001\000\262\320\077\007\274\342  
\173\320\153\231\370\342\167\151\347\316\235\244\003\274\202\155  
\241\376\201\145\037\114\047\254\216\000\272\026\173\353\060\152  
\000\300\263\164\150\176\262\257\307\325\142\263\172\077\120\312  
\214\066\104\044\143\322\066\351\014\205\366\103\166\325\114\241  
\140\162\147\342\050\063\245\313\061\270\072\042\043\064\270\175  
\275\126\042\100\235\352\364\173\003\255\150\374\262\201\117\230  
\320\164\352\215\345\175\315\143\303\243\366\336\222\302\130\031  
\340\226\273\305\304\251\075\245\164\226\376\257\371\211\252\275  
\225\027\124\330\170\104\361\014\167\025\222\340\230\102\247\244  
\326\252\040\222\315\301\240\263\226\262\072\204\102\215\175\325  
\225\344\326\333\351\142\304\130\263\171\305\214\323\065\063\203  
\237\165\241\122\047\141\070\361\131\075\216\120\340\275\171\074  
\347\154\226\376\136\331\002\145\264\216\134\320\021\064\337\135  
\277\122\247\201\000\303\177\231\105\231\025\325\027\310\012\123  
\354\143\363\231\175\314\151\022\206\302\027\360\001\236\277\204  
\274\321\122\313\033\222\146\316\244\123\345\241\277\304\333\011  
\326\346\211\126\053\310\343\174\336\343\377\211\345\065\156\050  
\350\154\013\043\121\251\045\005\353\110\370\335\261\312\372\154  
\010\121\357\267\030\154\104\312\046\341\163\306\211\006\201\345  
\212\254\260\342\051\306\271\044\263\153\104\021\364\245\103\302

\114\103\345\160\066\214\266\063\127\172\225\056\202\240\364\134  
\020\263\141\203\366\002\005\206\056\174\055\154\334\003\106\156  
\065\223\325\172\225\057\336\040\330\133\176\224\220\004\152\272  
\131\075\004\005\165\235\067\242\016\056\075\353\301\244\122\203  
\376\320\153\324\146\216\334\306\351\022\116\035\052\127\252\020  
\274\174\136\202\175\246\246\311\362\055\271\365\027\047\255\321  
\016\211\124\053\225\372\300\255\035\230\024\170\063\102\206\012  
\251\163\265\373\164\015\267\033\060\031\304\132\016\034\047\267  
\332\030\320\377\212\310\005\272\361\252\034\242\067\267\346\110  
\244\106\054\224\352\250\166\142\107\213\020\123\007\110\127\154  
\342\222\115\266\256\005\313\334\301\112\136\217\254\075\031\116  
\302\355\140\165\053\333\301\312\102\325\002\003\001\000\001\243  
\143\060\141\060\037\006\003\125\035\043\004\030\060\026\200\024  
\162\254\344\063\171\252\105\207\366\375\254\035\236\326\307\057  
\206\330\044\071\060\035\006\003\125\035\016\004\026\004\024\162  
\254\344\063\171\252\105\207\366\375\254\035\236\326\307\057\206  
\330\044\071\060\016\006\003\125\035\017\001\001\377\004\004\003  
\002\001\006\060\017\006\003\125\035\023\001\001\377\004\005\060  
\003\001\001\377\060\015\006\011\052\206\110\206\367\015\001\001  
\013\005\000\003\202\002\001\000\240\073\131\247\011\224\076\066  
\204\322\176\057\071\245\226\227\372\021\255\374\147\363\161\011  
\362\262\211\204\147\104\257\271\357\355\226\354\234\144\333\062  
\060\157\147\232\254\176\137\262\253\001\066\176\201\372\344\204  
\136\322\254\066\340\153\142\305\175\113\016\202\155\322\166\142  
\321\376\227\370\237\060\174\030\371\264\122\167\202\035\166\333  
\323\035\251\360\301\232\000\275\155\165\330\175\347\372\307\070  
\243\234\160\350\106\171\003\257\056\164\333\165\370\156\123\014  
\003\310\231\032\211\065\031\074\323\311\124\174\250\360\054\346  
\156\007\171\157\152\341\346\352\221\202\151\012\035\303\176\131  
\242\236\153\106\025\230\133\323\257\106\035\142\310\316\200\122  
\111\021\077\311\004\022\303\023\174\077\073\212\226\333\074\240  
\036\012\264\213\124\262\044\147\015\357\202\313\276\074\175\321  
\342\177\256\026\326\126\130\271\332\040\261\203\025\241\357\212  
\115\062\157\101\057\023\122\202\224\327\032\301\170\242\121\335  
\053\160\155\267\032\371\367\260\340\147\227\126\333\174\141\123  
\011\003\050\002\100\307\263\330\375\234\160\152\306\050\303\205  
\351\342\355\032\223\240\336\113\230\242\204\076\005\167\001\226  
\075\373\264\040\017\234\162\002\172\022\057\325\243\272\121\170  
\257\052\053\104\145\116\265\375\012\350\301\315\171\207\141\053  
\336\200\127\105\277\147\361\233\221\136\245\244\354\131\110\020  
\015\070\307\260\372\303\104\155\004\365\170\120\034\222\226\133  
\332\365\270\056\272\133\317\345\360\152\235\113\057\130\163\055  
\117\055\304\034\076\364\263\077\253\025\016\073\031\101\212\244  
\301\127\022\146\161\114\372\123\343\127\353\142\225\011\236\124  
\335\321\302\074\127\074\275\070\255\230\144\267\270\003\232\123  
\126\140\135\263\330\102\033\134\113\022\212\034\353\353\175\306  
\172\151\307\047\177\244\370\213\362\344\224\146\207\113\351\224  
\007\011\022\171\212\262\353\164\004\334\316\364\104\131\340\026

```
\312\305\054\130\327\074\173\317\142\206\152\120\175\065\066\146
\247\373\067\347\050\307\330\320\255\245\151\224\217\350\301\337
\044\370\033\007\061\207\201\330\135\366\350\050\330\112\122\200
\254\023\356\120\024\036\230\307
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "Telia Root CA v2"

# Issuer: CN=Telia Root CA v2,O=Telia Finland Oyj,C=FI

# Serial Number:01:67:5f:27:d6:fe:7a:e3:e4:ac:be:09:5b:05:9e

# Subject: CN=Telia Root CA v2,O=Telia Finland Oyj,C=FI

# Not Valid Before: Thu Nov 29 11:55:54 2018

# Not Valid After : Sun Nov 29 11:55:54 2043

# Fingerprint (SHA-256):

24:2B:69:74:2F:CB:1E:5B:2A:BF:98:89:8B:94:57:21:87:54:4E:5B:4D:99:11:78:65:73:62:1F:6A:74:B8:2C

# Fingerprint (SHA1): B9:99:CD:D1:73:50:8A:C4:47:05:08:9C:8C:88:FB:BE:A0:2B:40:CD

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Telia Root CA v2"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\271\231\315\321\163\120\212\304\107\005\010\234\214\210\373\276
\240\053\100\315
```

END

CKA\_CERT\_MD5\_HASH

MULTILINE\_OCTAL

```
\016\217\254\252\202\337\205\261\364\334\020\034\374\231\331\110
```

END

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\104\061\013\060\011\006\003\125\004\006\023\002\106\111\061
\032\060\030\006\003\125\004\012\014\021\124\145\154\151\141\040
\106\151\156\154\141\156\144\040\117\171\152\061\031\060\027\006
\003\125\004\003\014\020\124\145\154\151\141\040\122\157\157\164
\040\103\101\040\166\062
```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

```
\002\017\001\147\137\047\326\376\172\343\344\254\276\011\133\005
\236
```

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

```
#
# Certificate "D-TRUST BR Root CA 1 2020"
#
# Issuer: CN=D-TRUST BR Root CA 1 2020,O=D-Trust GmbH,C=DE
# Serial Number:7c:c9:8f:2b:84:d7:df:ea:0f:c9:65:9a:d3:4b:4d:96
# Subject: CN=D-TRUST BR Root CA 1 2020,O=D-Trust
#      GmbH,C=DE
# Not Valid Before: Tue Feb 11 09:45:00 2020
# Not Valid After : Sun Feb 11 09:44:59 2035
# Fingerprint (SHA-256):
E5:9A:AA:81:60:09:C2:2B:FF:5B:25:BA:D3:7D:F3:06:F0:49:79:7C:1F:81:D8:5A:B0:89:E6:57:BD:8F:00:44
# Fingerprint (SHA1): 1F:5B:98:F0:E3:B5:F7:74:3C:ED:E6:B0:36:7D:32:CD:F4:09:41:67
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "D-TRUST BR Root CA 1 2020"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\110\061\013\060\011\006\003\125\004\006\023\002\104\105\061
\025\060\023\006\003\125\004\012\023\014\104\055\124\162\165\163
\164\040\107\155\142\110\061\042\060\040\006\003\125\004\003\023
\031\104\055\124\122\125\123\124\040\102\122\040\122\157\157\164
\040\103\101\040\061\040\062\060\062\060
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\110\061\013\060\011\006\003\125\004\006\023\002\104\105\061
\025\060\023\006\003\125\004\012\023\014\104\055\124\162\165\163
\164\040\107\155\142\110\061\042\060\040\006\003\125\004\003\023
\031\104\055\124\122\125\123\124\040\102\122\040\122\157\157\164
\040\103\101\040\061\040\062\060\062\060
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\174\311\217\053\204\327\337\352\017\311\145\232\323\113
\115\226
END
CKA_VALUE MULTILINE_OCTAL
\060\202\002\333\060\202\002\140\240\003\002\001\002\002\020\174
\311\217\053\204\327\337\352\017\311\145\232\323\113\115\226\060
\012\006\010\052\206\110\316\075\004\003\003\060\110\061\013\060
\011\006\003\125\004\006\023\002\104\105\061\025\060\023\006\003
\125\004\012\023\014\104\055\124\162\165\163\164\040\107\155\142
\110\061\042\060\040\006\003\125\004\003\023\031\104\055\124\122
\125\123\124\040\102\122\040\122\157\157\164\040\103\101\040\061
\040\062\060\062\060\060\036\027\015\062\060\060\062\061\061\060
\071\064\065\060\060\132\027\015\063\065\060\062\061\061\060\071
```



\064\064\065\071\132\060\110\061\013\060\011\006\003\125\004\006  
\023\002\104\105\061\025\060\023\006\003\125\004\012\023\014\104  
\055\124\162\165\163\164\040\107\155\142\110\061\042\060\040\006  
\003\125\004\003\023\031\104\055\124\122\125\123\124\040\102\122  
\040\122\157\157\164\040\103\101\040\061\040\062\060\062\060\060  
\166\060\020\006\007\052\206\110\316\075\002\001\006\005\053\201  
\004\000\042\003\142\000\004\306\313\307\050\321\373\204\365\232  
\357\102\024\040\341\103\153\156\165\255\374\053\003\204\324\166  
\223\045\327\131\073\101\145\153\036\346\064\052\273\164\366\022  
\316\350\155\347\253\344\074\116\077\104\010\213\315\026\161\313  
\277\222\231\364\244\327\074\120\124\122\220\205\203\170\224\147  
\147\243\034\011\031\075\165\064\205\336\355\140\175\307\014\264  
\101\122\271\156\345\356\102\243\202\001\015\060\202\001\011\060  
\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377  
\060\035\006\003\125\035\016\004\026\004\024\163\221\020\253\377  
\125\263\132\174\011\045\325\262\272\010\240\153\253\037\155\060  
\016\006\003\125\035\017\001\001\377\004\004\003\002\001\006\060  
\201\306\006\003\125\035\037\004\201\276\060\201\273\060\076\240  
\074\240\072\206\070\150\164\164\160\072\057\057\143\162\154\056  
\144\055\164\162\165\163\164\056\156\145\164\057\143\162\154\057  
\144\055\164\162\165\163\164\137\142\162\137\162\157\157\164\137  
\143\141\137\061\137\062\060\062\060\056\143\162\154\060\171\240  
\167\240\165\206\163\154\144\141\160\072\057\057\144\151\162\145  
\143\164\157\162\171\056\144\055\164\162\165\163\164\056\156\145  
\164\057\103\116\075\104\055\124\122\125\123\124\045\062\060\102  
\122\045\062\060\122\157\157\164\045\062\060\103\101\045\062\060  
\061\045\062\060\062\060\062\060\054\117\075\104\055\124\162\165  
\163\164\045\062\060\107\155\142\110\054\103\075\104\105\077\143  
\145\162\164\151\146\151\143\141\164\145\162\145\166\157\143\141  
\164\151\157\156\154\151\163\164\060\012\006\010\052\206\110\316  
\075\004\003\003\003\151\000\060\146\002\061\000\224\220\055\023  
\372\341\143\370\141\143\350\255\205\170\124\221\234\270\223\070  
\076\032\101\332\100\026\123\102\010\312\057\216\361\076\201\126  
\300\252\330\355\030\304\260\256\364\076\372\046\002\061\000\363  
\050\342\306\333\053\231\373\267\121\270\044\243\244\224\172\032  
\077\346\066\342\003\127\063\212\060\313\202\307\326\024\021\325  
\165\143\133\024\225\234\037\001\317\330\325\162\247\017\073

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "D-TRUST BR Root CA 1 2020"

# Issuer: CN=D-TRUST BR Root CA 1 2020,O=D-Trust GmbH,C=DE

# Serial Number:7c:c9:8f:2b:84:d7:df:ea:0f:c9:65:9a:d3:4b:4d:96

# Subject: CN=D-TRUST BR Root CA 1 2020,O=D-Trust GmbH,C=DE

# Not Valid Before: Tue Feb 11 09:45:00 2020

```
# Not Valid After : Sun Feb 11 09:44:59 2035
# Fingerprint (SHA-256):
E5:9A:AA:81:60:09:C2:2B:FF:5B:25:BA:D3:7D:F3:06:F0:49:79:7C:1F:81:D8:5A:B0:89:E6:57:BD:8F:00:44
# Fingerprint (SHA1): 1F:5B:98:F0:E3:B5:F7:74:3C:ED:E6:B0:36:7D:32:CD:F4:09:41:67
CKA_CLASS
CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "D-TRUST BR Root CA 1 2020"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\037\133\230\360\343\265\367\164\074\355\346\260\066\175\062\315
\364\011\101\147
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\265\252\113\325\355\367\343\125\056\217\162\012\363\165\270\355
END
CKA_ISSUER MULTILINE_OCTAL
\060\110\061\013\060\011\006\003\125\004\006\023\002\104\105\061
\025\060\023\006\003\125\004\012\023\014\104\055\124\162\165\163
\164\040\107\155\142\110\061\042\060\040\006\003\125\004\003\023
\031\104\055\124\122\125\123\124\040\102\122\040\122\157\157\164
\040\103\101\040\061\040\062\060\062\060
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\174\311\217\053\204\327\337\352\017\311\145\232\323\113
\115\226
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED
CK_BBOOL CK_FALSE

#
# Certificate "D-TRUST EV Root CA 1 2020"
#
# Issuer: CN=D-TRUST EV Root CA 1 2020,O=D-Trust GmbH,C=DE
# Serial Number:5f:02:41:d7:7a:87:7c:4c:03:a3:ac:96:8d:fb:ff:d0
# Subject: CN=D-TRUST EV Root CA 1 2020,O=D-Trust GmbH,C=DE
# Not Valid Before: Tue Feb 11 10:00:00 2020
# Not Valid After : Sun Feb 11 09:59:59 2035
# Fingerprint (SHA-256):
08:17:0D:1A:A3:64:53:90:1A:2F:95:92:45:E3:47:DB:0C:8D:37:AB:AA:BC:56:B8:1A:A1:00:DC:95:89:70:DB
# Fingerprint (SHA1): 61:DB:8C:21:59:69:03:90:D8:7C:9C:12:86:54:CF:9D:3D:F4:DD:07
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "D-TRUST EV Root CA 1 2020"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\110\061\013\060\011\006\003\125\004\006\023\002\104\105\061
\025\060\023\006\003\125\004\012\023\014\104\055\124\162\165\163
\164\040\107\155\142\110\061\042\060\040\006\003\125\004\003\023
\031\104\055\124\122\125\123\124\040\105\126\040\122\157\157\164
\040\103\101\040\061\040\062\060\062\060
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\110\061\013\060\011\006\003\125\004\006\023\002\104\105\061
\025\060\023\006\003\125\004\012\023\014\104\055\124\162\165\163
\164\040\107\155\142\110\061\042\060\040\006\003\125\004\003\023
\031\104\055\124\122\125\123\124\040\105\126\040\122\157\157\164
\040\103\101\040\061\040\062\060\062\060
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\137\002\101\327\172\207\174\114\003\243\254\226\215\373
\377\320
END
CKA_VALUE MULTILINE_OCTAL
\060\202\002\333\060\202\002\140\240\003\002\001\002\002\020\137
\002\101\327\172\207\174\114\003\243\254\226\215\373\377\320\060
\012\006\010\052\206\110\316\075\004\003\003\060\110\061\013\060
\011\006\003\125\004\006\023\002\104\105\061\025\060\023\006\003
\125\004\012\023\014\104\055\124\162\165\163\164\040\107\155\142
\110\061\042\060\040\006\003\125\004\003\023\031\104\055\124\122
\125\123\124\040\105\126\040\122\157\157\164\040\103\101\040\061
\040\062\060\062\060\060\036\027\015\062\060\060\062\061\061\061
\060\060\060\060\060\132\027\015\063\065\060\062\061\061\060\071
\065\071\065\071\132\060\110\061\013\060\011\006\003\125\004\006
\023\002\104\105\061\025\060\023\006\003\125\004\012\023\014\104
\055\124\162\165\163\164\040\107\155\142\110\061\042\060\040\006
\003\125\004\003\023\031\104\055\124\122\125\123\124\040\105\126
\040\122\157\157\164\040\103\101\040\061\040\062\060\062\060\060
\166\060\020\006\007\052\206\110\316\075\002\001\006\005\053\201
\004\000\042\003\142\000\004\361\013\335\206\103\040\031\337\227
\205\350\042\112\233\317\235\230\277\264\005\046\311\313\343\246
\322\217\305\236\170\173\061\211\251\211\255\047\074\145\020\202
\374\337\303\235\116\360\063\043\304\322\062\365\034\260\337\063
\027\135\305\360\261\212\371\357\271\267\024\312\051\112\302\017
\251\177\165\145\111\052\060\147\364\144\367\326\032\167\332\303
\302\227\141\102\173\111\255\243\202\001\015\060\202\001\011\060
\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377
\060\035\006\003\125\035\016\004\026\004\024\177\020\001\026\067
```

\072\244\050\344\120\370\244\367\354\153\062\266\376\351\213\060  
\016\006\003\125\035\017\001\001\377\004\004\003\002\001\006\060  
\201\306\006\003\125\035\037\004\201\276\060\201\273\060\076\240  
\074\240\072\206\070\150\164\164\160\072\057\057\143\162\154\056  
\144\055\164\162\165\163\164\056\156\145\164\057\143\162\154\057  
\144\055\164\162\165\163\164\137\145\166\137\162\157\157\164\137  
\143\141\137\061\137\062\060\062\060\056\143\162\154\060\171\240  
\167\240\165\206\163\154\144\141\160\072\057\057\144\151\162\145  
\143\164\157\162\171\056\144\055\164\162\165\163\164\056\156\145  
\164\057\103\116\075\104\055\124\122\125\123\124\045\062\060\105  
\126\045\062\060\122\157\157\164\045\062\060\103\101\045\062\060  
\061\045\062\060\062\060\062\060\054\117\075\104\055\124\162\165  
\163\164\045\062\060\107\155\142\110\054\103\075\104\105\077\143  
\145\162\164\151\146\151\143\141\164\145\162\145\166\157\143\141  
\164\151\157\156\154\151\163\164\060\012\006\010\052\206\110\316  
\075\004\003\003\003\151\000\060\146\002\061\000\312\074\306\052  
\165\302\136\165\142\071\066\000\140\132\213\301\223\231\314\331  
\333\101\073\073\207\231\027\073\325\314\117\312\042\367\240\200  
\313\371\264\261\033\126\365\162\322\374\031\321\002\061\000\221  
\367\060\223\077\020\106\053\161\244\320\073\104\233\300\051\002  
\005\262\101\167\121\363\171\132\236\216\024\240\116\102\322\133  
\201\363\064\152\003\347\042\070\120\133\355\031\117\103\026

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "D-TRUST EV Root CA 1 2020"

# Issuer: CN=D-TRUST EV Root CA 1 2020,O=D-Trust GmbH,C=DE

# Serial Number:5f:02:41:d7:7a:87:7c:4c:03:a3:ac:96:8d:fb:ff:d0

# Subject: CN=D-TRUST EV Root CA 1 2020,O=D-Trust GmbH,C=DE

# Not Valid Before:

Tue Feb 11 10:00:00 2020

# Not Valid After : Sun Feb 11 09:59:59 2035

# Fingerprint (SHA-256):

08:17:0D:1A:A3:64:53:90:1A:2F:95:92:45:E3:47:DB:0C:8D:37:AB:AA:BC:56:B8:1A:A1:00:DC:95:89:70:DB

# Fingerprint (SHA1): 61:DB:8C:21:59:69:03:90:D8:7C:9C:12:86:54:CF:9D:3D:F4:DD:07

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "D-TRUST EV Root CA 1 2020"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\141\333\214\041\131\151\003\220\330\174\234\022\206\124\317\235  
\075\364\335\007

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```

\214\055\235\160\237\110\231\021\006\021\373\351\313\060\300\156
END
CKA_ISSUER MULTILINE_OCTAL
\060\110\061\013\060\011\006\003\125\004\006\023\002\104\105\061
\025\060\023\006\003\125\004\012\023\014\104\055\124\162\165\163
\164\040\107\155\142\110\061\042\060\040\006\003\125\004\003\023
\031\104\055\124\122\125\123\124\040\105\126\040\122\157\157\164
\040\103\101\040\061\040\062\060\062\060
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\137\002\101\327\172\207\174\114\003\243\254\226\215\373
\377\320
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "DigiCert TLS ECC P384 Root G5"
#
# Issuer: CN=DigiCert TLS ECC P384 Root G5,O="DigiCert, Inc.",C=US
# Serial Number:09:e0:93:65:ac:f7:d9:c8:b9:3e:1c:0b:04:2a:2e:f3
# Subject: CN=DigiCert TLS ECC P384 Root G5,O="DigiCert, Inc.",C=US
# Not Valid Before: Fri Jan 15 00:00:00 2021
# Not Valid After : Sun Jan 14 23:59:59 2046
# Fingerprint (SHA-256):
01:8E:13:F0:77:25:32:CF:80:9B:D1:B1:72:81:86:72:83:FC:48:C6:E1:3B:E9:C6:98:12:85:4A:49:0C:1B:05
# Fingerprint (SHA1): 17:F3:DE:5E:9F:0F:19:E9:8E:F6:1F:32:26:6E:20:C4:07:AE:30:EE
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL
CK_FALSE
CKA_LABEL UTF8 "DigiCert TLS ECC P384 Root G5"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\116\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\027\060\025\006\003\125\004\012\023\016\104\151\147\151\103\145
\162\164\054\040\111\156\143\056\061\046\060\044\006\003\125\004
\003\023\035\104\151\147\151\103\145\162\164\040\124\114\123\040
\105\103\103\040\120\063\070\064\040\122\157\157\164\040\107\065
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\116\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\027\060\025\006\003\125\004\012\023\016\104\151\147\151\103\145

```

\162\164\054\040\111\156\143\056\061\046\060\044\006\003\125\004  
\003\023\035\104\151\147\151\103\145\162\164\040\124\114\123\040  
\105\103\103\040\120\063\070\064\040\122\157\157\164\040\107\065  
END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\011\340\223\145\254\367\331\310\271\076\034\013\004\052  
\056\363

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\002\031\060\202\001\237\240\003\002\001\002\002\020\011  
\340\223\145\254\367\331\310\271\076\034\013\004\052\056\363\060  
\012\006\010\052\206\110\316\075\004\003\003\060\116\061\013\060  
\011\006\003\125\004\006\023\002\125\123\061\027\060\025\006\003  
\125\004\012\023\016\104\151\147\151\103\145\162\164\054\040\111  
\156\143\056\061\046\060\044\006\003\125\004\003\023\035\104\151  
\147\151\103\145\162\164\040\124\114\123\040\105\103\103\040\120  
\063\070\064\040\122\157\157\164\040\107\065\060\036\027\015\062  
\061\060\061\061\065\060\060\060\060\060\060\132\027\015\064\066  
\060\061\061\064\062\063\065\071\065\071\132\060\116\061\013\060  
\011\006\003\125\004\006\023\002\125\123\061\027\060\025\006\003  
\125\004\012\023\016\104\151\147\151\103\145\162\164\054\040\111  
\156\143\056\061\046\060\044\006\003\125\004\003\023\035\104\151  
\147\151\103\145\162\164\040\124\114\123\040\105\103\103\040\120  
\063\070\064\040\122\157\157\164\040\107\065\060\166\060\020\006  
\007\052\206\110\316\075\002\001\006\005\053\201\004\000\042\003  
\142\000\004\301\104\241\317\021\227\120\232\336\043\202\065\007  
\315\320\313\030\235\322\361\177\167\065\117\073\335\224\162\122  
\355\302\073\370\354\372\173\153\130\040\354\231\256\311\374\150  
\263\165\271\333\011\354\310\023\365\116\306\012\035\146\060\114  
\273\037\107\012\074\141\020\102\051\174\245\010\016\340\042\351  
\323\065\150\316\233\143\237\204\265\231\115\130\240\216\365\124  
\347\225\311\243\102\060\100\060\035\006\003\125\035\016\004\026  
\004\024\301\121\105\120\131\253\076\347\054\132\372\040\042\022  
\007\200\210\174\021\152\060\016\006\003\125\035\017\001\001\377  
\004\004\003\002\001\206\060\017\006\003\125\035\023\001\001\377  
\004\005\060\003\001\001\377\060\012\006\010\052\206\110\316\075  
\004\003\003\003\150\000\060\145\002\061\000\211\152\215\107\347  
\354\374\156\125\003\331\147\154\046\116\203\306\375\311\373\053  
\023\274\267\172\214\264\145\322\151\151\143\023\143\073\046\120  
\056\001\241\171\006\221\235\110\277\302\276\002\060\107\303\025  
\173\261\240\221\231\111\223\250\074\174\350\106\006\213\054\362  
\061\000\224\235\142\310\211\275\031\204\024\351\245\373\001\270  
\015\166\103\214\056\123\313\174\337\014\027\226\120

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

```

# Trust for "DigiCert TLS ECC P384 Root G5"
# Issuer: CN=DigiCert TLS ECC P384 Root G5,O="DigiCert, Inc.",C=US
# Serial Number:09:e0:93:65:ac:f7:d9:c8:b9:3e:1c:0b:04:2a:2e:f3
# Subject: CN=DigiCert TLS ECC P384 Root G5,O="DigiCert, Inc.",C=US
# Not Valid Before: Fri Jan 15 00:00:00 2021
# Not Valid After : Sun Jan 14 23:59:59 2046
# Fingerprint (SHA-256):
01:8E:13:F0:77:25:32:CF:80:9B:D1:B1:72:81:86:72:83:FC:48:C6:E1:3B:E9:C6:98:12:85:4A:49:0C:1B:05
# Fingerprint (SHA1): 17:F3:DE:5E:9F:0F:19:E9:8E:F6:1F:32:26:6E:20:C4:07:AE:30:EE
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "DigiCert
  TLS ECC P384 Root G5"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\027\363\336\136\237\017\031\351\216\366\037\062\046\156\040\304
\007\256\060\356
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\323\161\004\152\103\034\333\246\131\341\250\243\252\305\161\355
END
CKA_ISSUER MULTILINE_OCTAL
\060\116\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\027\060\025\006\003\125\004\012\023\016\104\151\147\151\103\145
\162\164\054\040\111\156\143\056\061\046\060\044\006\003\125\004
\003\023\035\104\151\147\151\103\145\162\164\040\124\114\123\040
\105\103\103\040\120\063\070\064\040\122\157\157\164\040\107\065
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\011\340\223\145\254\367\331\310\271\076\034\013\004\052
\056\363
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "DigiCert TLS RSA4096 Root G5"
#
# Issuer:
  CN=DigiCert TLS RSA4096 Root G5,O="DigiCert, Inc.",C=US
# Serial Number:08:f9:b4:78:a8:fa:7e:da:6a:33:37:89:de:7c:cf:8a
# Subject: CN=DigiCert TLS RSA4096 Root G5,O="DigiCert, Inc.",C=US
# Not Valid Before: Fri Jan 15 00:00:00 2021
# Not Valid After : Sun Jan 14 23:59:59 2046

```

# Fingerprint (SHA-256):

37:1A:00:DC:05:33:B3:72:1A:7E:EB:40:E8:41:9E:70:79:9D:2B:0A:0F:2C:1D:80:69:31:65:F7:CE:C4:AD:75

# Fingerprint (SHA1): A7:88:49:DC:5D:7C:75:8C:8C:DE:39:98:56:B3:AA:D0:B2:A5:71:35

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "DigiCert TLS RSA4096 Root G5"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\115\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\027\060\025\006\003\125\004\012\023\016\104\151\147\151\103\145  
\162\164\054\040\111\156\143\056\061\045\060\043\006\003\125\004  
\003\023\034\104\151\147\151\103\145\162\164\040\124\114\123\040  
\122\123\101\064\060\071\066\040\122\157\157\164\040\107\065

END

CKA\_ID

UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\115\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\027\060\025\006\003\125\004\012\023\016\104\151\147\151\103\145  
\162\164\054\040\111\156\143\056\061\045\060\043\006\003\125\004  
\003\023\034\104\151\147\151\103\145\162\164\040\124\114\123\040  
\122\123\101\064\060\071\066\040\122\157\157\164\040\107\065

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\010\371\264\170\250\372\176\332\152\063\067\211\336\174  
\317\212

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\146\060\202\003\116\240\003\002\001\002\002\020\010  
\371\264\170\250\372\176\332\152\063\067\211\336\174\317\212\060  
\015\006\011\052\206\110\206\367\015\001\001\014\005\000\060\115  
\061\013\060\011\006\003\125\004\006\023\002\125\123\061\027\060  
\025\006\003\125\004\012\023\016\104\151\147\151\103\145\162\164  
\054\040\111\156\143\056\061\045\060\043\006\003\125\004\003\023  
\034\104\151\147\151\103\145\162\164\040\124\114\123\040\122\123  
\101\064\060\071\066\040\122\157\157\164\040\107\065\060\036\027  
\015\062\061\060\061\061\065\060\060\060\060\060\060\132\027\015  
\064\066\060\061\061\064\062\063\065\071\065\071\132\060\115\061  
\013\060\011\006\003\125\004\006\023\002\125\123\061\027\060\025  
\006\003\125\004\012\023\016\104\151\147\151\103\145\162\164\054  
\040\111\156\143\056\061\045\060\043\006\003\125\004\003\023\034  
\104\151\147\151\103\145\162\164\040\124\114\123\040\122\123\101  
\064\060\071\066\040\122\157\157\164\040\107\065\060\202\002\042  
\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003  
\202\002\017\000\060\202\002\012\002\202\002\001\000\263\320\364  
\311\171\021\235\375\374\146\201\347\314\325\344\274\354\201\076



|152|065|216|056|267|347|336|257|371|007|115|317|060|235|352|011  
|013|231|275|154|127|332|030|112|270|170|254|072|071|250|246|110  
|254|056|162|345|275|353|361|032|315|347|244|003|251|077|021|264  
|330|057|211|026|373|224|001|075|273|057|370|023|005|241|170|034  
|216|050|340|105|340|203|364|131|033|225|263|256|176|003|105|345  
|276|302|102|376|356|362|074|266|205|023|230|062|235|026|250|051  
|302|013|034|070|334|237|061|167|134|277|047|243|374|047|254|267  
|053|275|164|233|027|055|362|201|332|135|260|341|043|027|076|210  
|112|022|043|320|352|317|235|336|003|027|261|102|112|240|026|114  
|244|155|223|351|077|072|356|072|174|235|130|235|364|116|217|374  
|073|043|310|155|270|342|005|332|314|353|354|303|061|364|327|247  
|051|124|200|317|104|133|114|157|060|236|363|314|335|037|224|103  
|235|115|177|160|160|015|324|072|321|067|360|154|235|233|300|024  
|223|130|357|315|101|070|165|274|023|003|225|174|177|343|134|351  
|325|015|325|342|174|020|142|252|153|360|075|166|363|077|243|350  
|260|301|375|357|252|127|115|254|206|247|030|264|051|301|054|016  
|277|144|276|051|214|330|002|055|315|134|057|362|177|357|025|364  
|014|025|254|012|260|361|323|015|117|152|115|167|227|001|240|361  
|146|267|267|316|357|316|354|354|245|165|312|254|343|341|143|367  
|270|241|004|310|274|173|077|135|055|026|042|126|355|110|111|376  
|247|057|171|060|045|233|272|153|055|077|235|073|304|027|347|035  
|056|373|362|317|246|374|343|024|054|226|230|041|214|264|221|351  
|031|140|203|362|060|053|006|163|120|325|230|073|006|351|307|212  
|014|140|214|050|370|122|233|156|341|366|115|273|006|044|233|327  
|053|046|077|375|052|057|161|365|326|044|276|177|061|236|017|155  
|350|217|117|115|243|077|377|065|352|337|111|136|101|217|206|371  
|361|167|171|113|033|264|243|136|057|373|106|002|320|146|023|136  
|136|205|117|316|330|160|210|173|316|001|265|226|227|327|315|175  
|375|202|370|302|044|301|312|001|071|117|215|242|301|024|100|037  
|234|146|325|014|011|106|326|362|320|321|110|166|126|072|103|313  
|266|012|021|071|272|214|023|154|006|265|236|317|353|002|003|001  
|000|001|243|102|060|100|060|035|006|003|125|035|016|004|026|004  
|024|121|063|034|355|066|100|257|027|323|045|315|151|150|362|257  
|116|043|076|263|101|060|016|006|003|125|035|017|001|001|377|004  
|004|003|002|001|206|060|017|006|003|125|035|023|001|001|377|004  
|005|060|003|001|001|377|060|015|006|011|052|206|110|206|367|015  
|001|001|014|005|000|003|202|002|001|000|140|246|257|133|137|127  
|332|211|333|113|120|251|304|043|065|041|377|320|141|060|204|221  
|267|077|020|317|045|216|311|277|106|064|331|301|041|046|034|160  
|031|162|036|243|311|207|376|251|103|144|226|072|310|123|004|012  
|266|101|273|304|107|000|331|237|030|030|073|262|016|363|064|352  
|044|367|335|257|040|140|256|222|050|137|066|347|135|344|336|307  
|074|333|120|071|255|273|075|050|115|226|174|166|306|133|364|301  
|333|024|245|253|031|142|007|030|100|137|227|221|334|234|307|253  
|265|121|015|346|151|123|125|314|071|175|332|305|021|125|162|305  
|073|213|211|370|064|055|244|027|345|027|346|231|175|060|210|041  
|067|315|060|027|075|270|362|274|250|165|240|103|334|076|211|113  
|220|256|155|003|340|034|243|240|226|011|273|175|243|267|052|020

\104\113\106\007\064\143\355\061\271\004\356\243\233\232\256\346  
\061\170\364\352\044\141\073\253\130\144\377\273\207\047\142\045  
\201\337\334\241\057\366\355\247\377\172\217\121\056\060\370\244  
\001\322\205\071\137\001\231\226\157\132\133\160\031\106\376\206  
\140\076\255\200\020\011\335\071\045\057\130\177\273\322\164\360  
\367\106\037\106\071\112\330\123\320\363\056\073\161\245\324\157  
\374\363\147\344\007\217\335\046\031\341\215\133\372\243\223\021  
\233\351\310\072\303\125\150\232\222\341\122\166\070\350\341\272  
\275\373\117\325\357\263\347\110\203\061\360\202\041\343\266\276  
\247\253\157\357\237\337\114\317\001\270\142\152\043\075\347\011  
\115\200\033\173\060\244\303\335\007\177\064\276\244\046\262\366  
\101\350\011\035\343\040\230\252\067\117\377\367\361\342\051\160  
\061\107\077\164\320\024\026\372\041\212\002\325\212\011\224\167  
\056\362\131\050\213\174\120\222\012\146\170\070\203\165\304\265  
\132\250\021\306\345\301\235\146\125\317\123\304\257\327\165\205  
\251\102\023\126\354\041\167\201\223\132\014\352\226\331\111\312  
\241\010\362\227\073\155\233\004\030\044\104\216\174\001\362\334  
\045\330\136\206\232\261\071\333\365\221\062\152\321\246\160\212  
\242\367\336\244\105\205\046\250\036\214\135\051\133\310\113\330  
\232\152\003\136\160\362\205\117\154\113\150\057\312\124\366\214  
\332\062\376\303\153\203\077\070\306\176

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "DigiCert TLS RSA4096 Root G5"

# Issuer: CN=DigiCert TLS RSA4096 Root G5,O="DigiCert, Inc.",C=US

# Serial Number:08:f9:b4:78:a8:fa:7e:da:6a:33:37:89:de:7c:cf:8a

# Subject: CN=DigiCert TLS RSA4096 Root G5,O="DigiCert, Inc.",C=US

# Not Valid Before: Fri Jan 15 00:00:00 2021

# Not Valid After : Sun Jan 14 23:59:59 2046

# Fingerprint (SHA-256):

37:1A:00:DC:05:33:B3:72:1A:7E:EB:40:E8:41:9E:70:79:9D:2B:0A:0F:2C:1D:80:69:31:65:F7:CE:C4:AD:75

# Fingerprint (SHA1): A7:88:49:DC:5D:7C:75:8C:8C:DE:39:98:56:B3:AA:D0:B2:A5:71:35

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL

CK\_FALSE

CKA\_LABEL UTF8 "DigiCert TLS RSA4096 Root G5"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\247\210\111\334\135\174\165\214\214\336\071\230\126\263\252\320

\262\245\161\065

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\254\376\367\064\226\251\362\263\264\022\113\344\047\101\157\341

END

CKA\_ISSUER MULTILINE\_OCTAL

\060\115\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\027\060\025\006\003\125\004\012\023\016\104\151\147\151\103\145  
\162\164\054\040\111\156\143\056\061\045\060\043\006\003\125\004  
\003\023\034\104\151\147\151\103\145\162\164\040\124\114\123\040  
\122\123\101\064\060\071\066\040\122\157\157\164\040\107\065

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\010\371\264\170\250\372\176\332\152\063\067\211\336\174  
\317\212

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "DigiCert SMIME ECC

P384 Root G5"

#

# Issuer: CN=DigiCert SMIME ECC P384 Root G5,O="DigiCert, Inc.",C=US

# Serial Number:05:3f:6e:a0:06:01:72:7d:ed:3f:c3:a3:b6:a3:d6:ef

# Subject: CN=DigiCert SMIME ECC P384 Root G5,O="DigiCert, Inc.",C=US

# Not Valid Before: Fri Jan 15 00:00:00 2021

# Not Valid After : Sun Jan 14 23:59:59 2046

# Fingerprint (SHA-256):

E8:E8:17:65:36:A6:0C:C2:C4:E1:01:87:C3:BE:FC:A2:0E:F2:63:49:70:18:F5:66:D5:BE:A0:F9:4D:0C:11:1B

# Fingerprint (SHA1): 1C:B8:A7:08:C9:0D:20:79:01:A0:B2:36:7F:F0:95:65:E4:53:24:FE

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "DigiCert SMIME ECC P384 Root G5"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\120\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\027\060\025\006\003\125\004\012\023\016\104\151\147\151\103\145  
\162\164\054\040\111\156\143\056\061\050\060\046\006\003\125\004  
\003\023\037\104\151\147\151\103\145\162\164\040\123\115\111\115  
\105\040\105\103\103\040\120\063\070\064\040\122\157\157\164\040  
\107\065

END

CKA\_ID

UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\120\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\027\060\025\006\003\125\004\012\023\016\104\151\147\151\103\145

\162\164\054\040\111\156\143\056\061\050\060\046\006\003\125\004  
\003\023\037\104\151\147\151\103\145\162\164\040\123\115\111\115  
\105\040\105\103\103\040\120\063\070\064\040\122\157\157\164\040  
\107\065

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\005\077\156\240\006\001\162\175\355\077\303\243\266\243  
\326\357

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\002\034\060\202\001\243\240\003\002\001\002\002\020\005  
\077\156\240\006\001\162\175\355\077\303\243\266\243\326\357\060  
\012\006\010\052\206\110\316\075\004\003\003\060\120\061\013\060  
\011\006\003\125\004\006\023\002\125\123\061\027\060\025\006\003  
\125\004\012\023\016\104\151\147\151\103\145\162\164\054\040\111  
\156\143\056\061\050\060\046\006\003\125\004\003\023\037\104\151  
\147\151\103\145\162\164\040\123\115\111\115\105\040\105\103\103  
\040\120\063\070\064\040\122\157\157\164\040\107\065\060\036\027  
\015\062\061\060\061\061\065\060\060\060\060\060\060\132\027\015  
\064\066\060\061\061\064\062\063\065\071\065\071\132\060\120\061  
\013\060\011\006\003\125\004\006\023\002\125\123\061\027\060\025  
\006\003\125\004\012\023\016\104\151\147\151\103\145\162\164\054  
\040\111\156\143\056\061\050\060\046\006\003\125\004\003\023\037  
\104\151\147\151\103\145\162\164\040\123\115\111\115\105\040\105  
\103\103\040\120\063\070\064\040\122\157\157\164\040\107\065\060  
\166\060\020\006\007\052\206\110\316\075\002\001\006\005\053\201  
\004\000\042\003\142\000\004\026\235\125\345\266\324\373\373\147  
\153\032\324\241\252\322\167\225\076\210\345\007\237\266\160\146  
\040\050\244\210\354\160\065\257\263\062\377\067\023\112\236\274  
\001\003\336\204\301\270\306\346\145\107\211\362\023\125\277\315  
\245\036\010\140\177\255\177\350\141\222\051\317\011\107\136\013  
\034\300\037\244\277\362\133\274\230\357\231\114\314\160\153\266  
\272\320\050\035\277\276\004\243\102\060\100\060\035\006\003\125  
\035\016\004\026\004\024\163\172\153\226\333\102\007\213\122\146  
\302\144\062\027\376\340\147\220\056\255\060\016\006\003\125\035  
\017\001\001\377\004\004\003\002\001\206\060\017\006\003\125\035  
\023\001\001\377\004\005\060\003\001\001\377\060\012\006\010\052  
\206\110\316\075\004\003\003\003\147\000\060\144\002\060\067\104  
\365\062\200\343\161\353\364\155\317\174\314\221\232\303\156\161  
\330\322\043\135\222\115\202\102\155\134\141\225\366\221\365\247  
\010\366\152\227\351\234\224\055\230\160\375\063\266\011\002\060  
\007\074\057\271\130\202\136\017\243\142\250\223\147\360\040\303  
\151\277\003\054\073\120\247\073\257\101\070\311\122\110\221\326  
\016\373\274\140\060\174\144\077\022\036\105\177\121\076\364\246

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "DigiCert

SMIME ECC P384 Root G5"

# Issuer: CN=DigiCert SMIME ECC P384 Root G5,O="DigiCert, Inc.",C=US

# Serial Number:05:3f:6e:a0:06:01:72:7d:ed:3f:c3:a3:b6:a3:d6:ef

# Subject: CN=DigiCert SMIME ECC P384 Root G5,O="DigiCert, Inc.",C=US

# Not Valid Before: Fri Jan 15 00:00:00 2021

# Not Valid After : Sun Jan 14 23:59:59 2046

# Fingerprint (SHA-256):

E8:E8:17:65:36:A6:0C:C2:C4:E1:01:87:C3:BE:FC:A2:0E:F2:63:49:70:18:F5:66:D5:BE:A0:F9:4D:0C:11:1B

# Fingerprint (SHA1): 1C:B8:A7:08:C9:0D:20:79:01:A0:B2:36:7F:F0:95:65:E4:53:24:FE

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "DigiCert SMIME ECC P384 Root G5"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\034\270\247\010\311\015\040\171\001\240\262\066\177\360\225\145  
\344\123\044\376

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\246\376\364\122\066\104\330\356\015\267\003\013\357\164\263\003  
END

CKA\_ISSUER MULTILINE\_OCTAL

\060\120\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\027\060\025\006\003\125\004\012\023\016\104\151\147\151\103\145  
\162\164\054\040\111\156\143\056\061\050\060\046\006\003\125\004  
\003\023\037\104\151\147\151\103\145\162\164\040\123\115\111\115  
\105\040\105\103\103\040\120\063\070\064\040\122\157\157\164\040  
\107\065

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\020\005\077\156\240\006\001\162\175\355\077\303\243\266\243  
\326\357

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "DigiCert SMIME RSA4096 Root G5"

#

# Issuer: CN=DigiCert SMIME RSA4096 Root G5,O="DigiCert, Inc.",C=US

# Serial Number:05:f6:ba:04:23:83:46:cb:7d:5c:e6:b9:5b:ba:1c:55

# Subject: CN=DigiCert SMIME RSA4096 Root G5,O="DigiCert, Inc.",C=US

```
# Not Valid Before: Fri Jan 15 00:00:00 2021
# Not Valid After : Sun Jan 14 23:59:59 2046
# Fingerprint (SHA-256):
90:37:0D:3E:FA:88:BF:58:C3:01:05:BA:25:10:4A:35:84:60:A7:FA:52:DF:C2:01:1D:F2:33:A0:F4:17:91:2A
#
Fingerprint (SHA1): 5B:C5:AD:E2:9A:A7:54:DA:84:89:53:A5:FE:D7:5B:46:86:D0:57:08
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "DigiCert SMIME RSA4096 Root G5"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\117\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\027\060\025\006\003\125\004\012\023\016\104\151\147\151\103\145
\162\164\054\040\111\156\143\056\061\047\060\045\006\003\125\004
\003\023\036\104\151\147\151\103\145\162\164\040\123\115\111\115
\105\040\122\123\101\064\060\071\066\040\122\157\157\164\040\107
\065
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\117\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\027\060\025\006\003\125\004\012\023\016\104\151\147\151\103\145
\162\164\054\040\111\156\143\056\061\047\060\045\006\003\125\004
\003\023\036\104\151\147\151\103\145\162\164\040\123\115\111\115
\105\040\122\123\101\064\060\071\066\040\122\157\157\164\040\107
\065
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\005\366\272\004\043\203\106\313\175\134\346\271\133\272
\034\125
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\152\060\202\003\122\240\003\002\001\002\002\020\005
\366\272\004\043\203\106\313\175\134\346\271\133\272\034\125\060
\015\006\011\052\206\110\206\367\015\001\001\014\005\000\060\117
\061\013\060\011\006\003\125\004\006\023\002\125\123\061\027\060
\025\006\003\125\004\012\023\016\104\151\147\151\103\145\162\164
\054\040\111\156\143\056\061\047\060\045\006\003\125\004\003\023
\036\104\151\147\151\103\145\162\164\040\123\115\111\115\105\040
\122\123\101\064\060\071\066\040\122\157\157\164\040\107\065\060
\036\027\015\062\061\060\061\061\065\060\060\060\060\060\060\132
\027\015\064\066\060\061\061\064\062\063\065\071\065\071\132\060
\117\061\013\060\011\006\003\125\004\006\023\002\125\123\061\027
\060\025\006\003\125\004\012\023\016\104\151\147\151\103\145\162
\164\054\040\111\156\143\056\061\047\060\045\006\003\125\004\003
```

\023\036\104\151\147\151\103\145\162\164\040\123\115\111\115\105  
\040\122\123\101\064\060\071\066\040\122\157\157\164\040\107\065  
\060\202\002\042\060\015\006\011\052\206\110\206\367\015\001\001  
\001\005\000\003\202\002\017\000\060\202\002\012\002\202\002\001  
\000\340\152\133\331\370\371\175\354\265\173\357\137\335\134\064  
\330\332\135\321\313\145\165\253\041\174\133\000\324\202\157\105  
\205\101\212\251\022\002\162\062\360\024\365\003\165\273\143\227  
\111\017\100\231\013\032\036\126\247\322\320\341\253\335\345\004  
\033\343\037\024\022\002\210\365\240\200\011\366\047\232\120\360  
\272\343\242\340\254\152\024\221\265\153\070\020\172\242\061\341  
\221\033\267\271\360\053\133\310\167\011\166\267\121\304\066\012  
\231\123\124\104\045\267\011\065\206\027\005\126\223\075\101\267  
\002\327\142\037\212\222\021\207\352\021\155\352\010\021\334\261  
\170\110\111\222\366\264\121\200\170\043\330\376\341\126\032\072  
\220\023\126\064\211\325\342\225\213\137\336\262\314\373\077\070  
\267\205\367\352\236\277\056\241\056\057\115\175\152\021\056\066  
\240\377\021\010\004\225\125\340\033\073\147\223\251\224\125\352  
\062\355\006\072\177\302\177\343\255\023\047\321\064\101\263\060  
\303\277\264\210\370\003\202\244\337\076\253\170\167\240\131\223  
\161\347\335\353\000\004\173\314\110\071\050\340\036\243\025\151  
\310\066\262\241\013\227\337\125\326\357\221\234\244\366\026\367  
\121\012\356\003\043\221\334\004\377\340\335\070\366\042\003\000  
\302\007\161\032\022\311\327\106\052\224\033\315\326\273\033\356  
\277\276\115\120\130\260\013\315\060\166\051\365\317\345\266\152  
\057\166\260\260\151\152\320\155\145\030\065\176\223\274\162\027  
\301\125\102\315\057\302\045\273\364\375\035\241\144\042\124\135  
\342\236\162\101\204\156\161\226\352\105\007\266\136\172\112\206  
\235\163\144\167\070\003\322\017\123\245\125\040\304\115\377\150  
\157\125\251\352\335\161\344\117\331\205\243\174\116\051\002\236  
\013\011\362\032\123\314\000\246\335\321\064\366\015\301\060\261  
\234\002\144\254\065\355\245\260\051\261\322\225\063\017\322\040  
\063\275\354\043\113\362\031\371\332\230\144\344\054\061\037\056  
\341\215\034\004\225\050\115\214\130\315\113\345\163\202\206\214  
\354\250\326\171\134\373\144\273\334\014\114\050\366\027\257\342  
\150\326\026\206\230\333\374\001\334\061\272\370\234\016\371\050  
\106\112\341\375\226\006\105\171\021\150\027\145\134\213\046\207  
\133\002\003\001\000\001\243\102\060\100\060\035\006\003\125\035  
\016\004\026\004\024\321\243\324\127\035\117\125\333\165\114\134  
\102\236\143\026\316\264\306\073\037\060\016\006\003\125\035\017  
\001\001\377\004\004\003\002\001\206\060\017\006\003\125\035\023  
\001\001\377\004\005\060\003\001\001\377\060\015\006\011\052\206  
\110\206\367\015\001\001\014\005\000\003\202\002\001\000\007\247  
\012\336\123\273\232\353\160\277\262\066\220\315\344\247\270\361  
\014\344\135\132\035\170\145\374\311\270\036\043\021\127\174\151  
\065\155\001\377\123\120\277\007\016\272\307\001\077\130\052\224  
\165\003\253\034\013\043\334\033\212\036\067\075\035\130\217\163  
\331\263\052\157\337\020\240\133\014\247\312\260\177\271\044\242  
\001\065\062\345\136\106\101\353\330\177\163\347\102\351\244\121

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\046\167\201\012\250\353\017\012\120\235\176\212\040\147\374\013
\216\072\021\323\305\214\140\030\331\113\261\374\324\361\264\111
\116\256\207\341\321\373\166\241\137\363\006\317\227\226\014\351
\236\165\201\134\123\015\042\374\066\346\111\156\164\333\000\205
\215\174\042\240\216\373\020\114\324\142\023\133\357\113\162\046
\213\374\116\212\217\376\227\020\123\305\170\213\102\144\033\137
\340\211\375\273\011\177\120\340\124\205\046\021\152\035\145\371
\111\051\334\174\066\337\373\075\367\322\254\356\062\215\156\246
\175\071\234\105\304\312\015\365\073\264\171\123\245\057\126\307
\121\305\212\114\144\135\220\103\043\216\153\114\027\170\314\350
\277\365\073\344\250\110\317\255\233\014\337\062\112\323\331\022
\216\043\170\015\055\257\237\257\236\074\011\302\227\000\355\072
\151\034\161\077\071\337\323\217\304\146\365\357\066\224\017\363
\335\222\266\226\137\220\246\335\163\252\246\040\224\224\045\152
\011\014\162\344\023\043\140\114\243\312\027\056\173\147\000\333
\320\315\352\172\037\071\046\127\211\060\167\313\116\345\225\105
\117\137\373\066\134\075\371\040\265\072\020\045\117\223\062\132
\356\301\226\350\351\126\004\260\111\141\115\354\170\250\235\030
\301\377\330\352\057\126\357\225\053\173\004\136\147\343\125\100
\355\071\004\371\013\171\365\152\214\134\017\211\232\220\307\315
\213\336\333\046\065\241\156\315\263\102\362\242\017\073\014\216
\223\377\024\317\374\367\223\367\344\101\010\156\031\122\021\017
\123\031\163\170\014\317\330\205\201\370\255\125\310\260\236\106
\143\257\234\122\356\134\277\360\300\133\067\036\011\040\322\076
\043\306\241\025\112\016\066\176\060\305\171\152\274\042\210\331
\014\122\100\037\335\116\017\147\046\026\322\255\027\034
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER

CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "DigiCert SMIME RSA4096 Root G5"

# Issuer: CN=DigiCert SMIME RSA4096 Root G5,O="DigiCert, Inc.",C=US

# Serial Number:05:f6:ba:04:23:83:46:cb:7d:5c:e6:b9:5b:ba:1c:55

# Subject: CN=DigiCert SMIME RSA4096 Root G5,O="DigiCert, Inc.",C=US

# Not Valid Before: Fri Jan 15 00:00:00 2021

# Not Valid After : Sun Jan 14 23:59:59 2046

# Fingerprint (SHA-256):

90:37:0D:3E:FA:88:BF:58:C3:01:05:BA:25:10:4A:35:84:60:A7:FA:52:DF:C2:01:1D:F2:33:A0:F4:17:91:2A

# Fingerprint (SHA1): 5B:C5:AD:E2:9A:A7:54:DA:84:89:53:A5:FE:D7:5B:46:86:D0:57:08

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "DigiCert SMIME RSA4096 Root G5"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL



\133\305\255\342\232\247\124\332\204\211\123\245\376\327\133\106  
\206\320\127\010

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\321\173\340\265\077\065\162\237\175\276\013\245\244\035\251\156

END

CKA\_ISSUER

MULTILINE\_OCTAL

\060\117\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\027\060\025\006\003\125\004\012\023\016\104\151\147\151\103\145  
\162\164\054\040\111\156\143\056\061\047\060\045\006\003\125\004  
\003\023\036\104\151\147\151\103\145\162\164\040\123\115\111\115  
\105\040\122\123\101\064\060\071\066\040\122\157\157\164\040\107  
\065

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\005\366\272\004\043\203\106\313\175\134\346\271\133\272  
\034\125

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "Certainly Root R1"

#

# Issuer: CN=Certainly Root R1,O=Certainly,C=US

# Serial Number:00:8e:0f:f9:4b:90:71:68:65:33:54:f4:d4:44:39:b7:e0

# Subject: CN=Certainly Root R1,O=Certainly,C=US

# Not Valid Before: Thu Apr 01 00:00:00 2021

# Not Valid After : Sun Apr 01 00:00:00 2046

#

Fingerprint (SHA-256):

77:B8:2C:D8:64:4C:43:05:F7:AC:C5:CB:15:6B:45:67:50:04:03:3D:51:C6:0C:62:02:A8:E0:C3:34:67:D3:A0

# Fingerprint (SHA1): A0:50:EE:0F:28:71:F4:27:B2:12:6D:6F:50:96:25:BA:CC:86:42:AF

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Certainly Root R1"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\075\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\022\060\020\006\003\125\004\012\023\011\103\145\162\164\141\151  
\156\154\171\061\032\060\030\006\003\125\004\003\023\021\103\145  
\162\164\141\151\156\154\171\040\122\157\157\164\040\122\061

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\075\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\022\060\020\006\003\125\004\012\023\011\103\145\162\164\141\151  
\156\154\171\061\032\060\030\006\003\125\004\003\023\021\103\145  
\162\164\141\151\156\154\171\040\122\157\157\164\040\122\061

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\021\000\216\017\371\113\220\161\150\145\063\124\364\324\104  
\071\267\340

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\107\060\202\003\057\240\003\002\001\002\002\021\000  
\216\017\371\113\220\161\150\145\063\124\364\324\104\071\267\340  
\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060  
\075\061\013\060\011\006\003\125\004\006\023\002\125\123\061\022  
\060\020\006\003\125\004\012\023\011\103\145\162\164\141\151\156  
\154\171\061\032\060\030\006\003\125\004\003\023\021\103\145\162  
\164\141\151\156\154\171\040\122\157\157\164\040\122\061\060\036  
\027\015\062\061\060\064\060\061\060\060\060\060\060\132\027  
\015\064\066\060\064\060\061\060\060\060\060\060\132\060\075  
\061\013\060\011\006\003\125\004\006\023\002\125\123\061\022\060  
\020\006\003\125\004\012\023\011\103\145\162\164\141\151\156\154  
\171\061\032\060\030\006\003\125\004\003\023\021\103\145\162\164  
\141\151\156\154\171\040\122\157\157\164\040\122\061\060\202\002  
\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000  
\003\202\002\017\000\060\202\002\012\002\202\002\001\000\320\066  
\324\037\352\335\253\344\321\266\346\373\042\300\335\023\015\152  
\173\042\023\034\227\074\150\143\146\062\234\003\265\215\244\201  
\203\332\170\060\021\317\334\262\053\276\222\277\216\344\304\023  
\276\244\150\114\332\002\150\026\164\276\262\335\004\344\153\052  
\335\067\037\140\054\333\365\367\241\174\225\267\014\160\206\056  
\361\072\357\122\367\314\323\233\371\213\276\016\337\061\267\235  
\150\134\222\246\365\345\363\012\064\265\377\173\242\344\207\241  
\306\257\027\000\357\003\221\355\251\034\116\161\075\322\213\154  
\211\364\170\206\346\152\111\240\316\265\322\260\253\233\366\364  
\324\056\343\162\371\066\306\353\025\267\045\214\072\374\045\015  
\263\042\163\041\164\310\112\226\141\222\365\057\013\030\245\364  
\255\342\356\101\275\001\171\372\226\214\215\027\002\060\264\371  
\257\170\032\214\264\066\020\020\007\005\160\320\364\061\220\212  
\121\305\206\046\171\262\021\210\136\305\360\012\124\315\111\246  
\277\002\234\322\104\247\355\343\170\357\106\136\155\161\321\171  
\160\034\106\137\121\351\311\067\334\137\176\151\173\101\337\064  
\105\340\073\204\364\241\212\012\066\236\067\314\142\122\341\211  
\015\050\371\172\043\261\015\075\075\232\375\235\201\357\054\220  
\300\173\104\116\273\111\340\016\112\126\222\274\313\265\335\171  
\027\211\221\336\141\211\164\222\250\343\062\205\276\116\205\244

\113\131\313\053\305\170\216\161\124\320\002\067\231\214\345\111  
\352\340\124\162\244\021\006\057\013\214\301\133\276\265\241\260  
\123\156\234\270\140\221\037\131\153\371\055\364\224\012\227\265  
\354\305\166\003\124\033\145\122\272\114\222\126\121\065\240\100  
\330\051\333\256\122\166\073\055\060\100\233\212\320\102\126\264  
\267\210\001\244\207\073\123\226\315\243\026\217\363\146\252\027  
\261\307\140\340\301\103\005\014\356\233\133\140\157\006\134\207  
\133\047\371\100\021\236\234\063\301\267\345\065\127\005\177\047  
\316\027\040\214\034\374\361\373\332\061\051\111\355\365\013\204  
\247\117\301\366\116\302\050\234\372\356\340\257\007\373\063\021  
\172\041\117\013\041\020\266\100\072\253\042\072\004\234\213\233  
\204\206\162\232\322\247\245\304\264\165\221\251\053\043\002\003  
\001\000\001\243\102\060\100\060\016\006\003\125\035\017\001\001  
\377\004\004\003\002\001\006\060\017\006\003\125\035\023\001\001  
\377\004\005\060\003\001\001\377\060\035\006\003\125\035\016\004  
\026\004\024\340\252\077\045\215\237\104\134\301\072\350\056\256  
\167\114\204\076\147\014\364\060\015\006\011\052\206\110\206\367  
\015\001\001\013\005\000\003\202\002\001\000\271\127\257\270\022  
\332\127\203\217\150\013\063\035\003\123\125\364\225\160\344\053  
\075\260\071\353\372\211\142\375\367\326\030\004\057\041\064\335  
\361\150\360\325\226\132\336\302\200\243\301\215\306\152\367\131  
\167\256\025\144\317\133\171\005\167\146\352\214\323\153\015\335  
\361\131\054\301\063\245\060\200\025\105\007\105\032\061\042\266  
\222\000\253\231\115\072\217\167\257\251\042\312\057\143\312\025  
\326\307\306\360\075\154\374\034\015\230\020\141\236\021\242\042  
\327\012\362\221\172\153\071\016\057\060\303\066\111\237\340\351  
\017\002\104\120\067\224\125\175\352\237\366\073\272\224\245\114  
\351\274\076\121\264\350\312\222\066\124\155\134\045\050\332\335  
\255\024\375\323\356\342\042\005\353\320\362\267\150\022\327\132  
\212\101\032\306\222\245\132\073\143\105\117\277\341\072\167\042  
\057\134\277\106\371\132\003\205\023\102\137\312\336\123\327\142  
\265\246\065\004\302\107\377\231\375\204\337\134\316\351\136\200  
\050\101\362\175\347\036\220\330\117\166\076\202\074\015\374\245  
\003\372\173\032\331\105\036\140\332\304\216\371\374\053\311\173  
\225\305\052\377\252\211\337\202\061\017\162\377\014\047\327\012  
\036\126\000\120\036\014\220\301\226\265\330\024\205\273\247\015  
\026\301\370\007\044\033\272\205\241\032\005\011\200\272\225\143  
\311\072\354\045\237\177\235\272\244\107\025\233\104\160\361\152  
\113\326\070\136\103\363\030\176\120\156\351\132\050\346\145\346  
\167\033\072\375\035\276\003\046\243\333\324\341\273\176\226\047  
\053\035\356\244\373\332\045\124\023\003\336\071\306\303\037\115  
\220\354\217\033\112\322\034\355\205\225\070\120\171\106\326\301  
\220\120\061\251\134\232\156\035\365\063\126\213\247\231\322\362  
\310\054\063\223\222\060\307\116\214\145\063\020\144\027\375\044  
\027\226\321\215\302\072\152\053\353\023\213\104\362\041\363\112  
\032\267\167\137\327\355\210\244\162\345\071\037\225\235\276\147  
\301\160\021\075\273\364\370\111\267\343\046\227\072\237\322\137  
\174\373\300\231\174\071\051\340\173\035\277\015\247\217\322\051

\064\156\044\025\313\336\220\136\277\032\304\146\352\302\346\272

\071\137\212\231\251\101\131\007\260\054\257

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "Certainly Root R1"

# Issuer: CN=Certainly Root R1,O=Certainly,C=US

# Serial Number:00:8e:0f:f9:4b:90:71:68:65:33:54:f4:d4:44:39:b7:e0

# Subject: CN=Certainly Root R1,O=Certainly,C=US

#

Not Valid Before: Thu Apr 01 00:00:00 2021

# Not Valid After : Sun Apr 01 00:00:00 2046

# Fingerprint (SHA-256):

77:B8:2C:D8:64:4C:43:05:F7:AC:C5:CB:15:6B:45:67:50:04:03:3D:51:C6:0C:62:02:A8:E0:C3:34:67:D3:A0

# Fingerprint (SHA1): A0:50:EE:0F:28:71:F4:27:B2:12:6D:6F:50:96:25:BA:CC:86:42:AF

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Certainly Root R1"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\240\120\356\017\050\161\364\047\262\022\155\157\120\226\045\272

\314\206\102\257

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\007\160\324\076\202\207\240\372\063\066\023\364\372\063\347\022

END

CKA\_ISSUER MULTILINE\_OCTAL

\060\075\061\013\060\011\006\003\125\004\006\023\002\125\123\061

\022\060\020\006\003\125\004\012\023\011\103\145\162\164\141\151

\156\154\171\061\032\060\030\006\003\125\004\003\023\021\103\145

\162\164\141\151\156\154\171\040\122\157\157\164\040\122\061

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\021\000\216\017\371\113\220\161\150\145\063\124\364\324\104

\071\267\340

END

CKA\_TRUST\_SERVER\_AUTH

CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "Certainly Root E1"

```
#
# Issuer: CN=Certainly Root E1,O=Certainly,C=US
# Serial Number:06:25:33:b1:47:03:33:27:5c:f9:8d:9a:b9:bf:cc:f8
# Subject: CN=Certainly Root E1,O=Certainly,C=US
# Not Valid Before: Thu Apr 01 00:00:00 2021
# Not Valid After : Sun Apr 01 00:00:00 2046
# Fingerprint (SHA-256):
B4:58:5F:22:E4:AC:75:6A:4E:86:12:A1:36:1C:5D:9D:03:1A:93:FD:84:FE:BB:77:8F:A3:06:8B:0F:C4:2D:C2
# Fingerprint (SHA1): F9:E1:6D:DC:01:89:CF:D5:82:45:63:3E:C5:37:7D:C2:EB:93:6F:2B
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Certainly Root E1"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE
CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\075\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\022\060\020\006\003\125\004\012\023\011\103\145\162\164\141\151
\156\154\171\061\032\060\030\006\003\125\004\003\023\021\103\145
\162\164\141\151\156\154\171\040\122\157\157\164\040\105\061
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\075\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\022\060\020\006\003\125\004\012\023\011\103\145\162\164\141\151
\156\154\171\061\032\060\030\006\003\125\004\003\023\021\103\145
\162\164\141\151\156\154\171\040\122\157\157\164\040\105\061
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\006\045\063\261\107\003\063\047\134\371\215\232\271\277
\314\370
END
CKA_VALUE MULTILINE_OCTAL
\060\202\001\367\060\202\001\175\240\003\002\001\002\002\020\006
\045\063\261\107\003\063\047\134\371\215\232\271\277\314\370\060
\012\006\010\052\206\110\316\075\004\003\003\060\075\061\013\060
\011\006\003\125\004\006\023\002\125\123\061\022\060\020\006\003
\125\004\012\023\011\103\145\162\164\141\151\156\154\171\061\032
\060\030\006\003\125\004\003\023\021\103\145\162\164\141\151\156
\154\171\040\122\157\157\164\040\105\061\060\036\027\015\062\061
\060\064\060\061\060\060\060\060\060\060\132\027\015\064\066\060
\064\060\061\060\060\060\060\060\060\132\060\075\061\013\060\011
\006\003\125\004\006\023\002\125\123\061\022\060\020\006\003\125
\004\012\023\011\103\145\162\164\141\151\156\154\171\061\032\060
\030\006\003\125\004\003\023\021\103\145\162\164\141\151\156\154
\171\040\122\157\157\164\040\105\061\060\166\060\020\006\007\052
\206\110\316\075\002\001\006\005\053\201\004\000\042\003\142\000
```

```
\004\336\157\370\177\034\337\355\371\107\207\206\261\244\300\212
\370\202\227\200\352\217\310\112\136\052\175\210\150\247\001\142
\024\221\044\172\134\236\243\027\175\212\206\041\064\030\120\033
\020\336\320\067\113\046\307\031\140\200\351\064\275\140\031\066
\100\326\051\207\011\074\221\172\366\274\023\043\335\131\116\004
\136\317\310\002\034\030\123\301\061\330\332\040\351\104\215\344
\166\243\102\060\100\060\016\006\003\125\035\017\001\001\377\004
\004\003\002\001\006\060\017\006\003\125\035\023\001\001\377\004
\005\060\003\001\001\377\060\035\006\003\125\035\016\004\026\004
\024\363\050\030\313\144\165\356\051\052\353\355\256\043\130\070
\205\353\310\042\007\060\012\006\010\052\206\110\316\075\004\003
\003\003\150\000\060\145\002\061\000\261\216\132\040\303\262\031
\142\115\336\260\117\337\156\322\160\212\361\237\176\152\214\346
\272\336\203\151\312\151\263\251\005\265\226\222\027\207\302\322
\352\320\173\316\330\101\133\174\256\002\060\106\336\352\313\135
\232\354\062\302\145\026\260\114\060\134\060\363\332\116\163\206
\006\330\316\211\004\110\067\067\370\335\063\121\235\160\257\173
\125\330\001\056\175\005\144\016\206\270\221
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "Certainly Root E1"

# Issuer: CN=Certainly

Root E1,O=Certainly,C=US

# Serial Number:06:25:33:b1:47:03:33:27:5c:f9:8d:9a:b9:bf:cc:f8

# Subject: CN=Certainly Root E1,O=Certainly,C=US

# Not Valid Before: Thu Apr 01 00:00:00 2021

# Not Valid After : Sun Apr 01 00:00:00 2046

# Fingerprint (SHA-256):

B4:58:5F:22:E4:AC:75:6A:4E:86:12:A1:36:1C:5D:9D:03:1A:93:FD:84:FE:BB:77:8F:A3:06:8B:0F:C4:2D:C2

# Fingerprint (SHA1): F9:E1:6D:DC:01:89:CF:D5:82:45:63:3E:C5:37:7D:C2:EB:93:6F:2B

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Certainly Root E1"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\371\341\155\334\001\211\317\325\202\105\143\076\305\067\175\302
\353\223\157\053
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\012\236\312\315\076\122\120\306\066\363\113\243\355\247\123\351
```

END

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\075\061\013\060\011\006\003\125\004\006\023\002\125\123\061
```

```
\022\060\020\006\003\125\004\012\023\011\103\145\162\164\141\151
\156\154\171\061\032\060\030\006\003\125\004\003\023\021\103\145
\162\164\141\151\156\154\171\040\122\157\157\164\040\105\061
END
```

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

```
\002\020\006\045\063\261\107\003\063\047\134\371\215\232\271\277
\314\370
```

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "E-Tugra Global Root CA RSA v3"

#

# Issuer: CN=E-Tugra Global Root CA RSA v3,OU=E-Tugra Trust Center,O=E-Tugra EBG A.S.,L=Ankara,C=TR

# Serial Number:0d:4d:c5:cd:16:22:95:96:08:7e:b8:0b:7f:15:06:34:fb:79:10:34

# Subject: CN=E-Tugra Global Root CA RSA v3,OU=E-Tugra Trust Center,O=E-Tugra EBG

A.S.,L=Ankara,C=TR

# Not Valid Before: Wed Mar 18 09:07:17 2020

# Not Valid After : Sun Mar 12 09:07:17 2045

# Fingerprint (SHA-256):

EF:66:B0:B1:0A:3C:DB:9F:2E:36:48:C7:6B:D2:AF:18:EA:D2:BF:E6:F1:17:65:5E:28:C4:06:0D:A1:A3:F4:C2

# Fingerprint (SHA1):

E9:A8:5D:22:14:52:1C:5B:AA:0A:B4:BE:24:6A:23:8A:C9:BA:E2:A9

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "E-Tugra Global Root CA RSA v3"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

```
\060\201\200\061\013\060\011\006\003\125\004\006\023\002\124\122
\061\017\060\015\006\003\125\004\007\023\006\101\156\153\141\162
\141\061\031\060\027\006\003\125\004\012\023\020\105\055\124\165
\147\162\141\040\105\102\107\040\101\056\123\056\061\035\060\033
\006\003\125\004\013\023\024\105\055\124\165\147\162\141\040\124
\162\165\163\164\040\103\145\156\164\145\162\061\046\060\044\006
\003\125\004\003\023\035\105\055\124\165\147\162\141\040\107\154
\157\142\141\154\040\122\157\157\164\040\103\101\040\122\123\101
\040\166\063
```

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\201\200\061\013\060\011\006\003\125\004\006\023\002\124\122
\061\017\060\015\006\003\125\004\007\023\006\101\156\153\141\162
```

\141\061\031\060\027\006\003\125\004\012\023\020\105\055\124\165  
\147\162\141\040\105\102\107\040\101\056\123\056\061\035\060\033  
\006\003\125\004\013\023\024\105\055\124\165\147\162\141\040\124  
\162\165\163\164\040\103\145\156\164\145\162\061\046\060\044\006  
\003\125\004\003\023\035\105\055\124\165\147\162\141\040\107\154  
\157\142\141\154\040\122\157\157\164\040\103\101\040\122\123\101  
\040\166\063

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\024\015\115\305\315\026\042\225\226\010\176\270\013\177\025  
\006\064\373\171\020\064

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\363\060\202\003\333\240\003\002\001\002\002\024\015  
\115\305\315\026\042\225\226\010\176\270\013\177\025\006\064\373  
\171\020\064\060\015\006\011\052\206\110\206\367\015\001\001\013  
\005\000\060\201\200\061\013\060\011\006\003\125\004\006\023\002  
\124\122\061\017\060\015\006\003\125\004\007\023\006\101\156\153  
\141\162\141\061\031\060\027\006\003\125\004\012\023\020\105\055  
\124\165\147\162\141\040\105\102\107\040\101\056\123\056\061\035  
\060\033\006\003\125\004\013\023\024\105\055\124\165\147\162\141  
\040\124\162\165\163\164\040\103\145\156\164\145\162\061\046\060  
\044\006\003\125\004\003\023\035\105\055\124\165\147\162\141\040  
\107\154\157\142\141\154\040\122\157\157\164\040\103\101\040\122  
\123\101\040\166\063\060\036\027\015\062\060\060\063\061\070\060  
\071\060\067\061\067\132\027\015\064\065\060\063\061\062\060\071  
\060\067\061\067\132\060\201\200\061\013\060\011\006\003\125\004  
\006\023\002\124\122\061\017\060\015\006\003\125\004\007\023\006  
\101\156\153\141\162\141\061\031\060\027\006\003\125\004\012\023  
\020\105\055\124\165\147\162\141\040\105\102\107\040\101\056\123  
\056\061\035\060\033\006\003\125\004\013\023\024\105\055\124\165  
\147\162\141\040\124\162\165\163\164\040\103\145\156\164\145\162  
\061\046\060\044\006\003\125\004\003\023\035\105\055\124\165\147  
\162\141\040\107\154\157\142\141\154\040\122\157\157\164\040\103  
\101\040\122\123\101\040\166\063\060\202\002\042\060\015\006\011  
\052\206\110\206\367\015\001\001\001\005\000\003\202\002\017\000  
\060\202\002\012\002\202\002\001\000\242\146\360\211\267\162\173  
\356\011\311\143\322\323\103\335\136\303\246\204\070\112\361\215  
\201\273\024\275\107\350\100\027\363\075\303\170\105\162\246\056  
\220\336\232\072\324\040\161\312\274\237\035\113\227\012\307\061  
\272\076\327\376\045\251\052\216\066\364\321\057\307\267\251\135  
\063\334\060\160\370\100\154\113\262\246\061\141\321\064\074\075  
\061\172\307\257\304\247\247\204\341\227\244\350\113\366\027\174  
\356\074\007\355\342\212\127\334\266\373\370\103\045\120\352\047  
\201\250\206\274\217\122\112\226\072\140\032\226\273\375\163\364  
\205\375\203\375\177\204\155\064\154\177\152\267\113\001\003\277  
\255\151\267\327\062\331\365\127\152\351\206\202\076\245\146\061



\263\026\075\302\363\046\140\062\323\122\036\260\154\244\067\076  
\364\365\257\353\341\337\200\006\317\052\101\347\146\011\341\113  
\227\347\167\275\041\155\051\266\147\303\055\176\355\326\171\145  
\321\317\072\266\321\261\136\126\141\120\172\132\316\116\120\061  
\200\003\230\107\347\344\030\174\104\132\306\244\263\073\306\306  
\303\072\360\154\303\213\310\244\221\005\363\365\331\266\252\006  
\241\267\253\344\261\352\041\024\134\203\244\374\377\266\120\323  
\214\022\046\231\166\160\351\300\017\246\164\374\273\320\033\170  
\316\162\222\342\050\234\274\346\351\011\330\072\323\211\346\276  
\056\167\337\001\012\157\226\366\345\215\074\115\122\166\032\126  
\341\163\176\027\254\075\255\154\243\122\022\030\160\346\200\116  
\063\362\176\046\062\254\005\215\070\244\346\166\074\237\020\151  
\016\155\235\322\301\171\040\153\133\317\063\215\321\224\166\065  
\347\135\125\307\267\254\050\253\106\314\347\073\041\265\012\012  
\344\112\131\334\201\065\113\104\225\022\012\147\245\241\377\133  
\000\007\322\300\314\371\077\374\237\063\362\000\370\214\154\207  
\235\006\055\361\357\343\346\006\372\305\146\023\133\374\120\007  
\236\161\206\262\332\157\164\060\317\223\123\350\334\042\326\336  
\040\037\141\215\243\056\243\170\062\220\154\334\254\062\265\005  
\344\365\074\063\015\326\340\207\167\027\114\235\260\330\011\250  
\015\127\367\104\205\360\310\004\276\134\135\132\343\027\216\124  
\143\151\177\111\164\144\005\214\243\002\003\001\000\001\243\143  
\060\141\060\017\006\003\125\035\023\001\001\377\004\005\060\003  
\001\001\377\060\037\006\003\125\035\043\004\030\060\026\200\024  
\262\264\256\346\055\367\046\325\252\165\055\166\113\300\033\123  
\041\320\110\357\060\035\006\003\125\035\016\004\026\004\024\262  
\264\256\346\055\367\046\325\252\165\055\166\113\300\033\123\041  
\320\110\357\060\016\006\003\125\035\017\001\001\377\004\004\003  
\002\001\006\060\015\006\011\052\206\110\206\367\015\001\001\013  
\005\000\003\202\002\001\000\211\250\162\177\214\353\316\056\030  
\304\020\200\055\020\014\377\373\024\315\004\340\024\074\116\232  
\373\237\051\277\042\236\127\271\202\163\022\143\046\265\314\220  
\351\322\052\051\356\234\055\314\054\231\276\105\047\344\261\161  
\355\344\070\225\061\101\362\175\172\143\170\337\312\066\026\057  
\202\210\237\274\021\107\117\166\115\310\055\216\353\337\055\174  
\116\073\332\256\366\343\332\135\024\246\256\350\205\104\235\006  
\156\216\373\357\172\112\152\055\053\050\030\376\277\220\054\165  
\026\237\017\352\226\175\005\356\233\023\245\104\154\370\003\320  
\335\043\341\375\003\022\022\010\364\030\064\263\340\067\013\167  
\021\001\110\277\141\264\265\370\031\331\313\115\352\243\214\357  
\375\360\006\265\155\222\364\112\141\120\204\355\354\111\323\344  
\276\150\346\056\343\061\013\124\013\032\222\326\202\330\266\242  
\145\074\146\004\371\125\332\154\373\333\265\024\146\115\224\203  
\073\315\036\246\053\262\376\167\100\206\253\347\337\012\311\375  
\366\335\207\126\030\330\260\054\125\140\226\372\010\176\122\220  
\365\113\246\056\207\174\313\040\333\006\076\240\135\003\167\175  
\242\074\023\033\051\242\023\125\240\075\024\042\257\157\270\320  
\232\033\162\335\005\001\215\206\140\277\244\147\356\265\245\015

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\321\177\346\032\053\142\146\303\007\272\347\240\110\034\070\303
\351\105\373\247\177\374\355\002\150\032\312\167\022\167\246\000
\125\050\024\354\326\307\022\242\033\145\102\351\221\350\313\076
\207\211\124\135\331\257\235\227\234\151\347\012\377\017\132\170
\213\143\052\114\175\107\224\077\336\113\351\123\320\060\361\305
\366\236\111\337\073\240\221\243\243\376\315\130\314\352\337\257
\157\050\073\240\151\233\217\354\254\256\053\124\235\233\004\261
\107\040\257\226\022\076\143\224\035\004\347\056\273\206\307\014
\232\210\277\166\107\357\367\260\013\227\146\322\104\317\140\122
\007\341\325\054\112\072\047\141\167\312\327\217\347\207\016\060
\377\014\273\004\342\141\303\242\310\227\141\216\264\060\152\074
\155\302\007\137\112\163\057\077\371\026\212\001\146\357\272\221
\312\122\127\173\256\324\346\017\335\013\172\177\213\236\046\040
\317\073\357\201\161\203\131
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "E-Tugra Global Root CA RSA v3"

# Issuer: CN=E-Tugra

Global Root CA RSA v3,OU=E-Tugra Trust Center,O=E-Tugra EBG A.S.,L=Ankara,C=TR

# Serial Number:0d:4d:c5:cd:16:22:95:96:08:7e:b8:0b:7f:15:06:34:fb:79:10:34

# Subject: CN=E-Tugra Global Root CA RSA v3,OU=E-Tugra Trust Center,O=E-Tugra EBG A.S.,L=Ankara,C=TR

# Not Valid Before: Wed Mar 18 09:07:17 2020

# Not Valid After : Sun Mar 12 09:07:17 2045

# Fingerprint (SHA-256):

EF:66:B0:B1:0A:3C:DB:9F:2E:36:48:C7:6B:D2:AF:18:EA:D2:BF:E6:F1:17:65:5E:28:C4:06:0D:A1:A3:F4:C2

# Fingerprint (SHA1): E9:A8:5D:22:14:52:1C:5B:AA:0A:B4:BE:24:6A:23:8A:C9:BA:E2:A9

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "E-Tugra Global Root CA RSA v3"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\351\250\135\042\024\122\034\133\252\012\264\276\044\152\043\212
\311\272\342\251
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\042\276\020\366\302\370\003\210\163\137\063\051\107\050\107\244
```

END

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\201\200\061\013\060\011\006\003\125\004\006\023\002\124\122
\061\017\060\015\006\003\125\004\007\023\006\101\156\153\141\162
\141\061\031\060\027\006\003\125\004\012\023\020\105\055\124\165
\147\162\141\040\105\102\107\040\101\056\123\056\061\035\060\033
```

\006\003\125\004\013\023\024\105\055\124\165\147\162\141\040\124  
\162\165\163\164\040\103\145\156\164\145\162\061\046\060\044\006  
\003\125\004\003\023\035\105\055\124\165\147\162\141\040\107\154  
\157\142\141\154\040\122\157\157\164\040\103\101\040\122\123\101  
\040\166\063

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\024\015\115\305\315\026\042\225\226\010\176\270\013\177\025  
\006\064\373\171\020\064

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "E-Tugra Global Root CA ECC v3"

#

# Issuer: CN=E-Tugra Global Root CA ECC v3,OU=E-Tugra Trust Center,O=E-Tugra  
EBG A.S.,L=Ankara,C=TR

# Serial Number:26:46:19:77:31:e1:4f:6f:28:36:de:39:51:86:e6:d4:97:88:22:c1

# Subject: CN=E-Tugra Global Root CA ECC v3,OU=E-Tugra Trust Center,O=E-Tugra EBG  
A.S.,L=Ankara,C=TR

# Not Valid Before: Wed Mar 18 09:46:58 2020

# Not Valid After : Sun Mar 12 09:46:58 2045

# Fingerprint (SHA-256):

87:3F:46:85:FA:7F:56:36:25:25:2E:6D:36:BC:D7:F1:6F:C2:49:51:F2:64:E4:7E:1B:95:4F:49:08:CD:CA:13

# Fingerprint (SHA1): 8A:2F:AF:57:53:B1:B0:E6:A1:04:EC:5B:6A:69:71:6D:F6:1C:E2:84

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "E-Tugra Global Root CA ECC v3"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\201\200\061\013\060\011\006\003\125\004\006\023\002\124\122  
\061\017\060\015\006\003\125\004\007\023\006\101\156\153\141\162  
\141\061\031\060\027\006\003\125\004\012\023\020\105\055\124\165  
\147\162\141\040\105\102\107\040\101\056\123\056\061\035\060\033  
\006\003\125\004\013\023\024\105\055\124\165\147\162\141\040\124  
\162\165\163\164\040\103\145\156\164\145\162\061\046\060\044\006  
\003\125\004\003\023\035\105\055\124\165\147\162\141\040\107\154  
\157\142\141\154\040\122\157\157\164\040\103\101\040\105\103\103  
\040\166\063

END

CKA\_ID

UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\200\061\013\060\011\006\003\125\004\006\023\002\124\122  
\061\017\060\015\006\003\125\004\007\023\006\101\156\153\141\162  
\141\061\031\060\027\006\003\125\004\012\023\020\105\055\124\165  
\147\162\141\040\105\102\107\040\101\056\123\056\061\035\060\033  
\006\003\125\004\013\023\024\105\055\124\165\147\162\141\040\124  
\162\165\163\164\040\103\145\156\164\145\162\061\046\060\044\006  
\003\125\004\003\023\035\105\055\124\165\147\162\141\040\107\154  
\157\142\141\154\040\122\157\157\164\040\103\101\040\105\103\103  
\040\166\063

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\024\046\106\031\167\061\341\117\157\050\066\336\071\121\206  
\346\324\227\210\042\301

END

CKA\_VALUE

MULTILINE\_OCTAL

\060\202\002\245\060\202\002\052\240\003\002\001\002\002\024\046  
\106\031\167\061\341\117\157\050\066\336\071\121\206\346\324\227  
\210\042\301\060\012\006\010\052\206\110\316\075\004\003\003\060  
\201\200\061\013\060\011\006\003\125\004\006\023\002\124\122\061  
\017\060\015\006\003\125\004\007\023\006\101\156\153\141\162\141  
\061\031\060\027\006\003\125\004\012\023\020\105\055\124\165\147  
\162\141\040\105\102\107\040\101\056\123\056\061\035\060\033\006  
\003\125\004\013\023\024\105\055\124\165\147\162\141\040\124\162  
\165\163\164\040\103\145\156\164\145\162\061\046\060\044\006\003  
\125\004\003\023\035\105\055\124\165\147\162\141\040\107\154\157  
\142\141\154\040\122\157\157\164\040\103\101\040\105\103\103\040  
\166\063\060\036\027\015\062\060\060\063\061\070\060\071\064\066  
\065\070\132\027\015\064\065\060\063\061\062\060\071\064\066\065  
\070\132\060\201\200\061\013\060\011\006\003\125\004\006\023\002  
\124\122\061\017\060\015\006\003\125\004\007\023\006\101\156\153  
\141\162\141\061\031\060\027\006\003\125\004\012\023\020\105\055  
\124\165\147\162\141\040\105\102\107\040\101\056\123\056\061\035  
\060\033\006\003\125\004\013\023\024\105\055\124\165\147\162\141  
\040\124\162\165\163\164\040\103\145\156\164\145\162\061\046\060  
\044\006\003\125\004\003\023\035\105\055\124\165\147\162\141\040  
\107\154\157\142\141\154\040\122\157\157\164\040\103\101\040\105  
\103\103\040\166\063\060\166\060\020\006\007\052\206\110\316\075  
\002\001\006\005\053\201\004\000\042\003\142\000\004\216\230\051  
\277\307\020\036\047\333\253\003\314\050\054\330\136\110\031\020  
\051\314\313\131\201\314\214\270\222\027\211\203\052\222\366\303  
\244\035\114\142\325\237\326\240\106\334\034\274\166\301\343\107  
\320\133\023\332\347\245\263\146\110\347\041\232\112\117\206\012  
\175\154\352\115\062\200\012\262\172\011\233\151\113\230\201\342  
\056\354\002\160\226\037\375\365\106\316\312\334\202\243\143\060  
\141\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001

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\001\377\060\037\006\003\125\035\043\004\030\060\026\200\024\377
\202\061\162\076\371\304\146\154\255\070\236\321\260\121\210\245
\220\314\365\060\035\006\003\125\035\016\004\026\004\024\377\202
\061\162\076\371\304\146\154\255\070\236\321\260\121\210\245\220
\314\365\060\016\006\003\125\035\017\001\001\377\004\004\003\002
\001\006\060\012\006\010\052\206\110\316\075\004\003\003\003\151
\000\060\146\002\061\000\346\005\130\151\141\345\055\312\015\313
\361\031\010\275\326\375\121\222\032\176\143\124\004\220\221\232
\065\221\071\231\372\007\251\146\223\272\310\150\324\212\077\372
\355\156\026\002\047\267\002\061\000\335\132\027\053\166\035\145
\102\226\246\254\135\212\171\126\330\212\033\337\232\336\137\307
\120\217\261\133\161\014\046\337\152\100\000\354\063\221\041\161
\276\150\344\043\244\331\255\241\067
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "E-Tugra Global Root CA ECC v3"

# Issuer: CN=E-Tugra Global

Root CA ECC v3,OU=E-Tugra Trust Center,O=E-Tugra EBG A.S.,L=Ankara,C=TR

# Serial Number:26:46:19:77:31:e1:4f:6f:28:36:de:39:51:86:e6:d4:97:88:22:c1

# Subject: CN=E-Tugra Global Root CA ECC v3,OU=E-Tugra Trust Center,O=E-Tugra EBG  
A.S.,L=Ankara,C=TR

# Not Valid Before: Wed Mar 18 09:46:58 2020

# Not Valid After : Sun Mar 12 09:46:58 2045

# Fingerprint (SHA-256):

87:3F:46:85:FA:7F:56:36:25:25:2E:6D:36:BC:D7:F1:6F:C2:49:51:F2:64:E4:7E:1B:95:4F:49:08:CD:CA:13

# Fingerprint (SHA1): 8A:2F:AF:57:53:B1:B0:E6:A1:04:EC:5B:6A:69:71:6D:F6:1C:E2:84

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "E-Tugra Global Root CA ECC v3"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\212\057\257\127\123\261\260\346\241\004\354\133\152\151\161\155
\366\034\342\204
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\106\274\201\273\361\265\036\367\113\226\274\024\342\347\047\144
```

END

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\201\200\061\013\060\011\006\003\125\004\006\023\002\124\122
\061\017\060\015\006\003\125\004\007\023\006\101\156\153\141\162
\141\061\031\060\027\006\003\125\004\012\023\020\105\055\124\165
\147\162\141\040\105\102\107\040\101\056\123\056\061\035\060\033
\006\003\125\004\013\023\024\105\055\124\165\147\162\141\040\124
```

```
\162\165\163\164\040\103\145\156\164\145\162\061\046\060\044\006  
\003\125\004\003\023\035\105\055\124\165\147\162\141\040\107\154  
\157\142\141\154\040\122\157\157\164\040\103\101\040\105\103\103  
\040\166\063
```

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

```
\002\024\046\106\031\167\061\341\117\157\050\066\336\071\121\206  
\346\324\227\210\042\301
```

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "DIGITALSIGN GLOBAL ROOT RSA CA"

#

# Issuer: CN=DIGITALSIGN GLOBAL ROOT RSA CA,O=DigitalSign Certificadora Digital,C=PT

#

Serial Number:5d:59:c8:ca:ab:09:57:f5:e6:b5:da:29:94:04:6a:ff:c5:d4:95:87

# Subject: CN=DIGITALSIGN GLOBAL ROOT RSA CA,O=DigitalSign Certificadora Digital,C=PT

# Not Valid Before: Thu Jan 21 10:50:34 2021

# Not Valid After : Mon Jan 15 10:50:34 2046

# Fingerprint (SHA-256):

82:BD:5D:85:1A:CF:7F:6E:1B:A7:BF:CB:C5:30:30:D0:E7:BC:3C:21:DF:77:2D:85:8C:AB:41:D1:99:BD:F5:95

# Fingerprint (SHA1): B9:82:07:97:AE:52:A5:68:6F:46:07:DF:FD:03:72:3D:92:86:88:2D

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "DIGITALSIGN GLOBAL ROOT RSA CA"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

```
\060\142\061\013\060\011\006\003\125\004\006\023\002\120\124\061  
\052\060\050\006\003\125\004\012\014\041\104\151\147\151\164\141  
\154\123\151\147\156\040\103\145\162\164\151\146\151\143\141\144  
\157\162\141\040\104\151\147\151\164\141\154\061\047\060\045\006  
\003\125\004\003\014\036\104\111\107\111\124\101\114\123\111\107  
\116\040\107\114\117\102\101\114\040\122\117\117\124\040\122\123  
\101\040\103\101
```

END

CKA\_ID

UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\142\061\013\060\011\006\003\125\004\006\023\002\120\124\061  
\052\060\050\006\003\125\004\012\014\041\104\151\147\151\164\141  
\154\123\151\147\156\040\103\145\162\164\151\146\151\143\141\144
```

\157\162\141\040\104\151\147\151\164\141\154\061\047\060\045\006  
\003\125\004\003\014\036\104\111\107\111\124\101\114\123\111\107  
\116\040\107\114\117\102\101\114\040\122\117\117\124\040\122\123  
\101\040\103\101

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\024\135\131\310\312\253\011\127\365\346\265\332\051\224\004  
\152\377\305\324\225\207

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\265\060\202\003\235\240\003\002\001\002\002\024\135  
\131\310\312\253\011\127\365\346\265\332\051\224\004\152\377\305  
\324\225\207\060\015\006\011\052\206\110\206\367\015\001\001\015  
\005\000\060\142\061\013\060\011\006\003\125\004\006\023\002\120  
\124\061\052\060\050\006\003\125\004\012\014\041\104\151\147\151  
\164\141\154\123\151\147\156\040\103\145\162\164\151\146\151\143  
\141\144\157\162\141\040\104\151\147\151\164\141\154\061\047\060  
\045\006\003\125\004\003\014\036\104\111\107\111\124\101\114\123  
\111\107\116\040\107\114\117\102\101\114\040\122\117\117\124\040  
\122\123\101\040\103\101\060\036\027\015\062\061\060\061\062\061  
\061\060\065\060\063\064\132\027\015\064\066\060\061\061\065\061  
\060\065\060\063\064\132\060\142\061\013\060\011\006\003\125\004  
\006\023\002\120\124\061\052\060\050\006\003\125\004\012\014\041  
\104\151\147\151\164\141\154\123\151\147\156\040\103\145\162\164  
\151\146\151\143\141\144\157\162\141\040\104\151\147\151\164\141  
\154\061\047\060\045\006\003\125\004\003\014\036\104\111\107\111  
\124\101\114\123\111\107\116\040\107\114\117\102\101\114\040\122  
\117\117\124\040\122\123\101\040\103\101\060\202\002\042\060\015  
\006\011\052\206\110\206\367\015\001\001\001\005\000\003\202\002  
\017\000\060\202\002\012\002\202\002\001\000\310\207\266\070\323  
\034\360\336\022\370\203\307\304\212\342\211\270\264\042\172\170  
\370\014\146\121\150\166\067\012\325\117\302\132\010\270\026\134  
\367\162\001\011\067\204\201\052\124\153\327\222\320\154\372\250  
\247\103\022\064\353\016\333\067\017\051\376\212\061\121\102\350  
\113\234\220\250\310\054\021\323\375\240\051\176\316\336\224\366  
\202\340\130\264\116\105\045\361\042\362\075\323\017\173\124\032  
\334\062\266\326\121\116\176\101\264\127\270\054\306\271\016\056  
\312\127\361\325\310\323\130\347\245\351\102\021\256\323\040\045  
\224\151\327\217\312\242\015\303\323\237\007\150\077\025\322\147  
\056\123\375\166\202\233\013\163\251\051\015\236\021\223\024\010  
\230\354\236\124\022\112\126\242\006\025\354\153\154\056\222\140  
\056\206\015\256\202\037\121\115\343\262\007\327\020\031\127\042  
\366\251\151\104\204\363\331\075\240\006\277\314\210\176\177\365  
\316\133\245\302\052\152\164\102\352\157\246\377\371\150\261\320  
\137\275\221\322\125\157\063\127\114\036\235\344\342\213\301\205  
\145\240\340\152\234\000\000\210\222\335\130\010\026\362\160\061  
\250\034\341\336\275\116\161\351\326\276\176\265\241\132\303\115  
\367\277\233\275\224\244\375\365\252\123\223\106\311\046\001\004

\160\304\240\161\272\316\045\146\373\221\176\125\160\356\111\012  
\115\142\177\302\120\232\162\362\030\147\235\351\105\250\064\204  
\350\370\201\366\321\132\042\036\007\117\073\263\177\335\021\245  
\163\334\276\251\031\072\151\251\155\033\062\342\211\252\245\047  
\013\132\176\164\342\017\144\071\135\176\134\271\301\027\374\307  
\215\136\311\354\044\355\322\362\077\172\204\105\067\002\276\076  
\153\131\304\346\133\026\155\300\252\236\252\265\131\056\054\160  
\125\234\314\231\226\230\044\124\321\216\332\312\264\021\264\267  
\160\103\037\157\220\013\040\240\250\166\023\145\333\333\043\132  
\165\113\241\013\061\167\012\356\175\150\141\032\023\214\352\121  
\176\134\126\243\127\114\135\241\353\023\145\277\124\024\314\363  
\356\334\327\354\074\227\362\170\126\270\337\162\134\160\374\316  
\006\335\237\322\007\061\357\347\122\221\236\315\272\327\300\030  
\104\007\061\145\111\062\151\023\112\353\217\002\003\001\000\001  
\243\143\060\141\060\017\006\003\125\035\023\001\001\377\004\005  
\060\003\001\001\377\060\037\006\003\125\035\043\004\030\060\026  
\200\024\265\066\274\074\214\032\253\054\366\131\031\055\203\024  
\332\223\045\025\326\206\060\035\006\003\125\035\016\004\026\004  
\024\265\066\274\074\214\032\253\054\366\131\031\055\203\024\332  
\223\045\025\326\206\060\016\006\003\125\035\017\001\001\377\004  
\004\003\002\001\006\060\015\006\011\052\206\110\206\367\015\001  
\001\015\005\000\003\202\002\001\000\024\373\061\045\070\061\370  
\312\010\262\043\166\070\255\370\323\131\365\314\264\127\045\341  
\104\276\176\374\026\354\256\372\046\237\117\147\026\112\126\360  
\375\355\307\031\001\064\216\220\132\055\326\200\134\354\161\322  
\201\045\202\036\000\161\337\232\321\325\035\042\273\321\245\363  
\142\017\264\353\334\044\163\376\246\126\315\232\024\305\004\065  
\026\061\242\007\353\245\000\342\266\370\137\162\375\077\141\111  
\216\336\176\115\070\327\172\036\164\067\154\121\334\276\000\004  
\270\070\024\363\040\301\355\233\247\043\375\015\102\204\035\177  
\362\163\303\320\170\143\361\237\354\327\133\351\361\276\154\240  
\113\003\236\215\151\341\024\332\210\020\201\043\123\377\332\124  
\053\013\306\271\226\225\004\030\106\363\173\250\227\330\133\150  
\244\344\070\034\016\105\345\230\323\011\256\232\136\354\263\171  
\015\071\162\362\364\224\235\016\236\140\042\346\250\366\114\205  
\315\007\202\072\150\071\315\075\137\343\070\364\266\257\073\153  
\112\237\140\121\105\242\100\002\345\252\014\343\076\321\170\324  
\242\164\234\046\272\005\232\050\160\112\076\246\013\320\035\111  
\360\272\370\256\101\020\176\244\007\022\275\250\317\051\075\127  
\273\307\361\103\107\000\076\256\160\030\132\040\173\011\313\072  
\072\160\200\345\114\140\230\301\025\301\035\112\367\310\360\233  
\341\162\255\347\135\150\130\013\004\261\214\274\237\267\373\156  
\213\133\004\125\373\353\043\125\327\170\120\332\045\313\276\047  
\066\273\044\032\171\034\121\321\376\023\273\377\170\054\334\244  
\276\057\366\305\113\123\317\247\114\231\136\160\254\131\210\004  
\256\144\004\277\173\246\172\115\323\350\167\275\241\176\120\025  
\363\357\111\060\205\115\041\127\252\333\054\165\227\255\201\001  
\207\242\261\160\235\036\006\132\003\140\261\077\246\155\202\054



```
\324\024\261\201\245\350\075\210\035\264\162\054\130\067\212\216
\070\224\270\163\335\251\340\270\366\167\242\263\174\130\336\256
\151\072\265\213\245\032\273\362\330\164\006\234\375\142\163\040
\041\166\261\176\160\236\031\324\353\027\142\031\070\231\315\066
\053\107\376\061\313\337\271\344\254\010\323\330\246\353\324\236
\176\113\144\244\125\135\053\027\311
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "DIGITALSIGN GLOBAL ROOT RSA CA"

# Issuer: CN=DIGITALSIGN GLOBAL ROOT RSA CA,O=DigitalSign Certificadora Digital,C=PT

# Serial Number:5d:59:c8:ca:ab:09:57:f5:e6:b5:da:29:94:04:6a:ff:c5:d4:95:87

#

Subject: CN=DIGITALSIGN GLOBAL ROOT RSA CA,O=DigitalSign Certificadora Digital,C=PT

# Not Valid Before: Thu Jan 21 10:50:34 2021

# Not Valid After : Mon Jan 15 10:50:34 2046

# Fingerprint (SHA-256):

82:BD:5D:85:1A:CF:7F:6E:1B:A7:BF:CB:C5:30:30:D0:E7:BC:3C:21:DF:77:2D:85:8C:AB:41:D1:99:BD:F5:95

# Fingerprint (SHA1): B9:82:07:97:AE:52:A5:68:6F:46:07:DF:FD:03:72:3D:92:86:88:2D

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "DIGITALSIGN GLOBAL ROOT RSA CA"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\271\202\007\227\256\122\245\150\157\106\007\337\375\003\162\075
\222\206\210\055
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\033\032\275\032\171\306\333\264\355\263\207\314\251\323\116\170
```

END

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\142\061\013\060\011\006\003\125\004\006\023\002\120\124\061
\052\060\050\006\003\125\004\012\014\041\104\151\147\151\164\141
\154\123\151\147\156\040\103\145\162\164\151\146\151\143\141\144
\157\162\141\040\104\151\147\151\164\141\154\061\047\060\045\006
\003\125\004\003\014\036\104\111\107\111\124\101\114\123\111\107
\116\040\107\114\117\102\101\114\040\122\117\117\124\040\122\123
\101\040\103\101
```

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

```
\002\024\135\131\310\312\253\011\127\365\346\265\332\051\224\004
\152\377\305\324\225\207
```

END

```

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "DIGITALSIGN GLOBAL ROOT ECDSA CA"
#
# Issuer: CN=DIGITALSIGN GLOBAL ROOT ECDSA CA,O=DigitalSign Certificadora Digital,C=PT
# Serial Number:36:2d:8f:72:88:a2:28:27:e4:00:ff:24:c6:2d:e4:eb:fa:9d:b6:e1
# Subject: CN=DIGITALSIGN GLOBAL ROOT ECDSA CA,O=DigitalSign Certificadora Digital,C=PT
# Not Valid Before: Thu Jan 21 11:07:50 2021
# Not Valid After : Mon Jan 15 11:07:50 2046
# Fingerprint
(SHA-256):
26:1D:71:14:AE:5F:8F:F2:D8:C7:20:9A:9D:E4:28:9E:6A:FC:9D:71:70:23:D8:54:50:90:91:99:F1:85:7C:FE
# Fingerprint (SHA1): 67:A8:08:EB:8F:88:F5:80:6C:05:45:1B:17:F3:D7:00:2F:D2:4A:8A
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "DIGITALSIGN GLOBAL ROOT ECDSA CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\144\061\013\060\011\006\003\125\004\006\023\002\120\124\061
\052\060\050\006\003\125\004\012\014\041\104\151\147\151\164\141
\154\123\151\147\156\040\103\145\162\164\151\146\151\143\141\144
\157\162\141\040\104\151\147\151\164\141\154\061\051\060\047\006
\003\125\004\003\014\040\104\111\107\111\124\101\114\123\111\107
\116\040\107\114\117\102\101\114\040\122\117\117\124\040\105\103
\104\123\101\040\103\101
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\144\061\013\060\011\006\003\125\004\006\023\002\120\124\061
\052\060\050\006\003\125\004\012\014\041\104\151\147\151\164\141
\154\123\151\147\156\040\103\145\162\164\151\146\151\143\141\144
\157\162\141\040\104\151\147\151\164\141\154\061\051\060\047\006
\003\125\004\003\014\040\104\111\107\111\124\101\114\123\111\107
\116\040\107\114\117\102\101\114\040\122\117\117\124\040\105\103
\104\123\101\040\103\101
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\024\066\055\217\162\210\242\050\047\344\000\377\044\306\055
\344\353\372\235\266\341
END
CKA_VALUE MULTILINE_OCTAL

```

\060\202\002\152\060\202\001\360\240\003\002\001\002\002\024\066  
\055\217\162\210\242\050\047\344\000\377\044\306\055\344\353\372  
\235\266\341\060\012\006\010\052\206\110\316\075\004\003\003\060  
\144\061\013\060\011\006\003\125\004\006\023\002\120\124\061\052  
\060\050\006\003\125\004\012\014\041\104\151\147\151\164\141\154  
\123\151\147\156\040\103\145\162\164\151\146\151\143\141\144\157  
\162\141\040\104\151\147\151\164\141\154\061\051\060\047\006\003  
\125\004\003\014\040\104\111\107\111\124\101\114\123\111\107\116  
\040\107\114\117\102\101\114\040\122\117\117\124\040\105\103\104  
\123\101\040\103\101\060\036\027\015\064\066\060\061\061\065\061\061  
\061\060\067\065\060\132\027\015\064\066\060\061\061\065\061\061  
\060\067\065\060\132\060\144\061\013\060\011\006\003\125\004\006  
\023\002\120\124\061\052\060\050\006\003\125\004\012\014\041\104  
\151\147\151\164\141\154\123\151\147\156\040\103\145\162\164\151  
\146\151\143\141\144\157\162\141\040\104\151\147\151\164\141\154  
\061\051\060\047\006\003\125\004\003\014\040\104\111\107\111\124  
\101\114\123\111\107\116\040\107\114\117\102\101\114\040\122\117  
\117\124\040\105\103\104\123\101\040\103\101\060\166\060\020\006  
\007\052\206\110\316\075\002\001\006\005\053\201\004\000\042\003  
\142\000\004\156\013\243\253\063\115\034\352\112\350\374\004\215  
\024\240\175\360\010\054\137\203\253\223\321\322\173\272\327\111  
\175\217\354\022\120\137\324\271\313\345\360\371\063\143\037\311  
\127\354\100\330\021\013\227\350\122\026\314\051\216\364\006\206  
\036\070\334\075\127\304\356\252\275\310\124\004\046\132\047\023  
\121\107\075\037\037\032\216\250\225\244\063\320\314\107\314\155  
\270\374\110\243\143\060\141\060\017\006\003\125\035\023\001\001  
\377\004\005\060\003\001\001\377\060\037\006\003\125\035\043\004  
\030\060\026\200\024\316\257\112\213\032\165\342\361\070\347\002  
\360\026\255\136\352\144\325\173\264\060\035\006\003\125\035\016  
\004\026\004\024\316\257\112\213\032\165\342\361\070\347\002\360  
\026\255\136\352\144\325\173\264\060\016\006\003\125\035\017\001  
\001\377\004\004\003\002\001\006\060\012\006\010\052\206\110\316  
\075\004\003\003\003\150\000\060\145\002\060\012\210\304\161\234  
\104\003\115\215\264\307\274\250\256\331\060\047\065\152\153\026  
\143\327\374\347\131\341\247\211\033\114\061\232\043\125\104\346  
\363\103\041\325\107\047\157\155\127\001\252\002\061\000\373\262  
\352\342\227\177\121\265\237\110\353\274\157\065\211\250\144\160  
\253\127\166\315\300\306\024\140\312\177\342\202\000\163\367\314  
\065\352\216\044\233\345\010\131\307\004\214\163\170\376

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "DIGITALSIGN GLOBAL ROOT ECDSA CA"

# Issuer: CN=DIGITALSIGN GLOBAL ROOT ECDSA CA,O=DigitalSign Certificadora Digital,C=PT

# Serial Number:36:2d:8f:72:88:a2:28:27:e4:00:ff:24:c6:2d:e4:eb:fa:9d:b6:e1

```
# Subject: CN=DIGITALSIGN GLOBAL ROOT ECDSA CA,O=DigitalSign Certificadora Digital,C=PT
# Not Valid Before: Thu Jan 21 11:07:50 2021
# Not Valid After : Mon Jan 15 11:07:50 2046
# Fingerprint (SHA-256):
26:1D:71:14:AE:5F:8F:F2:D8:C7:20:9A:9D:E4:28:9E:6A:FC:9D:71:70:23:D8:54:50:90:91:99:F1:85:7C:FE
# Fingerprint (SHA1): 67:A8:08:EB:8F:88:F5:80:6C:05:45:1B:17:F3:D7:00:2F:D2:4A:8A
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "DIGITALSIGN GLOBAL ROOT ECDSA CA"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\147\250\010\353\217\210\365\200\154\005\105\033\027\363\327\000
\057\322\112\212
END
CKA_CERT_MD5_HASH
MULTILINE_OCTAL
\252\055\241\316\377\041\302\210\313\132\036\214\341\311\222\217
END
CKA_ISSUER MULTILINE_OCTAL
\060\144\061\013\060\011\006\003\125\004\006\023\002\120\124\061
\052\060\050\006\003\125\004\012\014\041\104\151\147\151\164\141
\154\123\151\147\156\040\103\145\162\164\151\146\151\143\141\144
\157\162\141\040\104\151\147\151\164\141\154\061\051\060\047\006
\003\125\004\003\014\040\104\111\107\111\124\101\114\123\111\107
\116\040\107\114\117\102\101\114\040\122\117\117\124\040\105\103
\104\123\101\040\103\101
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\024\066\055\217\162\210\242\050\047\344\000\377\044\306\055
\344\353\372\235\266\341
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "Security Communication RootCA3"
#
#
# Issuer: CN=Security Communication RootCA3,O="SECOM Trust Systems CO.,LTD.",C=JP
# Serial Number:00:e1:7c:37:40:fd:1b:fe:67
# Subject: CN=Security Communication RootCA3,O="SECOM Trust Systems CO.,LTD.",C=JP
# Not Valid Before: Thu Jun 16 06:17:16 2016
# Not Valid After : Mon Jan 18 06:17:16 2038
# Fingerprint (SHA-256):
24:A5:5C:2A:B0:51:44:2D:06:17:76:65:41:23:9A:4A:D0:32:D7:C5:51:75:AA:34:FF:DE:2F:BC:4F:5C:52:94
```

# Fingerprint (SHA1): C3:03:C8:22:74:92:E5:61:A2:9C:5F:79:91:2B:1E:44:13:91:30:3A

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE  
CKA\_TOKEN CK\_BBOOL CK\_TRUE  
CKA\_PRIVATE CK\_BBOOL CK\_FALSE  
CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE  
CKA\_LABEL UTF8 "Security Communication RootCA3"  
CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509  
CKA\_SUBJECT MULTILINE\_OCTAL  
\060\135\061\013\060\011\006\003\125\004\006\023\002\112\120\061  
\045\060\043\006\003\125\004\012\023\034\123\105\103\117\115\040  
\124\162\165\163\164\040\123\171\163\164\145\155\163\040\103\117  
\056\054\114\124\104\056\061\047\060\045\006\003\125\004\003\023  
\036\123\145\143\165\162\151\164\171\040\103\157\155\155\165\156  
\151\143\141\164\151\157\156\040\122\157\157\164\103\101\063  
END

CKA\_ID  
UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL  
\060\135\061\013\060\011\006\003\125\004\006\023\002\112\120\061  
\045\060\043\006\003\125\004\012\023\034\123\105\103\117\115\040  
\124\162\165\163\164\040\123\171\163\164\145\155\163\040\103\117  
\056\054\114\124\104\056\061\047\060\045\006\003\125\004\003\023  
\036\123\145\143\165\162\151\164\171\040\103\157\155\155\165\156  
\151\143\141\164\151\157\156\040\122\157\157\164\103\101\063  
END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL  
\002\011\000\341\174\067\100\375\033\376\147  
END

CKA\_VALUE MULTILINE\_OCTAL  
\060\202\005\177\060\202\003\147\240\003\002\001\002\002\011\000  
\341\174\067\100\375\033\376\147\060\015\006\011\052\206\110\206  
\367\015\001\001\014\005\000\060\135\061\013\060\011\006\003\125  
\004\006\023\002\112\120\061\045\060\043\006\003\125\004\012\023  
\034\123\105\103\117\115\040\124\162\165\163\164\040\123\171\163  
\164\145\155\163\040\103\117\056\054\114\124\104\056\061\047\060  
\045\006\003\125\004\003\023\036\123\145\143\165\162\151\164\171  
\040\103\157\155\155\165\156\151\143\141\164\151\157\156\040\122  
\157\157\164\103\101\063\060\036\027\015\061\066\060\066\061\066  
\060\066\061\067\061\066\132\027\015\063\070\060\061\061\070\060  
\066\061\067\061\066\132\060\135\061\013\060\011\006\003\125\004  
\006\023\002\112\120\061\045\060\043\006\003\125\004\012\023\034  
\123\105\103\117\115\040\124\162\165\163\164\040\123\171\163\164  
\145\155\163\040\103\117\056\054\114\124\104\056\061\047\060\045  
\006\003\125\004\003\023\036\123\145\143\165\162\151\164\171\040  
\103\157\155\155\165\156\151\143\141\164\151\157\156\040\122\157  
\157\164\103\101\063\060\202\002\042\060\015\006\011\052\206\110  
\206\367\015\001\001\001\005\000\003\202\002\017\000\060\202\002  
\012\002\202\002\001\000\343\311\162\111\367\060\336\011\174\251

\100\201\130\323\264\072\335\272\141\017\223\120\156\151\074\065  
\302\356\133\163\220\033\147\114\041\354\137\065\273\071\076\053  
\012\140\357\273\155\053\206\373\161\242\310\254\344\126\224\371  
\311\257\261\162\324\040\254\164\322\270\025\255\121\376\205\164  
\241\271\020\376\005\200\371\122\223\263\100\075\165\020\254\300  
\226\267\247\176\166\274\343\033\122\031\316\021\037\013\004\064  
\365\330\365\151\074\167\363\144\364\015\252\205\336\340\011\120  
\004\027\226\204\267\310\212\274\115\162\374\034\273\317\363\006  
\115\371\237\144\367\176\246\146\206\065\161\310\021\200\114\301  
\161\100\130\036\276\240\163\366\374\076\120\341\340\057\046\075  
\176\134\043\265\171\160\336\372\340\321\245\326\014\101\161\173  
\367\352\214\034\210\307\354\213\365\321\057\125\226\106\174\132  
\073\130\073\373\272\330\055\265\045\332\172\116\317\104\256\041  
\246\236\230\312\040\156\174\273\210\205\133\373\300\020\142\273  
\362\371\047\107\357\321\211\071\103\304\337\336\341\101\277\124  
\163\040\227\055\154\332\363\324\007\243\346\271\330\157\256\374  
\214\031\056\323\147\147\053\225\333\130\134\265\152\002\363\270  
\203\136\264\153\276\101\176\127\011\165\104\120\125\315\132\021  
\141\041\012\141\302\251\210\375\023\274\055\211\057\315\141\340  
\225\276\312\265\173\341\173\064\147\013\037\266\014\307\174\036  
\031\123\312\247\261\112\025\040\126\024\160\075\053\202\054\017  
\235\025\035\107\200\107\377\170\231\016\061\257\157\076\217\355  
\206\151\036\173\030\210\024\262\302\374\202\063\056\234\113\055  
\373\160\073\161\252\053\173\046\047\363\032\302\334\373\027\270  
\241\352\313\240\264\256\323\224\176\172\320\253\303\354\070\055  
\021\056\210\277\324\077\255\022\073\102\254\217\002\156\175\314  
\321\137\141\276\241\274\072\152\110\352\046\125\042\026\135\137  
\015\377\047\063\237\030\003\164\212\133\122\040\107\153\105\115  
\042\167\214\125\047\360\257\036\214\311\203\042\124\267\232\320  
\117\331\316\374\331\056\034\226\050\261\002\323\003\275\045\122  
\034\064\146\117\043\253\364\167\202\226\035\321\127\060\010\021  
\005\375\127\321\331\307\002\003\001\000\001\243\102\060\100\060  
\035\006\003\125\035\016\004\026\004\024\144\024\174\374\130\162  
\026\246\012\051\064\025\157\052\313\274\374\257\250\253\060\016  
\006\003\125\035\017\001\001\377\004\004\003\002\001\006\060\017  
\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060  
\015\006\011\052\206\110\206\367\015\001\001\014\005\000\003\202  
\002\001\000\334\002\043\010\342\357\041\072\307\015\267\046\322  
\142\223\247\245\043\162\007\040\202\140\337\030\327\124\255\151  
\045\222\236\331\024\317\231\271\122\201\317\256\154\212\073\132  
\071\310\154\001\103\302\042\155\002\360\142\315\116\143\103\300  
\024\332\364\143\360\352\364\161\356\116\207\343\161\251\364\311  
\127\345\056\137\034\171\273\043\252\207\104\127\351\275\065\115  
\101\273\113\050\243\230\262\033\331\013\027\007\345\367\352\235  
\365\166\327\277\304\266\201\130\377\310\377\144\151\142\171\255  
\156\016\037\177\356\035\151\345\267\162\161\263\376\245\001\065  
\224\124\053\300\122\155\217\125\304\311\322\270\313\312\064\010  
\121\205\240\365\274\264\027\130\352\012\134\172\275\143\306\072

\057\377\226\111\031\204\352\147\330\004\261\141\364\000\133\112  
\267\234\161\067\031\205\171\277\201\260\307\023\016\166\161\076  
\072\200\006\256\006\026\247\215\265\302\304\313\377\100\245\134  
\215\245\311\072\355\162\201\312\134\230\074\322\064\003\167\010  
\375\360\051\131\135\041\010\307\140\277\244\161\173\270\331\036  
\202\276\011\257\145\157\050\253\277\113\265\356\076\010\107\047  
\240\017\157\017\213\077\254\225\030\363\271\016\334\147\125\156  
\142\236\106\016\321\004\170\312\162\256\166\331\245\370\262\337  
\210\011\141\213\357\044\116\321\131\077\132\324\075\311\223\074  
\053\144\365\201\015\026\226\367\222\303\376\061\157\350\052\062  
\164\016\364\114\230\112\030\016\060\124\325\305\353\274\305\025  
\236\350\231\041\353\047\053\011\012\333\361\346\160\030\126\273  
\014\344\276\371\350\020\244\023\222\270\034\340\333\147\035\123  
\003\244\042\247\334\135\222\020\074\352\377\374\033\020\032\303  
\330\320\234\235\145\313\320\053\047\061\003\036\066\341\075\166  
\165\014\377\105\046\271\335\121\274\043\307\137\330\330\207\020  
\100\022\015\075\070\067\347\104\074\030\300\123\011\144\217\377  
\325\232\246\174\160\056\163\125\041\350\337\377\203\271\035\076  
\062\036\326\246\175\054\361\146\351\134\035\247\243\316\136\045  
\062\053\343\225\254\052\007\316\264\050\170\206\074\055\246\235  
\115\322\164\060\335\144\121\025\333\203\203\121\327\257\375\063  
\235\115\146

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "Security Communication RootCA3"

# Issuer: CN=Security Communication RootCA3,O="SECOM Trust Systems CO.,LTD.",C=JP

# Serial Number:00:e1:7c:37:40:fd:1b:fe:67

# Subject: CN=Security Communication RootCA3,O="SECOM Trust Systems CO.,LTD.",C=JP

# Not Valid Before: Thu Jun 16 06:17:16 2016

# Not Valid After : Mon Jan 18 06:17:16 2038

# Fingerprint (SHA-256):

24:A5:5C:2A:B0:51:44:2D:06:17:76:65:41:23:9A:4A:D0:32:D7:C5:51:75:AA:34:FF:DE:2F:BC:4F:5C:52:94

#

Fingerprint (SHA1): C3:03:C8:22:74:92:E5:61:A2:9C:5F:79:91:2B:1E:44:13:91:30:3A

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Security Communication RootCA3"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\303\003\310\042\164\222\345\141\242\234\137\171\221\053\036\104  
\023\221\060\072

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\034\232\026\377\236\134\340\115\212\024\001\364\065\135\051\046

END

CKA\_ISSUER MULTILINE\_OCTAL

\060\135\061\013\060\011\006\003\125\004\006\023\002\112\120\061

\045\060\043\006\003\125\004\012\023\034\123\105\103\117\115\040

\124\162\165\163\164\040\123\171\163\164\145\155\163\040\103\117

\056\054\114\124\104\056\061\047\060\045\006\003\125\004\003\023

\036\123\145\143\165\162\151\164\171\040\103\157\155\155\165\156

\151\143\141\164\151\157\156\040\122\157\157\164\103\101\063

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\011\000\341\174\067\100\375\033\376\147

END

CKA\_TRUST\_SERVER\_AUTH

CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "Security Communication ECC RootCA1"

#

# Issuer: CN=Security Communication ECC RootCA1,O="SECOM Trust Systems CO.,LTD.",C=JP

# Serial Number:00:d6:5d:9b:b3:78:81:2e:eb

# Subject: CN=Security Communication ECC RootCA1,O="SECOM Trust Systems CO.,LTD.",C=JP

# Not Valid Before: Thu Jun 16 05:15:28 2016

# Not Valid After : Mon Jan 18 05:15:28 2038

# Fingerprint (SHA-256):

E7:4F:BD:A5:5B:D5:64:C4:73:A3:6B:44:1A:A7:99:C8:A6:8E:07:74:40:E8:28:8B:9F:A1:E5:0E:4B:BA:CA:11

# Fingerprint (SHA1): B8:0E:26:A9:BF:D2:B2:3B:C0:EF:46:C9:BA:C7:BB:F6:1D:0D:41:41

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Security Communication ECC RootCA1"

CKA\_CERTIFICATE\_TYPE

CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\141\061\013\060\011\006\003\125\004\006\023\002\112\120\061

\045\060\043\006\003\125\004\012\023\034\123\105\103\117\115\040

\124\162\165\163\164\040\123\171\163\164\145\155\163\040\103\117

\056\054\114\124\104\056\061\053\060\051\006\003\125\004\003\023

\042\123\145\143\165\162\151\164\171\040\103\157\155\155\165\156

\151\143\141\164\151\157\156\040\105\103\103\040\122\157\157\164

\103\101\061

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL



\060\141\061\013\060\011\006\003\125\004\006\023\002\112\120\061  
\045\060\043\006\003\125\004\012\023\034\123\105\103\117\115\040  
\124\162\165\163\164\040\123\171\163\164\145\155\163\040\103\117  
\056\054\114\124\104\056\061\053\060\051\006\003\125\004\003\023  
\042\123\145\143\165\162\151\164\171\040\103\157\155\155\165\156  
\151\143\141\164\151\157\156\040\105\103\103\040\122\157\157\164  
\103\101\061

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\011\000\326\135\233\263\170\201\056\353

END

CKA\_VALUE

MULTILINE\_OCTAL

\060\202\002\070\060\202\001\276\240\003\002\001\002\002\011\000  
\326\135\233\263\170\201\056\353\060\012\006\010\052\206\110\316  
\075\004\003\003\060\141\061\013\060\011\006\003\125\004\006\023  
\002\112\120\061\045\060\043\006\003\125\004\012\023\034\123\105  
\103\117\115\040\124\162\165\163\164\040\123\171\163\164\145\155  
\163\040\103\117\056\054\114\124\104\056\061\053\060\051\006\003  
\125\004\003\023\042\123\145\143\165\162\151\164\171\040\103\157  
\155\155\165\156\151\143\141\164\151\157\156\040\105\103\103\040  
\122\157\157\164\103\101\061\060\036\027\015\061\066\060\066\061  
\066\060\065\061\065\062\070\132\027\015\063\070\060\061\061\070  
\060\065\061\065\062\070\132\060\141\061\013\060\011\006\003\125  
\004\006\023\002\112\120\061\045\060\043\006\003\125\004\012\023  
\034\123\105\103\117\115\040\124\162\165\163\164\040\123\171\163  
\164\145\155\163\040\103\117\056\054\114\124\104\056\061\053\060  
\051\006\003\125\004\003\023\042\123\145\143\165\162\151\164\171  
\040\103\157\155\155\165\156\151\143\141\164\151\157\156\040\105  
\103\103\040\122\157\157\164\103\101\061\060\166\060\020\006\007  
\052\206\110\316\075\002\001\006\005\053\201\004\000\042\003\142  
\000\004\244\245\157\140\003\003\303\275\061\364\323\027\234\053  
\204\165\254\345\375\075\127\156\327\143\277\346\004\211\222\216  
\201\234\343\351\107\156\312\220\022\310\023\340\247\235\367\145  
\164\037\154\020\262\350\344\351\357\155\205\062\231\104\261\136  
\375\314\166\020\330\133\275\242\306\371\326\102\344\127\166\334  
\220\302\065\251\113\210\074\022\107\155\134\377\111\117\032\112  
\120\261\243\102\060\100\060\035\006\003\125\035\016\004\026\004  
\024\206\034\347\376\055\245\112\213\010\376\050\021\372\276\243  
\146\370\140\131\057\060\016\006\003\125\035\017\001\001\377\004  
\004\003\002\001\006\060\017\006\003\125\035\023\001\001\377\004  
\005\060\003\001\001\377\060\012\006\010\052\206\110\316\075\004  
\003\003\003\150\000\060\145\002\060\025\135\102\075\374\266\356  
\367\073\261\066\350\236\366\304\106\050\111\063\320\130\103\052  
\143\051\314\115\261\264\172\242\271\015\070\245\135\110\052\375  
\313\262\163\135\243\210\010\307\014\002\061\000\300\253\055\016  
\155\355\030\242\333\123\351\045\333\125\010\340\120\314\337\104  
\141\026\202\253\111\260\262\201\354\163\207\170\264\114\262\142

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\033\022\372\026\115\045\113\143\275\036\067\331
END
CKA_NSS_MOZILLA_CA_POLICY
CK_BBOOL CK_TRUE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

# Trust for "Security Communication ECC RootCA1"
# Issuer: CN=Security Communication ECC RootCA1,O="SECOM Trust Systems CO.,LTD.",C=JP
# Serial Number:00:d6:5d:9b:b3:78:81:2e:eb
# Subject: CN=Security Communication ECC RootCA1,O="SECOM Trust Systems CO.,LTD.",C=JP
# Not Valid Before: Thu Jun 16 05:15:28 2016
# Not Valid After : Mon Jan 18 05:15:28 2038
# Fingerprint (SHA-256):
E7:4F:BD:A5:5B:D5:64:C4:73:A3:6B:44:1A:A7:99:C8:A6:8E:07:74:40:E8:28:8B:9F:A1:E5:0E:4B:BA:CA:11
# Fingerprint (SHA1):
B8:0E:26:A9:BF:D2:B2:3B:C0:EF:46:C9:BA:C7:BB:F6:1D:0D:41:41
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Security Communication ECC RootCA1"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\270\016\046\251\277\322\262\073\300\357\106\311\272\307\273\366
\035\015\101\101
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\176\103\260\222\150\354\005\103\114\230\253\135\065\056\176\206
END
CKA_ISSUER MULTILINE_OCTAL
\060\141\061\013\060\011\006\003\125\004\006\023\002\112\120\061
\045\060\043\006\003\125\004\012\023\034\123\105\103\117\115\040
\124\162\165\163\164\040\123\171\163\164\145\155\163\040\103\117
\056\054\114\124\104\056\061\053\060\051\006\003\125\004\003\023
\042\123\145\143\165\162\151\164\171\040\103\157\155\155\165\156
\151\143\141\164\151\157\156\040\105\103\103\040\122\157\157\164
\103\101\061
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\011\000\326\135\233\263\170\201\056\353
END
CKA_TRUST_SERVER_AUTH
CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#

```

```
# Certificate "BJCA Global Root CA1"
#
# Issuer: CN=BJCA Global Root CA1,O=BEIJING CERTIFICATE AUTHORITY,C=CN
# Serial Number:55:6f:65:e3:b4:d9:90:6a:1b:09:d1:6c:3e:c0:6c:20
# Subject: CN=BJCA Global Root CA1,O=BEIJING CERTIFICATE AUTHORITY,C=CN
# Not Valid Before: Thu Dec 19 03:16:17 2019
# Not Valid After : Mon Dec 12 03:16:17 2044
# Fingerprint (SHA-256):
F3:89:6F:88:FE:7C:0A:88:27:66:A7:FA:6A:D2:74:9F:B5:7A:7F:3E:98:FB:76:9C:1F:A7:B0:9C:2C:44:D5:AE
# Fingerprint (SHA1): D5:EC:8D:7B:4C:BA:79:F4:E7:E8:CB:9D:6B:AE:77:83:10:03:21:6A
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "BJCA Global Root CA1"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\124\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\046\060\044\006\003\125\004\012\014\035\102\105\111\112\111\116
\107\040\103\105\122\124\111\106\111\103\101\124\105\040\101\125
\124\110\117\122\111\124\131\061\035\060\033\006\003\125\004\003
\014\024\102\112\103\101\040\107\154\157\142\141\154\040\122\157
\157\164\040\103\101\061
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\124\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\046\060\044\006\003\125\004\012\014\035\102\105\111\112\111\116
\107\040\103\105\122\124\111\106\111\103\101\124\105\040\101\125
\124\110\117\122\111\124\131\061\035\060\033\006\003\125\004\003
\014\024\102\112\103\101\040\107\154\157\142\141\154\040\122\157
\157\164\040\103\101\061
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\125\157\145\343\264\331\220\152\033\011\321\154\076\300
\154\040
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\164\060\202\003\134\240\003\002\001\002\002\020\125
\157\145\343\264\331\220\152\033\011\321\154\076\300\154\040\060
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\124
\061\013\060\011\006\003\125\004\006\023\002\103\116\061\046\060
\044\006\003\125\004\012\014\035\102\105\111\112\111\116\107\040
\103\105\122\124\111\106\111\103\101\124\105\040\101\125\124\110
\117\122\111\124\131\061\035\060\033\006\003\125\004\003\014\024
\102\112\103\101\040\107\154\157\142\141\154\040\122\157\157\164
\040\103\101\061\060\036\027\015\061\071\061\062\061\071\060\063
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\061\066\061\067\132\027\015\064\064\061\062\061\062\060\063\061  
\066\061\067\132\060\124\061\013\060\011\006\003\125\004\006\023  
\002\103\116\061\046\060\044\006\003\125\004\012\014\035\102\105  
\111\112\111\116\107\040\103\105\122\124\111\106\111\103\101\124  
\105\040\101\125\124\110\117\122\111\124\131\061\035\060\033\006  
\003\125\004\003\014\024\102\112\103\101\040\107\154\157\142\141  
\154\040\122\157\157\164\040\103\101\061\060\202\002\042\060\015  
\006\011\052\206\110\206\367\015\001\001\001\005\000\003\202\002  
\017\000\060\202\002\012\002\202\002\001\000\361\146\010\275\331  
\305\025\141\313\204\004\101\245\151\067\167\035\301\260\173\372  
\303\167\110\220\023\162\144\321\270\174\220\065\235\030\171\210  
\343\227\001\074\107\201\362\016\242\230\015\236\077\067\340\031  
\262\220\362\106\034\222\261\072\141\316\372\267\106\236\003\206  
\327\063\156\355\367\105\214\166\067\336\156\226\221\367\327\176  
\053\207\027\325\213\065\356\204\221\162\127\334\140\303\303\271  
\347\307\147\044\043\117\143\012\143\366\146\175\113\125\247\077  
\170\144\111\151\022\227\340\114\015\323\011\240\062\060\072\372  
\237\300\362\234\305\022\052\056\034\265\004\063\332\244\070\021  
\152\336\306\030\366\107\072\042\101\207\042\374\304\211\050\124  
\330\214\245\060\012\370\027\026\312\254\067\375\171\247\221\027  
\170\070\231\255\130\355\262\336\314\211\175\003\234\263\211\145  
\347\343\073\261\042\206\217\006\155\170\007\375\221\022\177\260  
\153\034\211\015\371\270\313\164\133\007\302\310\364\065\321\144  
\143\172\351\156\232\050\326\060\275\346\033\335\025\257\204\352  
\234\307\312\365\016\352\362\135\051\207\217\151\163\071\276\056  
\044\157\105\041\254\305\324\151\045\006\203\255\172\110\205\023  
\054\015\006\270\154\171\126\374\243\147\062\201\365\127\245\312  
\127\102\151\351\134\044\141\357\342\060\030\116\104\230\125\157  
\172\302\223\330\031\266\336\174\107\212\021\116\111\107\333\050  
\224\002\013\224\112\054\371\022\320\117\350\061\176\154\172\277  
\246\077\233\071\075\002\026\243\030\263\147\254\133\077\054\203  
\053\147\071\201\134\271\176\224\325\144\335\236\217\156\256\350  
\174\133\264\327\152\107\110\327\176\263\324\055\216\126\166\116  
\317\151\361\156\104\154\324\044\352\215\044\241\030\277\275\127  
\376\251\231\065\265\333\020\167\270\075\110\272\326\301\347\361  
\043\076\327\337\205\235\047\074\324\100\275\012\014\275\365\347  
\215\045\326\201\164\207\106\324\051\165\242\102\154\367\163\211  
\347\175\277\172\112\037\323\042\311\025\125\317\337\157\174\125  
\320\244\213\007\021\067\137\203\246\046\127\246\001\133\176\376  
\130\150\007\251\351\172\331\271\350\377\120\037\253\302\264\300  
\316\350\352\375\017\275\215\115\270\274\161\002\003\001\000\001  
\243\102\060\100\060\035\006\003\125\035\016\004\026\004\024\305  
\357\355\314\330\215\041\306\110\344\343\327\024\056\247\026\223  
\345\230\001\060\017\006\003\125\035\023\001\001\377\004\005\060  
\003\001\001\377\060\016\006\003\125\035\017\001\001\377\004\004  
\003\002\001\006\060\015\006\011\052\206\110\206\367\015\001\001  
\013\005\000\003\202\002\001\000\122\202\254\041\064\037\043\362  
\242\330\371\270\257\067\066\040\211\321\067\003\326\151\237\270

\141\020\272\242\061\230\131\107\350\321\015\045\036\025\101\014  
\340\052\125\325\127\122\313\370\344\307\151\243\035\115\161\002  
\136\137\041\105\140\110\134\011\216\111\020\301\004\334\251\142  
\153\002\360\103\310\116\235\070\111\164\311\062\160\124\155\301  
\107\374\216\264\066\236\324\234\275\335\040\326\123\311\030\251  
\265\126\271\166\213\225\147\146\356\275\230\376\256\357\276\156  
\373\140\366\375\131\306\052\033\077\043\112\224\044\060\047\310  
\211\274\353\104\044\232\313\075\276\117\325\172\316\216\027\313  
\142\301\331\336\036\016\172\377\103\206\064\122\274\141\077\074  
\137\273\331\166\264\123\274\227\263\376\212\114\022\056\053\363  
\327\316\341\242\377\335\173\160\373\073\241\115\244\143\002\375  
\070\227\225\077\005\160\240\153\337\142\201\103\213\264\131\015  
\112\214\124\234\305\273\201\237\315\175\245\357\013\045\036\072  
\040\333\034\374\037\230\147\002\012\324\163\104\023\333\121\204  
\032\125\003\126\340\000\176\164\006\377\070\304\162\035\323\250  
\077\150\061\135\323\011\307\056\214\133\143\340\350\334\036\322  
\354\141\036\362\336\345\357\366\231\166\140\055\036\224\162\161  
\306\013\052\062\307\222\116\325\106\327\035\371\251\031\012\310  
\372\225\316\155\043\230\252\013\070\255\232\126\015\157\215\361  
\061\000\210\301\027\234\315\031\066\065\376\125\123\240\340\074  
\063\137\226\136\342\062\351\337\063\273\006\112\251\330\204\163  
\316\167\322\306\254\161\341\134\243\035\014\273\012\337\137\342  
\243\161\330\332\067\132\240\170\053\364\324\175\353\166\355\362  
\141\160\245\145\232\323\211\064\030\253\373\162\076\327\264\075  
\171\134\330\037\241\063\173\331\202\120\014\223\027\252\154\334  
\302\202\273\002\127\066\257\230\047\052\071\120\341\260\211\365  
\045\227\176\107\150\020\264\354\163\312\263\227\321\044\334\366  
\142\240\050\323\265\243\270\144\267\210\142\102\317\235\123\315  
\231\276\144\150\217\117\036\022\110\367\322\051\303\230\050\312  
\362\062\013\223\214\051\117\074\140\062\315\005\226\141\354\362  
\257\376\263\160\054\056\246\362

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "BJCA Global Root CA1"

# Issuer: CN=BJCA Global Root CA1,O=BEIJING CERTIFICATE AUTHORITY,C=CN

# Serial Number:55:6f:65:e3:b4:d9:90:6a:1b:09:d1:6c:3e:c0:6c:20

# Subject: CN=BJCA Global Root CA1,O=BEIJING CERTIFICATE AUTHORITY,C=CN

# Not Valid Before: Thu Dec 19 03:16:17

2019

# Not Valid After : Mon Dec 12 03:16:17 2044

# Fingerprint (SHA-256):

F3:89:6F:88:FE:7C:0A:88:27:66:A7:FA:6A:D2:74:9F:B5:7A:7F:3E:98:FB:76:9C:1F:A7:B0:9C:2C:44:D5:AE

# Fingerprint (SHA1): D5:EC:8D:7B:4C:BA:79:F4:E7:E8:CB:9D:6B:AE:77:83:10:03:21:6A

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

```

CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "BJCA Global Root CA1"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\325\354\215\173\114\272\171\364\347\350\313\235\153\256\167\203
\020\003\041\152
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\102\062\231\166\103\063\066\044\065\007\202\233\050\371\320\220
END
CKA_ISSUER MULTILINE_OCTAL
\060\124\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\046\060\044\006\003\125\004\012\014\035\102\105\111\112\111\116
\107\040\103\105\122\124\111\106\111\103\101\124\105\040\101\125
\124\110\117\122\111\124\131\061\035\060\033\006\003\125\004\003
\014\024\102\112\103\101\040\107\154\157\142\141\154\040\122\157
\157\164\040\103\101\061
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\125\157\145\343\264\331\220\152\033\011\321\154\076\300
\154\040
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "BJCA Global Root CA2"
#
# Issuer: CN=BJCA Global Root CA2,O=BEIJING CERTIFICATE AUTHORITY,C=CN
# Serial Number:2c:17:08:7d:64:2a:c0:fe:85:18:59:06:cf:b4:4a:eb
# Subject: CN=BJCA Global Root CA2,O=BEIJING CERTIFICATE AUTHORITY,C=CN
# Not Valid Before: Thu Dec 19 03:18:21 2019
# Not Valid After : Mon Dec 12 03:18:21 2044
# Fingerprint (SHA-256):
57:4D:F6:93:1E:27:80:39:66:7B:72:0A:FD:C1:60:0F:C2:7E:B6:6D:D3:09:29:79:FB:73:85:64:87:21:28:82
# Fingerprint (SHA1): F4:27:86:EB:6E:B8:6D:88:31:67:02:FB:BA:66:A4:53:00:AA:7A:A6
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE
CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "BJCA Global Root CA2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL

```

\060\124\061\013\060\011\006\003\125\004\006\023\002\103\116\061  
\046\060\044\006\003\125\004\012\014\035\102\105\111\112\111\116  
\107\040\103\105\122\124\111\106\111\103\101\124\105\040\101\125  
\124\110\117\122\111\124\131\061\035\060\033\006\003\125\004\003  
\014\024\102\112\103\101\040\107\154\157\142\141\154\040\122\157  
\157\164\040\103\101\062

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\124\061\013\060\011\006\003\125\004\006\023\002\103\116\061  
\046\060\044\006\003\125\004\012\014\035\102\105\111\112\111\116  
\107\040\103\105\122\124\111\106\111\103\101\124\105\040\101\125  
\124\110\117\122\111\124\131\061\035\060\033\006\003\125\004\003  
\014\024\102\112\103\101\040\107\154\157\142\141\154\040\122\157  
\157\164\040\103\101\062

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\054\027\010\175\144\052\300\376\205\030\131\006\317\264  
\112\353

END

CKA\_VALUE

MULTILINE\_OCTAL

\060\202\002\045\060\202\001\253\240\003\002\001\002\002\020\054  
\027\010\175\144\052\300\376\205\030\131\006\317\264\112\353\060  
\012\006\010\052\206\110\316\075\004\003\003\060\124\061\013\060  
\011\006\003\125\004\006\023\002\103\116\061\046\060\044\006\003  
\125\004\012\014\035\102\105\111\112\111\116\107\040\103\105\122  
\124\111\106\111\103\101\124\105\040\101\125\124\110\117\122\111  
\124\131\061\035\060\033\006\003\125\004\003\014\024\102\112\103  
\101\040\107\154\157\142\141\154\040\122\157\157\164\040\103\101  
\062\060\036\027\015\061\071\061\062\061\071\060\063\061\070\062  
\061\132\027\015\064\064\061\062\061\062\060\063\061\070\062\061  
\132\060\124\061\013\060\011\006\003\125\004\006\023\002\103\116  
\061\046\060\044\006\003\125\004\012\014\035\102\105\111\112\111  
\116\107\040\103\105\122\124\111\106\111\103\101\124\105\040\101  
\125\124\110\117\122\111\124\131\061\035\060\033\006\003\125\004  
\003\014\024\102\112\103\101\040\107\154\157\142\141\154\040\122  
\157\157\164\040\103\101\062\060\166\060\020\006\007\052\206\110  
\316\075\002\001\006\005\053\201\004\000\042\003\142\000\004\235  
\313\200\221\215\123\147\265\271\120\261\003\370\345\111\037\101  
\042\011\260\121\122\130\326\053\064\217\305\022\106\024\305\213  
\057\054\204\377\054\156\250\325\361\011\343\003\041\024\304\103  
\075\174\301\054\304\113\152\112\315\351\207\340\175\366\042\276  
\372\112\121\270\060\212\375\341\336\030\022\012\366\107\267\347  
\027\277\047\212\324\101\114\226\074\140\226\301\375\025\034\243  
\102\060\100\060\035\006\003\125\035\016\004\026\004\024\322\112  
\261\121\177\006\360\321\202\037\116\156\137\253\203\374\110\324  
\260\221\060\017\006\003\125\035\023\001\001\377\004\005\060\003

```
\001\001\377\060\016\006\003\125\035\017\001\001\377\004\004\003
\002\001\006\060\012\006\010\052\206\110\316\075\004\003\003\003
\150\000\060\145\002\060\032\274\133\327\376\251\322\124\016\112
\135\322\155\261\100\334\364\103\325\322\112\231\031\022\126\200
\367\203\064\341\065\116\110\155\004\017\127\061\060\060\055\261
\252\235\003\070\333\006\002\061\000\313\314\207\123\313\172\337
\040\121\163\220\300\250\133\141\320\305\120\071\375\205\376\301
\343\170\370\246\326\113\275\233\207\217\017\345\326\123\226\253
\074\310\100\332\141\367\123\243\367
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "BJCA Global Root CA2"

# Issuer: CN=BJCA Global Root CA2,O=BEIJING CERTIFICATE AUTHORITY,C=CN

# Serial Number:2c:17:08:7d:64:2a:c0:fe:85:18:59:06:cf:b4:4a:eb

# Subject: CN=BJCA Global Root CA2,O=BEIJING CERTIFICATE AUTHORITY,C=CN

# Not Valid Before: Thu Dec 19 03:18:21 2019

# Not Valid After : Mon Dec 12 03:18:21 2044

# Fingerprint (SHA-256):

57:4D:F6:93:1E:27:80:39:66:7B:72:0A:FD:C1:60:0F:C2:7E:B6:6D:D3:09:29:79:FB:73:85:64:87:21:28:82

# Fingerprint (SHA1): F4:27:86:EB:6E:B8:6D:88:31:67:02:FB:BA:66:A4:53:00:AA:7A:A6

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN

CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "BJCA Global Root CA2"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\364\047\206\353\156\270\155\210\061\147\002\373\272\146\244\123
\000\252\172\246
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\136\012\366\107\137\246\024\350\021\001\225\077\115\001\353\074
```

END

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\124\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\046\060\044\006\003\125\004\012\014\035\102\105\111\112\111\116
\107\040\103\105\122\124\111\106\111\103\101\124\105\040\101\125
\124\110\117\122\111\124\131\061\035\060\033\006\003\125\004\003
\014\024\102\112\103\101\040\107\154\157\142\141\154\040\122\157
\157\164\040\103\101\062
```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

```
\002\020\054\027\010\175\144\052\300\376\205\030\131\006\317\264
\112\353
```



```
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST
CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
# Microsoft Code Signing Only Certificate
# Certificate "CAEDICOM Root"
# Issuer: C=ES,O=EDICOM,CN=CAEDICOM Root
# Serial Number:fb:71:26:58:ad:99:e5
# Subject: C=ES,O=EDICOM,CN=CAEDICOM Root
# Not Valid Before: Wed May 21 11:06:35 2014
# Not Valid After: Sun May 21 10:20:00 2034
# Fingerprint (MD5): cd:d5:a1:fe:28:31:9c:13:be:d5:c1:e8:cf:56:f0:76
# Fingerprint (SHA1): 55:9b:ba:7b:0f:fe:80:d6:d3:82:9b:1f:d0:7a:a4:d3:22:19:47:90
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "CAEDICOM Root"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\066\061\026\060\024\006\003\125\004\003\014\015\103\101\105
\104\111\103\117\115\040\122\157\157\164\061\017\060\015\006\003
\125\004\012\014\006\105\104\111\103\117\115\061\013\060\011\006
\003\125\004\006\023\002\105\123
```

```
END
```

```
CKA_ID UTF8 "0"
```

```
CKA_ISSUER
```

```
MULTILINE_OCTAL
```

```
\060\066\061\026\060\024\006\003\125\004\003\014\015\103\101\105
\104\111\103\117\115\040\122\157\157\164\061\017\060\015\006\003
\125\004\012\014\006\105\104\111\103\117\115\061\013\060\011\006
\003\125\004\006\023\002\105\123
```

```
END
```

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
```

```
\002\010\000\373\161\046\130\255\231\345
```

```
END
```

```
CKA_VALUE MULTILINE_OCTAL
```

```
\060\202\005\121\060\202\003\071\240\003\002\001\002\002\010\000
\373\161\046\130\255\231\345\060\015\006\011\052\206\110\206\367
\015\001\001\013\005\000\060\066\061\026\060\024\006\003\125\004
\003\014\015\103\101\105\104\111\103\117\115\040\122\157\157\164
\061\017\060\015\006\003\125\004\012\014\006\105\104\111\103\117
\115\061\013\060\011\006\003\125\004\006\023\002\105\123\060\036
\027\015\061\064\060\065\062\061\061\061\060\066\063\065\132\027
\015\063\064\060\065\062\061\061\060\062\060\060\060\132\060\066
```

\061\026\060\024\006\003\125\004\003\014\015\103\101\105\104\111  
\103\117\115\040\122\157\157\164\061\017\060\015\006\003\125\004  
\012\014\006\105\104\111\103\117\115\061\013\060\011\006\003\125  
\004\006\023\002\105\123\060\202\002\042\060\015\006\011\052\206  
\110\206\367\015\001\001\001\005\000\003\202\002\017\000\060\202  
\002\012\002\202\002\001\000\333\200\312\350\111\164\307\323\070  
\056\361\305\043\142\374\066\214\057\036\176\071\013\351\006\364  
\125\233\245\230\051\224\355\206\107\062\203\363\305\222\172\005  
\327\051\002\076\026\303\050\177\065\144\051\172\171\273\241\342  
\036\141\024\215\347\000\320\334\242\124\145\212\337\151\271\161  
\107\177\070\070\026\106\247\151\061\021\065\114\341\052\177\377  
\155\117\225\075\343\135\110\115\031\123\010\132\153\041\325\022  
\060\151\227\220\257\055\301\365\177\101\137\111\066\217\115\270  
\036\032\225\137\332\017\157\134\025\065\304\021\274\137\205\233  
\275\255\073\125\136\273\337\316\273\257\134\231\140\335\037\151  
\032\111\110\041\371\011\012\317\162\247\360\362\336\345\170\031  
\276\022\335\315\207\171\101\316\057\105\327\013\221\020\021\004  
\036\022\235\362\070\003\137\026\151\256\240\012\332\300\371\353  
\240\015\030\017\171\136\221\235\344\037\024\234\064\023\031\002  
\104\272\121\303\356\171\262\140\024\243\257\274\110\055\050\070  
\150\001\103\144\312\016\206\203\142\320\212\031\246\047\361\053  
\173\113\051\041\133\232\314\150\102\020\310\113\117\017\043\262  
\210\174\304\134\156\027\160\305\167\257\225\300\045\244\042\012  
\323\174\371\330\162\310\320\055\275\247\350\322\055\213\114\241  
\156\012\374\264\100\063\273\232\153\374\244\352\311\376\340\064  
\210\103\314\306\274\077\165\322\245\251\257\372\227\271\076\267  
\316\124\240\115\300\135\056\301\050\330\143\124\162\270\254\132  
\365\072\373\040\141\006\072\364\240\053\070\253\314\203\014\111  
\324\156\076\155\017\076\163\057\066\346\363\117\263\300\000\321  
\105\111\133\214\366\243\230\035\204\177\231\012\303\352\012\074  
\303\323\044\170\110\147\365\033\073\016\035\016\103\261\004\165  
\301\240\071\166\213\366\331\002\245\035\341\236\133\007\273\066  
\127\112\041\115\371\211\151\264\154\017\327\257\240\025\044\231  
\347\370\327\123\224\354\022\277\244\245\327\355\356\216\065\167  
\167\334\246\177\040\124\222\326\143\326\162\236\115\052\266\217  
\163\363\031\241\304\260\037\346\064\243\013\000\076\227\111\047  
\141\252\252\004\101\063\070\265\120\121\314\066\025\333\037\377  
\275\312\110\203\110\247\263\002\003\001\000\001\243\143\060\141  
\060\035\006\003\125\035\016\004\026\004\024\024\315\052\131\170  
\143\253\141\031\350\270\075\241\340\132\300\165\347\371\313\060  
\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377  
\060\037\006\003\125\035\043\004\030\060\026\200\024\024\315\052  
\131\170\143\253\141\031\350\270\075\241\340\132\300\165\347\371  
\313\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001  
\006\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000  
\003\202\002\001\000\075\011\031\000\266\221\002\154\354\016\367  
\341\342\142\260\277\063\015\375\125\022\364\010\232\367\053\055  
\256\367\234\107\330\037\006\001\023\265\216\347\262\202\013\075

\204\131\103\324\007\330\053\134\020\172\044\054\312\215\350\325  
\243\071\234\061\314\353\340\072\341\325\277\317\307\207\173\140  
\377\107\071\327\243\104\326\010\046\133\317\132\124\354\210\323  
\216\017\171\074\310\243\117\246\302\216\047\360\336\022\256\136  
\031\255\347\042\126\212\130\062\340\371\006\320\251\052\264\065  
\233\014\206\046\121\000\224\107\120\374\245\304\045\141\371\130  
\360\105\160\056\111\166\177\021\326\157\265\371\051\005\341\015  
\303\116\130\037\257\035\354\067\320\112\371\006\006\201\323\333  
\240\226\270\016\221\060\171\346\120\337\210\270\013\251\134\324  
\007\364\311\250\314\175\217\223\143\011\144\000\005\052\150\146  
\103\273\242\273\376\225\256\371\304\245\012\210\142\110\170\045  
\174\052\077\021\144\246\323\042\040\107\235\062\326\362\343\310  
\244\141\164\347\202\302\104\272\240\321\135\137\274\361\104\016  
\203\117\034\120\205\304\351\347\154\374\346\270\125\341\242\032  
\200\267\220\104\247\204\042\227\107\042\336\253\070\067\317\265  
\362\034\076\102\160\273\165\266\145\050\153\313\177\202\065\252  
\366\363\040\170\050\163\007\226\060\160\245\052\161\134\241\171  
\244\026\271\106\075\136\264\000\111\205\211\323\016\337\201\256  
\130\215\130\326\341\305\104\170\056\034\040\273\242\107\227\277  
\166\024\073\251\050\217\237\013\165\322\241\074\355\053\307\216  
\220\241\172\242\231\060\142\374\205\035\065\163\073\363\265\131  
\042\033\315\010\261\014\235\165\152\333\205\073\016\207\237\062  
\117\222\000\001\001\114\111\150\202\200\101\154\371\375\161\275  
\213\364\170\012\140\243\236\261\122\035\300\212\343\236\305\277  
\053\031\152\230\247\261\336\025\120\237\252\224\045\217\251\200  
\202\247\162\272\111\144\011\047\141\053\156\274\043\050\063\135  
\236\156\360\271\275\040\062\214\335\240\013\231\273\264\204\004  
\044\165\051\226\367\247\245\027\270\121\005\353\164\255\121\171  
\226\374\273\373\337\011\055\010\222\104\316\300\322\263\030\307  
\024\042\277\041\361

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER

CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "CAEDICOM Root"

# Issuer: C=ES,O=EDICOM,CN=CAEDICOM Root

# Serial Number:fb:71:26:58:ad:99:e5

# Subject: C=ES,O=EDICOM,CN=CAEDICOM Root

# Not Valid Before: Wed May 21 11:06:35 2014

# Not Valid After: Sun May 21 10:20:00 2034

# Fingerprint (MD5): cd:d5:a1:fe:28:31:9c:13:be:d5:c1:e8:cf:56:f0:76

# Fingerprint (SHA1): 55:9b:ba:7b:0f:fe:80:d6:d3:82:9b:1f:d0:7a:a4:d3:22:19:47:90

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

```

CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "CAEDICOM Root"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\125\233\272\173\017\376\200\326\323\202\233\037\320\172\244\323
\042\031\107\220
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\315\325\241\376\050\061\234\023\276\325\301\350\317\126\360\166
END
CKA_ISSUER MULTILINE_OCTAL
\060\066\061\026\060\024\006\003\125\004\003\014\015\103\101\105
\104\111\103\117\115\040\122\157\157\164\061\017\060\015\006\003
\125\004\012\014\006\105\104\111\103\117\115\061\013\060\011\006
\003\125\004\006\023\002\105\123
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\010\000\373\161\046\130\255\231\345
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "Symantec Enterprise Mobile Root for Microsoft"
# Issuer: CN=Symantec Enterprise Mobile Root for Microsoft,O=Symantec Corporation,C=US
# Serial Number:0f:6b:55:2f:9e:bf:90:7b:0f:66:29:a9:bd:f4:d8:ce
# Subject: CN=Symantec Enterprise Mobile Root for Microsoft,O=Symantec Corporation,C=US
# Not Valid Before: Thu Mar 15 00:00:00 2012
# Not Valid After: Sun Mar 14 23:59:59 2032
# Fingerprint (MD5): 71:d0:a5:ff:2d:59:74:16:94:be:e3:7d:1e:5c:86:0b
# Fingerprint (SHA1): 92:b4:6c:76:e1:30:54:e1:04:f2:30:51:7e:6e:50:4d:43:ab:10:b5
CKA_CLASS
CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Symantec Enterprise Mobile Root for Microsoft"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\144\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\035\060\033\006\003\125\004\012\023\024\123\171\155\141\156\164
\145\143\040\103\157\162\160\157\162\141\164\151\157\156\061\066
\060\064\006\003\125\004\003\023\055\123\171\155\141\156\164\145
\143\040\105\156\164\145\162\160\162\151\163\145\040\115\157\142
\151\154\145\040\122\157\157\164\040\146\157\162\040\115\151\143

```

\162\157\163\157\146\164

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\144\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\035\060\033\006\003\125\004\012\023\024\123\171\155\141\156\164  
\145\143\040\103\157\162\160\157\162\141\164\151\157\156\061\066  
\060\064\006\003\125\004\003\023\055\123\171\155\141\156\164\145  
\143\040\105\156\164\145\162\160\162\151\163\145\040\115\157\142  
\151\154\145\040\122\157\157\164\040\146\157\162\040\115\151\143  
\162\157\163\157\146\164

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\020\017\153\125\057\236\277\220\173\017\146\051\251\275\364  
\330\316

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\275\060\202\002\245\240\003\002\001\002\002\020\017  
\153\125\057\236\277\220\173\017\146\051\251\275\364\330\316\060  
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\144  
\061\013\060\011\006\003\125\004\006\023\002\125\123\061\035\060  
\033\006\003\125\004\012\023\024\123\171\155\141\156\164\145\143  
\040\103\157\162\160\157\162\141\164\151\157\156\061\066\060\064  
\006\003\125\004\003\023\055\123\171\155\141\156\164\145\143\040  
\105\156\164\145\162\160\162\151\163\145\040\115\157\142\151\154  
\145\040\122\157\157\164\040\146\157\162\040\115\151\143\162\157  
\163\157\146\164\060\036\027\015\061\062\060\063\061\065\060\060  
\060\060\060\060\132\027\015\063\062\060\063\061\064\062\063\065  
\071\065\071\132\060\144\061\013\060\011\006\003\125\004\006\023  
\002\125\123\061\035\060\033\006\003\125\004\012\023\024\123\171  
\155\141\156\164\145\143\040\103\157\162\160\157\162\141\164\151  
\157\156\061\066\060\064\006\003\125\004\003\023\055\123\171\155  
\141\156\164\145\143\040\105\156\164\145\162\160\162\151\163\145  
\040\115\157\142\151\154\145\040\122\157\157\164\040\146\157\162  
\040\115\151\143\162\157\163\157\146\164\060\202\001\042\060\015  
\006\011\052\206\110\206\367\015\001\001\001\005\000\003\202\001  
\017\000\060\202\001\012\002\202\001\001\000\265\075\260\162\356  
\221\351\245\151\234\021\115\172\371\263\372\075\362\224\233\043  
\267\246\003\354\142\030\374\205\022\042\376\301\161\175\124\223  
\271\221\175\142\366\312\250\070\025\145\370\167\075\345\202\040  
\072\324\265\321\156\215\006\111\275\337\202\016\044\205\347\357  
\170\055\030\362\340\013\150\106\076\044\020\310\127\356\016\155  
\161\246\323\261\126\034\327\051\325\262\352\124\005\012\250\074  
\241\270\045\122\007\005\240\337\347\334\356\134\073\101\265\253  
\134\063\062\322\316\353\351\226\370\100\364\012\272\063\035\370  
\126\003\011\202\365\147\007\304\300\064\301\135\374\105\273\352  
\074\232\325\164\161\155\325\206\323\302\374\205\274\124\353\243

\325\362\117\325\105\257\127\274\360\042\300\217\242\105\310\165  
\064\167\336\241\155\067\162\263\163\215\014\153\123\272\131\341  
\250\076\200\127\322\137\131\356\150\165\317\201\234\243\312\105  
\214\067\333\005\162\064\034\062\002\370\325\371\054\015\332\130  
\236\304\027\264\233\311\220\304\210\131\077\161\221\220\104\030  
\276\042\213\171\222\056\102\260\213\227\133\002\003\001\000\001  
\243\153\060\151\060\017\006\003\125\035\023\001\001\377\004\005  
\060\003\001\001\377\060\016\006\003\125\035\017\001\001\377\004  
\004\003\002\001\006\060\047\006\003\125\035\021\004\040\060\036  
\244\034\060\032\061\030\060\026\006\003\125\004\003\023\017\115  
\120\113\111\055\062\060\064\070\055\061\055\061\061\061\060\035  
\006\003\125\035\016\004\026\004\024\115\354\337\046\006\334\044  
\020\300\266\231\364\327\071\307\157\031\370\046\050\060\015\006  
\011\052\206\110\206\367\015\001\001\013\005\000\003\202\001\001  
\000\251\127\131\320\001\124\024\106\257\307\171\124\014\152\052  
\133\330\072\035\201\344\210\243\061\264\361\363\065\361\106\163  
\134\103\311\376\274\242\152\031\300\275\057\137\313\070\243\155  
\156\350\024\136\362\170\176\105\172\341\273\364\056\233\105\353  
\340\035\120\034\064\133\177\230\212\206\017\207\332\344\144\046  
\167\374\011\337\043\101\117\016\237\372\016\372\104\205\360\051  
\227\244\224\342\364\100\055\221\034\166\364\250\140\336\161\246  
\260\005\342\117\151\331\031\013\211\072\340\372\253\053\372\361  
\263\062\355\374\174\160\145\136\320\173\021\173\235\350\133\032  
\112\166\244\173\121\071\254\175\251\014\164\070\350\273\125\337  
\304\316\300\247\041\132\270\033\237\001\305\247\020\376\175\371  
\152\010\231\001\321\366\065\120\070\344\366\103\344\030\330\200  
\114\354\307\004\342\141\214\175\111\355\317\264\245\361\362\220  
\222\011\010\065\163\240\043\062\312\351\234\236\034\276\013\007  
\054\167\136\027\114\332\234\202\341\200\033\245\363\332\367\210  
\277\277\071\047\370\044\376\261\113\310\227\355\344\022\024\045  
\210

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "Symantec Enterprise Mobile Root for Microsoft"

# Issuer: CN=Symantec Enterprise Mobile Root for Microsoft,O=Symantec Corporation,C=US

# Serial Number:0f:6b:55:2f:9e:bf:90:7b:0f:66:29:a9:bd:f4:d8:ce

# Subject: CN=Symantec Enterprise Mobile Root for Microsoft,O=Symantec Corporation,C=US

# Not Valid Before: Thu Mar 15 00:00:00 2012

# Not Valid After: Sun Mar 14 23:59:59 2032

# Fingerprint (MD5): 71:d0:a5:ff:2d:59:74:16:94:be:e3:7d:1e:5c:86:0b

# Fingerprint (SHA1): 92:b4:6c:76:e1:30:54:e1:04:f2:30:51:7e:6e:50:4d:43:ab:10:b5

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

```

CKA_PRIVATE
CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Symantec Enterprise Mobile Root for Microsoft"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\222\264\154\166\341\060\124\341\004\362\060\121\176\156\120\115
\103\253\020\265
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\161\320\245\377\055\131\164\026\224\276\343\175\036\134\206\013
END
CKA_ISSUER MULTILINE_OCTAL
\060\144\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\035\060\033\006\003\125\004\012\023\024\123\171\155\141\156\164
\145\143\040\103\157\162\160\157\162\141\164\151\157\156\061\066
\060\064\006\003\125\004\003\023\055\123\171\155\141\156\164\145
\143\040\105\156\164\145\162\160\162\151\163\145\040\115\157\142
\151\154\145\040\122\157\157\164\040\146\157\162\040\115\151\143
\162\157\163\157\146\164
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\017\153\125\057\236\277\220\173\017\146\051\251\275\364
\330\316
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST
CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "I.CA Root CA/RSA"
# Issuer: 2.5.4.5=NTRCZ-26439395,CN=I.CA Root CA/RSA,O=První certifikační autorita\, a.s.,C=CZ
# Serial Number:05:f5:e1:00
# Subject: 2.5.4.5=NTRCZ-26439395,CN=I.CA Root CA/RSA,O=První certifikační autorita\, a.s.,C=CZ
# Not Valid Before: Wed May 27 12:20:00 2015
# Not Valid After: Sun May 27 12:20:00 2040
# Fingerprint (MD5): 34:ba:8d:c4:33:9a:b5:27:ee:bd:5b:7c:7d:82:97:7f
# Fingerprint (SHA1): 9b:09:59:89:81:54:08:1b:f6:a9:0e:9b:9e:58:a4:69:0c:9b:a1:04
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "I.CA Root CA/RSA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\160\061\013\060\011\006\003\125\004\006\023\002\103\132\061
\055\060\053\006\003\125\004\012\014\044\120\162\166\156\303\255

```

\040\143\145\162\164\151\146\151\153\141\304\215\156\303\255\040  
\141\165\164\157\162\151\164\141\054\040\141\056\163\056\061\031  
\060\027\006\003\125\004\003\014\020\111\056\103\101\040\122\157  
\157\164\040\103\101\057\122\123\101\061\027\060\025\006\003\125  
\004\005\023\016\116\124\122\103\132\055\062\066\064\063\071\063  
\071\065

END

CKA\_ID

UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\160\061\013\060\011\006\003\125\004\006\023\002\103\132\061  
\055\060\053\006\003\125\004\012\014\044\120\162\166\156\303\255  
\040\143\145\162\164\151\146\151\153\141\304\215\156\303\255\040  
\141\165\164\157\162\151\164\141\054\040\141\056\163\056\061\031  
\060\027\006\003\125\004\003\014\020\111\056\103\101\040\122\157  
\157\164\040\103\101\057\122\123\101\061\027\060\025\006\003\125  
\004\005\023\016\116\124\122\103\132\055\062\066\064\063\071\063  
\071\065

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\004\005\365\341\000

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\006\176\060\202\004\146\240\003\002\001\002\002\004\005  
\365\341\000\060\015\006\011\052\206\110\206\367\015\001\001\015  
\005\000\060\160\061\013\060\011\006\003\125\004\006\023\002\103  
\132\061\055\060\053\006\003\125\004\012\014\044\120\162\166\156  
\303\255\040\143\145\162\164\151\146\151\153\141\304\215\156\303  
\255\040\141\165\164\157\162\151\164\141\054\040\141\056\163\056  
\061\031\060\027\006\003\125\004\003\014\020\111\056\103\101\040  
\122\157\157\164\040\103\101\057\122\123\101\061\027\060\025\006  
\003\125\004\005\023\016\116\124\122\103\132\055\062\066\064\063  
\071\063\071\065\060\036\027\015\061\065\060\065\062\067\061\062  
\062\060\060\060\132\027\015\064\060\060\065\062\067\061\062\062  
\060\060\060\132\060\160\061\013\060\011\006\003\125\004\006\023  
\002\103\132\061\055\060\053\006\003\125\004\012\014\044\120\162  
\166\156\303\255\040\143\145\162\164\151\146\151\153\141\304\215  
\156\303\255\040\141\165\164\157\162\151\164\141\054\040\141\056  
\163\056\061\031\060\027\006\003\125\004\003\014\020\111\056\103  
\101\040\122\157\157\164\040\103\101\057\122\123\101\061\027\060  
\025\006\003\125\004\005\023\016\116\124\122\103\132\055\062\066  
\064\063\071\063\071\065\060\202\002\042\060\015\006\011\052\206  
\110\206\367\015\001\001\001\005\000\003\202\002\017\000\060\202  
\002\012\002\202\002\001\000\252\077\125\265\211\257\166\024\006  
\052\144\046\224\070\017\137\366\334\004\157\061\105\365\012\375  
\073\177\233\162\157\370\100\174\376\135\375\064\231\005\070\224  
\111\272\261\360\275\370\231\134\300\121\372\252\015\373\346\161  
\025\205\143\021\052\167\006\221\222\006\210\263\374\024\341\231



\106\264\051\202\256\204\203\356\265\046\207\156\370\213\125\104  
\235\100\330\377\052\132\252\350\177\322\145\341\024\107\302\174  
\061\375\165\141\012\033\214\200\112\236\264\342\056\024\107\061  
\356\274\005\121\256\246\176\317\021\270\305\110\275\005\124\302  
\204\344\247\150\153\370\270\372\176\050\311\271\317\344\041\117  
\145\311\210\150\240\070\331\165\245\021\073\114\034\156\113\036  
\324\206\154\301\255\005\107\323\054\224\015\314\207\055\032\055  
\303\326\314\336\204\376\354\153\300\341\043\023\241\323\234\030  
\176\340\162\327\134\125\274\114\263\100\061\033\234\100\315\232  
\353\200\016\161\256\327\142\156\132\026\117\037\366\145\105\321  
\237\172\205\101\031\302\172\072\316\041\222\344\224\160\114\273  
\250\101\306\304\273\065\315\365\072\236\143\251\215\240\152\321  
\040\104\252\052\266\110\245\162\303\316\236\344\130\110\107\011  
\177\002\101\363\015\034\155\011\170\360\327\024\321\240\125\374  
\021\326\132\032\000\171\345\073\346\010\313\122\236\244\011\253  
\153\347\154\234\052\057\042\175\373\271\120\262\336\120\323\057  
\014\162\271\326\263\267\263\010\346\353\173\254\364\264\305\366  
\301\062\037\247\031\041\365\334\136\067\252\307\037\123\233\103  
\076\346\236\237\332\015\327\126\242\017\123\151\055\125\277\353  
\206\170\021\277\246\327\132\115\363\016\223\163\352\377\016\320  
\347\217\361\310\263\360\330\030\163\154\245\162\210\361\160\114  
\107\124\266\233\132\321\274\046\067\215\030\337\233\153\056\333  
\013\045\263\212\262\343\255\006\134\155\273\175\027\003\007\001  
\212\060\227\211\164\155\112\224\167\056\353\356\317\260\036\265  
\352\166\364\265\024\070\225\327\325\331\057\077\262\244\046\314  
\115\243\134\215\011\363\136\014\205\062\316\126\154\002\010\361  
\113\243\253\277\310\124\240\005\205\164\344\165\035\172\274\234  
\073\140\075\152\375\031\221\002\003\001\000\001\243\202\001\036  
\060\202\001\032\060\016\006\003\125\035\017\001\001\377\004\004  
\003\002\001\006\060\017\006\003\125\035\023\001\001\377\004\005  
\060\003\001\001\377\060\035\006\003\125\035\016\004\026\004\024  
\166\271\003\110\373\325\030\241\241\067\240\355\314\150\202\114  
\122\064\066\015\060\201\327\006\003\125\035\040\004\201\317\060  
\201\314\060\201\311\006\004\125\035\040\000\060\201\300\060\201  
\275\006\010\053\006\001\005\005\007\002\002\060\201\260\032\201  
\255\124\145\156\164\157\040\153\166\141\154\151\146\151\153\157  
\166\141\156\171\040\163\171\163\164\145\155\157\166\171\040\143  
\145\162\164\151\146\151\153\141\164\040\142\171\154\040\166\171  
\144\141\156\040\160\157\144\154\145\040\172\141\153\157\156\141  
\040\062\062\067\057\062\060\060\060\040\123\142\056\040\166\040  
\160\154\141\164\156\145\155\040\172\156\145\156\151\057\124\150  
\151\163\040\161\165\141\154\151\146\151\145\144\040\163\171\163  
\164\145\155\040\143\145\162\164\151\146\151\143\141\164\145\040  
\167\141\163\040\151\163\163\165\145\144\040\141\143\143\157\162  
\144\151\156\147\040\164\157\040\101\143\164\040\116\157\056\040  
\062\062\067\057\062\060\060\060\040\103\157\154\154\056\060\015  
\006\011\052\206\110\206\367\015\001\001\015\005\000\003\202\002  
\001\000\031\124\002\045\203\333\042\226\213\035\225\236\231\333

\064\316\223\320\037\056\173\134\140\044\152\014\327\205\104\170  
\037\034\111\362\024\370\203\124\031\246\235\062\146\270\043\246  
\073\206\052\237\066\374\027\374\120\017\140\306\067\375\044\250  
\367\171\247\216\277\330\007\025\124\136\122\014\276\370\246\330  
\310\101\104\361\366\023\334\203\031\133\257\335\144\367\063\026  
\207\017\025\132\361\144\274\324\347\125\077\062\070\211\232\363  
\314\110\305\154\061\161\222\232\046\027\302\174\107\002\155\065  
\047\237\363\032\341\252\035\015\164\021\251\223\174\101\250\157  
\273\216\234\305\001\344\163\366\272\120\056\346\020\324\274\157  
\023\232\070\271\151\106\245\006\326\362\114\154\067\253\074\370  
\333\032\306\125\360\310\370\035\041\156\057\000\152\261\342\155  
\132\004\055\175\335\011\117\366\357\024\057\300\022\352\011\031  
\053\032\312\240\161\233\261\072\062\274\377\103\030\363\175\057  
\365\056\210\351\121\266\361\111\220\114\377\046\307\303\131\335  
\164\137\301\120\135\070\134\235\150\125\151\152\264\100\167\311  
\137\062\051\110\124\223\301\263\041\043\166\241\125\060\151\043  
\077\061\111\304\241\315\073\166\131\225\132\202\264\255\161\265  
\276\246\221\314\200\025\112\057\316\224\256\030\125\111\165\040  
\104\270\363\001\233\301\170\054\216\020\114\247\144\255\255\072  
\353\114\035\126\056\177\224\324\036\320\012\325\311\124\201\016  
\036\376\367\224\371\141\072\077\065\356\323\140\311\373\110\262  
\156\302\331\276\172\156\230\005\160\000\243\321\027\307\306\064  
\257\154\365\115\217\135\122\014\335\200\233\172\155\347\230\343  
\071\205\134\077\213\314\104\242\100\066\062\223\022\126\220\002  
\236\076\131\150\002\037\126\210\036\257\301\376\017\173\125\215  
\227\331\273\246\223\107\272\174\370\107\266\071\327\214\362\100  
\154\207\234\014\376\055\335\334\161\374\016\221\010\244\103\075  
\212\127\335\335\007\353\247\227\121\320\272\204\231\255\213\171  
\376\311\004\220\203\023\053\351\227\015\145\211\362\021\055\067  
\216\113\270\273\322\172\071\052\305\334\320\135\015\335\004\047  
\230\237\130\375\216\206\273\005\177\360\355\067\222\220\335\234  
\275\374

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "I.CA Root CA/RSA"

# Issuer: 2.5.4.5=NTRCZ-26439395,CN=I.CA

Root CA/RSA,O=První certifikační autorita, a.s.,C=CZ

# Serial Number:05:f5:e1:00

# Subject: 2.5.4.5=NTRCZ-26439395,CN=I.CA Root CA/RSA,O=První certifikační autorita, a.s.,C=CZ

# Not Valid Before: Wed May 27 12:20:00 2015

# Not Valid After: Sun May 27 12:20:00 2040

# Fingerprint (MD5): 34:ba:8d:c4:33:9a:b5:27:ee:bd:5b:7c:7d:82:97:7f

# Fingerprint (SHA1): 9b:09:59:89:81:54:08:1b:f6:a9:0e:9b:9e:58:a4:69:0c:9b:a1:04

```

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "I.CA Root CA/RSA"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\233\011\131\211\201\124\010\033\366\251\016\233\236\130\244\151
\014\233\241\004
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\064\272\215\304\063\232\265\047\356\275\133\174\175\202\227\177
END
CKA_ISSUER MULTILINE_OCTAL
\060\160\061\013\060\011\006\003\125\004\006\023\002\103\132\061
\055\060\053\006\003\125\004\012\014\044\120\162\166\156\303\255
\040\143\145\162\164\151\146\151\153\141\304\215\156\303\255\040
\141\165\164\157\162\151\164\141\054\040\141\056\163\056\061\031
\060\027\006\003\125\004\003\014\020\111\056\103\101\040\122\157
\157\164\040\103\101\057\122\123\101\061\027\060\025\006\003\125
\004\005\023\016\116\124\122\103\132\055\062\066\064\063\071\063
\071\065
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\004\005\365\341\000
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "MULTICERT Root Certification Authority 01"
# Issuer: CN=MULTICERT Root Certification Authority 01,O=MULTICERT - Serviços de Certificação
Electrónica S.A.,C=PT
# Serial Number:54:4d:a5:bc:40:35:56:5a
# Subject: CN=MULTICERT Root Certification Authority 01,O=MULTICERT - Serviços de Certificação
Electrónica S.A.,C=PT
# Not Valid Before: Fri Apr 04 08:59:47
2014
# Not Valid After: Mon Apr 04 08:59:47 2039
# Fingerprint (MD5): 30:b4:c2:a5:23:02:1d:2e:1b:c0:59:f2:ca:23:99:20
# Fingerprint (SHA1): 46:af:7a:31:b5:99:46:0d:46:9d:60:41:14:5b:13:65:1d:f9:17:0a
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "MULTICERT Root Certification Authority 01"

```

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\201\205\061\013\060\011\006\003\125\004\006\023\002\120\124  
\061\102\060\100\006\003\125\004\012\014\071\115\125\114\124\111  
\103\105\122\124\040\055\040\123\145\162\166\151\303\247\157\163  
\040\144\145\040\103\145\162\164\151\146\151\143\141\303\247\303  
\243\157\040\105\154\145\143\164\162\303\263\156\151\143\141\040  
\123\056\101\056\061\062\060\060\006\003\125\004\003\014\051\115  
\125\114\124\111\103\105\122\124\040\122\157\157\164\040\103\145  
\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150  
\157\162\151\164\171\040\060\061

END

CKA\_ID

UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\205\061\013\060\011\006\003\125\004\006\023\002\120\124  
\061\102\060\100\006\003\125\004\012\014\071\115\125\114\124\111  
\103\105\122\124\040\055\040\123\145\162\166\151\303\247\157\163  
\040\144\145\040\103\145\162\164\151\146\151\143\141\303\247\303  
\243\157\040\105\154\145\143\164\162\303\263\156\151\143\141\040  
\123\056\101\056\061\062\060\060\006\003\125\004\003\014\051\115  
\125\114\124\111\103\105\122\124\040\122\157\157\164\040\103\145  
\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150  
\157\162\151\164\171\040\060\061

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\010\124\115\245\274\100\065\126\132

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\361\060\202\003\331\240\003\002\001\002\002\010\124  
\115\245\274\100\065\126\132\060\015\006\011\052\206\110\206\367  
\015\001\001\013\005\000\060\201\205\061\013\060\011\006\003\125  
\004\006\023\002\120\124\061\102\060\100\006\003\125\004\012\014  
\071\115\125\114\124\111\103\105\122\124\040\055\040\123\145\162  
\166\151\303\247\157\163\040\144\145\040\103\145\162\164\151\146  
\151\143\141\303\247\303\243\157\040\105\154\145\143\164\162\303  
\263\156\151\143\141\040\123\056\101\056\061\062\060\060\006\003  
\125\004\003\014\051\115\125\114\124\111\103\105\122\124\040\122  
\157\157\164\040\103\145\162\164\151\146\151\143\141\164\151\157  
\156\040\101\165\164\150\157\162\151\164\171\040\060\061\060\036  
\027\015\061\064\060\064\060\064\060\070\065\071\064\067\132\027  
\015\063\071\060\064\060\064\060\070\065\071\064\067\132\060\201  
\205\061\013\060\011\006\003\125\004\006\023\002\120\124\061\102  
\060\100\006\003\125\004\012\014\071\115\125\114\124\111\103\105  
\122\124\040\055\040\123\145\162\166\151\303\247\157\163\040\144  
\145\040\103\145\162\164\151\146\151\143\141\303\247\303\243\157  
\040\105\154\145\143\164\162\303\263\156\151\143\141\040\123\056  
\101\056\061\062\060\060\006\003\125\004\003\014\051\115\125\114

\124\111\103\105\122\124\040\122\157\157\164\040\103\145\162\164  
\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162  
\151\164\171\040\060\061\060\202\002\042\060\015\006\011\052\206  
\110\206\367\015\001\001\001\005\000\003\202\002\017\000\060\202  
\002\012\002\202\002\001\000\316\334\077\364\031\156\273\025\151  
\206\364\344\315\347\072\160\073\307\232\213\073\203\000\201\133  
\373\040\026\132\276\277\130\000\137\051\346\127\157\176\212\054  
\025\007\134\032\143\214\102\137\026\335\332\211\204\105\127\027  
\226\240\234\241\165\042\101\032\072\375\305\027\221\023\366\276  
\142\012\274\156\045\055\133\300\214\020\146\367\342\326\373\334  
\110\061\243\032\250\345\115\110\311\242\034\163\376\217\146\100  
\143\167\131\007\074\075\024\237\324\367\205\221\320\303\102\365  
\033\141\263\167\200\200\052\155\022\002\226\213\121\331\301\157  
\047\013\032\007\064\000\377\322\131\114\051\350\327\031\143\330  
\221\264\077\374\216\016\045\362\241\022\007\145\312\065\336\253  
\376\026\243\010\214\257\177\176\022\364\131\026\005\037\350\255  
\164\171\062\367\170\002\266\264\314\253\333\036\070\141\004\031  
\172\101\100\332\132\021\144\165\002\375\144\321\326\224\102\017  
\042\347\145\315\257\220\016\014\133\061\001\231\121\357\105\214  
\175\245\070\332\236\174\113\344\246\350\263\244\202\326\003\064  
\056\117\267\121\253\167\070\011\365\006\376\334\146\033\017\077  
\372\175\357\214\125\276\340\015\206\225\241\334\275\304\303\010  
\321\105\036\362\275\276\160\361\346\046\306\273\010\261\050\245  
\302\245\355\210\326\241\300\373\043\361\047\071\314\341\204\007  
\031\274\176\366\314\070\377\156\020\273\106\351\043\211\044\201  
\377\000\342\121\000\334\122\120\175\023\120\175\026\075\100\215  
\323\277\371\212\145\330\142\022\051\167\302\272\302\111\064\117  
\212\171\151\311\113\025\363\064\336\317\257\206\342\345\310\251  
\126\141\114\006\124\132\305\154\031\352\363\310\104\315\044\032  
\166\321\161\000\131\153\331\165\233\316\375\020\376\261\203\242  
\245\267\222\206\166\233\112\367\035\334\214\205\246\130\255\212  
\246\150\151\027\311\155\033\246\317\047\113\051\054\335\161\102  
\032\211\020\345\325\233\022\137\111\213\204\274\330\010\134\373  
\317\070\102\257\276\321\156\173\221\252\146\100\305\005\176\053  
\320\146\266\307\337\122\376\364\105\155\043\222\041\236\022\001  
\220\163\203\342\245\011\015\327\300\370\205\225\036\143\321\077  
\065\332\224\321\067\331\365\002\003\001\000\001\243\143\060\141  
\060\035\006\003\125\035\016\004\026\004\024\325\071\034\234\133  
\157\004\252\242\225\114\357\040\335\051\164\244\305\105\161\060  
\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377  
\060\037\006\003\125\035\043\004\030\060\026\200\024\325\071\034  
\234\133\157\004\252\242\225\114\357\040\335\051\164\244\305\105  
\161\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001  
\006\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000  
\003\202\002\001\000\077\347\137\363\042\026\336\203\236\040\344  
\202\347\345\236\167\311\373\053\260\164\015\337\033\164\042\017  
\163\020\241\260\027\354\114\014\324\050\160\152\146\162\104\151  
\020\223\166\065\317\057\370\217\074\253\031\174\161\222\225\161

```
\033\067\025\302\033\050\172\357\156\170\070\337\373\217\233\001
\040\334\257\366\326\215\011\146\332\304\106\251\374\225\252\104
\043\022\337\107\300\260\025\354\265\261\236\154\017\221\252\246
\072\345\301\015\140\154\120\100\160\134\134\310\316\263\314\353
\355\252\210\031\126\245\244\310\014\172\345\166\100\147\063\264
\075\226\334\167\313\043\170\371\123\133\317\215\336\261\247\216
\132\172\242\062\143\243\210\327\045\141\132\135\111\072\162\346
\317\252\224\206\154\156\367\202\340\216\147\223\050\305\250\015
\115\357\070\255\171\112\146\215\204\001\010\004\171\363\122\306
\101\347\232\142\006\263\365\022\036\354\331\000\103\323\353\226
\167\164\341\171\371\024\224\204\155\272\124\202\005\214\337\001
\362\060\210\201\254\172\057\213\103\054\166\064\316\065\347\207
\216\116\013\012\245\032\127\261\123\132\277\153\330\276\000\176
\306\371\356\146\061\010\261\337\224\063\204\234\167\117\173\144
\057\357\216\017\131\050\042\313\360\134\076\053\375\065\326\225
\377\003\354\145\122\176\276\362\031\370\173\325\122\054\122\167
\232\221\146\101\160\215\325\111\347\013\110\177\212\256\336\105
\075\335\376\346\322\344\222\303\173\316\060\240\111\156\067\255
\250\323\054\266\075\236\041\333\006\127\342\360\256\006\373\331
\305\021\067\241\173\333\035\021\174\150\166\040\076\365\274\245
\331\146\265\041\255\105\046\306\135\036\002\243\101\304\324\175
\201\031\313\027\227\006\017\346\354\164\000\106\304\165\335\075
\360\103\064\257\246\274\374\366\202\373\317\305\372\263\017\045
\245\077\146\020\326\236\202\245\333\072\023\171\336\215\251\327
\246\215\206\322\057\331\151\015\342\165\170\176\111\137\042\253
\206\160\050\121\263\172\266\240\171\372\324\345\203\247\260\167
\312\333\001\202\357\342\276\115\057\323\300\115\320\343\151\156
\174\046\233\353\246\373\105\357\261\004\212\057\252\041\006\366
\346\324\274\101\043
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER

CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "MULTICERT Root Certification Authority 01"

# Issuer: CN=MULTICERT Root Certification Authority 01,O=MULTICERT - Serviços de Certificação  
Electrónica S.A.,C=PT

# Serial Number:54:4d:a5:bc:40:35:56:5a

# Subject: CN=MULTICERT Root Certification Authority 01,O=MULTICERT - Serviços de Certificação  
Electrónica S.A.,C=PT

# Not Valid Before: Fri Apr 04 08:59:47 2014

# Not Valid After: Mon Apr 04 08:59:47 2039

# Fingerprint (MD5): 30:b4:c2:a5:23:02:1d:2e:1b:c0:59:f2:ca:23:99:20

# Fingerprint (SHA1): 46:af:7a:31:b5:99:46:0d:46:9d:60:41:14:5b:13:65:1d:f9:17:0a

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

```
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "MULTICERT Root Certification Authority 01"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\106\257\172\061\265\231\106\015\106\235\140\101\024\133\023\145
\035\371\027\012
END
CKA_CERT_MD5_HASH
MULTILINE_OCTAL
\060\264\302\245\043\002\035\056\033\300\131\362\312\043\231\040
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\205\061\013\060\011\006\003\125\004\006\023\002\120\124
\061\102\060\100\006\003\125\004\012\014\071\115\125\114\124\111
\103\105\122\124\040\055\040\123\145\162\166\151\303\247\157\163
\040\144\145\040\103\145\162\164\151\146\151\143\141\303\247\303
\243\157\040\105\154\145\143\164\162\303\263\156\151\143\141\040
\123\056\101\056\061\062\060\060\006\003\125\004\003\014\051\115
\125\114\124\111\103\105\122\124\040\122\157\157\164\040\103\145
\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150
\157\162\151\164\171\040\060\061
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\010\124\115\245\274\100\065\126\132
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
# Microsoft
```

```
Code Signing Only Certificate
```

```
# Certificate "Certification Authority of WoSign G2"
```

```
# Issuer: CN=Certification Authority of WoSign G2,O=WoSign CA Limited,C=CN
```

```
# Serial Number:6b:25:da:8a:88:9d:7c:bc:0f:05:b3:b1:7a:61:45:44
```

```
# Subject: CN=Certification Authority of WoSign G2,O=WoSign CA Limited,C=CN
```

```
# Not Valid Before: Sat Nov 08 00:58:58 2014
```

```
# Not Valid After: Tue Nov 08 00:58:58 2044
```

```
# Fingerprint (MD5): c8:1c:7d:19:aa:cb:71:93:f2:50:f8:52:a8:1e:ba:60
```

```
# Fingerprint (SHA1): fb:ed:dc:90:65:b7:27:20:37:bc:55:0c:9c:56:de:bb:f2:78:94:e1
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "Certification Authority of WoSign G2"
```

```
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
```

```
CKA_SUBJECT MULTILINE_OCTAL
```

\060\130\061\013\060\011\006\003\125\004\006\023\002\103\116\061  
\032\060\030\006\003\125\004\012\023\021\127\157\123\151\147\156  
\040\103\101\040\114\151\155\151\164\145\144\061\055\060\053\006  
\003\125\004\003\023\044\103\145\162\164\151\146\151\143\141\164  
\151\157\156\040\101\165\164\150\157\162\151\164\171\040\157\146  
\040\127\157\123\151\147\156\040\107\062

END

CKA\_ID

UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\130\061\013\060\011\006\003\125\004\006\023\002\103\116\061  
\032\060\030\006\003\125\004\012\023\021\127\157\123\151\147\156  
\040\103\101\040\114\151\155\151\164\145\144\061\055\060\053\006  
\003\125\004\003\023\044\103\145\162\164\151\146\151\143\141\164  
\151\157\156\040\101\165\164\150\157\162\151\164\171\040\157\146  
\040\127\157\123\151\147\156\040\107\062

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\153\045\332\212\210\235\174\274\017\005\263\261\172\141  
\105\104

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\174\060\202\002\144\240\003\002\001\002\002\020\153  
\045\332\212\210\235\174\274\017\005\263\261\172\141\105\104\060  
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\130  
\061\013\060\011\006\003\125\004\006\023\002\103\116\061\032\060  
\030\006\003\125\004\012\023\021\127\157\123\151\147\156\040\103  
\101\040\114\151\155\151\164\145\144\061\055\060\053\006\003\125  
\004\003\023\044\103\145\162\164\151\146\151\143\141\164\151\157  
\156\040\101\165\164\150\157\162\151\164\171\040\157\146\040\127  
\157\123\151\147\156\040\107\062\060\036\027\015\061\064\061\061  
\060\070\060\060\065\070\065\070\132\027\015\064\064\061\061\060  
\070\060\060\065\070\065\070\132\060\130\061\013\060\011\006\003  
\125\004\006\023\002\103\116\061\032\060\030\006\003\125\004\012  
\023\021\127\157\123\151\147\156\040\103\101\040\114\151\155\151  
\164\145\144\061\055\060\053\006\003\125\004\003\023\044\103\145  
\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150  
\157\162\151\164\171\040\157\146\040\127\157\123\151\147\156\040  
\107\062\060\202\001\042\060\015\006\011\052\206\110\206\367\015  
\001\001\001\005\000\003\202\001\017\000\060\202\001\012\002\202  
\001\001\000\276\305\304\240\042\200\111\117\277\331\207\021\306  
\123\341\273\017\275\140\177\257\366\202\016\037\334\260\216\075  
\227\340\120\074\217\072\357\146\073\105\007\233\040\370\343\327  
\045\206\065\220\026\242\135\157\060\031\010\207\013\177\006\262  
\235\142\217\336\257\222\245\140\324\053\200\232\122\077\365\232  
\203\351\064\132\313\331\325\142\134\346\016\340\337\006\230\016  
\200\174\312\264\035\023\210\153\016\250\044\167\003\320\356\133  
\363\312\151\221\065\071\126\305\155\343\367\075\117\136\223\070



\044\312\030\351\044\313\222\003\335\314\034\075\011\160\344\040  
\344\361\256\254\273\163\151\243\143\072\017\105\017\241\112\232  
\302\321\143\254\313\020\370\075\346\116\050\267\353\304\225\261  
\254\375\136\253\372\101\313\135\235\113\334\364\174\166\357\147  
\177\000\172\215\322\240\032\134\115\042\341\265\332\335\166\263  
\324\166\337\136\270\213\230\310\024\124\314\153\027\222\267\340  
\112\277\111\224\141\013\070\220\217\135\044\154\045\173\073\171  
\331\342\176\235\255\237\230\241\006\374\170\024\140\127\370\356  
\200\167\261\002\003\001\000\001\243\102\060\100\060\016\006\003  
\125\035\017\001\001\377\004\004\003\002\001\006\060\017\006\003  
\125\035\023\001\001\377\004\005\060\003\001\001\377\060\035\006  
\003\125\035\016\004\026\004\024\372\140\251\353\145\305\335\026  
\024\010\116\014\017\215\233\340\367\144\257\147\060\015\006\011  
\052\206\110\206\367\015\001\001\013\005\000\003\202\001\001\000  
\127\303\172\066\202\234\215\230\342\253\100\252\107\217\307\247  
\133\355\174\347\075\146\132\073\061\273\337\363\026\063\221\374  
\174\173\245\302\246\146\343\252\260\267\047\230\077\111\327\140  
\147\147\077\066\117\112\313\361\024\372\132\207\050\034\355\217  
\101\062\306\225\371\175\332\275\173\133\302\260\041\343\217\106  
\334\041\070\103\164\114\373\060\370\027\162\301\062\374\310\221  
\027\304\314\130\067\116\013\314\132\367\041\065\050\203\154\140  
\055\104\353\122\214\120\075\265\154\022\327\372\011\273\154\262  
\112\261\305\211\344\374\323\122\330\141\027\376\172\224\204\217  
\171\266\063\131\272\017\304\013\342\160\240\113\170\056\372\310  
\237\375\257\221\145\012\170\070\025\345\227\027\024\335\371\340  
\054\064\370\070\320\204\042\000\300\024\121\030\053\002\334\060  
\132\360\350\001\174\065\072\043\257\010\344\257\252\216\050\102  
\111\056\360\365\231\064\276\355\017\113\030\341\322\044\074\273  
\135\107\267\041\362\215\321\012\231\216\343\156\076\255\160\340  
\217\271\312\314\156\201\061\366\173\234\172\171\344\147\161\030  
END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "Certification Authority of WoSign G2"

# Issuer: CN=Certification Authority of WoSign G2,O=WoSign CA Limited,C=CN

# Serial Number:6b:25:da:8a:88:9d:7c:bc:0f:05:b3:b1:7a:61:45:44

# Subject: CN=Certification Authority of WoSign G2,O=WoSign CA Limited,C=CN

# Not Valid Before: Sat Nov 08 00:58:58 2014

# Not Valid After: Tue Nov 08 00:58:58 2044

# Fingerprint (MD5): c8:1c:7d:19:aa:cb:71:93:f2:50:f8:52:a8:1e:ba:60

# Fingerprint (SHA1): fb:ed:dc:90:65:b7:27:20:37:bc:55:0c:9c:56:de:bb:f2:78:94:e1

CKA\_CLASS

CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

```
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Certification Authority of WoSign G2"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\373\355\334\220\145\267\047\040\067\274\125\014\234\126\336\273
\362\170\224\341
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\310\034\175\031\252\313\161\223\362\120\370\122\250\036\272\140
END
CKA_ISSUER MULTILINE_OCTAL
\060\130\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\032\060\030\006\003\125\004\012\023\021\127\157\123\151\147\156
\040\103\101\040\114\151\155\151\164\145\144\061\055\060\053\006
\003\125\004\003\023\044\103\145\162\164\151\146\151\143\141\164
\151\157\156\040\101\165\164\150\157\162\151\164\171\040\157\146
\040\127\157\123\151\147\156\040\107\062
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\153\045\332\212\210\235\174\274\017\005\263\261\172\141
\105\104
END
CKA_TRUST_SERVER_AUTH CK_TRUST
CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
# Microsoft Code Signing Only Certificate
# Certificate "CA WoSign ECC Root"
# Issuer: CN=CA WoSign ECC Root,O=WoSign CA Limited,C=CN
# Serial Number:68:4a:58:70:80:6b:f0:8f:02:fa:f6:de:e8:b0:90:90
# Subject: CN=CA WoSign ECC Root,O=WoSign CA Limited,C=CN
# Not Valid Before: Sat Nov 08 00:58:58 2014
# Not Valid After: Tue Nov 08 00:58:58 2044
# Fingerprint (MD5): 80:c6:53:ee:61:82:28:72:f0:ff:21:b9:17:ca:b2:20
# Fingerprint (SHA1): d2:7a:d2:be:ed:94:c0:a1:3c:c7:25:21:ea:5d:71:be:81:19:f3:2b
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "CA WoSign ECC Root"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\106\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\032\060\030\006\003\125\004\012\023\021\127\157\123\151\147\156
\040\103\101\040\114\151\155\151\164\145\144\061\033\060\031\006
\003\125\004\003\023\022\103\101\040\127\157\123\151\147\156\040
```

\105\103\103\040\122\157\157\164  
END  
CKA\_ID  
UTF8 "0"  
CKA\_ISSUER MULTILINE\_OCTAL  
\060\106\061\013\060\011\006\003\125\004\006\023\002\103\116\061  
\032\060\030\006\003\125\004\012\023\021\127\157\123\151\147\156  
\040\103\101\040\114\151\155\151\164\145\144\061\033\060\031\006  
\003\125\004\003\023\022\103\101\040\127\157\123\151\147\156\040  
\105\103\103\040\122\157\157\164  
END  
CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL  
\002\020\150\112\130\160\200\153\360\217\002\372\366\336\350\260  
\220\220  
END  
CKA\_VALUE MULTILINE\_OCTAL  
\060\202\002\011\060\202\001\217\240\003\002\001\002\002\020\150  
\112\130\160\200\153\360\217\002\372\366\336\350\260\220\220\060  
\012\006\010\052\206\110\316\075\004\003\003\060\106\061\013\060  
\011\006\003\125\004\006\023\002\103\116\061\032\060\030\006\003  
\125\004\012\023\021\127\157\123\151\147\156\040\103\101\040\114  
\151\155\151\164\145\144\061\033\060\031\006\003\125\004\003\023  
\022\103\101\040\127\157\123\151\147\156\040\105\103\103\040\122  
\157\157\164\060\036\027\015\061\064\061\061\060\070\060\060\065  
\070\065\070\132\027\015\064\064\061\061\060\070\060\060\065\070  
\065\070\132\060\106\061\013\060\011\006\003\125\004\006\023\002  
\103\116\061\032\060\030\006\003\125\004\012\023\021\127\157\123  
\151\147\156\040\103\101\040\114\151\155\151\164\145\144\061\033  
\060\031\006\003\125\004\003\023\022\103\101\040\127\157\123\151  
\147\156\040\105\103\103\040\122\157\157\164\060\166\060\020\006  
\007\052\206\110\316\075\002\001\006\005\053\201\004\000\042\003  
\142\000\004\341\375\216\270\103\044\253\226\173\205\302\272\013  
\255\215\340\072\343\044\271\322\261\276\210\072\312\277\112\270  
\371\357\054\057\257\121\120\074\107\165\154\370\224\267\233\374  
\050\036\305\124\314\143\235\026\113\123\301\347\040\253\315\254  
\045\322\177\217\302\301\132\202\136\060\213\172\124\316\003\265  
\221\177\252\224\320\321\212\110\314\202\005\046\241\325\121\022  
\326\173\066\243\102\060\100\060\016\006\003\125\035\017\001\001  
\377\004\004\003\002\001\006\060\017\006\003\125\035\023\001\001  
\377\004\005\060\003\001\001\377\060\035\006\003\125\035\016\004  
\026\004\024\252\375\325\132\243\366\207\213\062\205\375\321\062  
\133\200\105\223\363\003\270\060\012\006\010\052\206\110\316\075  
\004\003\003\003\150\000\060\145\002\061\000\344\244\204\260\201  
\325\075\260\164\254\224\244\350\016\075\000\164\114\241\227\153  
\371\015\121\074\241\331\073\364\015\253\251\237\276\116\162\312  
\205\324\331\354\265\062\105\030\157\253\255\002\060\175\307\367  
\151\143\057\241\341\230\357\023\020\321\171\077\321\376\352\073  
\177\336\126\364\220\261\025\021\330\262\042\025\320\057\303\046

```

\056\153\361\221\262\220\145\364\232\346\220\356\112
END
CKA_NSS_MOZILLA_CA_POLICY
CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

# Microsoft
Code Signing Only Certificate
# Trust for "CA WoSign ECC Root"
# Issuer: CN=CA WoSign ECC Root,O=WoSign CA Limited,C=CN
# Serial Number:68:4a:58:70:80:6b:f0:8f:02:fa:f6:de:e8:b0:90:90
# Subject: CN=CA WoSign ECC Root,O=WoSign CA Limited,C=CN
# Not Valid Before: Sat Nov 08 00:58:58 2014
# Not Valid After: Tue Nov 08 00:58:58 2044
# Fingerprint (MD5): 80:c6:53:ee:61:82:28:72:f0:ff:21:b9:17:ca:b2:20
# Fingerprint (SHA1): d2:7a:d2:be:ed:94:c0:a1:3c:c7:25:21:ea:5d:71:be:81:19:f3:2b
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "CA WoSign ECC Root"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\322\172\322\276\355\224\300\241\074\307\045\041\352\135\161\276
\201\031\363\053
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\200\306\123\356\141\202\050\162\360\377\041\271\027\312\262\040
END
CKA_ISSUER MULTILINE_OCTAL
\060\106\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\032\060\030\006\003\125\004\012\023\021\127\157\123\151\147\156
\040\103\101\040\114\151\155\151\164\145\144\061\033\060\031\006
\003\125\004\003\023\022\103\101\040\127\157\123\151\147\156\040
\105\103\103\040\122\157\157\164
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\150\112\130\160\200\153\360\217\002\372\366\336\350\260
\220\220
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "CCA India 2015 SPL"

```

```
# Issuer: CN=CCA India 2015 SPL,O=India PKI,C=IN
# Serial Number: 10165 (0x27b5)
# Subject: CN=CCA India 2015 SPL,O=India PKI,C=IN
# Not Valid Before: Thu Jan 29 11:36:43 2015
# Not Valid After: Wed Jan 29 11:36:43 2025
# Fingerprint (MD5): 16:da:3e:ac:1d:0a:57:a9:b4:e2:de:d0:93:96:dc:d4
# Fingerprint (SHA1): 3b:c6:dc:e0:03:07:bd:67:60:41:eb:d8:59:70:c6:2f:8f:da:51:09
CKA_CLASS CK_OBJECT_CLASS
CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "CCA India 2015 SPL"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\076\061\013\060\011\006\003\125\004\006\023\002\111\116\061
\022\060\020\006\003\125\004\012\023\011\111\156\144\151\141\040
\120\113\111\061\033\060\031\006\003\125\004\003\023\022\103\103
\101\040\111\156\144\151\141\040\062\060\061\065\040\123\120\114
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\076\061\013\060\011\006\003\125\004\006\023\002\111\116\061
\022\060\020\006\003\125\004\012\023\011\111\156\144\151\141\040
\120\113\111\061\033\060\031\006\003\125\004\003\023\022\103\103
\101\040\111\156\144\151\141\040\062\060\061\065\040\123\120\114
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\002\047\265
END
CKA_VALUE MULTILINE_OCTAL
\060\202\003\053\060\202\002\023\240\003\002\001\002\002\002\047
\265\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000
\060\076\061\013\060\011\006\003\125\004\006\023\002\111\116\061
\022\060\020\006\003\125\004\012\023\011\111\156\144\151\141\040
\120\113\111\061\033\060\031\006\003\125\004\003\023\022\103\103
\101\040\111\156\144\151\141\040\062\060\061\065\040\123\120\114
\060\036\027\015\061\065\060\061\062\071\061\061\063\066\064\063
\132\027\015\062\065\060\061\062\071\061\061\063\066\064\063\132
\060\076\061\013\060\011\006\003\125\004\006\023\002\111\116\061
\022\060\020\006\003\125\004\012\023\011\111\156\144\151\141\040
\120\113\111\061\033\060\031\006\003\125\004\003\023\022\103\103
\101\040\111\156\144\151\141\040\062\060\061\065\040\123\120\114
\060\202\001\042\060\015\006\011\052\206\110\206\367\015\001\001
\001\005\000\003\202\001\017\000\060\202\001\012\002\202\001\001
\000\227\327\066\211\075\067\101\016\221\077\153\040\137\374\072
\176\073\132\135\057\303\014\207\123\074\030\242\310\141\163\015
\010\016\126\036\322\156\140\245\127\145\334\376\317\120\206\017
```

\132\116\253\142\213\004\312\126\357\341\321\236\256\164\255\252  
\372\077\101\130\321\125\160\160\076\105\311\033\200\163\374\010  
\210\344\213\162\250\012\265\051\127\260\255\012\221\101\032\234  
\137\120\175\254\027\032\045\133\041\360\225\053\347\337\067\254  
\064\363\007\260\361\035\301\023\357\173\056\072\305\251\141\220  
\262\170\137\124\120\074\263\132\125\143\266\313\020\243\157\373  
\015\364\266\357\346\010\336\242\020\277\166\227\177\352\331\226  
\321\324\303\163\002\161\264\251\260\254\254\037\027\040\245\107  
\106\326\104\002\070\231\276\313\024\170\376\346\137\304\177\335  
\157\351\252\107\024\220\021\330\035\200\300\025\324\214\240\231  
\343\031\016\012\017\314\032\010\234\324\123\007\000\340\037\111  
\277\202\202\114\317\233\330\156\323\324\021\000\022\154\017\175  
\140\147\112\214\120\333\362\057\340\271\171\207\203\303\134\302  
\071\002\003\001\000\001\243\063\060\061\060\017\006\003\125\035  
\023\001\001\377\004\005\060\003\001\001\377\060\021\006\003\125  
\035\016\004\012\004\010\114\021\160\252\217\335\037\007\060\013  
\006\003\125\035\017\004\004\003\002\001\006\060\015\006\011\052  
\206\110\206\367\015\001\001\013\005\000\003\202\001\001\000\055  
\274\214\025\312\064\355\114\050\042\273\341\123\045\113\072\227  
\251\355\046\242\244\253\115\373\012\022\156\347\065\346\147\016  
\030\201\142\066\245\314\302\337\032\345\150\001\201\116\263\231  
\324\107\025\022\235\166\351\241\246\023\035\260\377\175\273\127  
\343\357\131\233\310\073\120\151\306\143\072\254\240\301\345\220  
\350\144\051\134\110\101\151\067\254\073\273\335\343\125\306\327  
\222\015\225\203\260\050\127\302\243\251\226\247\312\336\114\036  
\232\377\076\245\056\047\136\333\146\147\047\205\357\253\212\134  
\163\174\210\315\107\146\360\235\203\314\204\217\342\051\364\037  
\101\157\267\365\041\015\365\224\126\121\343\374\377\023\130\267  
\237\003\356\051\237\322\001\260\142\236\224\275\031\206\132\103  
\372\152\211\201\260\352\134\030\207\312\200\225\373\355\001\277  
\021\032\337\225\024\256\056\342\257\315\221\220\272\263\047\303  
\157\020\330\331\016\264\245\164\154\201\267\137\031\314\376\047  
\116\263\105\230\130\030\234\127\304\222\162\022\317\247\202\071  
\325\341\020\227\012\206\060\105\205\143\250\153\115\232\374

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "CCA India 2015 SPL"

# Issuer: CN=CCA India 2015 SPL,O=India PKI,C=IN

# Serial Number: 10165 (0x27b5)

# Subject: CN=CCA India 2015 SPL,O=India PKI,C=IN

# Not Valid Before: Thu Jan 29 11:36:43 2015

# Not Valid After: Wed Jan 29 11:36:43 2025

# Fingerprint (MD5): 16:da:3e:ac:1d:0a:57:a9:b4:e2:de:d0:93:96:dc:d4

# Fingerprint (SHA1): 3b:c6:dc:e0:03:07:bd:67:60:41:eb:d8:59:70:c6:2f:8f:da:51:09

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "CCA India 2015 SPL"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\073\306\334\340\003\007\275\147\140\101\353\330\131\160\306\057  
\217\332\121\011

END

CKA\_CERT\_MD5\_HASH

MULTILINE\_OCTAL

\026\332\076\254\035\012\127\251\264\342\336\320\223\226\334\324  
END

CKA\_ISSUER MULTILINE\_OCTAL

\060\076\061\013\060\011\006\003\125\004\006\023\002\111\116\061  
\022\060\020\006\003\125\004\012\023\011\111\156\144\151\141\040  
\120\113\111\061\033\060\031\006\003\125\004\003\023\022\103\103  
\101\040\111\156\144\151\141\040\062\060\061\065\040\123\120\114

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\002\047\265

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "Swedish Government Root Authority v3"

# Issuer: CN=Swedish Government Root Authority v3,O=Swedish Social Insurance Agency,C=SE

# Serial Number:32:69:a2:bf:40:6b:8d:b4:47:83:64:3c:8b:0d:c9:43

# Subject:

CN=Swedish Government Root Authority v3,O=Swedish Social Insurance Agency,C=SE

# Not Valid Before: Tue Sep 29 11:32:32 2015

# Not Valid After: Sat Sep 29 11:42:09 2040

# Fingerprint (MD5): 63:e2:fd:ea:a2:55:6a:70:54:fb:3a:22:e3:34:b1:17

# Fingerprint (SHA1): 74:6f:88:f9:ac:16:3c:53:00:9e:ef:92:0c:40:67:75:6a:15:71:7e

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Swedish Government Root Authority v3"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\146\061\013\060\011\006\003\125\004\006\023\002\123\105\061  
\050\060\046\006\003\125\004\012\023\037\123\167\145\144\151\163  
\150\040\123\157\143\151\141\154\040\111\156\163\165\162\141\156

\143\145\040\101\147\145\156\143\171\061\055\060\053\006\003\125  
\004\003\023\044\123\167\145\144\151\163\150\040\107\157\166\145  
\162\156\155\145\156\164\040\122\157\157\164\040\101\165\164\150  
\157\162\151\164\171\040\166\063

END

CKA\_ID

UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\146\061\013\060\011\006\003\125\004\006\023\002\123\105\061  
\050\060\046\006\003\125\004\012\023\037\123\167\145\144\151\163  
\150\040\123\157\143\151\141\154\040\111\156\163\165\162\141\156  
\143\145\040\101\147\145\156\143\171\061\055\060\053\006\003\125  
\004\003\023\044\123\167\145\144\151\163\150\040\107\157\166\145  
\162\156\155\145\156\164\040\122\157\157\164\040\101\165\164\150  
\157\162\151\164\171\040\166\063

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\062\151\242\277\100\153\215\264\107\203\144\074\213\015  
\311\103

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\252\060\202\003\222\240\003\002\001\002\002\020\062  
\151\242\277\100\153\215\264\107\203\144\074\213\015\311\103\060  
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\146  
\061\013\060\011\006\003\125\004\006\023\002\123\105\061\050\060  
\046\006\003\125\004\012\023\037\123\167\145\144\151\163\150\040  
\123\157\143\151\141\154\040\111\156\163\165\162\141\156\143\145  
\040\101\147\145\156\143\171\061\055\060\053\006\003\125\004\003  
\023\044\123\167\145\144\151\163\150\040\107\157\166\145\162\156  
\155\145\156\164\040\122\157\157\164\040\101\165\164\150\157\162  
\151\164\171\040\166\063\060\036\027\015\061\065\060\071\062\071  
\061\061\063\062\063\062\132\027\015\064\060\060\071\062\071\061  
\061\064\062\060\071\132\060\146\061\013\060\011\006\003\125\004  
\006\023\002\123\105\061\050\060\046\006\003\125\004\012\023\037  
\123\167\145\144\151\163\150\040\123\157\143\151\141\154\040\111  
\156\163\165\162\141\156\143\145\040\101\147\145\156\143\171\061  
\055\060\053\006\003\125\004\003\023\044\123\167\145\144\151\163  
\150\040\107\157\166\145\162\156\155\145\156\164\040\122\157\157  
\164\040\101\165\164\150\157\162\151\164\171\040\166\063\060\202  
\002\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005  
\000\003\202\002\017\000\060\202\002\012\002\202\002\001\000\272  
\036\242\151\033\150\117\134\217\272\364\043\307\136\146\005\170  
\205\066\130\243\242\177\147\357\242\014\026\222\244\112\213\340  
\240\222\207\125\067\013\304\321\304\320\100\103\227\062\120\117  
\354\225\107\267\077\257\103\005\345\204\227\011\357\126\124\347  
\103\063\107\375\255\361\072\233\230\244\341\344\121\243\271\254  
\214\013\356\045\006\011\362\323\272\065\147\141\214\302\275\046  
\313\327\143\314\327\203\063\331\114\342\357\371\033\237\250\313



\015\166\001\055\162\311\042\273\150\221\336\220\017\073\075\264  
\102\275\031\175\237\204\134\074\176\102\067\206\261\140\302\110  
\207\122\116\134\127\376\316\222\256\312\076\126\267\263\236\225  
\232\224\370\057\241\320\242\056\302\124\132\154\314\314\326\255  
\113\107\320\056\207\202\063\250\173\120\071\247\052\054\261\133  
\047\012\237\255\365\024\353\374\215\123\262\163\053\124\043\364  
\214\227\231\227\373\065\334\314\265\372\063\024\046\215\165\247  
\044\246\350\024\056\055\246\200\050\203\232\077\270\312\073\307  
\365\030\340\375\354\216\171\373\252\102\154\112\113\026\176\363  
\202\003\156\272\347\021\006\245\237\204\053\322\140\155\351\106  
\356\101\132\226\271\024\375\034\077\206\022\361\124\046\046\375  
\147\200\057\345\250\055\050\056\103\267\144\302\357\344\267\176  
\226\334\204\213\047\331\166\075\230\201\123\024\334\102\105\241  
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\352\222\000\075\111\004\331\243\134\272\105\373\002\020\377\255  
\151\164\122\245\070\143\232\146\210\004\262\021\272\023\252\071  
\325\203\137\355\145\133\123\310\235\134\262\205\240\170\160\065  
\115\134\044\020\244\366\061\052\222\125\101\331\363\027\154\231  
\023\130\372\335\050\320\154\023\275\133\207\215\223\203\255\130  
\051\126\025\264\130\047\112\233\021\154\240\246\147\105\072\316  
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\001\377\004\004\003\002\001\006\060\017\006\003\125\035\023\001  
\001\377\004\005\060\003\001\001\377\060\035\006\003\125\035\016  
\004\026\004\024\234\274\001\347\253\144\065\365\061\233\215\265  
\373\027\231\210\002\313\233\362\060\020\006\011\053\006\001\004  
\001\202\067\025\001\004\003\002\001\000\060\015\006\011\052\206  
\110\206\367\015\001\001\013\005\000\003\202\002\001\000\207\253  
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\141\132\026\134\234\104\265\243\321\226\320\100\376\317\146\025  
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\313\011\164\215\353\005\312\172\351\200\260\267\121\055\042\223  
\343\232\031\356\355\227\010\041\203\255\307\012\221\137\304\312  
\333\136\257\270\347\214\272\072\111\322\125\003\065\031\031\120  
\112\342\206\247\273\170\075\225\375\261\037\106\362\117\146\362  
\373\277\205\144\266\012\043\030\222\011\236\111\105\061\266\326  
\024\127\236\374\211\105\164\177\071\314\300\152\150\310\317\107  
\320\341\036\307\323\057\055\371\054\044\073\374\152\272\224\023  
\336\314\162\362\242\035\313\037\237\325\203\167\046\136\176\233  
\240\257\151\237\170\333\245\301\156\161\134\110\102\116\053\330  
\170\270\325\017\245\077\154\313\217\220\315\107\330\220\031\111  
\205\326\154\374\342\253\252\102\277\313\023\227\277\151\104\165

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\143\065\055\332\240\307\375\141\367\312\101\075\124\234\364\066
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\131\101\046\110\247\343\353\147\152\323\354\064\267\230\367\314
\312\243\066\006\225\347\310\060\131\367\377\311\241\321\344\171
\274\337\023\037\056\331\263\165\321\004\267\043\011\041\314\035
\041\034\047\234\016\053\372\301\207\030\311\372\371\111\203\214
\022\026\373\305\022\316\073\017\102\372\360\005\145\176\250\307
\353\122\112\371\230\136\161\243\254\022\307\050\161\032\132\165
\317\207\312\037\067\050\034\024\235\220\120\157\306\277\112\314
\307\045\317\061\335\133\221\116\166\250\021\325\166\146\331\277
\200\163\142\260\354\303\376\104\274\315\131\023\013\014\055\330
\241\314\252\142\115\124\105\136\244\122\243\214\127\074\024\061
\223\124\316\245\026\124\136\055\102\263\356\145\251\266\235\077
\154\316\141\331\126\313\336\352\240\126\336\155\206\003\372\267
\201\152\214\322\330\363\327\266\300\254\051\204\131\043\016\233
\227\152\346\240\316\325\052\124\030\357\120\230\171\040
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "Swedish Government Root Authority v3"

# Issuer: CN=Swedish Government Root Authority v3,O=Swedish Social Insurance Agency,C=SE

# Serial Number:32:69:a2:bf:40:6b:8d:b4:47:83:64:3c:8b:0d:c9:43

# Subject: CN=Swedish Government Root Authority v3,O=Swedish Social Insurance Agency,C=SE

#

Not Valid Before: Tue Sep 29 11:32:32 2015

# Not Valid After: Sat Sep 29 11:42:09 2040

# Fingerprint (MD5): 63:e2:fd:ea:a2:55:6a:70:54:fb:3a:22:e3:34:b1:17

# Fingerprint (SHA1): 74:6f:88:f9:ac:16:3c:53:00:9e:ef:92:0c:40:67:75:6a:15:71:7e

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Swedish Government Root Authority v3"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

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\164\157\210\371\254\026\074\123\000\236\357\222\014\100\147\165
\152\025\161\176
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END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

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\143\342\375\352\242\125\152\160\124\373\072\042\343\064\261\027
```

END

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\146\061\013\060\011\006\003\125\004\006\023\002\123\105\061
\050\060\046\006\003\125\004\012\023\037\123\167\145\144\151\163
\150\040\123\157\143\151\141\154\040\111\156\163\165\162\141\156
```

```
\143\145\040\101\147\145\156\143\171\061\055\060\053\006\003\125
\004\003\023\044\123\167\145\144\151\163\150\040\107\157\166\145
\162\156\155\145\156\164\040\122\157\157\164\040\101\165\164\150
\157\162\151\164\171\040\166\063
```

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

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\002\020\062\151\242\277\100\153\215\264\107\203\144\074\213\015
\311\103
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END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "Swedish Government Root Authority v2"

# Issuer: CN=Swedish Government Root Authority v2,O=Swedish Social Insurance Agency,C=SE

# Serial Number:54:12:15:9f:ab:8a:75:93:44:94:ca:77:40:56:2e:ef

# Subject: CN=Swedish Government Root Authority v2,O=Swedish Social Insurance Agency,C=SE

# Not Valid Before: Tue May 05 11:15:23 2015

# Not Valid After: Sat May 05 11:24:19 2040

# Fingerprint (MD5): 33:85:e1:95:66:4b:83:50:73:42:c2:e0:da:a0:40:92

# Fingerprint (SHA1): 32:f4:42:09:3b:36:d7:03:1b:75:ca:4d:ad:dc:b3:27:fa:a0:2b:9c

CKA\_CLASS

CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Swedish Government Root Authority v2"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

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\060\146\061\013\060\011\006\003\125\004\006\023\002\123\105\061
\050\060\046\006\003\125\004\012\023\037\123\167\145\144\151\163
\150\040\123\157\143\151\141\154\040\111\156\163\165\162\141\156
\143\145\040\101\147\145\156\143\171\061\055\060\053\006\003\125
\004\003\023\044\123\167\145\144\151\163\150\040\107\157\166\145
\162\156\155\145\156\164\040\122\157\157\164\040\101\165\164\150
\157\162\151\164\171\040\166\062
```

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

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\060\146\061\013\060\011\006\003\125\004\006\023\002\123\105\061
\050\060\046\006\003\125\004\012\023\037\123\167\145\144\151\163
\150\040\123\157\143\151\141\154\040\111\156\163\165\162\141\156
\143\145\040\101\147\145\156\143\171\061\055\060\053\006\003\125
\004\003\023\044\123\167\145\144\151\163\150\040\107\157\166\145
\162\156\155\145\156\164\040\122\157\157\164\040\101\165\164\150
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\157\162\151\164\171\040\166\062

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\020\124\022\025\237\253\212\165\223\104\224\312\167\100\126  
\056\357

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\006\013\060\202\003\363\240\003\002\001\002\002\020\124  
\022\025\237\253\212\165\223\104\224\312\167\100\126\056\357\060  
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\146  
\061\013\060\011\006\003\125\004\006\023\002\123\105\061\050\060  
\046\006\003\125\004\012\023\037\123\167\145\144\151\163\150\040  
\123\157\143\151\141\154\040\111\156\163\165\162\141\156\143\145  
\040\101\147\145\156\143\171\061\055\060\053\006\003\125\004\003  
\023\044\123\167\145\144\151\163\150\040\107\157\166\145\162\156  
\155\145\156\164\040\122\157\157\164\040\101\165\164\150\157\162  
\151\164\171\040\166\062\060\036\027\015\061\065\060\065\060\065  
\061\061\061\065\062\063\132\027\015\064\060\060\065\060\065\061  
\061\062\064\061\071\132\060\146\061\013\060\011\006\003\125\004  
\006\023\002\123\105\061\050\060\046\006\003\125\004\012\023\037  
\123\167\145\144\151\163\150\040\123\157\143\151\141\154\040\111  
\156\163\165\162\141\156\143\145\040\101\147\145\156\143\171\061  
\055\060\053\006\003\125\004\003\023\044\123\167\145\144\151\163  
\150\040\107\157\166\145\162\156\155\145\156\164\040\122\157\157  
\164\040\101\165\164\150\157\162\151\164\171\040\166\062\060\202  
\002\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005  
\000\003\202\002\017\000\060\202\002\012\002\202\002\001\000\310  
\256\265\103\274\102\105\113\065\143\077\002\113\305\377\333\066  
\327\047\305\302\256\105\146\243\161\207\026\115\211\117\141\224  
\340\126\106\270\320\104\023\346\163\220\360\141\170\101\212\340  
\032\176\067\254\002\051\276\350\377\002\046\306\032\174\012\261  
\217\144\051\242\332\007\212\325\044\205\150\031\222\062\337\237  
\051\140\130\155\052\205\200\021\066\311\266\302\323\236\204\014  
\272\121\021\314\124\351\253\006\060\022\217\040\167\005\300\306  
\215\232\233\131\310\266\205\350\160\007\002\261\036\377\327\151  
\317\026\106\213\141\057\102\315\122\246\330\016\172\057\207\055  
\306\057\074\042\103\261\223\176\303\026\166\331\314\327\213\354  
\021\033\320\311\161\024\302\211\111\176\361\244\020\252\065\074  
\250\033\273\377\354\062\100\345\275\052\363\246\001\023\310\214  
\227\031\220\316\143\371\260\153\175\367\371\212\316\156\340\205  
\347\333\224\325\172\040\045\240\065\360\251\367\257\132\050\132  
\014\310\363\164\071\213\061\073\042\314\111\045\311\157\270\134  
\172\056\054\226\343\057\243\076\312\171\167\151\221\132\370\360  
\305\123\067\116\123\155\111\047\126\142\312\345\371\163\140\251  
\027\073\133\242\045\257\055\173\311\267\333\317\031\021\072\063  
\161\071\131\132\003\351\347\054\014\377\155\234\162\143\143\200  
\005\130\123\206\334\050\165\026\302\345\360\023\131\241\201\377

\005\014\231\250\266\074\154\056\305\016\000\230\201\351\203\167  
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\100\172\123\025\051\324\021\220\272\241\140\212\235\253\364\112  
\112\152\335\207\252\301\355\005\332\236\133\126\341\210\117\052  
\153\225\050\206\146\120\241\357\332\112\262\220\012\066\067\111  
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\133\313\301\211\366\363\350\042\270\316\270\122\076\121\036\261  
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\004\001\202\067\012\003\014\006\010\053\006\001\005\005\007\003  
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\056\252\205\227\113\244\134\020\257\332\370\075\275\223\130\057  
\170\373\031\167\003\071\026\107\111\162\125\314\207\350\275\244  
\177\322\253\044\254\347\324\120\356\235\330\203\306\231\040\373  
\026\057\210\306\027\067\312\213\036\253\320\342\154\007\130\270  
\144\221\241\020\241\151\067\165\136\376\332\163\024\346\212\153  
\276\302\140\041\057\300\371\243\004\110\066\133\067\276\332\154  
\375\351\226\216\236\361\123\174\217\145\104\247\125\175\013\224  
\116\124\366\377\062\275\057\175\234\245\136\102\304\114\051\343  
\020\144\057\346\317\132\073\064\125\050\141\321\047\022\273\156  
\124\233\201\130\254\325\136\235\127\003\240\115\321\377\067\164  
\246\215\363\371\225\375\052\211\165\172\171\067\375\046\171\057  
\047\163\177\251\031\040\345\320\137\230\350\226\005\217\230\171  
\351\171\020\101\051\001\103\365\151\067\314\120\020\150\265\330  
\104\116\016\362\231\343\047\054\152\216\137\273\175\273\153\161  
\113\006\212\335\052\330\012\077\133\310\162\056\130\141\012\017  
\201\150\036\107\307\351\055\272\357\215\334\016\243\043\303\262  
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\103\327\225\112\277\007\057\112\100\176\006\245\121\207\046\211  
\005\335\074\312\117\376\034\047\351\333\210\036\300\262\376\343  
\357\037\176\261\350\131\225\240\117\253\012\211\000\340\163\262  
\347\034\301\027\120\200\207\114\322\103\031\131\225\322\133\024  
\133\012\133\300\174\211\161\172\265\012\300\212\105\057\356\304  
\300\376\124\055\347\225\044\167\005\056\356\164\306\240\220\261

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\163\334\102\326\240\165\311\130\131\005\242\336\021\277\131\351
\015\247\046\302\156\300\106\212\306\036\323\365\352\017\175\075
\162\315\031\225\114\272\340\150\227\215\130\300\152\357\171\367
\262\150\152\270\162\066\303\044\014\350\062\355\275\361\237\310
\357\336\165\322\333\166\251\224\047\070\364\001\141\277\146\070
\217\152\075\334\000\133\263\374\104\337\003\113\371\361\166\045
\065\377\122\037\010\035\320\245\024\351\213\006\053\170\203\054
\161\134\117\221\207\143\326\014\016\005\210\074\224\240\261\132
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```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "Swedish Government Root Authority v2"

# Issuer: CN=Swedish Government Root Authority v2,O=Swedish Social Insurance Agency,C=SE

# Serial Number:54:12:15:9f:ab:8a:75:93:44:94:ca:77:40:56:2e:ef

#

Subject: CN=Swedish Government Root Authority v2,O=Swedish Social Insurance Agency,C=SE

# Not Valid Before: Tue May 05 11:15:23 2015

# Not Valid After: Sat May 05 11:24:19 2040

# Fingerprint (MD5): 33:85:e1:95:66:4b:83:50:73:42:c2:e0:da:a0:40:92

# Fingerprint (SHA1): 32:f4:42:09:3b:36:d7:03:1b:75:ca:4d:ad:dc:b3:27:fa:a0:2b:9c

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Swedish Government Root Authority v2"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\062\364\102\011\073\066\327\003\033\165\312\115\255\334\263\047
\372\240\053\234
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\063\205\341\225\146\113\203\120\163\102\302\340\332\240\100\222
```

END

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\146\061\013\060\011\006\003\125\004\006\023\002\123\105\061
\050\060\046\006\003\125\004\012\023\037\123\167\145\144\151\163
\150\040\123\157\143\151\141\154\040\111\156\163\165\162\141\156
\143\145\040\101\147\145\156\143\171\061\055\060\053\006\003\125
\004\003\023\044\123\167\145\144\151\163\150\040\107\157\166\145
\162\156\155\145\156\164\040\122\157\157\164\040\101\165\164\150
\157\162\151\164\171\040\166\062
```

END

CKA\_SERIAL\_NUMBER

```

MULTILINE_OCTAL
\002\020\124\022\025\237\253\212\165\223\104\224\312\167\100\126
\056\357
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "Tunisian Root Certificate Authority - TunRootCA2"
# Issuer: O=National Digital Certification Agency,CN=Tunisian Root Certificate Authority - TunRootCA2,C=TN
# Serial Number:21:66:15:05:05:27:05:05:bc:8a:b0:1d:af:0a:be:c4
# Subject: O=National Digital Certification Agency,CN=Tunisian Root Certificate Authority - TunRootCA2,C=TN
# Not Valid Before: Tue May 05 08:57:01 2015
# Not Valid After: Wed May 05
08:57:01 2027
# Fingerprint (MD5): 03:d1:25:b1:f0:55:ad:ca:dd:7c:59:93:50:ef:17:21
# Fingerprint (SHA1): 96:38:63:3c:90:56:ae:88:14:a0:65:d2:3b:dc:60:a0:ee:70:2f:a7
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Tunisian Root Certificate Authority - TunRootCA2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\170\061\013\060\011\006\003\125\004\006\023\002\124\116\061
\071\060\067\006\003\125\004\003\023\060\124\165\156\151\163\151
\141\156\040\122\157\157\164\040\103\145\162\164\151\146\151\143
\141\164\145\040\101\165\164\150\157\162\151\164\171\040\055\040
\124\165\156\122\157\157\164\103\101\062\061\056\060\054\006\003
\125\004\012\023\045\116\141\164\151\157\156\141\154\040\104\151
\147\151\164\141\154\040\103\145\162\164\151\146\151\143\141\164
\151\157\156\040\101\147\145\156\143\171
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\170\061\013\060\011\006\003\125\004\006\023\002\124\116\061
\071\060\067\006\003\125\004\003\023\060\124\165\156\151\163\151
\141\156\040\122\157\157\164\040\103\145\162\164\151\146\151\143
\141\164\145\040\101\165\164\150\157\162\151\164\171\040\055\040
\124\165\156\122\157\157\164\103\101\062\061\056\060\054\006\003
\125\004\012\023\045\116\141\164\151\157\156\141\154\040\104\151
\147\151\164\141\154\040\103\145\162\164\151\146\151\143\141\164
\151\157\156\040\101\147\145\156\143\171
END
CKA_SERIAL_NUMBER

```

MULTILINE\_OCTAL

\002\020\041\146\025\005\005\047\005\005\274\212\260\035\257\012  
\276\304

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\274\060\202\003\244\240\003\002\001\002\002\020\041  
\146\025\005\005\047\005\005\274\212\260\035\257\012\276\304\060  
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\170  
\061\013\060\011\006\003\125\004\006\023\002\124\116\061\071\060  
\067\006\003\125\004\003\023\060\124\165\156\151\163\151\141\156  
\040\122\157\157\164\040\103\145\162\164\151\146\151\143\141\164  
\145\040\101\165\164\150\157\162\151\164\171\040\055\040\124\165  
\156\122\157\157\164\103\101\062\061\056\060\054\006\003\125\004  
\012\023\045\116\141\164\151\157\156\141\154\040\104\151\147\151  
\164\141\154\040\103\145\162\164\151\146\151\143\141\164\151\157  
\156\040\101\147\145\156\143\171\060\036\027\015\061\065\060\065  
\060\065\060\070\065\067\060\061\132\027\015\062\067\060\065\060  
\065\060\070\065\067\060\061\132\060\170\061\013\060\011\006\003  
\125\004\006\023\002\124\116\061\071\060\067\006\003\125\004\003  
\023\060\124\165\156\151\163\151\141\156\040\122\157\157\164\040  
\103\145\162\164\151\146\151\143\141\164\145\040\101\165\164\150  
\157\162\151\164\171\040\055\040\124\165\156\122\157\157\164\103  
\101\062\061\056\060\054\006\003\125\004\012\023\045\116\141\164  
\151\157\156\141\154\040\104\151\147\151\164\141\154\040\103\145  
\162\164\151\146\151\143\141\164\151\157\156\040\101\147\145\156  
\143\171\060\202\002\042\060\015\006\011\052\206\110\206\367\015  
\001\001\001\005\000\003\202\002\017\000\060\202\002\012\002\202  
\002\001\000\260\007\347\142\373\320\015\125\316\147\267\127\215  
\156\014\251\047\124\036\353\251\044\253\147\217\217\234\141\017  
\333\050\062\057\073\370\054\145\222\055\256\272\063\222\300\053  
\236\362\037\136\155\043\135\263\130\037\215\241\300\155\165\205  
\012\260\023\116\133\126\106\213\071\275\013\202\273\072\103\233  
\010\272\106\356\371\027\353\315\310\327\343\165\023\336\256\121  
\110\012\316\040\225\106\237\002\354\125\214\164\252\132\374\374  
\352\011\063\065\156\243\107\006\307\335\176\204\150\016\307\022  
\312\224\303\355\346\154\002\155\336\002\211\065\263\004\313\105  
\370\174\107\244\323\037\337\345\134\043\342\363\042\173\271\113  
\242\375\027\065\135\110\351\277\365\263\045\143\213\347\170\353  
\374\165\047\275\210\134\246\205\077\101\337\225\174\335\172\106  
\217\376\036\332\261\253\330\323\216\315\006\214\311\330\122\102  
\021\122\242\203\217\134\203\173\344\047\266\217\037\240\136\075  
\322\165\175\171\123\223\006\227\343\003\307\226\054\332\001\074  
\171\305\073\120\350\260\323\241\244\342\323\203\175\104\370\020  
\317\240\032\052\362\145\200\275\167\301\230\145\166\256\022\041  
\142\312\072\276\276\265\231\303\133\304\321\277\233\300\012\312  
\130\036\025\246\327\041\136\261\115\012\345\160\170\232\150\346  
\164\146\062\024\052\036\021\276\210\367\006\366\125\243\303\037  
\156\027\220\125\321\212\100\211\126\103\325\117\346\242\311\210



|144\000\005\121\077\127\264\074\266\276\152\221\161\100\361\242  
|134\361\327\355\234\266\127\366\131\324\052\021\345\324\345\277  
|273\036\321\310\327\137\104\005\233\273\211\072\255\247\103\167  
|176\025\140\174\210\135\233\354\245\134\322\106\255\014\213\124  
|105\324\224\121\125\105\122\252\134\330\021\254\370\126\042\154  
|331\322\024\351\267\116\102\205\124\106\370\001\306\075\046\006  
|167\350\262\065\033\360\235\102\311\177\376\200\047\001\120\313  
|177\305\254\124\372\153\155\226\214\101\244\241\322\347\265\221  
|110\157\167\034\213\302\053\164\376\074\134\304\135\224\316\253  
|361\040\226\153\301\014\132\137\371\345\065\271\154\243\020\147  
|357\221\252\110\016\357\110\267\166\130\142\331\276\236\102\263  
|244\275\065\002\003\001\000\001\243\102\060\100\060\035\006\003  
|125\035\016\004\026\004\024\314\163\305\243\152\051\061\227\247  
|215\240\330\124\301\012\165\266\043\077\246\060\017\006\003\125  
|035\023\001\001\377\004\005\060\003\001\001\377\060\016\006\003  
|125\035\017\001\001\377\004\004\003\002\001\006\060\015\006\011  
|052\206\110\206\367\015\001\001\013\005\000\003\202\002\001\000  
|056\362\207\110\355\231\236\237\001\014\074\311\012\170\123\174  
|030\065\336\266\345\154\364\000\200\341\233\213\331\372\373\252  
|373\145\267\322\311\365\327\247\313\176\311\261\242\161\130\155  
|131\067\326\340\063\020\312\265\331\162\333\116\045\067\252\246  
|335\035\030\275\365\311\212\234\172\210\356\037\002\304\055\222  
|124\175\127\342\134\031\030\043\002\172\134\111\225\266\230\347  
|302\140\101\145\100\273\354\132\267\161\234\120\362\163\166\373  
|137\015\357\065\317\264\151\215\205\350\114\220\027\003\013\311  
|263\056\040\067\143\021\142\246\117\343\064\340\373\171\125\347  
|306\302\256\102\376\260\064\154\111\043\016\162\007\173\146\005  
|125\110\373\022\017\240\300\372\116\321\373\075\314\376\375\026  
|113\126\120\315\021\054\247\233\367\261\012\317\246\353\357\335  
|216\270\256\102\010\174\244\214\224\352\206\307\103\343\367\074  
|212\337\107\322\060\100\310\055\123\365\157\021\111\314\041\214  
|226\103\117\020\240\107\241\126\215\037\034\133\330\126\133\353  
|064\166\341\065\072\161\324\314\041\057\236\065\050\362\132\336  
|236\344\356\107\152\020\350\070\275\112\264\175\004\177\005\256  
|110\012\264\003\277\056\263\012\033\237\313\255\335\115\320\207  
|041\267\107\166\202\203\055\307\127\276\232\025\243\033\060\030  
|154\243\072\161\157\144\107\050\222\333\021\141\040\232\167\145  
|055\371\254\126\023\154\113\243\137\377\233\244\350\357\347\130  
|350\173\236\073\177\152\247\276\071\012\023\224\311\110\116\146  
|144\330\123\114\354\101\153\375\374\066\056\327\016\337\141\013  
|173\265\100\254\335\102\111\155\236\200\277\140\225\360\351\300  
|077\173\273\030\351\070\265\126\116\247\176\212\142\357\230\036  
|370\170\100\251\273\330\351\345\264\264\371\343\147\234\354\123  
|317\270\102\264\057\223\201\065\240\154\366\272\040\212\150\075  
|367\155\377\177\323\114\367\172\224\150\003\167\103\073\065\121  
|252\123\022\076\107\023\024\071\254\326\145\217\250\106\377\074  
|041\364\322\277\320\110\244\176\247\121\233\227\022\365\231\064  
|027\043\126\204\023\143\313\064\312\037\312\272\250\007\051\363

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\103\044\012\111\177\375\016\324\220\360\253\103\041\142\234\217
END
CKA_NSS_MOZILLA_CA_POLICY
CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRUST_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRUST_AFTER CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Trust for "Tunisian Root Certificate Authority - TunRootCA2"
# Issuer: O=National Digital Certification Agency,CN=Tunisian Root Certificate Authority - TunRootCA2,C=TN
# Serial Number:21:66:15:05:05:27:05:05:bc:8a:b0:1d:af:0a:be:c4
#
Subject: O=National Digital Certification Agency,CN=Tunisian Root Certificate Authority - TunRootCA2,C=TN
# Not Valid Before: Tue May 05 08:57:01 2015
# Not Valid After: Wed May 05 08:57:01 2027
# Fingerprint (MD5): 03:d1:25:b1:f0:55:ad:ca:dd:7c:59:93:50:ef:17:21
# Fingerprint (SHA1): 96:38:63:3c:90:56:ae:88:14:a0:65:d2:3b:dc:60:a0:ee:70:2f:a7
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Tunisian Root Certificate Authority - TunRootCA2"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\226\070\143\074\220\126\256\210\024\240\145\322\073\334\140\240
\356\160\057\247
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\003\321\045\261\360\125\255\312\335\174\131\223\120\357\027\041
END
CKA_ISSUER MULTILINE_OCTAL
\060\170\061\013\060\011\006\003\125\004\006\023\002\124\116\061
\071\060\067\006\003\125\004\003\023\060\124\165\156\151\163\151
\141\156\040\122\157\157\164\040\103\145\162\164\151\146\151\143
\141\164\145\040\101\165\164\150\157\162\151\164\171\040\055\040
\124\165\156\122\157\157\164\103\101\062\061\056\060\054\006\003
\125\004\012\023\045\116\141\164\151\157\156\141\154\040\104\151
\147\151\164\141\154\040\103\145\162\164\151\146\151\143\141\164
\151\157\156\040\101\147\145\156\143\171
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\041\146\025\005\005\047\005\005\274\212\260\035\257\012
\276\304
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

```

```

# Microsoft Code Signing Only Certificate
# Certificate "OpenTrust Root CA G2"
# Issuer: CN=OpenTrust Root CA G2,O=OpenTrust,C=FR
# Serial Number:11:20:a1:69:1b:bf:bd:b9:bd:52:96:8f:23:e8:48:bf:26:11
# Subject: CN=OpenTrust Root CA G2,O=OpenTrust,C=FR
# Not Valid Before: Mon May 26 00:00:00 2014
# Not Valid After: Fri Jan 15 00:00:00 2038
# Fingerprint
(MD5): 57:24:b6:59:24:6b:ae:c8:fe:1c:0c:20:f2:c0:4e:eb
# Fingerprint (SHA1): 79:5f:88:60:c5:ab:7c:3d:92:e6:cb:f4:8d:e1:45:cd:11:ef:60:0b
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "OpenTrust Root CA G2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\100\061\013\060\011\006\003\125\004\006\023\002\106\122\061
\022\060\020\006\003\125\004\012\014\011\117\160\145\156\124\162
\165\163\164\061\035\060\033\006\003\125\004\003\014\024\117\160
\145\156\124\162\165\163\164\040\122\157\157\164\040\103\101\040
\107\062
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\100\061\013\060\011\006\003\125\004\006\023\002\106\122\061
\022\060\020\006\003\125\004\012\014\011\117\160\145\156\124\162
\165\163\164\061\035\060\033\006\003\125\004\003\014\024\117\160
\145\156\124\162\165\163\164\040\122\157\157\164\040\103\101\040
\107\062
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\022\021\040\241\151\033\277\275\271\275\122\226\217\043\350
\110\277\046\021
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\157\060\202\003\127\240\003\002\001\002\002\022\021
\040\241\151\033\277\275\271\275\122\226\217\043\350\110\277\046
\021\060\015\006\011\052\206\110\206\367\015\001\001\015\005\000
\060\100\061\013\060\011\006\003\125\004\006\023\002\106\122\061
\022\060\020\006\003\125\004\012\014\011\117\160\145\156\124\162
\165\163\164\061\035\060\033\006\003\125\004\003\014\024\117\160
\145\156\124\162\165\163\164\040\122\157\157\164\040\103\101\040
\107\062\060\036\027\015\061\064\060\065\062\066\060\060\060\060
\060\060\132\027\015\063\070\060\061\061\065\060\060\060\060\060
\060\132\060\100\061\013\060\011\006\003\125\004\006\023\002\106

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\122\061\022\060\020\006\003\125\004\012\014\011\117\160\145\156  
\124\162\165\163\164\061\035\060\033\006\003\125\004\003\014\024  
\117\160\145\156\124\162\165\163\164\040\122\157\157\164\040\103  
\101\040\107\062\060\202\002\042\060\015\006\011\052\206\110\206  
\367\015\001\001\001\005\000\003\202\002\017\000\060\202\002\012  
\002\202\002\001\000\314\266\127\245\063\224\020\201\062\123\337  
\141\176\017\166\071\317\134\302\123\165\035\111\172\226\070\335  
\242\163\152\361\157\336\136\242\132\271\161\041\276\066\331\241  
\374\274\356\154\250\174\064\032\161\032\350\032\330\137\016\104  
\006\355\247\340\363\322\141\013\340\062\242\226\321\070\360\302  
\332\001\027\374\344\254\117\350\356\211\036\164\253\117\277\036  
\011\266\066\152\126\363\341\356\226\211\146\044\006\344\315\102  
\072\112\335\340\232\260\304\202\105\263\376\311\253\134\174\076  
\311\353\027\057\014\175\156\256\245\217\310\254\045\012\157\372  
\325\105\230\322\065\011\366\003\103\224\376\331\277\040\225\171  
\200\230\212\331\211\065\273\121\033\244\067\175\374\231\073\253  
\377\277\254\015\217\103\261\231\173\026\020\176\035\157\107\304  
\025\217\004\226\010\006\102\004\370\204\326\035\274\221\246\102  
\276\111\325\152\210\077\274\055\121\321\236\215\340\122\314\127  
\335\065\065\130\333\264\217\044\210\344\213\337\334\153\124\322  
\201\053\262\316\222\113\034\037\106\372\035\330\222\313\166\147  
\265\011\231\011\345\254\027\024\125\160\306\074\240\126\012\003  
\263\334\142\031\337\310\265\060\177\365\074\046\165\021\275\327  
\033\263\207\236\007\257\145\161\345\240\317\032\247\011\020\035  
\223\211\146\133\350\074\142\062\265\265\072\156\351\205\001\213  
\236\103\214\147\163\050\131\133\353\343\334\054\314\245\046\162  
\142\022\264\346\234\203\104\366\121\244\342\300\172\044\127\312  
\016\245\077\072\265\073\213\345\166\356\160\346\222\336\026\134  
\050\133\227\031\047\222\376\172\222\124\316\223\071\012\026\207  
\274\143\263\365\261\223\134\340\156\267\320\352\371\142\062\210  
\104\373\277\047\050\266\060\225\135\022\050\271\225\276\217\123  
\030\345\242\030\026\342\126\244\262\054\020\365\035\067\246\370  
\267\366\320\131\134\211\367\302\325\265\224\164\321\325\376\033  
\266\360\346\326\036\173\322\074\313\250\343\365\030\363\041\037  
\156\357\115\150\006\173\055\135\156\103\211\246\300\371\240\277  
\202\036\317\123\177\264\353\054\333\135\366\152\175\100\044\005  
\162\211\070\001\223\313\161\302\071\135\006\021\366\157\170\370  
\067\015\071\204\047\002\003\001\000\001\243\143\060\141\060\016  
\006\003\125\035\017\001\001\377\004\004\003\002\001\006\060\017  
\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060  
\035\006\003\125\035\016\004\026\004\024\152\071\372\102\042\367  
\346\211\000\115\136\175\063\203\313\270\156\167\206\257\060\037  
\006\003\125\035\043\004\030\060\026\200\024\152\071\372\102\042  
\367\346\211\000\115\136\175\063\203\313\270\156\167\206\257\060  
\015\006\011\052\206\110\206\367\015\001\001\015\005\000\003\202  
\002\001\000\230\313\253\100\074\345\063\002\227\177\055\207\246  
\217\324\136\112\257\270\036\347\273\161\373\200\144\045\251\263  
\032\076\150\135\047\046\247\272\052\341\360\127\203\012\144\117

\036\042\164\033\351\220\137\360\254\317\377\117\150\172\070\244  
\020\154\015\261\307\244\167\200\030\266\242\050\104\166\247\064  
\235\161\204\057\312\131\322\107\210\231\101\042\311\060\230\141  
\156\075\250\250\005\155\321\037\300\121\104\126\177\047\065\002  
\335\136\230\012\102\353\060\277\215\241\233\121\252\073\352\223  
\106\144\305\000\171\336\041\153\366\127\240\206\327\006\162\354  
\160\106\113\213\163\335\240\041\165\076\334\035\300\217\323\117  
\163\034\205\331\376\177\142\310\225\157\266\323\173\214\272\123  
\302\157\233\104\114\171\320\035\160\263\327\237\002\364\262\007  
\260\307\345\370\255\043\016\246\126\311\051\022\167\110\331\057  
\106\375\073\360\374\164\160\222\245\216\070\010\037\144\060\266  
\267\113\373\066\254\020\216\240\122\063\143\235\003\065\126\305  
\151\275\306\043\132\047\224\366\244\022\370\055\063\074\241\126  
\245\137\326\031\351\355\174\010\275\167\315\047\144\314\224\332  
\116\106\120\207\340\371\301\123\200\036\273\255\373\107\122\213  
\033\375\242\371\336\016\042\267\075\063\131\154\324\336\365\225  
\006\062\015\121\031\101\134\076\117\006\367\271\053\200\047\366  
\243\252\172\174\006\341\103\303\023\071\142\032\066\275\340\050  
\056\224\002\344\051\056\140\125\256\100\075\260\164\222\136\360  
\040\144\226\077\137\105\135\210\265\212\332\002\240\133\105\124  
\336\070\075\011\300\250\112\145\106\026\374\252\277\124\116\115  
\133\276\070\103\267\050\312\213\063\252\032\045\272\045\134\051  
\057\133\112\156\214\352\055\234\052\366\005\166\340\167\227\200  
\210\335\147\023\157\035\150\044\213\117\267\164\201\345\364\140  
\237\172\125\327\076\067\332\026\153\076\167\254\256\030\160\225  
\010\171\051\003\212\376\301\073\263\077\032\017\244\073\136\037  
\130\241\225\311\253\057\163\112\320\055\156\232\131\017\125\030  
\170\055\074\121\246\227\213\346\273\262\160\252\114\021\336\377  
\174\053\067\324\172\321\167\064\217\347\371\102\367\074\201\014  
\113\122\012

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "OpenTrust

Root CA G2"

# Issuer: CN=OpenTrust Root CA G2,O=OpenTrust,C=FR

# Serial Number: 11:20:a1:69:1b:bf:bd:b9:bd:52:96:8f:23:e8:48:bf:26:11

# Subject: CN=OpenTrust Root CA G2,O=OpenTrust,C=FR

# Not Valid Before: Mon May 26 00:00:00 2014

# Not Valid After: Fri Jan 15 00:00:00 2038

# Fingerprint (MD5): 57:24:b6:59:24:6b:ae:c8:fe:1c:0c:20:f2:c0:4e:eb

# Fingerprint (SHA1): 79:5f:88:60:c5:ab:7c:3d:92:e6:cb:f4:8d:e1:45:cd:11:ef:60:0b

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

```
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "OpenTrust Root CA G2"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\171\137\210\140\305\253\174\075\222\346\313\364\215\341\105\315
\021\357\140\013
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\127\044\266\131\044\153\256\310\376\034\014\040\362\300\116\353
END
CKA_ISSUER MULTILINE_OCTAL
\060\100\061\013\060\011\006\003\125\004\006\023\002\106\122\061
\022\060\020\006\003\125\004\012\014\011\117\160\145\156\124\162
\165\163\164\061\035\060\033\006\003\125\004\003\014\024\117\160
\145\156\124\162\165\163\164\040\122\157\157\164\040\103\101\040
\107\062
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\022\021\040\241\151\033\277\275\271\275\122\226\217\043\350
\110\277\046\021
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
# Microsoft Code Signing Only Certificate
# Certificate "OpenTrust Root CA G3"
# Issuer: CN=OpenTrust Root CA G3,O=OpenTrust,C=FR
# Serial Number:11:20:e6:f8:4c:fc:24:b0:be:05:40:ac:da:83:1b:34:60:3f
# Subject: CN=OpenTrust Root CA G3,O=OpenTrust,C=FR
# Not Valid Before: Mon May 26 00:00:00 2014
# Not Valid After: Fri Jan 15 00:00:00 2038
# Fingerprint (MD5): 21:37:b4:17:16:92:7b:67:46:70:a9:96:d7:a8:13:24
# Fingerprint (SHA1): 6e:26:64:f3:56:bf:34:55:bf:d1:93:3f:7c:01:de:d8:13:da:8a:a6
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN
CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "OpenTrust Root CA G3"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\100\061\013\060\011\006\003\125\004\006\023\002\106\122\061
\022\060\020\006\003\125\004\012\014\011\117\160\145\156\124\162
\165\163\164\061\035\060\033\006\003\125\004\003\014\024\117\160
\145\156\124\162\165\163\164\040\122\157\157\164\040\103\101\040
```

\107\063  
END  
CKA\_ID UTF8 "0"  
CKA\_ISSUER MULTILINE\_OCTAL  
\060\100\061\013\060\011\006\003\125\004\006\023\002\106\122\061  
\022\060\020\006\003\125\004\012\014\011\117\160\145\156\124\162  
\165\163\164\061\035\060\033\006\003\125\004\003\014\024\117\160  
\145\156\124\162\165\163\164\040\122\157\157\164\040\103\101\040  
\107\063  
END  
CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL  
\002\022\021\040\346\370\114\374\044\260\276\005\100\254\332\203  
\033\064\140\077  
END  
CKA\_VALUE MULTILINE\_OCTAL  
\060\202\002\041\060\202\001\246\240\003\002\001\002\002\022\021  
\040\346\370\114\374\044\260\276\005\100\254\332\203\033\064\140  
\077\060\012\006\010\052\206\110\316\075\004\003\003\060\100\061  
\013\060\011\006\003\125\004\006\023\002\106\122\061\022\060\020  
\006\003\125\004\012\014\011\117\160\145\156\124\162\165\163\164  
\061\035\060\033\006\003\125\004\003\014\024\117\160\145\156\124  
\162\165\163\164\040\122\157\157\164\040\103\101\040\107\063\060  
\036\027\015\061\064\060\065\062\066\060\060\060\060\060\132  
\027\015\063\070\060\061\061\065\060\060\060\060\060\132\060  
\100\061\013\060\011\006\003\125\004\006\023\002\106\122\061\022  
\060\020\006\003\125\004\012\014\011\117\160\145\156\124\162\165  
\163\164\061\035\060\033\006\003\125\004\003\014\024\117\160\145  
\156\124\162\165\163\164\040\122\157\157\164\040\103\101\040\107  
\063\060\166\060\020\006\007\052\206\110\316\075\002\001\006\005  
\053\201\004\000\042\003\142\000\004\112\356\130\256\115\312\146  
\336\006\072\243\021\374\340\030\360\156\034\272\055\060\014\211  
\331\326\356\233\163\203\251\043\025\214\057\131\212\132\335\024  
\352\235\131\053\103\267\006\354\062\266\272\356\101\265\255\135  
\241\205\314\352\035\024\146\243\147\176\106\342\224\363\347\266  
\126\241\025\131\241\117\067\227\271\042\036\275\021\353\364\262  
\037\136\303\024\232\345\331\227\231\243\143\060\141\060\016\006  
\003\125\035\017\001\001\377\004\004\003\002\001\006\060\017\006  
\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060\035  
\006\003\125\035\016\004\026\004\024\107\167\303\024\213\142\071  
\014\311\157\341\120\115\320\020\130\334\225\210\155\060\037\006  
\003\125\035\043\004\030\060\026\200\024\107\167\303\024\213\142  
\071\014\311\157\341\120\115\320\020\130\334\225\210\155\060\012  
\006\010\052\206\110\316\075\004\003\003\003\151\000\060\146\002  
\061\000\217\250\334\235\272\014\004\027\372\025\351\075\057\051  
\001\227\277\201\026\063\100\223\154\374\371\355\200\160\157\252  
\217\333\204\302\213\365\065\312\006\334\144\157\150\026\341\217  
\221\271\002\061\000\330\113\245\313\302\320\010\154\351\030\373  
\132\335\115\137\044\013\260\000\041\045\357\217\247\004\046\161

\342\174\151\345\135\232\370\101\037\073\071\223\223\235\125\352  
\315\215\361\373\301

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "OpenTrust Root CA G3"

# Issuer: CN=OpenTrust Root CA G3,O=OpenTrust,C=FR

# Serial Number: 11:20:e6:f8:4c:fc:24:b0:be:05:40:ac:da:83:1b:34:60:3f

# Subject: CN=OpenTrust Root CA G3,O=OpenTrust,C=FR

# Not Valid Before: Mon May 26 00:00:00 2014

# Not Valid After: Fri Jan 15 00:00:00 2038

# Fingerprint (MD5): 21:37:b4:17:16:92:7b:67:46:70:a9:96:d7:a8:13:24

# Fingerprint (SHA1): 6e:26:64:f3:56:bf:34:55:bf:d1:93:3f:7c:01:de:d8:13:da:8a:a6

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "OpenTrust Root CA G3"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\156\046\144\363\126\277\064\125\277\321\223\077\174\001\336\330

\023\332\212\246

END

CKA\_CERT\_MD5\_HASH

MULTILINE\_OCTAL

\041\067\264\027\026\222\173\147\106\160\251\226\327\250\023\044

END

CKA\_ISSUER MULTILINE\_OCTAL

\060\100\061\013\060\011\006\003\125\004\006\023\002\106\122\061

\022\060\020\006\003\125\004\012\014\011\117\160\145\156\124\162

\165\163\164\061\035\060\033\006\003\125\004\003\014\024\117\160

\145\156\124\162\165\163\164\040\122\157\157\164\040\103\101\040

\107\063

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\022\021\040\346\370\114\374\044\260\276\005\100\254\332\203

\033\064\140\077

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "Certplus Root CA G1"



```
# Issuer: CN=Certplus Root CA G1,O=Certplus,C=FR
# Serial Number:11:20:55:83:e4:2d:3e:54:56:85:2d:83:37:b7:2c:dc:46:11
#
Subject: CN=Certplus Root CA G1,O=Certplus,C=FR
# Not Valid Before: Mon May 26 00:00:00 2014
# Not Valid After: Fri Jan 15 00:00:00 2038
# Fingerprint (MD5): 7f:09:9c:f7:d9:b9:5c:69:69:56:d5:37:3e:14:0d:42
# Fingerprint (SHA1): 22:fd:d0:b7:fd:a2:4e:0d:ac:49:2c:a0:ac:a6:7b:6a:1f:e3:f7:66
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Certplus Root CA G1"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\076\061\013\060\011\006\003\125\004\006\023\002\106\122\061
\021\060\017\006\003\125\004\012\014\010\103\145\162\164\160\154
\165\163\061\034\060\032\006\003\125\004\003\014\023\103\145\162
\164\160\154\165\163\040\122\157\157\164\040\103\101\040\107\061
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\076\061\013\060\011\006\003\125\004\006\023\002\106\122\061
\021\060\017\006\003\125\004\012\014\010\103\145\162\164\160\154
\165\163\061\034\060\032\006\003\125\004\003\014\023\103\145\162
\164\160\154\165\163\040\122\157\157\164\040\103\101\040\107\061
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\022\021\040\125\203\344\055\076\124\126\205\055\203\067\267
\054\334\106\021
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\153\060\202\003\123\240\003\002\001\002\002\022\021
\040\125\203\344\055\076\124\126\205\055\203\067\267\054\334\106
\021\060\015\006\011\052\206\110\206\367\015\001\001\015\005\000
\060\076\061\013\060\011\006\003\125\004\006\023\002\106\122\061
\021\060\017\006\003\125\004\012\014\010\103\145\162\164\160\154
\165\163\061\034\060\032\006\003\125\004\003\014\023\103\145\162
\164\160\154\165\163\040\122\157\157\164\040\103\101\040\107\061
\060\036\027\015\061\064\060\065\062\066\060\060\060\060\060\060
\132\027\015\063\070\060\061\061\065\060\060\060\060\060\060\132
\060\076\061\013\060\011\006\003\125\004\006\023\002\106\122\061
\021\060\017\006\003\125\004\012\014\010\103\145\162\164\160\154
\165\163\061\034\060\032\006\003\125\004\003\014\023\103\145\162
\164\160\154\165\163\040\122\157\157\164\040\103\101\040\107\061
\060\202\002\042\060\015\006\011\052\206\110\206\367\015\001\001
\001\005\000\003\202\002\017\000\060\202\002\012\002\202\002\001
```

\000\332\120\207\266\332\270\251\076\235\144\372\126\063\232\126  
\075\026\345\003\225\262\064\034\232\155\142\005\324\330\217\347  
\211\144\237\272\333\144\213\144\346\171\052\141\315\257\217\132  
\211\221\145\271\130\374\264\003\137\221\077\055\020\025\340\176  
\317\274\374\177\103\147\250\255\136\066\043\330\230\263\115\363  
\103\236\071\174\052\374\354\210\325\210\356\160\275\205\026\055  
\352\113\211\074\243\161\102\376\034\375\323\034\055\020\270\206  
\124\352\103\270\333\306\207\332\250\256\200\045\317\172\046\035  
\252\221\260\110\157\256\265\336\236\330\327\372\000\375\306\217  
\320\121\273\142\175\244\261\214\262\377\040\021\272\065\143\005  
\206\107\140\103\063\220\366\107\242\003\117\226\115\235\117\301  
\352\352\234\242\376\064\056\336\267\312\033\166\244\267\255\237  
\351\250\324\170\077\170\376\362\070\011\066\035\322\026\002\310  
\354\052\150\257\365\216\224\357\055\023\172\036\102\112\035\025  
\061\256\014\004\127\374\141\163\363\061\126\206\061\200\240\304  
\021\156\060\166\343\224\360\137\004\304\254\207\162\211\230\305  
\235\314\127\010\232\364\014\374\175\172\005\072\372\107\200\071  
\266\317\204\023\167\157\047\352\377\226\147\027\010\155\351\015  
\326\043\120\060\260\025\164\023\076\345\057\377\016\315\304\013  
\112\135\360\330\000\063\111\146\353\241\030\174\131\056\075\050  
\271\141\161\313\265\245\272\270\352\334\342\160\157\010\152\334  
\207\147\064\357\337\060\162\335\363\311\077\043\377\065\341\276  
\041\051\040\060\201\344\031\245\040\351\045\312\163\061\164\051  
\276\342\102\325\363\262\046\146\307\150\375\031\263\347\040\223  
\231\350\135\340\136\207\347\106\350\045\234\012\051\044\324\315  
\130\206\122\100\044\262\173\017\230\022\040\044\366\220\154\107  
\310\015\273\030\040\056\331\375\374\213\362\051\352\207\164\225  
\340\102\120\170\204\004\101\141\260\364\041\043\217\055\313\050  
\041\362\152\154\364\032\246\305\024\264\067\145\117\225\375\200  
\310\370\162\345\045\153\304\140\261\173\155\216\112\212\163\316  
\131\373\160\172\163\006\023\331\323\164\067\044\101\012\021\157  
\227\334\347\344\176\241\275\025\362\272\207\017\075\150\212\026  
\007\002\003\001\000\001\243\143\060\141\060\016\006\003\125\035  
\017\001\001\377\004\004\003\002\001\006\060\017\006\003\125\035  
\023\001\001\377\004\005\060\003\001\001\377\060\035\006\003\125  
\035\016\004\026\004\024\250\301\300\233\221\250\103\025\174\135  
\006\047\264\052\121\330\227\013\201\261\060\037\006\003\125\035  
\043\004\030\060\026\200\024\250\301\300\233\221\250\103\025\174  
\135\006\047\264\052\121\330\227\013\201\261\060\015\006\011\052  
\206\110\206\367\015\001\001\015\005\000\003\202\002\001\000\234  
\126\157\001\176\321\275\114\365\212\306\360\046\037\344\340\070  
\030\314\062\303\051\073\235\101\051\064\141\306\327\360\000\241  
\353\244\162\217\224\027\274\023\054\165\264\127\356\012\174\011  
\172\334\325\312\241\320\064\023\370\167\253\237\345\376\330\036  
\164\212\205\007\217\177\314\171\172\312\226\315\315\375\117\373  
\375\043\015\220\365\364\136\323\306\141\175\236\021\340\002\356  
\011\004\331\007\335\246\212\267\014\203\044\273\203\120\222\376  
\140\165\021\076\330\235\260\212\172\265\340\235\233\313\220\122

\113\260\223\052\324\076\026\063\345\236\306\145\025\076\144\073  
\004\077\333\014\217\137\134\035\151\037\257\363\351\041\214\363  
\357\227\366\232\267\031\266\204\164\234\243\124\265\160\116\143  
\330\127\135\123\041\233\100\222\103\372\326\167\125\063\117\144  
\325\373\320\054\152\216\155\045\246\357\205\350\002\304\123\076  
\271\236\207\274\314\065\032\336\241\351\212\143\207\145\036\021  
\052\333\143\167\227\024\276\232\024\231\021\262\300\356\260\117  
\370\024\041\062\103\117\237\253\242\313\250\017\252\073\006\125  
\306\022\051\127\010\324\067\327\207\047\255\111\131\247\221\253  
\104\172\136\215\160\333\227\316\110\120\261\163\223\366\360\203  
\140\371\315\361\341\061\375\133\174\161\041\143\024\024\252\257  
\305\336\223\176\150\261\354\042\242\252\220\165\236\265\103\162  
\352\144\243\204\113\375\014\250\046\153\161\227\356\126\143\146  
\350\102\124\371\307\035\337\320\217\133\337\310\060\157\210\376  
\015\304\063\034\123\250\243\375\110\020\362\344\012\116\341\025  
\127\374\156\144\060\302\125\021\334\352\251\315\112\124\254\051  
\143\104\317\112\100\240\326\150\131\033\063\371\357\072\213\333  
\040\222\334\102\204\277\001\253\207\300\325\040\202\333\306\271  
\203\205\102\134\017\103\073\152\111\065\325\230\364\025\277\372  
\141\201\014\011\040\030\322\320\027\014\313\110\000\120\351\166  
\202\214\144\327\072\240\007\125\314\036\061\300\357\072\264\145  
\373\343\277\102\153\236\017\250\275\153\230\334\330\333\313\213  
\244\335\327\131\364\156\335\376\252\303\221\320\056\102\007\300  
\014\115\123\315\044\261\114\133\036\121\364\337\351\222\372

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER

CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "Certplus Root CA G1"

# Issuer: CN=Certplus Root CA G1,O=Certplus,C=FR

# Serial Number:11:20:55:83:e4:2d:3e:54:56:85:2d:83:37:b7:2c:dc:46:11

# Subject: CN=Certplus Root CA G1,O=Certplus,C=FR

# Not Valid Before: Mon May 26 00:00:00 2014

# Not Valid After: Fri Jan 15 00:00:00 2038

# Fingerprint (MD5): 7f:09:9c:f7:d9:b9:5c:69:69:56:d5:37:3e:14:0d:42

# Fingerprint (SHA1): 22:fd:d0:b7:fd:a2:4e:0d:ac:49:2c:a0:ac:a6:7b:6a:1f:e3:f7:66

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Certplus Root CA G1"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\042\375\320\267\375\242\116\015\254\111\054\240\254\246\173\152

\037\343\367\146

```
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\177\011\234\367\331\271\134\151\151\126\325\067\076\024\015\102
END
CKA_ISSUER MULTILINE_OCTAL
\060\076\061\013\060\011\006\003\125\004\006\023\002\106\122\061
\021\060\017\006\003\125\004\012\014\010\103\145\162\164\160\154
\165\163\061\034\060\032\006\003\125\004\003\014\023\103\145\162
\164\160\154\165\163\040\122\157\157\164\040\103\101\040\107\061
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\022\021\040\125\203\344\055\076\124\126\205\055\203\067\267
\054\334\106\021
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
# Microsoft Code Signing Only Certificate
# Certificate "Certplus Root CA G2"
# Issuer: CN=Certplus Root CA G2,O=Certplus,C=FR
# Serial Number: 11:20:d9:91:ce:ae:a3:e8:c5:e7:ff:e9:02:af:cf:73:bc:55
# Subject: CN=Certplus Root CA G2,O=Certplus,C=FR
# Not Valid Before: Mon May 26 00:00:00 2014
# Not Valid After: Fri Jan 15 00:00:00 2038
# Fingerprint (MD5): a7:ee:c4:78:2d:1b:ee:2d:b9:29:ce:d6:a7:96:32:31
#
```

```
Fingerprint (SHA1): 4f:65:8e:1f:e9:06:d8:28:02:e9:54:47:41:c9:54:25:5d:69:cc:1a
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Certplus Root CA G2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\076\061\013\060\011\006\003\125\004\006\023\002\106\122\061
\021\060\017\006\003\125\004\012\014\010\103\145\162\164\160\154
\165\163\061\034\060\032\006\003\125\004\003\014\023\103\145\162
\164\160\154\165\163\040\122\157\157\164\040\103\101\040\107\062
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\076\061\013\060\011\006\003\125\004\006\023\002\106\122\061
\021\060\017\006\003\125\004\012\014\010\103\145\162\164\160\154
\165\163\061\034\060\032\006\003\125\004\003\014\023\103\145\162
\164\160\154\165\163\040\122\157\157\164\040\103\101\040\107\062
```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\022\021\040\331\221\316\256\243\350\305\347\377\351\002\257  
\317\163\274\125

END

CKA\_VALUE

MULTILINE\_OCTAL

\060\202\002\034\060\202\001\242\240\003\002\001\002\002\022\021  
\040\331\221\316\256\243\350\305\347\377\351\002\257\317\163\274  
\125\060\012\006\010\052\206\110\316\075\004\003\003\060\076\061  
\013\060\011\006\003\125\004\006\023\002\106\122\061\021\060\017  
\006\003\125\004\012\014\010\103\145\162\164\160\154\165\163\061  
\034\060\032\006\003\125\004\003\014\023\103\145\162\164\160\154  
\165\163\040\122\157\157\164\040\103\101\040\107\062\060\036\027  
\015\061\064\060\065\062\066\060\060\060\060\060\132\027\015  
\063\070\060\061\061\065\060\060\060\060\060\132\060\076\061  
\013\060\011\006\003\125\004\006\023\002\106\122\061\021\060\017  
\006\003\125\004\012\014\010\103\145\162\164\160\154\165\163\061  
\034\060\032\006\003\125\004\003\014\023\103\145\162\164\160\154  
\165\163\040\122\157\157\164\040\103\101\040\107\062\060\166\060  
\020\006\007\052\206\110\316\075\002\001\006\005\053\201\004\000  
\042\003\142\000\004\315\017\133\126\202\337\360\105\032\326\255  
\367\171\360\035\311\254\226\326\236\116\234\037\264\102\021\312  
\206\277\155\373\205\243\305\345\031\134\327\356\246\077\151\147  
\330\170\342\246\311\304\333\055\171\056\347\213\215\002\157\061  
\042\115\006\343\140\162\105\235\016\102\167\236\316\317\345\177  
\205\233\030\344\374\314\056\162\323\026\223\116\312\231\143\134  
\241\005\052\154\006\243\143\060\141\060\016\006\003\125\035\017  
\001\001\377\004\004\003\002\001\006\060\017\006\003\125\035\023  
\001\001\377\004\005\060\003\001\001\377\060\035\006\003\125\035  
\016\004\026\004\024\332\203\143\002\171\216\332\114\306\074\043  
\024\330\217\303\040\253\050\140\131\060\037\006\003\125\035\043  
\004\030\060\026\200\024\332\203\143\002\171\216\332\114\306\074  
\043\024\330\217\303\040\253\050\140\131\060\012\006\010\052\206  
\110\316\075\004\003\003\003\150\000\060\145\002\060\160\376\260  
\013\331\367\203\227\354\363\125\035\324\334\263\006\016\376\063  
\230\235\213\071\220\153\224\041\355\266\327\135\326\114\327\041  
\247\347\277\041\017\053\315\367\052\334\205\007\235\002\061\000  
\206\024\026\345\334\260\145\302\300\216\024\237\277\044\026\150  
\345\274\371\171\151\334\255\105\053\367\266\061\163\314\006\245  
\123\223\221\032\223\256\160\152\147\272\327\236\345\141\032\137

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

```
# Trust for "Certplus Root CA G2"
# Issuer: CN=Certplus Root CA G2,O=Certplus,C=FR
# Serial Number:11:20:d9:91:ce:ae:a3:e8:c5:e7:ff:e9:02:af:cf:73:bc:55
# Subject: CN=Certplus Root CA G2,O=Certplus,C=FR
# Not Valid Before: Mon May 26 00:00:00 2014
# Not Valid After: Fri Jan 15 00:00:00 2038
# Fingerprint (MD5): a7:ee:c4:78:2d:1b:ee:2d:b9:29:ce:d6:a7:96:32:31
# Fingerprint (SHA1): 4f:65:8e:1f:e9:06:d8:28:02:e9:54:47:41:c9:54:25:5d:69:cc:1a
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE
CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Certplus Root CA G2"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\117\145\216\037\351\006\330\050\002\351\124\107\101\311\124\045
\135\151\314\032
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\247\356\304\170\055\033\356\055\271\051\316\326\247\226\062\061
END
CKA_ISSUER MULTILINE_OCTAL
\060\076\061\013\060\011\006\003\125\004\006\023\002\106\122\061
\021\060\017\006\003\125\004\012\014\010\103\145\162\164\160\154
\165\163\061\034\060\032\006\003\125\004\003\014\023\103\145\162
\164\160\154\165\163\040\122\157\157\164\040\103\101\040\107\062
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\022\021\040\331\221\316\256\243\350\305\347\377\351\002\257
\317\163\274\125
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
# Microsoft Code Signing Only Certificate
# Certificate "Government Root Certification
Authority"
# Issuer: O=Government Root Certification Authority,C=TW
# Serial Number:b6:4b:88:07:e2:23:ee:c8:5c:12:ad:a6:0e:06:a1:f2
# Subject: O=Government Root Certification Authority,C=TW
# Not Valid Before: Fri Sep 28 08:58:51 2012
# Not Valid After: Thu Dec 31 15:59:59 2037
# Fingerprint (MD5): 2f:d4:2d:cd:86:7f:36:b0:5f:1c:e0:53:8d:b6:a2:5b
# Fingerprint (SHA1): b0:91:aa:91:38:47:f3:13:d7:27:bc:ef:c8:17:9f:08:6f:3a:8c:0f
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Government Root Certification Authority"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\077\061\013\060\011\006\003\125\004\006\023\002\124\127\061
\060\060\056\006\003\125\004\012\014\047\107\157\166\145\162\156
\155\145\156\164\040\122\157\157\164\040\103\145\162\164\151\146
\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164
\171
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\077\061\013\060\011\006\003\125\004\006\023\002\124\127\061
\060\060\056\006\003\125\004\012\014\047\107\157\166\145\162\156
\155\145\156\164\040\122\157\157\164\040\103\145\162\164\151\146
\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164
\171
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\021\000\266\113\210\007\342\043\356\310\134\022\255\246\016
\006\241\362
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\113\060\202\003\063\240\003\002\001\002\002\021\000
\266\113\210\007\342\043\356\310\134\022\255\246\016\006\241\362
\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060
\077\061\013\060\011\006\003\125\004\006\023\002\124\127\061\060
\060\056\006\003\125\004\012\014\047\107\157\166\145\162\156\155
\145\156\164\040\122\157\157\164\040\103\145\162\164\151\146\151
\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171
\060\036\027\015\061\062\060\071\062\070\060\070\065\070\065\061
\132\027\015\063\067\061\062\063\061\061\065\065\071\065\071\132
\060\077\061\013\060\011\006\003\125\004\006\023\002\124\127\061
\060\060\056\006\003\125\004\012\014\047\107\157\166\145\162\156
\155\145\156\164\040\122\157\157\164\040\103\145\162\164\151\146
\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164
\171\060\202\002\042\060\015\006\011\052\206\110\206\367\015\001
\001\001\005\000\003\202\002\017\000\060\202\002\012\002\202\002
\001\000\266\377\227\074\201\276\001\130\044\047\257\216\001\053
\326\162\222\060\062\033\137\233\174\324\324\177\350\241\140\163
\060\127\020\000\372\120\226\044\376\120\346\214\072\225\321\127
\171\204\325\147\123\014\052\202\076\030\134\270\060\046\032\326
\136\306\055\262\004\121\016\357\337\014\143\107\353\304\022\010
\121\053\231\161\136\325\151\173\341\135\311\167\035\040\354\126
\216\345\141\140\055\374\351\034\200\337\372\152\203\273\005\265
\036\043\022\234\202\312\012\363\024\035\040\344\006\217\103\044
```

\231\237\266\012\223\132\163\033\026\071\276\005\266\361\214\245  
\144\222\217\005\344\134\166\367\071\303\317\055\275\016\330\313  
\250\016\061\233\311\106\017\147\123\103\004\217\310\262\310\203  
\200\137\272\362\017\253\201\065\242\040\041\227\316\017\211\064  
\170\017\317\037\116\351\373\214\050\074\336\064\347\355\237\322  
\146\365\305\312\061\170\322\316\120\321\140\202\143\235\340\114  
\367\007\256\203\064\235\111\111\103\324\176\275\055\342\352\307  
\161\145\200\010\344\066\236\171\160\012\074\207\051\351\344\222  
\224\352\006\222\051\047\170\346\255\327\075\351\012\013\136\364  
\340\326\206\235\055\162\313\213\144\126\346\364\256\170\245\240  
\071\063\130\074\334\250\217\215\264\152\055\375\210\163\351\225  
\120\163\004\337\021\210\076\102\326\002\164\373\054\304\157\274  
\154\326\340\200\157\321\206\245\062\127\003\326\115\364\116\012  
\231\042\166\176\112\100\202\370\311\344\116\313\123\055\307\261  
\266\342\323\302\165\047\156\271\016\161\262\064\374\277\034\116  
\302\075\370\066\351\012\314\130\232\241\030\206\116\342\341\252  
\263\163\131\156\136\235\264\302\010\257\257\134\375\244\002\157  
\377\270\015\273\325\253\327\156\237\032\117\221\100\360\037\106  
\125\155\240\222\303\211\315\267\261\377\034\263\313\243\234\012  
\343\376\315\252\274\001\354\335\124\312\221\335\117\023\207\244  
\366\230\357\375\111\326\127\052\074\246\134\366\140\067\277\330  
\076\176\116\150\052\043\062\072\276\156\344\042\075\007\044\317  
\212\313\233\135\121\263\060\322\161\155\316\106\212\155\174\112  
\063\104\332\022\057\066\113\362\351\361\121\011\155\333\152\227  
\016\027\002\003\001\000\001\243\102\060\100\060\017\006\003\125  
\035\023\001\001\377\004\005\060\003\001\001\377\060\035\006\003  
\125\035\016\004\026\004\024\325\147\035\340\234\172\054\234\313  
\305\230\347\035\007\046\052\206\354\164\315\060\016\006\003\125  
\035\017\001\001\377\004\004\003\002\001\006\060\015\006\011\052  
\206\110\206\367\015\001\001\013\005\000\003\202\002\001\000\220  
\073\345\302\123\102\050\352\365\061\116\216\075\221\236\115\011  
\363\330\261\122\346\117\254\014\061\041\273\361\352\231\314\203  
\374\266\050\344\354\204\007\016\017\116\227\273\157\150\106\217  
\016\121\025\225\370\072\073\037\137\202\016\014\161\016\274\221  
\117\256\063\056\043\101\364\046\153\117\023\207\372\170\366\056  
\302\017\221\005\227\252\152\301\152\237\274\204\236\010\052\047  
\335\332\207\027\206\341\263\312\135\355\070\251\051\156\204\336  
\106\153\374\047\031\120\245\022\172\214\175\142\374\332\347\314  
\274\237\111\257\006\270\047\047\362\211\367\026\075\030\346\275  
\336\365\214\022\221\237\343\004\215\376\007\024\032\132\254\071  
\202\033\361\070\031\341\143\343\257\154\266\246\121\027\353\372  
\113\353\213\042\366\227\376\020\072\137\224\240\113\123\161\077  
\132\341\020\370\162\217\226\200\335\215\002\230\000\141\075\215  
\274\055\261\107\314\332\135\341\040\247\214\061\134\361\343\332  
\271\012\206\107\310\241\075\007\243\074\246\163\156\224\221\355  
\156\044\072\371\311\060\321\007\250\201\175\046\175\175\204\337  
\206\311\213\345\256\015\036\276\211\110\121\025\203\230\226\057  
\112\353\163\064\327\164\315\311\157\320\302\272\053\366\232\376



```
\231\335\140\024\216\033\371\234\071\074\177\103\211\123\350\345
\302\253\276\042\255\047\070\233\167\050\267\243\143\143\247\201
\347\251\151\105\353\216\170\126\314\005\204\307\373\255\266\060
\174\143\005\237\055\214\044\177\113\213\222\374\070\036\237\240
\245\127\263\156\235\330\144\270\160\232\140\122\160\310\251\320
\377\306\234\355\020\141\136\315\203\016\156\350\115\002\101\112
\342\166\004\171\326\124\077\212\230\062\024\240\335\055\234\347
\272\202\161\243\206\125\051\231\322\051\333\165\072\367\333\103
\377\266\133\373\267\176\065\200\216\015\154\256\171\267\066\055
\227\122\241\260\007\234\007\345\053\066\315\003\227\224\275\055
\016\064\006\374\300\026\211\374\067\124\344\326\317\075\023\004
\362\221\331\311\066\056\076\305\132\320\245\114\202\303\377\056
\174\046\166\367\363\375\105\242\245\156\125\256\056\314\317\054
\211\064\332\366\015\347\221\250\020\352\027\235\362\366\354
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER

CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "Government Root Certification Authority"

# Issuer: O=Government Root Certification Authority,C=TW

# Serial Number:b6:4b:88:07:e2:23:ee:c8:5c:12:ad:a6:0e:06:a1:f2

# Subject: O=Government Root Certification Authority,C=TW

# Not Valid Before: Fri Sep 28 08:58:51 2012

# Not Valid After: Thu Dec 31 15:59:59 2037

# Fingerprint (MD5): 2f:d4:2d:cd:86:7f:36:b0:5f:1c:e0:53:8d:b6:a2:5b

# Fingerprint (SHA1): b0:91:aa:91:38:47:f3:13:d7:27:bc:ef:c8:17:9f:08:6f:3a:8c:0f

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Government Root Certification Authority"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\260\221\252\221\070\107\363\023\327\047\274\357\310\027\237\010
\157\072\214\017
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\057\324\055\315\206\177\066\260\137\034\340\123\215\266\242\133
```

END

CKA\_ISSUER

MULTILINE\_OCTAL

```
\060\077\061\013\060\011\006\003\125\004\006\023\002\124\127\061
\060\060\056\006\003\125\004\012\014\047\107\157\166\145\162\156
\155\145\156\164\040\122\157\157\164\040\103\145\162\164\151\146
\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164
```

```

\171
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\021\000\266\113\210\007\342\043\356\310\134\022\255\246\016
\006\241\362
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "A-Trust-Root-05"
# Issuer: CN=A-Trust-Root-05,OU=A-Trust-Root-05,O=A-Trust Ges. f. Sicherheitssysteme im elektr. Datenverkehr
GmbH,C=AT
# Serial Number: 1035700 (0xfcdb4)
# Subject: CN=A-Trust-Root-05,OU=A-Trust-Root-05,O=A-Trust Ges. f. Sicherheitssysteme im elektr.
Datenverkehr GmbH,C=AT
# Not
Valid Before: Mon Sep 23 13:24:11 2013
# Not Valid After: Wed Sep 20 11:24:11 2023
# Fingerprint (MD5): f4:6f:96:17:87:40:f4:cf:37:d3:18:29:89:76:e6:0a
# Fingerprint (SHA1): 2e:66:c9:84:11:81:c0:8f:b1:df:ab:d4:ff:8d:5c:c7:2b:e0:8f:02
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "A-Trust-Root-05"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\213\061\013\060\011\006\003\125\004\006\023\002\101\124
\061\110\060\106\006\003\125\004\012\014\077\101\055\124\162\165
\163\164\040\107\145\163\056\040\146\056\040\123\151\143\150\145
\162\150\145\151\164\163\163\171\163\164\145\155\145\040\151\155
\040\145\154\145\153\164\162\056\040\104\141\164\145\156\166\145
\162\153\145\150\162\040\107\155\142\110\061\030\060\026\006\003
\125\004\013\014\017\101\055\124\162\165\163\164\055\122\157\157
\164\055\060\065\061\030\060\026\006\003\125\004\003\014\017\101
\055\124\162\165\163\164\055\122\157\157\164\055\060\065
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\213\061\013\060\011\006\003\125\004\006\023\002\101\124
\061\110\060\106\006\003\125\004\012\014\077\101\055\124\162\165
\163\164\040\107\145\163\056\040\146\056\040\123\151\143\150\145
\162\150\145\151\164\163\163\171\163\164\145\155\145\040\151\155
\040\145\154\145\153\164\162\056\040\104\141\164\145\156\166\145

```

\162\153\145\150\162\040\107\155\142\110\061\030\060\026\006\003  
\125\004\013\014\017\101\055\124\162\165\163\164\055\122\157\157  
\164\055\060\065\061\030\060\026\006\003\125\004\003\014\017\101  
\055\124\162\165\163\164\055\122\157\157\164\055\060\065

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\003\017\315\264

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\311\060\202\003\261\240\003\002\001\002\002\003\017  
\315\264\060\015\006\011\052\206\110\206\367\015\001\001\013\005  
\000\060\201\213\061\013\060\011\006\003\125\004\006\023\002\101  
\124\061\110\060\106\006\003\125\004\012\014\077\101\055\124\162  
\165\163\164\040\107\145\163\056\040\146\056\040\123\151\143\150  
\145\162\150\145\151\164\163\163\171\163\164\145\155\145\040\151  
\155\040\145\154\145\153\164\162\056\040\104\141\164\145\156\166  
\145\162\153\145\150\162\040\107\155\142\110\061\030\060\026\006  
\003\125\004\013\014\017\101\055\124\162\165\163\164\055\122\157  
\157\164\055\060\065\061\030\060\026\006\003\125\004\003\014\017  
\101\055\124\162\165\163\164\055\122\157\157\164\055\060\065\060  
\036\027\015\061\063\060\071\062\063\061\063\062\064\061\061\132  
\027\015\062\063\060\071\062\060\061\061\062\064\061\061\132\060  
\201\213\061\013\060\011\006\003\125\004\006\023\002\101\124\061  
\110\060\106\006\003\125\004\012\014\077\101\055\124\162\165\163  
\164\040\107\145\163\056\040\146\056\040\123\151\143\150\145\162  
\150\145\151\164\163\163\171\163\164\145\155\145\040\151\155\040  
\145\154\145\153\164\162\056\040\104\141\164\145\156\166\145\162  
\153\145\150\162\040\107\155\142\110\061\030\060\026\006\003\125  
\004\013\014\017\101\055\124\162\165\163\164\055\122\157\157\164  
\055\060\065\061\030\060\026\006\003\125\004\003\014\017\101\055  
\124\162\165\163\164\055\122\157\157\164\055\060\065\060\202\002  
\040\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000  
\003\202\002\015\000\060\202\002\010\002\202\002\001\000\344\373  
\214\122\046\245\147\201\204\150\335\202\311\315\250\162\001\131  
\042\077\044\351\022\244\222\227\305\120\316\362\105\077\153\104  
\005\030\272\173\161\257\346\215\273\155\366\344\363\345\334\274  
\344\170\023\043\262\012\104\235\267\275\067\100\326\045\104\120  
\211\316\150\322\303\142\247\104\241\043\105\257\137\006\161\166  
\106\341\151\377\342\041\340\077\317\062\225\352\210\046\247\040  
\254\302\161\135\060\311\014\354\104\055\316\305\145\174\327\007  
\176\065\366\015\030\026\115\173\253\363\252\017\175\336\350\214  
\224\056\223\320\267\156\110\070\304\002\042\032\337\040\245\202  
\143\277\123\325\104\025\006\073\244\073\172\334\266\356\220\213  
\100\002\264\237\300\366\161\063\131\246\042\323\260\150\043\077  
\375\204\310\226\260\371\160\113\057\064\206\375\045\125\231\321  
\315\167\047\070\304\155\134\031\352\353\176\023\206\001\240\020  
\100\046\107\037\276\024\276\137\245\270\077\140\241\156\341\041  
\216\023\045\170\056\247\172\315\130\257\176\133\254\077\316\017

\263\362\127\174\325\173\155\311\323\374\255\225\255\033\277\207  
\230\117\047\346\013\251\150\073\344\054\054\365\024\107\327\251  
\135\202\366\342\233\267\040\341\345\032\153\054\170\010\215\154  
\165\214\352\067\226\211\235\131\351\164\062\057\030\060\030\072  
\004\045\113\006\355\306\147\147\046\200\152\137\201\167\060\036  
\236\321\164\217\137\214\300\124\152\354\244\030\141\231\172\035  
\371\235\371\350\371\361\357\162\276\316\057\031\222\174\343\050  
\257\321\270\270\157\320\140\276\170\130\244\056\067\072\262\047  
\211\021\121\242\136\211\274\035\314\127\145\113\111\114\023\020  
\002\256\127\276\114\041\361\042\252\036\240\222\324\124\054\270  
\233\174\063\150\047\020\052\035\113\377\006\012\002\223\200\207  
\031\257\277\250\203\022\020\216\175\020\245\053\220\350\016\340  
\024\206\105\366\327\345\126\163\226\037\217\236\074\052\243\032  
\136\054\220\146\205\157\001\166\275\263\360\051\310\047\212\251  
\251\043\260\325\362\360\312\325\275\266\062\160\314\057\034\131  
\277\352\303\006\244\140\337\253\211\156\107\024\357\205\220\153  
\150\043\226\116\006\323\261\047\243\003\303\271\331\275\002\001  
\003\243\066\060\064\060\017\006\003\125\035\023\001\001\377\004  
\005\060\003\001\001\377\060\021\006\003\125\035\016\004\012\004  
\010\100\371\271\147\276\003\322\010\060\016\006\003\125\035\017  
\001\001\377\004\004\003\002\001\006\060\015\006\011\052\206\110  
\206\367\015\001\001\013\005\000\003\202\002\001\000\342\052\145  
\306\153\132\053\310\250\064\313\227\021\035\046\037\243\262\316  
\270\074\053\041\237\230\364\027\037\015\266\173\256\313\020\155  
\203\362\143\301\210\256\351\300\122\102\256\067\237\013\231\127  
\122\350\105\176\230\224\351\051\107\237\361\007\301\102\010\363  
\163\074\252\153\065\263\154\025\053\221\061\033\344\176\222\347  
\303\305\246\041\070\337\033\276\321\237\226\015\120\266\365\173  
\224\243\055\252\257\267\215\322\073\055\174\202\020\324\152\112  
\311\141\243\246\217\247\262\240\331\124\303\227\177\321\211\314  
\143\370\331\337\070\130\225\272\001\120\314\012\363\213\111\074  
\177\077\075\250\363\150\314\307\230\323\331\065\060\367\016\202  
\136\370\020\141\256\274\116\360\053\064\172\242\232\366\333\215  
\257\353\003\114\047\303\336\256\154\335\125\024\257\077\035\353  
\217\232\266\170\111\356\274\371\036\167\140\002\044\334\336\336  
\351\245\373\221\246\034\172\262\111\340\367\277\035\007\256\206  
\313\273\331\000\327\313\001\030\357\350\303\217\014\007\060\160  
\130\301\362\143\352\214\375\266\255\343\350\007\074\075\133\005  
\207\164\313\065\345\357\011\267\273\240\204\151\274\101\161\143  
\333\062\234\101\341\137\176\332\166\155\223\243\256\205\372\345  
\214\311\122\254\047\313\140\263\066\054\111\251\004\336\270\047  
\053\011\061\304\222\223\351\214\321\244\113\375\276\126\121\260  
\330\267\316\235\105\303\033\110\057\321\263\060\367\176\134\251  
\133\061\077\345\005\233\341\166\251\327\365\051\206\163\127\034  
\275\057\333\327\031\026\364\045\064\361\203\026\264\062\130\013  
\261\131\116\343\213\320\243\053\213\033\100\302\367\343\122\250  
\116\112\356\165\351\355\143\231\033\006\373\060\215\374\036\127  
\231\354\316\024\050\343\240\215\055\353\357\007\036\014\002\216

```
\214\110\314\210\332\246\255\171\224\264\254\351\014\060\266\377
\006\073\024\161\225\205\373\260\172\313\213\110\131\162\333\120
\000\362\267\215\171\053\315\004\225\222\165\111\002\226\124\242
\035\124\205\273\140\257\175\175\252\263\275\371\160\074\131\172
\301\201\374\254\120\000\030\022\344\265\334\135\330\245\130\136
\035\137\047\151\216\314\333\357\252\127\032\253\204
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for

"A-Trust-Root-05"

# Issuer: CN=A-Trust-Root-05,OU=A-Trust-Root-05,O=A-Trust Ges. f. Sicherheitssysteme im elektr. Datenverkehr GmbH,C=AT

# Serial Number: 1035700 (0xfcdb4)

# Subject: CN=A-Trust-Root-05,OU=A-Trust-Root-05,O=A-Trust Ges. f. Sicherheitssysteme im elektr. Datenverkehr GmbH,C=AT

# Not Valid Before: Mon Sep 23 13:24:11 2013

# Not Valid After: Wed Sep 20 11:24:11 2023

# Fingerprint (MD5): f4:6f:96:17:87:40:f4:cf:37:d3:18:29:89:76:e6:0a

# Fingerprint (SHA1): 2e:66:c9:84:11:81:c0:8f:b1:df:ab:d4:ff:8d:5c:c7:2b:e0:8f:02

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "A-Trust-Root-05"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\056\146\311\204\021\201\300\217\261\337\253\324\377\215\134\307
\053\340\217\002
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\364\157\226\027\207\100\364\317\067\323\030\051\211\166\346\012
```

END

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\201\213\061\013\060\011\006\003\125\004\006\023\002\101\124
\061\110\060\106\006\003\125\004\012\014\077\101\055\124\162\165
\163\164\040\107\145\163\056\040\146\056\040\123\151\143\150\145
\162\150\145\151\164\163\163\171\163\164\145\155\145\040\151\155
\040\145\154\145\153\164\162\056\040\104\141\164\145\156\166\145
\162\153\145\150\162\040\107\155\142\110\061\030\060\026\006\003
\125\004\013\014\017\101\055\124\162\165\163\164\055\122\157\157
\164\055\060\065\061\030\060\026\006\003\125\004\003\014\017\101
\055\124\162\165\163\164\055\122\157\157\164\055\060\065
```

END

CKA\_SERIAL\_NUMBER

```

MULTILINE_OCTAL
\002\003\017\315\264
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "A-Trust-Qual-02"
# Issuer: CN=A-Trust-Qual-02,OU=A-Trust-Qual-02,O=A-Trust Ges. f. Sicherheitssysteme im elektr. Datenverkehr
GmbH,C=AT
#
Serial Number:14:4d:e4
# Subject: CN=A-Trust-Qual-02,OU=A-Trust-Qual-02,O=A-Trust Ges. f. Sicherheitssysteme im elektr.
Datenverkehr GmbH,C=AT
# Not Valid Before: Tue Jul 01 11:23:33 2014
# Not Valid After: Mon Jul 01 09:23:33 2024
# Fingerprint (MD5): 4b:d4:35:43:a8:b2:43:6d:d7:78:e2:89:a2:a9:39:ab
# Fingerprint (SHA1): cd:78:7a:3d:5c:ba:82:07:08:28:48:36:5e:9a:cd:e9:68:33:64:d8
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "A-Trust-Qual-02"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\213\061\013\060\011\006\003\125\004\006\023\002\101\124
\061\110\060\106\006\003\125\004\012\014\077\101\055\124\162\165
\163\164\040\107\145\163\056\040\146\056\040\123\151\143\150\145
\162\150\145\151\164\163\163\171\163\164\145\155\145\040\151\155
\040\145\154\145\153\164\162\056\040\104\141\164\145\156\166\145
\162\153\145\150\162\040\107\155\142\110\061\030\060\026\006\003
\125\004\013\014\017\101\055\124\162\165\163\164\055\121\165\141
\154\055\060\062\061\030\060\026\006\003\125\004\003\014\017\101
\055\124\162\165\163\164\055\121\165\141\154\055\060\062
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\213\061\013\060\011\006\003\125\004\006\023\002\101\124
\061\110\060\106\006\003\125\004\012\014\077\101\055\124\162\165
\163\164\040\107\145\163\056\040\146\056\040\123\151\143\150\145
\162\150\145\151\164\163\163\171\163\164\145\155\145\040\151\155
\040\145\154\145\153\164\162\056\040\104\141\164\145\156\166\145
\162\153\145\150\162\040\107\155\142\110\061\030\060\026\006\003
\125\004\013\014\017\101\055\124\162\165\163\164\055\121\165\141
\154\055\060\062\061\030\060\026\006\003\125\004\003\014\017\101

```

\055\124\162\165\163\164\055\121\165\141\154\055\060\062  
END  
CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL  
\002\003\024\115\344  
END  
CKA\_VALUE MULTILINE\_OCTAL  
\060\202\003\313\060\202\002\263\240\003\002\001\002\002\003\024  
\115\344\060\015\006\011\052\206\110\206\367\015\001\001\005\005  
\000\060\201\213\061\013\060\011\006\003\125\004\006\023\002\101  
\124\061\110\060\106\006\003\125\004\012\014\077\101\055\124\162  
\165\163\164\040\107\145\163\056\040\146\056\040\123\151\143\150  
\145\162\150\145\151\164\163\163\171\163\164\145\155\145\040\151  
\155\040\145\154\145\153\164\162\056\040\104\141\164\145\156\166  
\145\162\153\145\150\162\040\107\155\142\110\061\030\060\026\006  
\003\125\004\013\014\017\101\055\124\162\165\163\164\055\121\165  
\141\154\055\060\062\061\030\060\026\006\003\125\004\003\014\017  
\101\055\124\162\165\163\164\055\121\165\141\154\055\060\062\060  
\036\027\015\061\064\060\067\060\061\061\061\062\063\063\063\132  
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\150\145\151\164\163\163\171\163\164\145\155\145\040\151\155\040  
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\153\145\150\162\040\107\155\142\110\061\030\060\026\006\003\125  
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\206\110\206\367\015\001\001\005\005\000\003\202\001\001\000\141
\061\363\210\065\011\270\136\234\305\350\071\244\072\146\377\002
\264\227\035\376\113\071\272\205\230\203\050\240\332\366\116\114
\263\255\104\312\374\321\076\231\332\346\327\224\137\166\333\073
\221\225\152\374\200\237\101\041\136\150\373\326\150\005\152\342
\231\107\377\156\216\216\363\023\126\376\303\176\007\317\005\114
\103\132\251\102\270\071\303\234\360\025\103\354\250\376\216\142
\004\016\156\122\123\033\247\234\347\154\073\145\307\001\177\346
\005\252\162\177\341\053\024\224\010\375\156\210\343\310\224\247
\336\126\373\021\230\027\011\001\332\042\305\063\077\041\315\164
\245\253\311\060\143\210\333\112\047\002\273\320\144\005\004\155
\164\013\003\307\054\362\166\261\174\136\201\243\176\224\366\171
\072\302\176\352\361\123\327\205\130\236\220\034\235\327\261\172
\364\017\232\207\102\052\303\204\217\177\320\152\065\022\036\325
\214\161\214\070\102\232\065\255\335\252\062\023\166\105\006\341
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END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER

CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "A-Trust-Qual-02"

# Issuer: CN=A-Trust-Qual-02,OU=A-Trust-Qual-02,O=A-Trust Ges. f. Sicherheitssysteme im elektr. Datenverkehr GmbH,C=AT

# Serial Number:14:4d:e4

# Subject: CN=A-Trust-Qual-02,OU=A-Trust-Qual-02,O=A-Trust Ges. f. Sicherheitssysteme im elektr. Datenverkehr GmbH,C=AT

# Not Valid Before: Tue Jul 01 11:23:33 2014

# Not Valid After: Mon Jul 01 09:23:33 2024

# Fingerprint (MD5): 4b:d4:35:43:a8:b2:43:6d:d7:78:e2:89:a2:a9:39:ab

# Fingerprint (SHA1): cd:78:7a:3d:5c:ba:82:07:08:28:48:36:5e:9a:cd:e9:68:33:64:d8

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "A-Trust-Qual-02"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

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\315\170\172\075\134\272\202\007\010\050\110\066\136\232\315\351
\150\063\144\330
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END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

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\113\324\065\103\250\262\103\155\327\170\342\211\242\251\071\253
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END

CKA\_ISSUER

MULTILINE\_OCTAL

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\163\164\040\107\145\163\056\040\146\056\040\123\151\143\150\145  
\162\150\145\151\164\163\163\171\163\164\145\155\145\040\151\155  
\040\145\154\145\153\164\162\056\040\104\141\164\145\156\166\145  
\162\153\145\150\162\040\107\155\142\110\061\030\060\026\006\003  
\125\004\013\014\017\101\055\124\162\165\163\164\055\121\165\141  
\154\055\060\062\061\030\060\026\006\003\125\004\003\014\017\101  
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END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\003\024\115\344

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "Thailand National Root Certification Authority - G1"

# Issuer:

CN=Thailand National Root Certification Authority - G1,OU=Thailand National Root Certification  
Authority,O=Electronic Transactions Development Agency (Public Organization),C=TH

# Serial Number:51:52:c5:8c

# Subject: CN=Thailand National Root Certification Authority - G1,OU=Thailand National Root Certification  
Authority,O=Electronic Transactions Development Agency (Public Organization),C=TH

# Not Valid Before: Wed Mar 27 09:40:22 2013

# Not Valid After: Thu Mar 27 10:10:22 2036

# Fingerprint (MD5): da:9d:b6:26:4a:e5:22:a0:bb:8d:a4:f7:bc:0d:25:cc

# Fingerprint (SHA1): 66:f2:dc:fb:3f:81:4d:de:e9:b3:20:6f:11:de:fe:1b:fb:df:e1:32

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Thailand National Root Certification Authority - G1"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\201\317\061\013\060\011\006\003\125\004\006\023\002\124\110  
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\162\157\156\151\143\040\124\162\141\156\163\141\143\164\151\157  
\156\163\040\104\145\166\145\154\157\160\155\145\156\164\040\101  
\147\145\156\143\171\040\050\120\165\142\154\151\143\040\117\162  
\147\141\156\151\172\141\164\151\157\156\051\061\067\060\065\006  
\003\125\004\013\014\056\124\150\141\151\154\141\156\144\040\116  
\141\164\151\157\156\141\154\040\122\157\157\164\040\103\145\162

\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157  
\162\151\164\171\061\074\060\072\006\003\125\004\003\014\063\124  
\150\141\151\154\141\156\144\040\116\141\164\151\157\156\141\154  
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\107\061

END

CKA\_ID

UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

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\156\163\040\104\145\166\145\154\157\160\155\145\156\164\040\101  
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\141\164\151\157\156\141\154\040\122\157\157\164\040\103\145\162  
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CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

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CKA\_VALUE MULTILINE\_OCTAL

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\151\157\156\163\040\104\145\166\145\154\157\160\155\145\156\164  
\040\101\147\145\156\143\171\040\050\120\165\142\154\151\143\040  
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\014\352\173\020\023\160\036\236\210\305\334\076\216\271\015\125  
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\014\143\174\353\144\275\156\113\000\250\201\372\222\062\206\060  
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\150\364\142\251\250\036\067\331\056\231\111\240\260\006\214\100  
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END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "Thailand National Root Certification Authority - G1"

# Issuer: CN=Thailand National Root Certification Authority - G1,OU=Thailand National Root Certification

```
Authority,O=Electronic Transactions Development Agency (Public Organization),C=TH
# Serial Number:51:52:c5:8c
#
Subject: CN=Thailand National Root Certification Authority - G1,OU=Thailand National Root Certification
Authority,O=Electronic Transactions Development Agency (Public Organization),C=TH
# Not Valid Before: Wed Mar 27 09:40:22 2013
# Not Valid After: Thu Mar 27 10:10:22 2036
# Fingerprint (MD5): da:9d:b6:26:4a:e5:22:a0:bb:8d:a4:f7:bc:0d:25:cc
# Fingerprint (SHA1): 66:f2:dc:fb:3f:81:4d:de:e9:b3:20:6f:11:de:fe:1b:fb:df:e1:32
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Thailand National Root Certification Authority - G1"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\146\362\334\373\077\201\115\336\351\263\040\157\021\336\376\033
\373\337\341\062
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\332\235\266\046\112\345\042\240\273\215\244\367\274\015\045\314
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\317\061\013\060\011\006\003\125\004\006\023\002\124\110
\061\111\060\107\006\003\125\004\012\014\100\105\154\145\143\164
\162\157\156\151\143\040\124\162\141\156\163\141\143\164\151\157
\156\163\040\104\145\166\145\154\157\160\155\145\156\164\040\101
\147\145\156\143\171\040\050\120\165\142\154\151\143\040\117\162
\147\141\156\151\172\141\164\151\157\156\051\061\067\060\065\006
\003\125\004\013\014\056\124\150\141\151\154\141\156\144\040\116
\141\164\151\157\156\141\154\040\122\157\157\164\040\103\145\162
\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157
\162\151\164\171\061\074\060\072\006\003\125\004\003\014\063\124
\150\141\151\154\141\156\144\040\116\141\164\151\157\156\141\154
\040\122\157\157\164\040\103\145\162\164\151\146\151\143\141\164
\151\157\156\040\101\165\164\150\157\162\151\164\171\040\055\040
\107\061
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\004\121\122\305\214
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED
CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
```

```
# Certificate "Certification Authority of WoSign"
# Issuer: CN=Certification Authority of WoSign,O=WoSign CA Limited,C=CN
# Serial Number:5e:68:d6:11:71:94:63:50:56:00:68:f3:3e:c9:c5:91
# Subject: CN=Certification Authority of WoSign,O=WoSign CA Limited,C=CN
# Not Valid Before: Sat Aug 08 01:00:01 2009
# Not Valid After: Mon Aug 08 01:00:01 2039
# Fingerprint (MD5): a1:f2:f9:b5:d2:c8:7a:74:b8:f3:05:f1:d7:e1:84:8d
# Fingerprint (SHA1): b9:42:94:bf:91:ea:8f:b6:4b:e6:10:97:c7:fb:00:13:59:b6:76:cb
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Certification Authority of WoSign"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\125\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\032\060\030\006\003\125\004\012\023\021\127\157\123\151\147\156
\040\103\101\040\114\151\155\151\164\145\144\061\052\060\050\006
\003\125\004\003\023\041\103\145\162\164\151\146\151\143\141\164
\151\157\156\040\101\165\164\150\157\162\151\164\171\040\157\146
\040\127\157\123\151\147\156
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\125\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\032\060\030\006\003\125\004\012\023\021\127\157\123\151\147\156
\040\103\101\040\114\151\155\151\164\145\144\061\052\060\050\006
\003\125\004\003\023\041\103\145\162\164\151\146\151\143\141\164
\151\157\156\040\101\165\164\150\157\162\151\164\171\040\157\146
\040\127\157\123\151\147\156
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\136\150\326\021\161\224\143\120\126\000\150\363\076\311
\305\221
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\166\060\202\003\136\240\003\002\001\002\002\020\136
\150\326\021\161\224\143\120\126\000\150\363\076\311\305\221\060
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\125
\061\013\060\011\006\003\125\004\006\023\002\103\116\061\032\060
\030\006\003\125\004\012\023\021\127\157\123\151\147\156\040\103
\101\040\114\151\155\151\164\145\144\061\052\060\050\006\003\125
\004\003\023\041\103\145\162\164\151\146\151\143\141\164\151\157
\156\040\101\165\164\150\157\162\151\164\171\040\157\146\040\127
\157\123\151\147\156\060\036\027\015\060\071\060\070\060\070\060
\061\060\060\060\061\132\027\015\063\071\060\070\060\070\060\061
\060\060\060\061\132\060\125\061\013\060\011\006\003\125\004\006
```

\023\002\103\116\061\032\060\030\006\003\125\004\012\023\021\127  
\157\123\151\147\156\040\103\101\040\114\151\155\151\164\145\144  
\061\052\060\050\006\003\125\004\003\023\041\103\145\162\164\151  
\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151  
\164\171\040\157\146\040\127\157\123\151\147\156\060\202\002\042  
\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003  
\202\002\017\000\060\202\002\012\002\202\002\001\000\275\312\215  
\254\270\221\025\126\227\173\153\134\172\302\336\153\331\241\260  
\303\020\043\372\247\241\262\314\061\372\076\331\246\051\157\026  
\075\340\153\370\270\100\137\333\071\250\000\172\213\240\115\124  
\175\302\042\170\374\216\011\270\250\205\327\314\225\227\113\164  
\330\236\176\360\000\344\016\211\256\111\050\104\032\020\231\062  
\017\045\210\123\244\015\263\017\022\010\026\013\003\161\047\034  
\177\341\333\322\375\147\150\304\005\135\012\016\135\160\327\330  
\227\240\274\123\101\232\221\215\364\236\066\146\172\176\126\301  
\220\137\346\261\150\040\066\244\214\044\054\054\107\013\131\166  
\146\060\265\276\336\355\217\370\235\323\273\001\060\346\362\363  
\016\340\054\222\200\363\205\371\050\212\264\124\056\232\355\367  
\166\374\025\150\026\353\112\154\353\056\022\217\324\317\376\014  
\307\134\035\013\176\005\062\276\136\260\011\052\102\325\311\116  
\220\263\131\015\273\172\176\315\325\010\132\264\177\330\034\151  
\021\371\047\017\173\006\257\124\203\030\173\341\335\124\172\121  
\150\156\167\374\306\277\122\112\146\106\241\262\147\032\273\243  
\117\167\240\276\135\377\374\126\013\103\162\167\220\312\236\371  
\362\071\365\015\251\364\352\327\347\263\020\057\060\102\067\041  
\314\060\160\311\206\230\017\314\130\115\203\273\175\345\032\245  
\067\215\266\254\062\227\000\072\143\161\044\036\236\067\304\377  
\164\324\067\300\342\376\210\106\140\021\335\010\077\120\066\253  
\270\172\244\225\142\152\156\260\312\152\041\132\151\363\363\373  
\035\160\071\225\363\247\156\246\201\211\241\210\305\073\161\312  
\243\122\356\203\273\375\240\167\364\344\157\347\102\333\155\112  
\231\212\064\110\274\027\334\344\200\010\042\266\362\061\300\077  
\004\076\353\237\040\171\326\270\006\144\144\002\061\327\251\315  
\122\373\204\105\151\011\000\052\334\125\213\304\006\106\113\300  
\112\035\011\133\071\050\375\251\253\316\000\371\056\110\113\046  
\346\060\114\245\130\312\264\104\202\117\347\221\036\063\303\260  
\223\377\021\374\201\322\312\037\161\051\335\166\117\222\045\257  
\035\201\267\017\057\214\303\006\314\057\047\243\112\344\016\231  
\272\174\036\105\037\177\252\031\105\226\375\374\075\002\003\001  
\000\001\243\102\060\100\060\016\006\003\125\035\017\001\001\377  
\004\004\003\002\001\006\060\017\006\003\125\035\023\001\001\377  
\004\005\060\003\001\001\377\060\035\006\003\125\035\016\004\026  
\004\024\341\146\317\016\321\361\263\113\267\006\040\024\376\207  
\022\325\366\376\373\076\060\015\006\011\052\206\110\206\367\015  
\001\001\005\005\000\003\202\002\001\000\250\313\162\100\262\166  
\301\176\173\374\255\144\343\062\173\314\074\266\135\106\323\365  
\054\342\160\135\310\056\330\006\175\230\321\013\041\240\211\131  
\044\001\235\371\257\011\175\012\043\202\064\325\374\174\162\231

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\271\243\327\124\364\352\122\160\016\305\365\326\073\341\072\011
\062\346\041\071\223\275\263\025\352\117\152\364\365\213\077\057
\174\215\130\056\305\341\071\240\076\307\075\112\163\236\100\172
\300\053\141\251\147\311\363\044\271\263\155\125\054\132\035\236
\045\162\316\013\255\252\307\125\142\013\276\373\143\263\141\104
\043\243\313\341\032\016\367\232\006\115\336\324\043\116\041\226
\133\071\133\127\035\057\135\010\136\011\171\377\174\227\265\115
\203\256\015\326\346\243\171\340\063\320\231\226\002\060\247\076
\377\322\243\103\077\005\132\006\352\104\002\332\174\370\110\320
\063\251\371\007\307\225\341\365\076\365\135\161\272\362\225\251
\164\210\141\131\343\277\312\132\023\272\162\264\214\135\066\207
\351\246\305\074\023\277\336\320\104\046\356\267\354\056\160\372
\327\235\267\254\345\305\100\132\346\327\154\173\054\303\126\233
\107\315\013\316\372\033\264\041\327\267\146\270\364\045\060\213
\134\015\271\352\147\262\364\155\256\325\241\236\117\330\237\351
\047\002\260\035\006\326\217\343\373\110\022\237\177\021\241\020
\076\114\121\072\226\260\321\023\361\307\330\046\256\072\312\221
\304\151\235\337\001\051\144\121\157\150\332\024\354\010\101\227
\220\215\320\262\200\362\317\302\075\277\221\150\305\200\147\036
\304\140\023\125\325\141\231\127\174\272\225\017\141\111\072\312
\165\274\311\012\223\077\147\016\022\362\050\342\061\033\300\127
\026\337\010\174\031\301\176\017\037\205\036\012\066\174\133\176
\047\274\172\277\340\333\364\332\122\275\336\014\124\160\061\221
\103\225\310\274\360\076\335\011\176\060\144\120\355\177\001\244
\063\147\115\150\117\276\025\357\260\366\002\021\242\033\023\045
\072\334\302\131\361\343\134\106\273\147\054\002\106\352\036\110
\246\346\133\331\265\274\121\242\222\226\333\252\306\067\042\246
\376\314\040\164\243\055\251\056\153\313\300\202\021\041\265\223
\171\356\104\206\276\327\036\344\036\373
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "Certification Authority of WoSign"

# Issuer: CN=Certification Authority of WoSign,O=WoSign CA Limited,C=CN

# Serial Number:5e:68:d6:11:71:94:63:50:56:00:68:f3:3e:c9:c5:91

# Subject: CN=Certification Authority of WoSign,O=WoSign CA Limited,C=CN

# Not Valid Before: Sat Aug 08 01:00:01 2009

# Not Valid After: Mon Aug 08 01:00:01 2039

# Fingerprint (MD5): a1:f2:f9:b5:d2:c8:7a:74:b8:f3:05:f1:d7:e1:84:8d

#

Fingerprint (SHA1): b9:42:94:bf:91:ea:8f:b6:4b:e6:10:97:c7:fb:00:13:59:b6:76:cb

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE



```

CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Certification Authority of WoSign"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\271\102\224\277\221\352\217\266\113\346\020\227\307\373\000\023
\131\266\166\313
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\241\362\371\265\322\310\172\164\270\363\005\361\327\341\204\215
END
CKA_ISSUER MULTILINE_OCTAL
\060\125\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\032\060\030\006\003\125\004\012\023\021\127\157\123\151\147\156
\040\103\101\040\114\151\155\151\164\145\144\061\052\060\050\006
\003\125\004\003\023\041\103\145\162\164\151\146\151\143\141\164
\151\157\156\040\101\165\164\150\157\162\151\164\171\040\157\146
\040\127\157\123\151\147\156
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\136\150\326\021\161\224\143\120\126\000\150\363\076\311
\305\221
END
CKA_TRUST_SERVER_AUTH
CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

```

```

# Microsoft Code Signing Only Certificate
# Certificate "CA "
# Issuer: CN=CA ,O=WoSign CA Limited,C=CN
# Serial Number:50:70:6b:cd:d8:13:fc:1b:4e:3b:33:72:d2:11:48:8d
# Subject: CN=CA ,O=WoSign CA Limited,C=CN
# Not Valid Before: Sat Aug 08 01:00:01 2009
# Not Valid After: Mon Aug 08 01:00:01 2039
# Fingerprint (MD5): 78:83:5b:52:16:76:c4:24:3b:83:78:e8:ac:da:9a:93
# Fingerprint (SHA1): 16:32:47:8d:89:f9:21:3a:92:00:85:63:f5:a4:a7:d3:12:40:8a:d6

```

```

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "CA "
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\106\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\032\060\030\006\003\125\004\012\023\021\127\157\123\151\147\156
\040\103\101\040\114\151\155\151\164\145\144\061\033\060\031\006
\003\125\004\003\014\022\103\101\040\346\262\203\351\200\232\346
\240\271\350\257\201\344\271\246

```

END

CKA\_ID

UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\106\061\013\060\011\006\003\125\004\006\023\002\103\116\061  
\032\060\030\006\003\125\004\012\023\021\127\157\123\151\147\156  
\040\103\101\040\114\151\155\151\164\145\144\061\033\060\031\006  
\003\125\004\003\014\022\103\101\040\346\262\203\351\200\232\346  
\240\271\350\257\201\344\271\246

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\120\160\153\315\330\023\374\033\116\073\063\162\322\021  
\110\215

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\130\060\202\003\100\240\003\002\001\002\002\020\120  
\160\153\315\330\023\374\033\116\073\063\162\322\021\110\215\060  
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\106  
\061\013\060\011\006\003\125\004\006\023\002\103\116\061\032\060  
\030\006\003\125\004\012\023\021\127\157\123\151\147\156\040\103  
\101\040\114\151\155\151\164\145\144\061\033\060\031\006\003\125  
\004\003\014\022\103\101\040\346\262\203\351\200\232\346\240\271  
\350\257\201\344\271\246\060\036\027\015\060\071\060\070\060\070  
\060\061\060\060\060\061\132\027\015\063\071\060\070\060\070\060  
\061\060\060\060\061\132\060\106\061\013\060\011\006\003\125\004  
\006\023\002\103\116\061\032\060\030\006\003\125\004\012\023\021  
\127\157\123\151\147\156\040\103\101\040\114\151\155\151\164\145  
\144\061\033\060\031\006\003\125\004\003\014\022\103\101\040\346  
\262\203\351\200\232\346\240\271\350\257\201\344\271\246\060\202  
\002\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005  
\000\003\202\002\017\000\060\202\002\012\002\202\002\001\000\320  
\111\041\036\045\374\207\301\052\302\254\333\166\206\006\116\347  
\320\164\064\334\355\145\065\374\120\326\210\077\244\360\177\353  
\017\137\171\057\211\261\375\274\143\130\067\223\233\070\370\267  
\133\251\372\330\161\307\264\274\200\227\215\154\113\361\120\325  
\052\051\252\250\031\172\226\346\225\216\164\355\227\012\127\165  
\364\005\333\155\013\071\271\001\177\252\366\326\332\154\346\005  
\340\244\115\122\374\333\320\164\267\021\214\173\215\117\377\207  
\203\256\377\005\003\023\127\120\067\376\214\226\122\020\114\137  
\277\224\161\151\331\226\076\014\103\117\276\060\300\237\071\164  
\117\006\105\135\243\326\126\071\150\007\314\207\117\120\167\223  
\161\331\104\010\261\212\064\351\211\254\333\233\116\341\331\344  
\122\105\214\056\024\037\221\153\031\035\150\051\054\126\304\342  
\036\023\127\144\360\141\343\271\021\337\260\341\127\240\033\255  
\327\137\321\257\333\053\055\077\320\150\216\017\352\237\017\213  
\065\130\033\023\034\364\336\065\241\012\135\326\352\337\022\157  
\300\373\151\007\106\162\334\201\366\004\043\027\340\115\165\341  
\162\157\260\050\353\233\341\341\203\241\237\112\135\257\314\233

\372\002\040\266\030\142\167\221\073\243\325\145\255\334\174\220  
\167\034\104\101\244\112\213\353\225\162\351\366\011\144\334\250  
\055\237\164\170\350\301\242\011\143\234\357\240\333\117\235\225  
\253\040\117\267\260\367\207\134\246\240\344\067\070\307\134\343  
\065\017\054\255\243\200\242\354\056\135\300\317\355\213\005\302  
\346\163\156\366\211\325\365\322\106\216\352\155\143\033\036\212  
\311\175\246\370\234\353\345\325\143\205\115\163\146\151\021\376  
\310\016\364\301\307\146\111\123\176\344\031\153\361\351\172\131  
\243\155\176\305\027\346\047\306\357\033\333\157\374\015\115\006  
\001\264\016\134\060\106\125\140\257\070\145\072\312\107\272\254  
\054\314\106\037\262\106\226\077\363\355\046\005\356\167\241\152  
\153\176\055\155\130\134\112\324\216\147\270\361\332\325\106\212  
\047\371\021\362\311\102\376\116\336\337\037\134\304\244\206\207  
\026\063\241\247\027\030\245\015\344\005\345\053\302\053\013\242  
\225\220\271\375\140\074\116\211\076\347\234\356\037\273\001\002  
\003\001\000\001\243\102\060\100\060\016\006\003\125\035\017\001  
\001\377\004\004\003\002\001\006\060\017\006\003\125\035\023\001  
\001\377\004\005\060\003\001\001\377\060\035\006\003\125\035\016  
\004\026\004\024\340\115\277\334\233\101\135\023\350\144\360\247  
\351\025\244\341\201\301\272\061\060\015\006\011\052\206\110\206  
\367\015\001\001\013\005\000\003\202\002\001\000\152\212\160\070  
\131\266\332\213\030\310\276\052\323\266\031\325\146\051\172\135  
\315\133\057\163\034\046\116\243\175\157\253\267\051\115\246\351  
\245\021\203\247\071\163\257\020\104\222\346\045\135\117\141\372  
\310\006\276\116\113\357\376\363\061\376\306\174\160\012\101\130  
\332\350\231\113\226\311\170\274\230\174\002\051\355\011\200\346  
\012\072\202\002\052\342\311\057\310\126\031\046\356\170\034\043  
\375\367\223\145\116\347\363\230\230\257\315\335\331\236\100\210  
\061\050\072\253\056\013\260\254\014\044\372\172\046\230\363\022  
\141\020\364\135\027\367\176\342\170\227\124\342\214\350\051\272  
\214\020\062\275\335\063\153\070\206\176\071\075\016\003\162\247  
\135\171\217\105\212\131\256\133\041\156\061\106\325\131\215\317  
\025\137\335\061\045\317\333\140\326\201\104\162\051\002\127\366  
\226\324\326\377\352\051\333\071\305\270\054\212\032\215\316\313  
\347\102\061\206\005\150\016\236\024\335\000\220\272\151\105\010  
\333\156\220\201\206\247\052\005\077\346\204\071\370\267\371\127  
\137\114\244\171\132\020\014\136\325\153\377\065\137\005\121\036  
\154\243\165\251\317\120\203\323\174\364\146\367\202\215\075\014  
\175\350\337\173\250\016\033\054\234\256\100\160\207\332\355\247  
\026\202\132\276\065\154\040\116\042\141\331\274\121\172\315\172  
\141\334\113\021\371\376\147\064\317\056\004\146\141\134\127\227  
\043\214\363\206\033\110\337\052\257\247\301\377\330\216\076\003  
\273\330\052\260\372\024\045\262\121\153\206\103\205\056\007\043  
\026\200\215\114\373\264\143\073\314\303\164\355\033\243\036\376  
\065\017\137\174\035\026\206\365\016\303\225\361\057\257\135\045  
\073\121\346\327\166\101\070\321\113\003\071\050\245\036\221\162  
\324\175\253\227\063\304\323\076\340\151\266\050\171\240\011\215  
\034\321\377\101\162\110\006\374\232\056\347\040\371\233\242\336

```
\211\355\256\074\011\257\312\127\263\222\211\160\100\344\057\117
\302\160\203\100\327\044\054\153\347\011\037\323\325\307\301\010
\364\333\016\073\034\007\013\103\021\204\041\206\351\200\324\165
\330\253\361\002\142\301\261\176\125\141\317\023\327\046\260\327
\234\313\051\213\070\112\013\016\220\215\272\241
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "CA "

# Issuer: CN=CA ,O=WoSign CA Limited,C=CN

# Serial Number:50:70:6b:cd:d8:13:fc:1b:4e:3b:33:72:d2:11:48:8d

# Subject: CN=CA ,O=WoSign CA Limited,C=CN

# Not Valid Before: Sat Aug 08 01:00:01 2009

# Not Valid After: Mon Aug 08 01:00:01 2039

# Fingerprint (MD5): 78:83:5b:52:16:76:c4:24:3b:83:78:e8:ac:da:9a:93

# Fingerprint (SHA1): 16:32:47:8d:89:f9:21:3a:92:00:85:63:f5:a4:a7:d3:12:40:8a:d6

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE

CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "CA "

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\026\062\107\215\211\371\041\072\222\000\205\143\365\244\247\323
\022\100\212\326
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\170\203\133\122\026\166\304\044\073\203\170\350\254\332\232\223
```

END

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\106\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\032\060\030\006\003\125\004\012\023\021\127\157\123\151\147\156
\040\103\101\040\114\151\155\151\164\145\144\061\033\060\031\006
\003\125\004\003\014\022\103\101\040\346\262\203\351\200\232\346
\240\271\350\257\201\344\271\246
```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

```
\002\020\120\160\153\315\330\023\374\033\116\073\063\162\322\021
\110\215
```

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

```
# Microsoft Code Signing Only Certificate
# Certificate "SSC GDL
  CA Root B"
# Issuer: CN=SSC GDL CA Root B,OU=CA ROOT Services,O=Skaitmeninio sertifikavimo centras,C=LT
# Serial Number:3e:8c:4f:bc:e4:29:83:82:4d:84:55:8e:d5:35:80:cf
# Subject: CN=SSC GDL CA Root B,OU=CA ROOT Services,O=Skaitmeninio sertifikavimo centras,C=LT
# Not Valid Before: Tue Jun 04 14:20:15 2013
# Not Valid After: Sat Jun 04 14:21:55 2033
# Fingerprint (MD5): ca:b5:ab:b2:55:7b:93:36:32:53:23:ed:79:27:30:4a
# Fingerprint (SHA1): c8:60:a3:18:fc:f5:b7:13:0b:10:07:ad:7f:61:4a:40:ff:ff:18:5f
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "SSC GDL CA Root B"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\161\061\013\060\011\006\003\125\004\006\023\002\114\124\061
\053\060\051\006\003\125\004\012\023\042\123\153\141\151\164\155
\145\156\151\156\151\157\040\163\145\162\164\151\146\151\153\141
\166\151\155\157\040\143\145\156\164\162\141\163\061\031\060\027
\006\003\125\004\013\023\020\103\101\040\122\117\117\124\040\123
\145\162\166\151\143\145\163\061\032\060\030\006\003\125\004\003
\023\021\123\123\103\040\107\104\114\040\103\101\040\122\157\157
\164\040\102
END
CKA_ID
  UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\161\061\013\060\011\006\003\125\004\006\023\002\114\124\061
\053\060\051\006\003\125\004\012\023\042\123\153\141\151\164\155
\145\156\151\156\151\157\040\163\145\162\164\151\146\151\153\141
\166\151\155\157\040\143\145\156\164\162\141\163\061\031\060\027
\006\003\125\004\013\023\020\103\101\040\122\117\117\124\040\123
\145\162\166\151\143\145\163\061\032\060\030\006\003\125\004\003
\023\021\123\123\103\040\107\104\114\040\103\101\040\122\157\157
\164\040\102
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\076\214\117\274\344\051\203\202\115\204\125\216\325\065
\200\317
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\256\060\202\003\226\240\003\002\001\002\002\020\076
\214\117\274\344\051\203\202\115\204\125\216\325\065\200\317\060
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\161
\061\013\060\011\006\003\125\004\006\023\002\114\124\061\053\060
```

\051\006\003\125\004\012\023\042\123\153\141\151\164\155\145\156  
\151\156\151\157\040\163\145\162\164\151\146\151\153\141\166\151  
\155\157\040\143\145\156\164\162\141\163\061\031\060\027\006\003  
\125\004\013\023\020\103\101\040\122\117\117\124\040\123\145\162  
\166\151\143\145\163\061\032\060\030\006\003\125\004\003\023\021  
\123\123\103\040\107\104\114\040\103\101\040\122\157\157\164\040  
\102\060\036\027\015\061\063\060\066\060\064\061\064\062\060\061  
\065\132\027\015\063\063\060\066\060\064\061\064\062\061\065\065  
\132\060\161\061\013\060\011\006\003\125\004\006\023\002\114\124  
\061\053\060\051\006\003\125\004\012\023\042\123\153\141\151\164  
\155\145\156\151\156\151\157\040\163\145\162\164\151\146\151\153  
\141\166\151\155\157\040\143\145\156\164\162\141\163\061\031\060  
\027\006\003\125\004\013\023\020\103\101\040\122\117\117\124\040  
\123\145\162\166\151\143\145\163\061\032\060\030\006\003\125\004  
\003\023\021\123\123\103\040\107\104\114\040\103\101\040\122\157  
\157\164\040\102\060\202\002\042\060\015\006\011\052\206\110\206  
\367\015\001\001\001\005\000\003\202\002\017\000\060\202\002\012  
\002\202\002\001\000\217\225\351\322\353\301\163\045\307\070\147  
\360\203\216\123\274\266\313\316\272\163\333\117\047\366\042\220  
\077\102\277\041\326\336\142\202\264\157\004\005\111\011\073\167  
\001\327\113\137\122\322\331\031\307\155\174\014\251\072\011\142  
\344\052\030\151\214\240\335\353\254\023\266\016\071\021\200\151  
\116\143\137\334\074\015\372\331\214\142\276\144\205\062\062\131  
\227\120\223\211\337\373\377\324\330\145\161\307\106\125\242\033  
\231\141\037\334\120\000\310\027\171\350\120\260\014\136\346\376  
\166\246\001\116\011\310\160\154\372\220\263\136\334\075\007\315  
\111\243\116\126\136\022\117\144\101\177\176\014\025\303\240\336  
\263\243\051\006\111\104\241\137\157\077\201\240\104\115\360\173  
\012\070\050\355\022\356\143\227\303\173\135\214\117\161\335\225  
\072\332\056\250\001\106\012\363\154\350\265\361\037\010\000\361  
\100\222\033\046\000\061\165\071\106\111\046\271\244\324\161\167  
\021\244\117\063\314\011\333\331\321\041\113\222\104\254\316\170  
\142\202\027\373\372\022\264\175\325\362\206\355\364\176\226\024  
\346\215\003\122\257\315\027\242\325\034\245\376\201\246\232\355  
\175\344\331\016\062\146\020\217\333\331\063\061\201\176\051\127  
\357\314\262\241\140\356\212\133\271\145\333\177\033\232\054\217  
\047\061\211\212\050\265\257\261\126\324\003\042\356\045\117\330  
\232\275\322\154\127\274\203\246\110\037\054\125\007\011\064\053  
\271\171\054\002\245\240\137\174\166\237\044\062\074\055\222\337  
\353\110\127\207\241\366\376\043\372\064\253\211\365\150\033\216  
\037\252\156\016\245\322\041\322\357\271\321\261\111\127\065\132  
\204\323\036\342\002\155\122\020\177\342\214\115\041\333\062\062  
\034\175\314\226\042\003\055\152\247\006\102\155\156\220\207\372  
\034\134\260\117\320\003\101\023\372\013\123\346\301\020\002\110  
\013\167\143\364\245\234\121\173\230\146\327\305\166\062\345\157  
\135\024\141\175\014\273\155\225\100\332\251\046\307\367\251\313  
\322\376\047\301\053\366\261\150\206\376\343\142\122\231\120\216  
\053\336\101\041\007\033\207\365\100\035\160\255\317\375\302\103

\250\065\126\021\102\305\313\136\146\241\310\250\150\367\376\114  
\127\141\066\122\201\002\003\001\000\001\243\102\060\100\060\016  
\006\003\125\035\017\001\001\377\004\004\003\002\001\006\060\017  
\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060  
\035\006\003\125\035\016\004\026\004\024\162\003\106\207\141\366  
\035\263\324\225\143\271\120\167\156\015\253\230\376\057\060\015  
\006\011\052\206\110\206\367\015\001\001\013\005\000\003\202\002  
\001\000\010\333\212\062\201\164\063\161\026\354\041\205\123\110  
\012\157\037\162\343\343\004\370\056\267\077\363\044\225\117\234  
\355\023\341\210\202\002\366\146\367\267\261\055\200\047\255\256  
\270\155\376\043\007\021\010\253\164\141\214\050\022\371\366\020  
\064\360\317\266\174\243\165\055\022\324\224\337\164\356\261\230  
\253\261\356\042\142\113\131\037\177\376\032\145\255\115\342\244  
\021\077\023\041\264\330\065\213\166\100\246\137\275\063\021\337  
\230\343\041\136\035\243\273\170\066\002\073\330\375\144\204\332  
\067\315\131\355\374\014\320\164\244\153\161\074\066\022\104\236  
\176\156\117\012\041\034\145\037\113\022\154\277\216\162\326\335  
\076\000\160\230\001\105\053\354\225\220\343\323\151\070\347\053  
\235\176\145\131\133\341\333\205\312\143\376\253\277\344\320\375  
\344\122\272\032\346\376\306\220\272\173\316\361\244\142\305\107  
\276\044\307\240\172\345\041\341\306\010\340\014\211\203\217\200  
\151\375\356\240\337\172\114\072\323\110\052\026\277\256\246\225  
\265\335\150\037\373\016\265\005\214\321\262\104\174\140\060\126  
\166\027\265\065\117\250\325\012\353\302\265\156\002\356\234\137  
\016\243\261\001\250\345\123\157\176\203\101\037\025\330\377\341  
\302\266\032\361\106\234\144\240\032\340\112\312\270\246\264\211  
\044\356\173\225\231\142\324\342\100\273\316\243\232\175\035\162  
\363\033\201\101\167\000\136\354\074\242\060\005\074\315\174\110  
\066\023\310\062\260\153\157\237\070\050\070\151\134\173\346\342  
\255\203\273\155\023\321\056\267\321\166\157\135\060\136\271\120  
\105\110\326\110\200\223\121\311\026\251\020\135\147\306\313\176  
\147\175\005\117\364\040\357\044\045\136\355\147\103\306\373\156  
\171\373\262\362\310\311\316\101\174\005\340\255\213\315\012\105  
\056\342\142\237\227\221\364\371\143\354\362\302\140\212\334\033  
\377\041\250\377\043\207\214\163\215\260\072\314\037\217\061\162  
\012\375\226\241\337\032\123\323\066\266\260\167\106\336\003\366  
\302\200\056\157\227\043\341\021\314\121\230\077\356\100\377\364  
\075\233\210\177\214\273\341\131\206\275\011\064\047\134\236\012  
\223\062\073\125\052\251\136\013\015\017\251\246\121\004\342\233  
\052\021

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "SSC"

```

GDL CA Root B"
# Issuer: CN=SSC GDL CA Root B,OU=CA ROOT Services,O=Skaitmeninio sertifikavimo centras,C=LT
# Serial Number:3e:8c:4f:bc:e4:29:83:82:4d:84:55:8e:d5:35:80:cf
# Subject: CN=SSC GDL CA Root B,OU=CA ROOT Services,O=Skaitmeninio sertifikavimo centras,C=LT
# Not Valid Before: Tue Jun 04 14:20:15 2013
# Not Valid After: Sat Jun 04 14:21:55 2033
# Fingerprint (MD5): ca:b5:ab:b2:55:7b:93:36:32:53:23:ed:79:27:30:4a
# Fingerprint (SHA1): c8:60:a3:18:fc:f5:b7:13:0b:10:07:ad:7f:61:4a:40:ff:ff:18:5f
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "SSC GDL CA Root B"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\310\140\243\030\374\365\267\023\013\020\007\255\177\141\112\100
\377\377\030\137
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\312\265\253\262\125\173\223\066\062\123\043\355\171\047\060\112
END
CKA_ISSUER MULTILINE_OCTAL
\060\161\061\013\060\011\006\003\125\004\006\023\002\114\124\061
\053\060\051\006\003\125\004\012\023\042\123\153\141\151\164\155
\145\156\151\156\151\157\040\163\145\162\164\151\146\151\153\141
\166\151\155\157\040\143\145\156\164\162\141\163\061\031\060\027
\006\003\125\004\013\023\020\103\101\040\122\117\117\124\040\123
\145\162\166\151\143\145\163\061\032\060\030\006\003\125\004\003
\023\021\123\123\103\040\107\104\114\040\103\101\040\122\157\157
\164\040\102
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\076\214\117\274\344\051\203\202\115\204\125\216\325\065
\200\317
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "SAPO Class 2 Root CA"
# Issuer: 1.2.840.113549.1.9.1=pkiaadmin@trustcentre.co.za,CN=SAPO Class 2 Root CA,OU=SAPO Trust
Centre,O=South African Post Office Limited,L=Somerset West,ST=Western Cape,C=ZA
# Serial Number:
1 (0x1)
# Subject: 1.2.840.113549.1.9.1=pkiaadmin@trustcentre.co.za,CN=SAPO Class 2 Root CA,OU=SAPO Trust
Centre,O=South African Post Office Limited,L=Somerset West,ST=Western Cape,C=ZA

```



```
# Not Valid Before: Wed Sep 15 00:00:00 2010
# Not Valid After: Sat Sep 14 00:00:00 2030
# Fingerprint (MD5): 0a:7b:e7:df:15:44:93:ed:92:72:42:1a:28:4b:0c:ee
# Fingerprint (SHA1): e4:55:01:60:8a:a1:ef:89:e2:7b:8c:d3:c3:b3:4c:03:b0:38:e6:d7
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "SAPO Class 2 Root CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\316\061\013\060\011\006\003\125\004\006\023\002\132\101
\061\025\060\023\006\003\125\004\010\023\014\127\145\163\164\145
\162\156\040\103\141\160\145\061\026\060\024\006\003\125\004\007
\023\015\123\157\155\145\162\163\145\164\040\127\145\163\164\061
\052\060\050\006\003\125\004\012\023\041\123\157\165\164\150\040
\101\146\162\151\143\141\156\040\120\157\163\164\040\117\146\146
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\003\125\004\013\023\021\123\101\120\117\040\124\162\165\163\164
\040\103\145\156\164\162\145\061\035\060\033\006\003\125\004\003
\023\024\123\101\120\117\040\103\154\141\163\163\040\062\040\122
\157\157\164\040\103\101\061\051\060\047\006\011\052\206\110\206
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CKA\_VALUE MULTILINE\_OCTAL

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\035\023\004\005\060\003\001\001\377\060\035\006\003\125\035\016
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\375\170\340\153\126\052\206\166\256\133\302\136\353\105\344\060
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CKA\_NSS\_Mozilla\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "SAPO Class 2 Root CA"

# Issuer: 1.2.840.113549.1.9.1=pkiadmin@trustcentre.co.za,CN=SAPO Class 2 Root CA,OU=SAPO Trust Centre,O=South African Post Office Limited,L=Somerset West,ST=Western Cape,C=ZA

# Serial Number: 1 (0x1)

# Subject: 1.2.840.113549.1.9.1=pkiadmin@trustcentre.co.za,CN=SAPO Class 2 Root CA,OU=SAPO Trust Centre,O=South African Post Office Limited,L=Somerset West,ST=Western Cape,C=ZA

# Not Valid Before: Wed Sep 15 00:00:00 2010

# Not Valid After: Sat Sep 14 00:00:00 2030

# Fingerprint (MD5): 0a:7b:e7:df:15:44:93:ed:92:72:42:1a:28:4b:0c:ee

# Fingerprint (SHA1): e4:55:01:60:8a:a1:ef:89:e2:7b:8c:d3:c3:b3:4c:03:b0:38:e6:d7

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CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL

UTF8 "SAPO Class 2 Root CA"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

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\260\070\346\327

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CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

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CKA\_ISSUER MULTILINE\_OCTAL

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END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\001\001

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "SAPO Class 3 Root CA"

# Issuer: 1.2.840.113549.1.9.1=pkiadmin@trustcentre.co.za,CN=SAPO Class 3 Root CA,OU=SAPO Trust Centre,O=South African Post Office Limited,L=Somerset West,ST=Western Cape,C=ZA

# Serial Number: 2 (0x2)

# Subject: 1.2.840.113549.1.9.1=pkiadmin@trustcentre.co.za,CN=SAPO Class 3 Root CA,OU=SAPO Trust Centre,O=South African Post Office Limited,L=Somerset West,ST=Western Cape,C=ZA

# Not Valid Before: Wed Sep 15 00:00:00 2010

# Not Valid After: Sat Sep 14 00:00:00 2030

# Fingerprint (MD5): 54:e5:eb:35:d1:75:05:3c:7c:df:30:d6:bf:f3:ff:53

#

Fingerprint (SHA1): 38:dd:76:59:c7:35:10:0b:00:a2:37:e4:91:b7:bc:0f:fc:d2:31:6c

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "SAPO Class 3 Root CA"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

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CKA\_ID

UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

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CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

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\274\273\077\277\353\167\205\004\046\213\224\262\220\365\353\215  
\117\242\104\042\120\250\234\052\104\110\000\170\031\253\235\010  
\226\025\002\003\001\000\001\243\077\060\075\060\016\006\003\125  
\035\017\001\001\377\004\004\003\002\001\006\060\014\006\003\125  
\035\023\004\005\060\003\001\001\377\060\035\006\003\125\035\016  
\004\026\004\024\141\263\171\122\235\112\225\222\121\216\202\044  
\160\323\216\100\310\305\146\320\060\015\006\011\052\206\110\206  
\367\015\001\001\005\005\000\003\202\002\001\000\177\306\263\044  
\204\120\067\371\304\260\305\060\074\026\351\120\015\172\272\264  
\073\322\043\345\351\211\170\152\345\343\033\005\036\221\034\316  
\006\227\215\146\026\007\104\357\201\271\010\176\243\307\071\064  
\270\277\232\155\215\260\301\040\102\056\015\367\013\006\003\117  
\156\313\274\267\260\057\031\161\215\216\257\012\115\130\061\213  
\104\231\052\050\146\205\307\200\046\146\260\107\302\071\262\372  
\117\076\125\275\334\211\047\113\163\063\004\376\173\107\220\311  
\005\300\055\063\370\267\010\202\051\101\103\375\046\123\346\372  
\037\067\126\215\117\027\272\330\375\072\204\160\330\076\360\063  
\256\304\005\110\124\241\271\325\041\077\352\076\307\251\061\107  
\367\233\256\112\142\230\321\147\040\145\336\171\341\261\062\036  
\153\337\373\200\153\107\134\071\307\016\010\252\307\243\356\051  
\351\064\342\233\371\165\270\046\353\210\235\264\071\021\056\160  
\375\121\004\062\273\017\171\204\120\041\105\174\057\344\331\377  
\045\070\006\043\253\116\261\016\334\073\061\012\255\332\113\000  
\151\153\056\342\303\014\311\005\001\105\146\341\245\211\141\034  
\144\231\215\013\230\220\263\176\146\073\013\330\253\350\165\016  
\331\177\232\156\175\311\203\047\311\274\350\064\070\302\132\207  
\062\162\007\014\376\325\224\321\360\300\170\362\200\250\106\365  
\153\232\354\342\331\026\216\212\372\204\366\321\122\311\234\262  
\041\126\140\103\246\020\367\177\111\277\276\007\323\120\144\155  
\002\272\052\125\054\317\331\302\156\257\174\013\110\320\361\341  
\247\302\255\164\217\206\344\355\252\372\134\203\175\102\350\175  
\007\035\007\125\314\053\151\062\271\167\202\150\306\167\362\042  
\151\246\311\012\135\207\231\345\161\236\175\057\023\036\322\364  
\375\011\171\047\130\053\012\207\201\052\373\152\043\055\113\044  
\205\164\026\107\030\017\011\305\376\251\110\044\343\254\320\151  
\075\137\123\230\062\275\354\340\121\301\123\112\261\366\073\360  
\064\110\365\232\336\334\321\340\343\275\045\263\104\350\072\163  
\311\171\320\254\321\355\342\000\012\137\241\035\146\131\112\163  
\150\324\005\162\063\070\247\153\257\221\333\015\307\214\100\350  
\236\220\210\311\373\376\044\327\201\254\363\336

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust

for "SAPO Class 3 Root CA"

# Issuer: 1.2.840.113549.1.9.1=pkiadmin@trustcentre.co.za,CN=SAPO Class 3 Root CA,OU=SAPO Trust Centre,O=South African Post Office Limited,L=Somerset West,ST=Western Cape,C=ZA

# Serial Number: 2 (0x2)

# Subject: 1.2.840.113549.1.9.1=pkiadmin@trustcentre.co.za,CN=SAPO Class 3 Root CA,OU=SAPO Trust Centre,O=South African Post Office Limited,L=Somerset West,ST=Western Cape,C=ZA

# Not Valid Before: Wed Sep 15 00:00:00 2010

# Not Valid After: Sat Sep 14 00:00:00 2030

# Fingerprint (MD5): 54:e5:eb:35:d1:75:05:3c:7c:df:30:d6:bf:f3:ff:53

# Fingerprint (SHA1): 38:dd:76:59:c7:35:10:0b:00:a2:37:e4:91:b7:bc:0f:fc:d2:31:6c

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "SAPO Class 3 Root CA"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\070\335\166\131\307\065\020\013\000\242\067\344\221\267\274\017  
\374\322\061\154

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\124\345\353\065\321\165\005\074\174\337\060\326\277\363\377\123

END

CKA\_ISSUER

MULTILINE\_OCTAL

\060\201\316\061\013\060\011\006\003\125\004\006\023\002\132\101  
\061\025\060\023\006\003\125\004\010\023\014\127\145\163\164\145  
\162\156\040\103\141\160\145\061\026\060\024\006\003\125\004\007  
\023\015\123\157\155\145\162\163\145\164\040\127\145\163\164\061  
\052\060\050\006\003\125\004\012\023\041\123\157\165\164\150\040  
\101\146\162\151\143\141\156\040\120\157\163\164\040\117\146\146  
\151\143\145\040\114\151\155\151\164\145\144\061\032\060\030\006  
\003\125\004\013\023\021\123\101\120\117\040\124\162\165\163\164  
\040\103\145\156\164\162\145\061\035\060\033\006\003\125\004\003  
\023\024\123\101\120\117\040\103\154\141\163\163\040\063\040\122  
\157\157\164\040\103\101\061\051\060\047\006\011\052\206\110\206  
\367\015\001\011\001\026\032\160\153\151\141\144\155\151\156\100  
\164\162\165\163\164\143\145\156\164\162\145\056\143\157\056\172  
\141

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\001\002

END



```

CKA_TRUST_SERVER_AUTH CK_TRUST
CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "SAPO Class 4 Root CA"
# Issuer: 1.2.840.113549.1.9.1=pkiadmin@trustcentre.co.za,CN=SAPO Class 4 Root CA,OU=SAPO Trust
Centre,O=South African Post Office Limited,L=Somerset West,ST=Western Cape,C=ZA
# Serial Number: 3 (0x3)
# Subject: 1.2.840.113549.1.9.1=pkiadmin@trustcentre.co.za,CN=SAPO Class 4 Root CA,OU=SAPO Trust
Centre,O=South African Post Office Limited,L=Somerset West,ST=Western Cape,C=ZA
# Not Valid Before: Wed Sep 15 00:00:00 2010
# Not Valid After: Sat Sep 14 00:00:00 2030
# Fingerprint (MD5): f8:a7:f6:89:94:8c:61:f7:43:98:36:df:22:82:9b:3b
# Fingerprint (SHA1): 20:a8:f5:ff:c4:3a:f4:a9:bc:89:88:1e:bf:99:20:ff:91:e9:fd:0a
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE
CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "SAPO Class 4 Root CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\316\061\013\060\011\006\003\125\004\006\023\002\132\101
\061\025\060\023\006\003\125\004\010\023\014\127\145\163\164\145
\162\156\040\103\141\160\145\061\026\060\024\006\003\125\004\007
\023\015\123\157\155\145\162\163\145\164\040\127\145\163\164\061
\052\060\050\006\003\125\004\012\023\041\123\157\165\164\150\040
\101\146\162\151\143\141\156\040\120\157\163\164\040\117\146\146
\151\143\145\040\114\151\155\151\164\145\144\061\032\060\030\006
\003\125\004\013\023\021\123\101\120\117\040\124\162\165\163\164
\040\103\145\156\164\162\145\061\035\060\033\006\003\125\004\003
\023\024\123\101\120\117\040\103\154\141\163\163\040\064\040\122
\157\157\164\040\103\101\061\051\060\047\006\011\052\206\110\206
\367\015\001\011\001\026\032\160\153\151\141\144\155\151\156\100
\164\162\165\163\164\143\145\156\164\162\145\056\143\157\056\172
\141
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\316\061\013\060\011\006\003\125\004\006\023\002\132\101
\061\025\060\023\006\003\125\004\010\023\014\127\145\163\164\145
\162\156\040\103\141\160\145\061\026\060\024\006\003\125\004\007
\023\015\123\157\155\145\162\163\145\164\040\127\145\163\164\061
\052\060\050\006\003\125\004\012\023\041\123\157\165\164\150\040

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\101\146\162\151\143\141\156\040\120\157\163\164\040\117\146\146  
\151\143\145\040\114\151\155\151\164\145\144\061\032\060\030\006  
\003\125\004\013\023\021\123\101\120\117\040\124\162\165\163\164  
\040\103\145\156\164\162\145\061\035\060\033\006\003\125\004\003  
\023\024\123\101\120\117\040\103\154\141\163\163\040\064\040\122  
\157\157\164\040\103\101\061\051\060\047\006\011\052\206\110\206  
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\164\162\165\163\164\143\145\156\164\162\145\056\143\157\056\172  
\141

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\001\003

END

CKA\_VALUE MULTILINE\_OCTAL

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\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060  
\201\316\061\013\060\011\006\003\125\004\006\023\002\132\101\061  
\025\060\023\006\003\125\004\010\023\014\127\145\163\164\145\162  
\156\040\103\141\160\145\061\026\060\024\006\003\125\004\007\023  
\015\123\157\155\145\162\163\145\164\040\127\145\163\164\061\052  
\060\050\006\003\125\004\012\023\041\123\157\165\164\150\040\101  
\146\162\151\143\141\156\040\120\157\163\164\040\117\146\146\151  
\143\145\040\114\151\155\151\164\145\144\061\032\060\030\006\003  
\125\004\013\023\021\123\101\120\117\040\124\162\165\163\164\040  
\103\145\156\164\162\145\061\035\060\033\006\003\125\004\003\023  
\024\123\101\120\117\040\103\154\141\163\163\040\064\040\122\157  
\157\164\040\103\101\061\051\060\047\006\011\052\206\110\206\367  
\015\001\011\001\026\032\160\153\151\141\144\155\151\156\100\164  
\162\165\163\164\143\145\156\164\162\145\056\143\157\056\172\141  
\060\036\027\015\061\060\060\071\061\065\060\060\060\060\060  
\132\027\015\063\060\060\071\061\064\060\060\060\060\060\060\132  
\060\201\316\061\013\060\011\006\003\125\004\006\023\002\132\101  
\061\025\060\023\006\003\125\004\010\023\014\127\145\163\164\145  
\162\156\040\103\141\160\145\061\026\060\024\006\003\125\004\007  
\023\015\123\157\155\145\162\163\145\164\040\127\145\163\164\061  
\052\060\050\006\003\125\004\012\023\041\123\157\165\164\150\040  
\101\146\162\151\143\141\156\040\120\157\163\164\040\117\146\146  
\151\143\145\040\114\151\155\151\164\145\144\061\032\060\030\006\003  
\003\125\004\013\023\021\123\101\120\117\040\124\162\165\163\164  
\040\103\145\156\164\162\145\061\035\060\033\006\003\125\004\003  
\023\024\123\101\120\117\040\103\154\141\163\163\040\064\040\122  
\157\157\164\040\103\101\061\051\060\047\006\011\052\206\110\206  
\367\015\001\011\001\026\032\160\153\151\141\144\155\151\156\100  
\164\162\165\163\164\143\145\156\164\162\145\056\143\157\056\172  
\141\060\202\002\042\060\015\006\011\052\206\110\206\367\015\001  
\001\001\005\000\003\202\002\017\000\060\202\002\012\002\202\002  
\001\000\333\334\355\110\232\240\243\237\340\021\216\331\310\222  
\165\072\125\301\121\042\312\013\172\244\065\015\305\346\127\055

\203\360\052\157\042\070\067\061\155\174\205\044\242\006\057\103  
\202\075\105\060\100\045\034\356\130\107\101\346\360\236\000\036  
\370\364\057\021\273\222\262\230\105\055\323\037\200\311\166\024  
\023\303\314\100\346\255\353\071\140\374\317\310\337\052\375\214  
\022\121\357\317\014\144\306\127\350\043\121\135\347\146\122\352  
\146\275\223\177\235\172\050\361\031\160\156\204\237\060\107\267  
\260\071\153\023\054\353\113\115\056\257\077\277\375\002\023\112  
\071\347\076\063\305\020\221\121\276\017\107\235\115\122\374\054  
\363\343\023\242\000\202\341\024\014\315\322\236\263\362\340\201  
\332\276\231\222\123\343\175\231\167\103\341\341\110\051\201\236  
\326\005\127\072\161\334\076\230\255\130\160\157\106\273\176\062  
\003\342\203\233\131\127\367\370\263\315\124\026\354\266\255\241  
\034\032\222\321\324\051\236\217\315\263\350\175\120\361\302\202  
\254\272\275\264\165\126\240\365\105\135\030\175\054\214\361\173  
\101\314\206\261\232\204\113\012\052\135\233\226\341\315\372\253  
\026\047\101\347\225\065\246\313\212\247\226\363\245\314\121\371  
\055\175\036\103\373\334\155\265\271\070\275\005\373\130\372\056  
\323\354\136\144\055\257\130\001\112\174\042\106\323\101\313\075  
\344\226\136\111\103\070\273\211\353\364\234\151\071\022\003\134  
\204\273\345\214\036\352\340\146\273\300\277\214\376\236\012\115  
\075\150\077\100\166\326\062\251\352\105\270\152\007\122\216\315  
\121\361\135\050\143\014\323\131\070\374\311\375\202\311\105\040  
\274\346\350\314\242\014\313\173\144\071\111\106\105\365\163\034  
\152\227\040\353\041\102\367\264\040\122\267\112\375\165\274\313  
\017\014\147\021\127\037\367\060\361\253\220\314\135\074\226\005  
\142\323\312\125\001\113\106\305\200\207\034\162\320\163\124\041  
\352\327\243\234\323\256\177\324\123\331\050\374\127\336\345\077  
\122\112\273\310\046\044\107\123\034\163\272\317\306\264\060\315  
\136\161\307\126\274\111\070\045\346\305\020\011\170\331\324\035  
\134\315\156\355\333\221\134\241\123\024\126\252\215\047\251\246  
\216\033\002\003\001\000\001\243\077\060\075\060\016\006\003\125  
\035\017\001\001\377\004\004\003\002\001\006\060\014\006\003\125  
\035\023\004\005\060\003\001\001\377\060\035\006\003\125\035\016  
\004\026\004\024\026\204\055\373\033\347\264\036\150\230\323\102  
\040\032\156\176\117\221\127\002\060\015\006\011\052\206\110\206  
\367\015\001\001\005\005\000\003\202\002\001\000\173\343\015\143  
\072\144\040\155\314\374\054\270\351\326\253\333\327\253\046\051  
\107\242\014\126\355\165\314\225\231\122\066\313\040\373\021\064  
\027\102\116\165\005\260\330\344\270\260\204\057\230\031\271\373  
\320\071\154\162\006\030\311\134\212\172\164\010\067\110\151\375  
\042\241\135\305\327\170\023\360\050\102\101\303\311\303\071\011  
\007\324\241\370\067\042\151\344\337\062\125\157\302\174\271\223  
\361\262\067\165\314\256\322\063\226\214\066\367\001\355\343\144  
\351\013\150\133\020\252\001\066\231\174\317\232\224\135\375\032  
\131\141\242\145\025\175\236\027\144\324\237\123\230\001\375\161  
\127\320\135\100\021\026\077\077\104\322\257\311\374\010\062\175  
\166\370\325\103\350\334\066\150\007\303\116\303\226\227\127\306  
\175\066\136\333\160\255\376\256\324\210\235\265\244\140\326\243

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\142\276\174\371\064\036\374\273\364\112\162\305\203\036\106\150
\303\016\227\203\030\075\323\016\012\021\065\174\151\225\305\253
\052\365\310\071\020\115\014\211\060\051\211\111\033\104\227\221
\364\352\145\041\033\077\012\103\162\202\034\155\021\135\340\042
\105\137\141\114\242\246\372\337\243\106\272\341\201\140\154\062
\264\374\344\334\066\005\344\063\367\353\217\167\111\252\215\012
\357\110\212\346\101\227\176\073\253\103\207\362\010\140\013\157
\327\131\146\375\053\273\057\316\063\117\162\340\266\327\263\123
\127\211\360\073\274\156\342\020\277\163\076\142\217\245\010\351
\123\147\301\116\301\056\102\103\247\262\244\371\026\213\102\356
\334\064\177\110\263\220\333\044\342\310\344\123\065\123\234\352
\067\205\317\277\230\006\065\107\046\327\256\155\335\204\251\143
\130\046\101\365\165\062\056\141\236\117\223\122\122\366\132\043
\353\301\240\163\046\045\042\102\221\221\221\200\117\377\210\316
\136\163\347\226\302\355\011\022\367\166\226\251\171\142\220\111
\201\203\237\014\062\062\342\133\312\335\110\064\254\207\216\161
\225\256\114\344\174\170\035\247\121\303\275\021\372\002\321\225
\211\163\010\106\042\211\151\000\317\117\200\301\115\133\224\304
\312\231\121\230\057\015\275\175\124\144\324\012\332\047\131\247
\067\273\126\014\320\006\242\162\271\022\271\133
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "SAPO Class 4 Root CA"

# Issuer: 1.2.840.113549.1.9.1=pkadmin@trustcentre.co.za,CN=SAPO Class 4 Root CA,OU=SAPO Trust Centre,O=South African Post Office Limited,L=Somerset West,ST=Western Cape,C=ZA

# Serial Number: 3

(0x3)

# Subject: 1.2.840.113549.1.9.1=pkadmin@trustcentre.co.za,CN=SAPO Class 4 Root CA,OU=SAPO Trust Centre,O=South African Post Office Limited,L=Somerset West,ST=Western Cape,C=ZA

# Not Valid Before: Wed Sep 15 00:00:00 2010

# Not Valid After: Sat Sep 14 00:00:00 2030

# Fingerprint (MD5): f8:a7:f6:89:94:8c:61:f7:43:98:36:df:22:82:9b:3b

# Fingerprint (SHA1): 20:a8:f5:ff:c4:3a:f4:a9:bc:89:88:1e:bf:99:20:ff:91:e9:fd:0a

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "SAPO Class 4 Root CA"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

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\040\250\365\377\304\072\364\251\274\211\210\036\277\231\040\377
\221\351\375\012
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END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\370\247\366\211\224\214\141\367\103\230\066\337\042\202\233\073

END

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\316\061\013\060\011\006\003\125\004\006\023\002\132\101  
\061\025\060\023\006\003\125\004\010\023\014\127\145\163\164\145  
\162\156\040\103\141\160\145\061\026\060\024\006\003\125\004\007  
\023\015\123\157\155\145\162\163\145\164\040\127\145\163\164\061  
\052\060\050\006\003\125\004\012\023\041\123\157\165\164\150\040  
\101\146\162\151\143\141\156\040\120\157\163\164\040\117\146\146  
\151\143\145\040\114\151\155\151\164\145\144\061\032\060\030\006  
\003\125\004\013\023\021\123\101\120\117\040\124\162\165\163\164  
\040\103\145\156\164\162\145\061\035\060\033\006\003\125\004\003  
\023\024\123\101\120\117\040\103\154\141\163\163\040\064\040\122  
\157\157\164\040\103\101\061\051\060\047\006\011\052\206\110\206  
\367\015\001\011\001\026\032\160\153\151\141\144\155\151\156\100  
\164\162\165\163\164\143\145\156\164\162\145\056\143\157\056\172  
\141

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\001\003

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only

Certificate

# Certificate "CA Disig Root R1"

# Issuer: CN=CA Disig Root R1,O=Disig a.s.,L=Bratislava,C=SK

# Serial Number:c3:03:9a:ee:50:90:6e:28

# Subject: CN=CA Disig Root R1,O=Disig a.s.,L=Bratislava,C=SK

# Not Valid Before: Thu Jul 19 09:06:56 2012

# Not Valid After: Sat Jul 19 09:06:56 2042

# Fingerprint (MD5): be:ec:11:93:9a:f5:69:21:bc:d7:c1:c0:67:89:cc:2a

# Fingerprint (SHA1): 8e:1c:74:f8:a6:20:b9:e5:8a:f4:61:fa:ec:2b:47:56:51:1a:52:c6

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "CA Disig Root R1"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\122\061\013\060\011\006\003\125\004\006\023\002\123\113\061  
\023\060\021\006\003\125\004\007\023\012\102\162\141\164\151\163  
\154\141\166\141\061\023\060\021\006\003\125\004\012\023\012\104  
\151\163\151\147\040\141\056\163\056\061\031\060\027\006\003\125

\004\003\023\020\103\101\040\104\151\163\151\147\040\122\157\157  
\164\040\122\061  
END  
CKA\_ID  
UTF8 "0"  
CKA\_ISSUER MULTILINE\_OCTAL  
\060\122\061\013\060\011\006\003\125\004\006\023\002\123\113\061  
\023\060\021\006\003\125\004\007\023\012\102\162\141\164\151\163  
\154\141\166\141\061\023\060\021\006\003\125\004\012\023\012\104  
\151\163\151\147\040\141\056\163\056\061\031\060\027\006\003\125  
\004\003\023\020\103\101\040\104\151\163\151\147\040\122\157\157  
\164\040\122\061  
END  
CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL  
\002\011\000\303\003\232\356\120\220\156\050  
END  
CKA\_VALUE MULTILINE\_OCTAL  
\060\202\005\151\060\202\003\121\240\003\002\001\002\002\011\000  
\303\003\232\356\120\220\156\050\060\015\006\011\052\206\110\206  
\367\015\001\001\005\005\000\060\122\061\013\060\011\006\003\125  
\004\006\023\002\123\113\061\023\060\021\006\003\125\004\007\023  
\012\102\162\141\164\151\163\154\141\166\141\061\023\060\021\006  
\003\125\004\012\023\012\104\151\163\151\147\040\141\056\163\056  
\061\031\060\027\006\003\125\004\003\023\020\103\101\040\104\151  
\163\151\147\040\122\157\157\164\040\122\061\060\036\027\015\061  
\062\060\067\061\071\060\071\060\066\065\066\132\027\015\064\062  
\060\067\061\071\060\071\060\066\065\066\132\060\122\061\013\060  
\011\006\003\125\004\006\023\002\123\113\061\023\060\021\006\003  
\125\004\007\023\012\102\162\141\164\151\163\154\141\166\141\061  
\023\060\021\006\003\125\004\012\023\012\104\151\163\151\147\040  
\141\056\163\056\061\031\060\027\006\003\125\004\003\023\020\103  
\101\040\104\151\163\151\147\040\122\157\157\164\040\122\061\060  
\202\002\042\060\015\006\011\052\206\110\206\367\015\001\001\001  
\005\000\003\202\002\017\000\060\202\002\012\002\202\002\001\000  
\252\303\170\367\334\230\243\247\132\136\167\030\262\335\004\144  
\017\143\375\233\226\011\200\325\350\252\245\342\234\046\224\072  
\350\231\163\214\235\337\327\337\203\363\170\117\100\341\177\322  
\247\322\345\312\023\223\347\355\306\167\137\066\265\224\257\350  
\070\216\333\233\345\174\273\314\215\353\165\163\341\044\315\346  
\247\055\031\056\330\326\212\153\024\353\010\142\012\330\334\263  
\000\115\303\043\174\137\103\010\043\062\022\334\355\014\255\300  
\175\017\245\172\102\331\132\160\331\277\247\327\001\034\366\233  
\253\216\267\112\206\170\240\036\126\061\256\357\202\012\200\101  
\367\033\311\256\253\062\046\324\054\153\355\175\153\344\342\136  
\042\012\105\313\204\061\115\254\376\333\321\107\272\371\140\227  
\071\261\145\307\336\373\231\344\012\042\261\055\115\345\110\046  
\151\253\342\252\363\373\374\222\051\062\351\263\076\115\037\047  
\241\315\216\271\027\373\045\076\311\156\363\167\332\015\022\366

\135\307\273\066\020\325\124\326\363\340\342\107\110\346\336\024  
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\377\041\350\131\006\340\010\325\204\025\123\367\103\345\174\305  
\240\211\230\153\163\306\150\316\145\336\275\177\005\367\261\356  
\366\127\241\140\225\305\314\352\223\072\276\231\256\233\002\243  
\255\311\026\265\316\335\136\231\170\176\032\071\176\262\300\005  
\244\300\202\245\243\107\236\214\352\134\266\274\147\333\346\052  
\115\322\004\334\243\256\105\367\274\213\234\034\247\326\325\003  
\334\010\313\056\026\312\134\100\063\350\147\303\056\347\246\104  
\352\021\105\034\065\145\055\036\105\141\044\033\202\056\245\235  
\063\135\145\370\101\371\056\313\224\077\037\243\014\061\044\104  
\355\307\136\255\120\272\306\101\233\254\360\027\145\300\370\135  
\157\133\240\012\064\074\356\327\352\210\237\230\371\257\116\044  
\372\227\262\144\166\332\253\364\355\343\303\140\357\325\371\002  
\310\055\237\203\257\147\151\006\247\061\125\325\317\113\157\377  
\004\005\307\130\254\137\026\033\345\322\243\353\061\333\037\063  
\025\115\320\362\245\123\365\313\341\075\116\150\055\330\022\335  
\252\362\346\115\233\111\345\305\050\241\272\260\132\306\240\265  
\002\003\001\000\001\243\102\060\100\060\017\006\003\125\035\023  
\001\001\377\004\005\060\003\001\001\377\060\016\006\003\125\035  
\017\001\001\377\004\004\003\002\001\006\060\035\006\003\125\035  
\016\004\026\004\024\211\012\264\070\223\032\346\253\356\233\221  
\030\371\365\074\076\065\320\323\202\060\015\006\011\052\206\110  
\206\367\015\001\001\005\005\000\003\202\002\001\000\062\213\366  
\235\112\311\276\024\345\214\254\070\312\072\011\324\033\316\206  
\263\335\353\324\272\050\276\022\256\105\054\004\164\254\023\121  
\305\130\030\146\115\202\332\325\334\223\300\047\341\276\174\237  
\122\236\022\126\366\325\234\251\364\165\234\372\067\022\217\034  
\223\354\127\376\007\017\253\325\022\367\017\256\141\136\126\200  
\111\365\374\060\365\233\117\037\101\057\034\204\323\211\307\342  
\332\002\166\355\011\317\154\301\270\034\203\034\026\372\224\315  
\175\240\310\030\322\310\235\156\365\275\151\324\155\075\065\350  
\036\242\117\140\327\007\051\374\262\243\244\235\156\025\222\126  
\031\114\012\260\351\174\322\031\115\102\106\354\275\375\366\127  
\133\335\230\176\244\115\314\162\003\203\130\135\357\223\072\101  
\172\143\252\174\072\250\365\254\244\321\335\242\055\266\052\374  
\237\001\216\342\020\261\304\312\344\147\333\125\045\031\077\375  
\350\066\176\263\341\341\201\257\021\026\213\120\227\140\031\202  
\000\300\153\115\163\270\321\023\007\076\352\266\061\117\360\102  
\232\155\342\021\164\345\224\254\215\204\225\074\041\257\305\332  
\107\310\337\071\142\142\313\133\120\013\327\201\100\005\234\233  
\355\272\266\213\036\004\157\226\040\071\355\244\175\051\333\110  
\316\202\334\324\002\215\035\004\061\132\307\113\360\154\141\122  
\327\264\121\302\201\154\315\341\373\247\241\322\222\166\317\261  
\017\067\130\244\362\122\161\147\077\014\210\170\200\211\301\310  
\265\037\222\143\276\247\172\212\126\054\032\250\246\234\265\135  
\263\143\320\023\040\241\353\221\154\320\215\175\257\337\013\344  
\027\271\206\236\070\261\224\014\130\214\340\125\252\073\143\155

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\232\211\140\270\144\052\222\306\067\364\176\103\103\267\163\350
\001\347\177\227\017\327\362\173\031\375\032\327\217\311\372\205
\153\172\235\236\211\266\246\050\231\223\210\100\367\076\315\121
\243\312\352\357\171\107\041\265\376\062\342\307\303\121\157\276
\200\164\360\244\303\072\362\117\351\137\337\031\012\362\073\023
\103\254\061\244\263\347\353\374\030\326\001\251\363\052\217\066
\016\353\264\261\274\267\114\311\153\277\241\363\331\364\355\342
\360\343\355\144\236\075\057\226\122\117\200\123\213
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "CA Disig Root R1"

# Issuer: CN=CA Disig Root R1,O=Disig a.s.,L=Bratislava,C=SK

# Serial Number:c3:03:9a:ee:50:90:6e:28

# Subject: CN=CA Disig Root R1,O=Disig a.s.,L=Bratislava,C=SK

# Not Valid Before: Thu Jul 19 09:06:56 2012

# Not Valid After: Sat Jul 19 09:06:56 2042

# Fingerprint (MD5): be:ec:11:93:9a:f5:69:21:bc:d7:c1:c0:67:89:cc:2a

# Fingerprint (SHA1): 8e:1c:74:f8:a6:20:b9:e5:8a:f4:61:fa:ec:2b:47:56:51:1a:52:c6

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "CA Disig Root R1"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\216\034\164\370\246\040\271\345\212\364\141\372\354\053\107\126
\121\032\122\306
```

END

CKA\_CERT\_MD5\_HASH

MULTILINE\_OCTAL

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\276\354\021\223\232\365\151\041\274\327\301\300\147\211\314\052
```

END

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\122\061\013\060\011\006\003\125\004\006\023\002\123\113\061
\023\060\021\006\003\125\004\007\023\012\102\162\141\164\151\163
\154\141\166\141\061\023\060\021\006\003\125\004\012\023\012\104
\151\163\151\147\040\141\056\163\056\061\031\060\027\006\003\125
\004\003\023\020\103\101\040\104\151\163\151\147\040\122\157\157
\164\040\122\061
```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

```
\002\011\000\303\003\232\356\120\220\156\050
```

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST



CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST  
CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR  
CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate  
# Certificate "Autoridad Certificadora Raíz Nacional de Uruguay"  
# Issuer: C=UY,O=AGESIC,CN=Autoridad  
Certificadora Raíz Nacional de Uruguay  
# Serial Number:02:ee:00:9b:66:d8:6a:1d:67:fe:da:8a:25:6f:21:5a:75:1b  
# Subject: C=UY,O=AGESIC,CN=Autoridad Certificadora Raíz Nacional de Uruguay  
# Not Valid Before: Thu Nov 03 15:02:49 2011  
# Not Valid After: Wed Oct 29 15:02:49 2031  
# Fingerprint (MD5): 7b:b7:e7:2e:64:18:e4:11:0c:f7:42:78:3e:65:a2:ae  
# Fingerprint (SHA1): 7a:1c:dd:e3:d2:19:7e:71:37:43:3d:3f:99:c0:b3:69:f7:06:c7:49

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE  
CKA\_TOKEN CK\_BBOOL CK\_TRUE  
CKA\_PRIVATE CK\_BBOOL CK\_FALSE  
CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE  
CKA\_LABEL UTF8 "Autoridad Certificadora Raíz Nacional de Uruguay"  
CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509  
CKA\_SUBJECT MULTILINE\_OCTAL  
\060\132\061\072\060\070\006\003\125\004\003\014\061\101\165\164  
\157\162\151\144\141\144\040\103\145\162\164\151\146\151\143\141  
\144\157\162\141\040\122\141\303\255\172\040\116\141\143\151\157  
\156\141\154\040\144\145\040\125\162\165\147\165\141\171\061\017  
\060\015\006\003\125\004\012\023\006\101\107\105\123\111\103\061  
\013\060\011\006\003\125\004\006\023\002\125\131  
END

CKA\_ID  
UTF8 "0"  
CKA\_ISSUER MULTILINE\_OCTAL  
\060\132\061\072\060\070\006\003\125\004\003\014\061\101\165\164  
\157\162\151\144\141\144\040\103\145\162\164\151\146\151\143\141  
\144\157\162\141\040\122\141\303\255\172\040\116\141\143\151\157  
\156\141\154\040\144\145\040\125\162\165\147\165\141\171\061\017  
\060\015\006\003\125\004\012\023\006\101\107\105\123\111\103\061  
\013\060\011\006\003\125\004\006\023\002\125\131  
END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL  
\002\022\002\356\000\233\146\330\152\035\147\376\332\212\045\157  
\041\132\165\033  
END

CKA\_VALUE MULTILINE\_OCTAL  
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\356\000\233\146\330\152\035\147\376\332\212\045\157\041\132\165  
\033\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000  
\060\132\061\072\060\070\006\003\125\004\003\014\061\101\165\164  
\157\162\151\144\141\144\040\103\145\162\164\151\146\151\143\141

\144\157\162\141\040\122\141\303\255\172\040\116\141\143\151\157  
\156\141\154\040\144\145\040\125\162\165\147\165\141\171\061\017  
\060\015\006\003\125\004\012\023\006\101\107\105\123\111\103\061  
\013\060\011\006\003\125\004\006\023\002\125\131\060\036\027\015  
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\060\070\006\003\125\004\003\014\061\101\165\164\157\162\151\144  
\141\144\040\103\145\162\164\151\146\151\143\141\144\157\162\141  
\040\122\141\303\255\172\040\116\141\143\151\157\156\141\154\040  
\144\145\040\125\162\165\147\165\141\171\061\017\060\015\006\003  
\125\004\012\023\006\101\107\105\123\111\103\061\013\060\011\006  
\003\125\004\006\023\002\125\131\060\202\002\040\060\015\006\011  
\052\206\110\206\367\015\001\001\001\005\000\003\202\002\015\000  
\060\202\002\010\002\202\002\001\000\227\304\037\052\104\241\201  
\113\110\221\165\335\353\332\217\312\033\213\362\264\074\054\306  
\345\364\301\036\321\270\060\023\157\134\237\345\121\226\177\032  
\244\026\376\322\324\035\045\366\320\346\067\140\137\000\243\031  
\251\354\047\277\120\055\005\240\134\136\223\353\343\150\375\233  
\075\271\024\066\055\347\045\025\020\220\032\222\311\021\261\051  
\227\223\126\125\142\255\107\254\177\325\014\167\226\322\223\150  
\152\061\335\124\357\223\362\012\117\240\137\002\132\357\266\104  
\076\347\231\262\216\105\336\240\367\300\350\110\260\107\354\336  
\102\024\333\065\173\240\151\374\036\300\001\051\026\332\063\241  
\041\241\062\062\020\166\175\250\307\300\056\163\203\144\374\132  
\367\233\066\214\151\355\040\125\043\171\315\363\363\154\153\140  
\134\170\215\374\075\205\054\274\251\367\160\350\245\312\115\330  
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\104\013\117\311\052\361\266\264\053\240\325\003\224\204\041\323  
\164\363\051\155\170\360\005\152\256\001\017\141\037\306\245\360  
\307\202\025\331\073\373\335\213\164\151\356\344\307\307\364\021  
\334\024\121\301\204\032\045\126\023\153\133\316\137\054\375\213  
\033\055\017\310\300\125\252\030\117\230\234\317\242\167\010\264  
\065\225\330\271\213\234\111\016\264\020\013\374\374\107\115\324  
\232\127\371\237\172\275\351\127\273\264\017\137\025\220\330\150  
\154\325\205\045\203\055\206\014\107\142\227\263\171\115\271\145  
\010\167\122\157\112\343\156\200\300\254\243\325\274\352\111\342  
\145\342\114\131\152\202\336\053\365\252\076\376\145\350\121\160  
\115\067\204\006\004\077\222\203\324\126\050\343\045\325\124\312  
\205\356\126\300\056\316\371\160\020\022\137\135\236\306\274\113  
\020\035\126\155\312\162\301\123\011\052\023\075\330\265\371\034  
\073\105\306\207\024\320\070\176\236\041\137\374\166\035\377\013  
\051\102\333\241\304\171\071\341\115\325\206\120\343\362\340\263  
\327\131\233\336\077\036\032\003\363\324\151\206\113\107\034\062  
\177\074\007\011\023\020\247\233\007\060\167\063\274\151\021\321  
\064\075\174\020\052\270\036\216\275\107\336\371\262\171\125\146  
\041\002\007\373\071\054\012\027\241\002\001\003\243\202\001\135  
\060\202\001\131\060\016\006\003\125\035\017\001\001\377\004\004  
\003\002\001\006\060\017\006\003\125\035\023\001\001\377\004\005

\060\003\001\001\377\060\142\006\003\125\035\037\004\133\060\131  
\060\054\240\052\240\050\206\046\150\164\164\160\072\057\057\167  
\167\167\056\141\147\145\163\151\143\056\147\165\142\056\165\171  
\057\141\143\162\156\057\141\143\162\156\056\143\162\154\060\051  
\240\047\240\045\206\043\150\164\164\160\072\057\057\167\167\167  
\056\165\143\145\056\147\165\142\056\165\171\057\141\143\162\156  
\057\141\143\162\156\056\143\162\154\060\201\262\006\003\125\035  
\040\004\201\252\060\201\247\060\134\006\013\140\206\132\204\342  
\256\035\204\210\005\000\060\115\060\113\006\010\053\006\001\005  
\005\007\002\001\026\077\150\164\164\160\072\057\057\167\167\167  
\056\165\143\145\056\147\165\142\056\165\171\057\151\156\146\157  
\162\155\141\143\151\157\156\055\164\145\143\156\151\143\141\057  
\160\157\154\151\164\151\143\141\163\057\143\160\137\141\143\162  
\156\056\160\144\146\060\107\006\013\140\206\132\204\342\256\035  
\204\210\005\001\060\070\060\066\006\010\053\006\001\005\005\007  
\002\001\026\052\150\164\164\160\072\057\057\167\167\167\056\141  
\147\145\163\151\143\056\147\165\142\056\165\171\057\141\143\162  
\156\057\143\160\163\137\141\143\162\156\056\160\144\146\060\035  
\006\003\125\035\016\004\026\004\024\222\236\221\270\125\050\075  
\167\102\054\063\245\230\137\320\311\254\215\265\243\060\015\006  
\011\052\206\110\206\367\015\001\001\013\005\000\003\202\002\001  
\000\135\347\253\131\352\111\334\277\106\103\375\224\273\230\160  
\224\024\372\316\003\135\361\175\061\023\222\116\205\044\060\024  
\153\154\323\347\316\346\171\325\333\116\125\116\027\053\327\223  
\105\337\023\014\047\147\035\307\102\220\124\060\306\361\250\151  
\050\264\116\246\155\245\065\246\120\226\150\111\243\356\057\013  
\253\374\003\002\120\150\361\225\051\076\161\054\334\332\345\055  
\331\166\056\356\126\063\176\027\241\047\002\341\241\047\050\041  
\212\277\001\347\142\307\273\262\045\004\332\033\246\043\214\174  
\223\272\311\213\353\012\371\067\267\224\071\375\115\217\176\242  
\334\201\157\033\255\024\017\133\040\003\170\101\163\147\236\322  
\227\027\220\052\212\124\113\247\171\177\044\022\221\237\073\054  
\307\067\244\014\134\162\152\023\236\062\011\047\353\103\062\165  
\137\327\107\303\052\105\123\025\126\166\117\273\011\350\204\140  
\021\357\163\325\347\120\156\151\050\375\353\306\313\312\116\023  
\143\015\016\067\054\061\037\333\247\130\240\262\375\015\027\207  
\263\222\256\033\050\200\037\266\222\176\206\021\341\366\114\230  
\177\146\213\037\023\111\003\102\374\373\230\234\356\206\226\251  
\056\005\176\160\034\301\167\310\351\135\202\270\016\316\133\144  
\005\143\356\077\006\055\066\014\351\037\162\133\036\254\335\046  
\365\034\070\156\375\214\075\115\206\353\047\313\312\003\215\100  
\363\052\321\212\330\064\016\302\255\265\210\355\207\232\212\205  
\242\207\357\351\271\070\347\150\226\243\001\317\202\075\034\113  
\050\235\047\365\371\231\226\173\110\375\254\320\360\062\367\070  
\004\335\115\231\256\016\222\202\303\372\074\033\023\307\150\267  
\135\340\223\106\270\270\270\244\014\304\033\306\272\106\226\335  
\236\125\017\107\235\366\201\245\254\145\131\330\335\256\006\154  
\340\103\202\306\147\330\160\002\065\365\066\004\343\112\071\251

```
\165\002\036\346\077\106\317\234\054\036\204\210\027\252\046\251
\246\103\200\340\300\133\243\144\203\233\232\355\153\001\145\266
\301\075\030\354\223\031\146\224\250\323\021\120\231\172\210\175
\257\076\177\224\220\073\012\303\152\267\215\137\322\247\121\321
\062\037\271\362\062\175\167\223\155\103\354\101\151\253\317\311
\141
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "Autoridad Certificadora Raíz Nacional de Uruguay"

# Issuer: C=UY,O=AGESIC,CN=Autoridad Certificadora Raíz Nacional de Uruguay

# Serial Number:02:ee:00:9b:66:d8:6a:1d:67:fe:da:8a:25:6f:21:5a:75:1b

# Subject: C=UY,O=AGESIC,CN=Autoridad Certificadora

Raíz Nacional de Uruguay

# Not Valid Before: Thu Nov 03 15:02:49 2011

# Not Valid After: Wed Oct 29 15:02:49 2031

# Fingerprint (MD5): 7b:b7:e7:2e:64:18:e4:11:0c:f7:42:78:3e:65:a2:ae

# Fingerprint (SHA1): 7a:1c:dd:e3:d2:19:7e:71:37:43:3d:3f:99:c0:b3:69:f7:06:c7:49

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Autoridad Certificadora Raíz Nacional de Uruguay"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\172\034\335\343\322\031\176\161\067\103\075\077\231\300\263\151
\367\006\307\111
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\173\267\347\056\144\030\344\021\014\367\102\170\076\145\242\256
```

END

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\132\061\072\060\070\006\003\125\004\003\014\061\101\165\164
\157\162\151\144\141\144\040\103\145\162\164\151\146\151\143\141
\144\157\162\141\040\122\141\303\255\172\040\116\141\143\151\157
\156\141\154\040\144\145\040\125\162\165\147\165\141\171\061\017
\060\015\006\003\125\004\012\023\006\101\107\105\123\111\103\061
\013\060\011\006\003\125\004\006\023\002\125\131
```

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

```
\002\022\002\356\000\233\146\330\152\035\147\376\332\212\045\157
\041\132\165\033
```

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST  
CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR  
CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate  
# Certificate "ApplicationCA2 Root"  
# Issuer: CN=ApplicationCA2 Root,OU=GPKI,O=Japanese Government,C=JP  
# Serial Number:31:32:35:33:37:32:38:32:38:32:38  
# Subject: CN=ApplicationCA2 Root,OU=GPKI,O=Japanese Government,C=JP  
# Not Valid Before: Tue Mar 12 15:00:00 2013  
# Not Valid After: Sat Mar 12 15:00:00 2033  
# Fingerprint (MD5): 7b:4c:15:74:3b:54:96:07:aa:95:3b:60:10:23:cf:f3  
# Fingerprint (SHA1): f0:0f:c3:7d:6a:1c:92:61:fb:6b:c1:c2:18:49:8c:5a:a4:dc:51:fb

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE  
CKA\_TOKEN CK\_BBOOL  
CK\_TRUE  
CKA\_PRIVATE CK\_BBOOL CK\_FALSE  
CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE  
CKA\_LABEL UTF8 "ApplicationCA2 Root"  
CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509  
CKA\_SUBJECT MULTILINE\_OCTAL  
\060\130\061\013\060\011\006\003\125\004\006\023\002\112\120\061  
\034\060\032\006\003\125\004\012\023\023\112\141\160\141\156\145  
\163\145\040\107\157\166\145\162\156\155\145\156\164\061\015\060  
\013\006\003\125\004\013\023\004\107\120\113\111\061\034\060\032  
\006\003\125\004\003\023\023\101\160\160\154\151\143\141\164\151  
\157\156\103\101\062\040\122\157\157\164  
END

CKA\_ID UTF8 "0"  
CKA\_ISSUER MULTILINE\_OCTAL  
\060\130\061\013\060\011\006\003\125\004\006\023\002\112\120\061  
\034\060\032\006\003\125\004\012\023\023\112\141\160\141\156\145  
\163\145\040\107\157\166\145\162\156\155\145\156\164\061\015\060  
\013\006\003\125\004\013\023\004\107\120\113\111\061\034\060\032  
\006\003\125\004\003\023\023\101\160\160\154\151\143\141\164\151  
\157\156\103\101\062\040\122\157\157\164  
END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL  
\002\013\061\062\065\063\067\062\070\062\070\062\070  
END

CKA\_VALUE  
MULTILINE\_OCTAL  
\060\202\003\367\060\202\002\337\240\003\002\001\002\002\013\061  
\062\065\063\067\062\070\062\070\062\070\060\015\006\011\052\206  
\110\206\367\015\001\001\013\005\000\060\130\061\013\060\011\006  
\003\125\004\006\023\002\112\120\061\034\060\032\006\003\125\004  
\012\023\023\112\141\160\141\156\145\163\145\040\107\157\166\145  
\162\156\155\145\156\164\061\015\060\013\006\003\125\004\013\023

\004\107\120\113\111\061\034\060\032\006\003\125\004\003\023\023  
\101\160\160\154\151\143\141\164\151\157\156\103\101\062\040\122  
\157\157\164\060\036\027\015\061\063\060\063\061\062\061\065\060  
\060\060\060\132\027\015\063\063\060\063\061\062\061\065\060\060  
\060\060\132\060\130\061\013\060\011\006\003\125\004\006\023\002  
\112\120\061\034\060\032\006\003\125\004\012\023\023\112\141\160  
\141\156\145\163\145\040\107\157\166\145\162\156\155\145\156\164  
\061\015\060\013\006\003\125\004\013\023\004\107\120\113\111\061  
\034\060\032\006\003\125\004\003\023\023\101\160\160\154\151\143  
\141\164\151\157\156\103\101\062\040\122\157\157\164\060\202\001  
\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000  
\003\202\001\017\000\060\202\001\012\002\202\001\001\000\246\252  
\255\045\145\326\000\021\326\350\172\166\252\364\346\264\113\363  
\314\303\122\264\215\254\246\117\265\222\161\157\106\265\325\255  
\213\022\042\027\045\316\105\350\024\172\205\232\344\043\020\250  
\372\261\147\120\345\155\107\340\152\211\023\343\256\256\065\361  
\364\102\305\005\367\115\227\176\074\050\374\260\046\221\036\214  
\036\070\032\226\334\130\104\227\142\343\062\310\321\025\101\115  
\165\230\170\276\253\150\251\136\355\107\276\244\272\216\241\002  
\227\336\223\164\231\155\147\264\005\045\356\224\310\355\252\244  
\272\062\154\102\021\353\276\313\027\006\220\341\223\205\310\144  
\050\316\037\107\307\300\135\140\356\166\066\334\063\073\121\353  
\173\317\162\330\017\170\250\031\202\010\220\076\032\230\215\216  
\264\317\025\066\246\156\335\267\342\115\100\040\123\331\166\052  
\320\170\254\211\360\117\213\062\155\104\352\056\272\260\251\353  
\211\335\267\157\171\017\253\201\156\270\346\213\051\013\131\257  
\266\111\015\121\054\251\375\235\050\143\146\270\160\225\163\232  
\330\372\073\063\274\102\102\033\062\254\261\062\373\075\002\003  
\001\000\001\243\201\301\060\201\276\060\035\006\003\125\035\016  
\004\026\004\024\126\247\254\252\002\035\262\254\075\220\016\240  
\157\056\101\306\166\347\173\332\060\016\006\003\125\035\017\001  
\001\377\004\004\003\002\001\006\060\174\006\003\125\035\021\004  
\165\060\163\244\161\060\157\061\013\060\011\006\003\125\004\006  
\023\002\112\120\061\030\060\026\006\003\125\004\012\014\017\346  
\227\245\346\234\254\345\233\275\346\224\277\345\272\234\061\033  
\060\031\006\003\125\004\013\014\022\346\224\277\345\272\234\350  
\252\215\350\250\274\345\237\272\347\233\244\061\051\060\047\006  
\003\125\004\003\014\040\343\202\242\343\203\227\343\203\252\343  
\202\261\343\203\274\343\202\267\343\203\247\343\203\263\103\101  
\062\040\122\157\157\164\060\017\006\003\125\035\023\001\001\377  
\004\005\060\003\001\001\377\060\015\006\011\052\206\110\206\367  
\015\001\001\013\005\000\003\202\001\001\000\177\232\011\165\254  
\007\321\162\164\056\167\127\060\302\004\234\324\200\246\203\347  
\245\240\033\237\376\253\363\200\275\325\112\243\241\217\266\114  
\140\021\347\312\341\140\201\327\110\301\040\131\245\141\062\213  
\235\236\227\323\146\203\332\145\056\130\076\333\345\057\245\315  
\214\163\246\121\276\130\050\240\171\134\151\057\103\337\143\262  
\211\107\312\273\336\271\064\021\143\240\016\045\027\345\207\364

```
\035\260\260\245\317\101\250\164\306\350\123\325\102\364\202\055
\123\011\021\150\046\161\224\165\023\115\252\166\210\074\164\261
\326\343\114\117\142\303\111\114\116\155\361\160\176\303\177\246
\005\314\170\233\351\201\333\250\310\307\134\236\374\222\222\055
\246\227\362\070\265\156\163\225\014\300\077\316\246\224\060\265
\372\005\267\336\236\040\252\374\023\144\311\212\272\144\357\342
\143\344\330\230\256\153\265\076\246\125\270\063\076\054\162\373
\054\021\000\373\133\026\057\204\322\023\236\372\005\305\301\313
\162\116\042\335\204\312\113\274\322\055\206\032\004\166\131\037
\111\102\142\073\023\037\026\350\272\327\375
```

END

CKA\_NSS\_Mozilla\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "ApplicationCA2 Root"

# Issuer: CN=ApplicationCA2 Root,OU=GPKI,O=Japanese Government,C=JP

# Serial Number:31:32:35:33:37:32:38:32:38:32:38

# Subject: CN=ApplicationCA2 Root,OU=GPKI,O=Japanese Government,C=JP

# Not Valid Before: Tue Mar 12 15:00:00 2013

# Not Valid After: Sat Mar 12 15:00:00 2033

# Fingerprint (MD5): 7b:4c:15:74:3b:54:96:07:aa:95:3b:60:10:23:cf:f3

# Fingerprint (SHA1): f0:0f:c3:7d:6a:1c:92:61:fb:6b:c1:c2:18:49:8c:5a:a4:dc:51:fb

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL

UTF8 "ApplicationCA2 Root"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\360\017\303\175\152\034\222\141\373\153\301\302\030\111\214\132
\244\334\121\373
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\173\114\025\164\073\124\226\007\252\225\073\140\020\043\317\363
```

END

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\130\061\013\060\011\006\003\125\004\006\023\002\112\120\061
\034\060\032\006\003\125\004\012\023\023\112\141\160\141\156\145
\163\145\040\107\157\166\145\162\156\155\145\156\164\061\015\060
\013\006\003\125\004\013\023\004\107\120\113\111\061\034\060\032
\006\003\125\004\003\023\023\101\160\160\154\151\143\141\164\151
\157\156\103\101\062\040\122\157\157\164
```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

```
\002\013\061\062\065\063\067\062\070\062\070\062\070
```

```
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
# Microsoft Code Signing
```

```
Only Certificate
```

```
# Certificate "ADOCA02"
```

```
# Issuer: CN=ADOCA02,OU=CAs,OU=PKI,OU=DoD,O=GOV,C=AU
```

```
# Serial Number: 1813 (0x715)
```

```
# Subject: CN=ADOCA02,OU=CAs,OU=PKI,OU=DoD,O=GOV,C=AU
```

```
# Not Valid Before: Thu Sep 01 04:26:07 2011
```

```
# Not Valid After: Sun Jan 27 02:31:24 2019
```

```
# Fingerprint (MD5): c4:4f:6a:cd:50:fd:44:c4:36:e0:b3:38:d3:7c:c0:97
```

```
# Fingerprint (SHA1): 84:42:9d:9f:e2:e7:3a:0d:c8:aa:0a:e0:a9:02:f2:74:99:33:fe:02
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "ADOCA02"
```

```
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
```

```
CKA_SUBJECT MULTILINE_OCTAL
```

```
\060\127\061\013\060\011\006\003\125\004\006\023\002\101\125\061
\014\060\012\006\003\125\004\012\023\003\107\117\126\061\014\060
\012\006\003\125\004\013\023\003\104\157\104\061\014\060\012\006
\003\125\004\013\023\003\120\113\111\061\014\060\012\006\003\125
\004\013\023\003\103\101\163\061\020\060\016\006\003\125\004\003
\023\007\101\104\117\103\101\060\062
```

```
END
```

```
CKA_ID
```

```
UTF8 "0"
```

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\127\061\013\060\011\006\003\125\004\006\023\002\101\125\061
\014\060\012\006\003\125\004\012\023\003\107\117\126\061\014\060
\012\006\003\125\004\013\023\003\104\157\104\061\014\060\012\006
\003\125\004\013\023\003\120\113\111\061\014\060\012\006\003\125
\004\013\023\003\103\101\163\061\020\060\016\006\003\125\004\003
\023\007\101\104\117\103\101\060\062
```

```
END
```

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
```

```
\002\002\007\025
```

```
END
```

```
CKA_VALUE MULTILINE_OCTAL
```

```
\060\202\003\331\060\202\002\301\240\003\002\001\002\002\002\007
\025\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000
\060\127\061\013\060\011\006\003\125\004\006\023\002\101\125\061
\014\060\012\006\003\125\004\012\023\003\107\117\126\061\014\060
```



\012\006\003\125\004\013\023\003\104\157\104\061\014\060\012\006  
\003\125\004\013\023\003\120\113\111\061\014\060\012\006\003\125  
\004\013\023\003\103\101\163\061\020\060\016\006\003\125\004\003  
\023\007\101\104\117\103\101\060\062\060\036\027\015\061\061\060  
\071\060\061\060\064\062\066\060\067\132\027\015\061\071\060\061  
\062\067\060\062\063\061\062\064\132\060\127\061\013\060\011\006  
\003\125\004\006\023\002\101\125\061\014\060\012\006\003\125\004  
\012\023\003\107\117\126\061\014\060\012\006\003\125\004\013\023  
\003\104\157\104\061\014\060\012\006\003\125\004\013\023\003\120  
\113\111\061\014\060\012\006\003\125\004\013\023\003\103\101\163  
\061\020\060\016\006\003\125\004\003\023\007\101\104\117\103\101  
\060\062\060\202\001\042\060\015\006\011\052\206\110\206\367\015  
\001\001\001\005\000\003\202\001\017\000\060\202\001\012\002\202  
\001\001\000\344\120\205\110\167\217\276\377\111\321\273\165\256  
\207\040\012\226\101\045\053\274\106\007\335\313\004\206\225\054  
\111\056\275\106\014\016\367\130\240\140\026\205\332\135\073\343  
\165\136\102\175\144\154\217\301\135\051\144\101\262\205\267\033  
\106\275\205\332\327\072\035\262\264\361\112\075\376\036\332\310  
\356\206\235\243\152\121\013\344\105\230\257\330\033\110\274\074  
\024\042\355\053\237\073\177\157\063\074\326\175\254\340\171\117  
\277\145\223\313\027\052\157\274\172\017\351\133\137\341\014\052  
\373\100\122\066\112\135\145\070\313\131\301\110\263\244\221\205  
\026\135\170\175\302\317\055\063\356\131\112\310\346\141\263\206  
\037\204\310\270\032\154\236\321\140\264\202\065\353\275\043\250  
\057\223\124\120\316\044\136\061\256\323\152\064\054\141\207\067  
\106\036\103\211\306\200\313\042\003\323\311\205\056\037\233\261  
\254\071\113\115\140\362\212\141\033\377\203\261\054\163\217\210  
\102\300\055\261\312\236\300\225\147\164\173\226\344\152\172\216  
\101\105\240\064\363\316\270\347\342\217\363\120\125\144\157\271  
\040\053\223\002\003\001\000\001\243\201\256\060\201\253\060\014  
\006\003\125\035\023\004\005\060\003\001\001\377\060\113\006\003  
\125\035\040\004\104\060\102\060\070\006\011\052\044\001\202\116  
\001\001\001\001\060\053\060\051\006\010\053\006\001\005\005\007  
\002\001\026\035\150\164\164\160\072\057\057\167\167\167\056\144  
\145\146\145\156\143\145\056\147\157\166\056\141\165\057\160\153  
\151\060\006\006\004\125\035\040\000\060\016\006\003\125\035\017  
\001\001\377\004\004\003\002\001\306\060\037\006\003\125\035\043  
\004\030\060\026\200\024\351\347\235\353\065\275\270\262\053\111  
\130\364\274\222\175\213\161\212\021\132\060\035\006\003\125\035  
\016\004\026\004\024\351\347\235\353\065\275\270\262\053\111\130  
\364\274\222\175\213\161\212\021\132\060\015\006\011\052\206\110  
\206\367\015\001\001\005\005\000\003\202\001\001\000\126\320\250  
\310\154\311\264\254\361\073\201\165\053\021\304\366\126\264\127  
\256\302\222\031\134\226\163\012\355\056\103\234\144\052\131\170  
\023\265\120\214\116\152\220\124\363\031\076\026\030\317\103\023  
\311\062\163\370\125\340\312\320\222\031\076\145\243\336\200\022  
\034\121\245\030\054\300\151\335\267\206\062\257\360\255\317\340  
\303\043\304\345\374\266\077\013\005\327\226\072\144\136\167\214

```
\204\316\361\334\315\004\012\334\227\361\041\034\307\175\060\045
\135\327\040\065\225\303\207\035\266\077\333\123\342\052\244\370
\031\027\072\014\025\356\263\005\070\061\356\105\161\335\227\373
\170\161\206\002\364\237\064\031\163\111\020\053\240\177\361\311
\372\240\362\130\043\061\026\370\020\120\202\273\135\322\352\357
\151\335\147\166\125\070\307\250\016\003\200\070\117\000\040\153
\337\053\145\223\333\010\257\140\154\064\040\250\255\110\077\020
\176\246\303\224\001\225\341\201\054\240\355\214\256\124\116\072
\113\303\322\302\317\176\002\174\357\052\054\273\354\332\336\305
\001\257\224\111\355\017\302\277\016\220\151\055\153
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "ADOCA02"

# Issuer: CN=ADOCA02,OU=CAs,OU=PKI,OU=DoD,O=GOV,C=AU

# Serial Number: 1813 (0x715)

# Subject: CN=ADOCA02,OU=CAs,OU=PKI,OU=DoD,O=GOV,C=AU

# Not Valid Before: Thu Sep 01 04:26:07 2011

# Not Valid After: Sun Jan 27 02:31:24 2019

# Fingerprint (MD5): c4:4f:6a:cd:50:fd:44:c4:36:e0:b3:38:d3:7c:c0:97

#

Fingerprint (SHA1): 84:42:9d:9f:e2:e7:3a:0d:c8:aa:0a:e0:a9:02:f2:74:99:33:fe:02

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "ADOCA02"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\204\102\235\237\342\347\072\015\310\252\012\340\251\002\362\164
\231\063\376\002
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\304\117\152\315\120\375\104\304\066\340\263\070\323\174\300\227
```

END

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\127\061\013\060\011\006\003\125\004\006\023\002\101\125\061
\014\060\012\006\003\125\004\012\023\003\107\117\126\061\014\060
\012\006\003\125\004\013\023\003\104\157\104\061\014\060\012\006
\003\125\004\013\023\003\120\113\111\061\014\060\012\006\003\125
\004\013\023\003\103\101\163\061\020\060\016\006\003\125\004\003
\023\007\101\104\117\103\101\060\062
```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

```
\002\002\007\025
```

```
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION
CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
# Microsoft Code Signing Only Certificate
# Certificate "StartCom Certification Authority G2"
# Issuer: CN=StartCom Certification Authority G2,O=StartCom Ltd.,C=IL
# Serial Number: 59 (0x3b)
# Subject: CN=StartCom Certification Authority G2,O=StartCom Ltd.,C=IL
# Not Valid Before: Fri Jan 01 01:00:01 2010
# Not Valid After: Sat Dec 31 23:59:01 2039
# Fingerprint (MD5): 78:4b:fb:9e:64:82:0a:d3:b8:4c:62:f3:64:f2:90:64
# Fingerprint (SHA1): 31:f1:fd:68:22:63:20:ee:c6:3b:3f:9d:ea:4a:3e:53:7c:7c:39:17
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "StartCom Certification Authority G2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\123\061\013\060\011\006\003\125\004\006\023\002\111\114\061
\026\060\024\006\003\125\004\012\023\015\123\164\141\162\164\103
\157\155\040\114\164\144\056\061\054\060\052\006\003\125\004\003
\023\043\123\164\141\162\164\103\157\155\040\103\145\162\164\151
\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151
\164\171\040\107\062
```

```
END
```

```
CKA_ID
UTF8 "0"
```

```
CKA_ISSUER MULTILINE_OCTAL
\060\123\061\013\060\011\006\003\125\004\006\023\002\111\114\061
\026\060\024\006\003\125\004\012\023\015\123\164\141\162\164\103
\157\155\040\114\164\144\056\061\054\060\052\006\003\125\004\003
\023\043\123\164\141\162\164\103\157\155\040\103\145\162\164\151
\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151
\164\171\040\107\062
```

```
END
```

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\073
```

```
END
```

```
CKA_VALUE MULTILINE_OCTAL
\060\202\005\143\060\202\003\113\240\003\002\001\002\002\001\073
\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060
\123\061\013\060\011\006\003\125\004\006\023\002\111\114\061\026
\060\024\006\003\125\004\012\023\015\123\164\141\162\164\103\157
```

\155\040\114\164\144\056\061\054\060\052\006\003\125\004\003\023  
\043\123\164\141\162\164\103\157\155\040\103\145\162\164\151\146  
\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164  
\171\040\107\062\060\036\027\015\061\060\060\061\060\061\060\061  
\060\060\060\061\132\027\015\063\071\061\062\063\061\062\063\065  
\071\060\061\132\060\123\061\013\060\011\006\003\125\004\006\023  
\002\111\114\061\026\060\024\006\003\125\004\012\023\015\123\164  
\141\162\164\103\157\155\040\114\164\144\056\061\054\060\052\006  
\003\125\004\003\023\043\123\164\141\162\164\103\157\155\040\103  
\145\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164  
\150\157\162\151\164\171\040\107\062\060\202\002\042\060\015\006  
\011\052\206\110\206\367\015\001\001\001\005\000\003\202\002\017  
\000\060\202\002\012\002\202\002\001\000\266\211\066\133\007\267  
\040\066\275\202\273\341\026\040\003\225\172\257\016\243\125\311  
\045\231\112\305\320\126\101\207\220\115\041\140\244\024\207\073  
\315\375\262\076\264\147\003\152\355\341\017\113\300\221\205\160  
\105\340\102\236\336\051\043\324\001\015\240\020\171\270\333\003  
\275\363\251\057\321\306\340\017\313\236\212\024\012\270\275\366  
\126\142\361\305\162\266\062\045\331\262\363\275\145\305\015\054  
\156\325\222\157\030\213\000\101\024\202\157\100\040\046\172\050  
\017\365\036\177\047\367\224\261\067\075\267\307\221\367\342\001  
\354\375\224\211\341\314\156\323\066\326\012\031\171\256\327\064  
\202\145\377\174\102\273\266\335\013\246\064\257\113\140\376\177  
\103\111\006\213\214\103\270\126\362\331\177\041\103\027\352\247  
\110\225\001\165\165\352\053\245\103\225\352\025\204\235\010\215  
\046\156\125\233\253\334\322\071\322\061\035\140\342\254\314\126  
\105\044\365\034\124\253\356\206\335\226\062\205\370\114\117\350  
\225\166\266\005\335\066\043\147\274\377\025\342\312\073\346\246  
\354\073\354\046\021\064\110\215\366\200\053\032\043\002\353\212  
\034\072\166\052\173\126\026\034\162\052\263\252\343\140\245\000  
\237\004\233\342\157\036\024\130\133\245\154\213\130\074\303\272  
\116\072\134\367\341\226\053\076\357\007\274\244\345\135\314\115  
\237\015\341\334\252\273\341\156\032\354\217\341\266\114\115\171  
\162\135\027\065\013\035\327\301\107\332\226\044\340\320\162\250  
\132\137\146\055\020\334\057\052\023\256\046\376\012\034\031\314  
\320\076\013\234\310\011\056\371\133\226\172\107\234\351\172\363  
\005\120\164\225\163\236\060\011\363\227\202\136\346\217\071\010  
\036\131\345\065\024\102\023\377\000\234\367\276\252\120\317\342  
\121\110\327\270\157\257\370\116\176\063\230\222\024\142\072\165  
\143\317\173\372\336\202\073\251\273\071\342\304\275\054\000\016  
\310\027\254\023\357\115\045\216\330\263\220\057\251\332\051\175  
\035\257\164\072\262\047\300\301\036\076\165\243\026\251\257\172  
\042\135\237\023\032\317\247\240\353\343\206\012\323\375\346\226  
\225\327\043\310\067\335\304\174\252\066\254\230\032\022\261\340  
\116\350\261\073\365\326\157\361\060\327\002\003\001\000\001\243  
\102\060\100\060\017\006\003\125\035\023\001\001\377\004\005\060  
\003\001\001\377\060\016\006\003\125\035\017\001\001\377\004\004  
\003\002\001\006\060\035\006\003\125\035\016\004\026\004\024\113

\305\264\100\153\255\034\263\245\034\145\156\106\066\211\207\005  
\014\016\266\060\015\006\011\052\206\110\206\367\015\001\001\013  
\005\000\003\202\002\001\000\163\127\077\054\325\225\062\176\067  
\333\226\222\353\031\136\176\123\347\101\354\021\266\107\357\265  
\336\355\164\134\305\361\216\111\340\374\156\231\023\315\237\212  
\332\315\072\012\330\072\132\011\077\137\064\320\057\003\322\146  
\035\032\275\234\220\067\310\014\216\007\132\224\105\106\052\346  
\276\172\332\241\251\244\151\022\222\260\175\066\324\104\207\327  
\121\361\051\143\326\165\315\026\344\047\211\035\370\302\062\110  
\375\333\231\320\217\137\124\164\314\254\147\064\021\142\331\014  
\012\067\207\321\243\027\110\216\322\027\035\366\327\375\333\145  
\353\375\250\324\365\326\117\244\133\165\350\305\322\140\262\333  
\011\176\045\213\173\272\122\222\236\076\350\305\167\241\074\340  
\112\163\153\141\317\206\334\103\377\377\041\376\043\135\044\112  
\365\323\155\017\142\004\005\127\202\332\156\244\063\045\171\113  
\056\124\031\213\314\054\075\060\351\321\006\377\350\062\106\276  
\265\063\166\167\250\001\135\226\301\301\325\276\256\045\300\311  
\036\012\011\040\210\241\016\311\363\157\115\202\124\000\040\247  
\322\217\344\071\124\027\056\215\036\270\033\273\033\275\232\116  
\073\020\064\334\234\210\123\357\242\061\133\130\117\221\142\310  
\302\232\232\315\025\135\070\251\326\276\370\023\265\237\022\151  
\362\120\142\254\373\027\067\364\356\270\165\147\140\020\373\203  
\120\371\104\265\165\234\100\027\262\376\375\171\135\156\130\130  
\137\060\374\000\256\257\063\301\016\116\154\272\247\246\241\177  
\062\333\070\340\261\162\027\012\053\221\354\152\143\046\355\211  
\324\170\314\164\036\005\370\153\376\214\152\166\071\051\256\145  
\043\022\225\010\042\034\227\316\133\006\356\014\342\273\274\037  
\104\223\366\330\070\105\005\041\355\344\255\253\022\266\003\244  
\102\056\055\304\011\072\003\147\151\204\232\341\131\220\212\050  
\205\325\135\164\261\321\016\040\130\233\023\245\260\143\246\355  
\173\107\375\105\125\060\244\356\232\324\346\342\207\357\230\311  
\062\202\021\051\042\274\000\012\061\136\055\017\300\216\351\153  
\262\217\056\006\330\321\221\307\306\022\364\114\375\060\027\303  
\301\332\070\133\343\251\352\346\241\272\171\357\163\330\266\123  
\127\055\366\320\341\327\110

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "StartCom Certification Authority G2"

# Issuer: CN=StartCom Certification Authority G2,O=StartCom Ltd.,C=IL

# Serial Number: 59 (0x3b)

# Subject: CN=StartCom Certification Authority G2,O=StartCom Ltd.,C=IL

# Not Valid Before: Fri Jan 01 01:00:01 2010

# Not Valid After: Sat Dec 31 23:59:01 2039

```

# Fingerprint (MD5): 78:4b:fb:9e:64:82:0a:d3:b8:4c:62:f3:64:f2:90:64
# Fingerprint (SHA1): 31:f1:fd:68:22:63:20:ee:c6:3b:3f:9d:ea:4a:3e:53:7c:7c:39:17
CKA_CLASS
CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "StartCom Certification Authority G2"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\061\361\375\150\042\143\040\356\306\073\077\235\352\112\076\123
\174\174\071\027
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\170\113\373\236\144\202\012\323\270\114\142\363\144\362\220\144
END
CKA_ISSUER MULTILINE_OCTAL
\060\123\061\013\060\011\006\003\125\004\006\023\002\111\114\061
\026\060\024\006\003\125\004\012\023\015\123\164\141\162\164\103
\157\155\040\114\164\144\056\061\054\060\052\006\003\125\004\003
\023\043\123\164\141\162\164\103\157\155\040\103\145\162\164\151
\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151
\164\171\040\107\062
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\073
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED
CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "Symantec Class 3 Public Primary Certification Authority - G6"
# Issuer: CN=Symantec Class 3 Public Primary Certification Authority - G6,OU=Symantec Trust
Network,O=Symantec Corporation,C=US
# Serial Number:65:63:71:85:d3:6f:45:c6:8f:7f:31:f9:09:87:92:82
# Subject: CN=Symantec Class 3 Public Primary Certification Authority - G6,OU=Symantec Trust
Network,O=Symantec Corporation,C=US
# Not Valid Before: Thu Oct 18 00:00:00 2012
# Not Valid After: Tue Dec 01 23:59:59 2037
# Fingerprint (MD5): 8d:d1:96:24:c4:4c:8f:5d:26:f4:6c:8d:52:41:1a:c6
# Fingerprint (SHA1): 26:a1:6c:23:5a:24:72:22:9b:23:62:80:25:bc:80:97:c8:85:24:a1
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Symantec Class 3 Public Primary Certification Authority - G6"

```

```
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE
CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\224\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\035\060\033\006\003\125\004\012\023\024\123\171\155\141\156
\164\145\143\040\103\157\162\160\157\162\141\164\151\157\156\061
\037\060\035\006\003\125\004\013\023\026\123\171\155\141\156\164
\145\143\040\124\162\165\163\164\040\116\145\164\167\157\162\153
\061\105\060\103\006\003\125\004\003\023\074\123\171\155\141\156
\164\145\143\040\103\154\141\163\163\040\063\040\120\165\142\154
\151\143\040\120\162\151\155\141\162\171\040\103\145\162\164\151
\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151
\164\171\040\055\040\107\066
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\224\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\035\060\033\006\003\125\004\012\023\024\123\171\155\141\156
\164\145\143\040\103\157\162\160\157\162\141\164\151\157\156\061
\037\060\035\006\003\125\004\013\023\026\123\171\155\141\156\164
\145\143\040\124\162\165\163\164\040\116\145\164\167\157\162\153
\061\105\060\103\006\003\125\004\003\023\074\123\171\155\141\156
\164\145\143\040\103\154\141\163\163\040\063\040\120\165\142\154
\151\143\040\120\162\151\155\141\162\171\040\103\145\162\164\151
\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151
\164\171\040\055\040\107\066
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\145\143\161\205\323\157\105\306\217\177\061\371\011\207
\222\202
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\366\060\202\003\336\240\003\002\001\002\002\020\145
\143\161\205\323\157\105\306\217\177\061\371\011\207\222\202\060
\015\006\011\052\206\110\206\367\015\001\001\014\005\000\060\201
\224\061\013\060\011\006\003\125\004\006\023\002\125\123\061\035
\060\033\006\003\125\004\012\023\024\123\171\155\141\156\164\145
\143\040\103\157\162\160\157\162\141\164\151\157\156\061\037\060
\035\006\003\125\004\013\023\026\123\171\155\141\156\164\145\143
\040\124\162\165\163\164\040\116\145\164\167\157\162\153\061\105
\060\103\006\003\125\004\003\023\074\123\171\155\141\156\164\145
\143\040\103\154\141\163\163\040\063\040\120\165\142\154\151\143
\040\120\162\151\155\141\162\171\040\103\145\162\164\151\146\151
\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171
\040\055\040\107\066\060\036\027\015\061\062\061\060\061\070\060
\060\060\060\060\060\132\027\015\063\067\061\062\060\061\062\063
\065\071\065\071\132\060\201\224\061\013\060\011\006\003\125\004
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\006\023\002\125\123\061\035\060\033\006\003\125\004\012\023\024  
\123\171\155\141\156\164\145\143\040\103\157\162\160\157\162\141  
\164\151\157\156\061\037\060\035\006\003\125\004\013\023\026\123  
\171\155\141\156\164\145\143\040\124\162\165\163\164\040\116\145  
\164\167\157\162\153\061\105\060\103\006\003\125\004\003\023\074  
\123\171\155\141\156\164\145\143\040\103\154\141\163\163\040\063  
\040\120\165\142\154\151\143\040\120\162\151\155\141\162\171\040  
\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101\165  
\164\150\157\162\151\164\171\040\055\040\107\066\060\202\002\042  
\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003  
\202\002\017\000\060\202\002\012\002\202\002\001\000\267\016\262  
\372\115\274\232\162\025\373\167\133\333\375\103\017\313\013\367  
\140\056\263\053\176\014\273\123\362\314\116\145\363\031\273\377  
\065\035\367\323\251\273\100\055\265\335\170\324\246\371\067\352  
\205\005\173\155\267\346\023\113\006\174\373\166\143\217\040\035  
\055\070\053\004\205\362\350\260\321\137\115\112\041\311\152\330  
\224\352\036\002\120\246\252\220\007\240\107\041\352\146\371\004  
\240\346\203\360\304\365\136\226\342\047\115\141\303\263\301\214  
\042\266\146\241\000\321\126\051\373\355\301\177\044\312\075\372  
\132\224\260\204\303\307\272\103\034\375\144\016\361\050\373\107  
\131\362\046\341\061\271\104\371\253\335\373\276\276\054\067\343  
\254\013\030\323\374\001\242\361\244\012\065\202\107\114\253\275  
\212\136\337\023\205\374\040\314\110\131\257\257\101\157\313\043  
\315\312\223\247\335\325\137\310\144\073\377\001\003\240\012\117  
\055\156\075\204\276\257\310\062\262\123\051\220\025\367\260\005  
\232\012\074\366\271\006\220\311\245\341\135\240\073\260\376\250  
\266\277\365\211\050\127\044\072\041\206\161\344\334\212\213\101  
\125\354\036\060\044\131\321\300\131\270\170\257\252\132\164\336  
\045\200\060\230\355\060\104\157\041\160\034\333\022\123\016\326  
\246\050\146\223\054\037\314\117\074\033\201\305\271\366\170\157  
\320\062\072\010\162\333\153\016\106\027\205\224\363\274\357\274  
\367\244\136\216\351\351\265\144\345\267\113\105\022\054\114\067  
\267\140\103\012\115\161\006\000\224\046\065\164\037\273\172\071  
\134\116\073\346\270\003\342\307\223\213\204\054\045\111\105\335  
\177\043\224\140\037\313\351\315\366\253\227\367\141\347\373\177  
\142\201\310\334\012\060\134\030\174\346\316\357\307\156\036\207  
\174\263\351\312\310\173\152\364\150\374\203\245\014\126\264\272  
\262\215\112\012\307\227\227\305\210\060\025\075\020\010\124\025  
\162\162\147\063\063\364\174\267\316\000\047\123\145\316\044\361  
\132\144\347\066\057\362\056\002\302\227\337\162\350\002\036\240  
\367\075\265\373\150\140\003\372\063\251\346\022\155\006\341\251  
\250\135\116\074\376\331\347\000\145\254\266\031\115\173\203\177  
\064\107\352\341\030\155\261\213\034\171\253\347\235\002\003\001  
\000\001\243\102\060\100\060\016\006\003\125\035\017\001\001\377  
\004\004\003\002\001\006\060\017\006\003\125\035\023\001\001\377  
\004\005\060\003\001\001\377\060\035\006\003\125\035\016\004\026  
\004\024\071\161\010\000\076\336\310\206\347\220\377\344\375\041  
\017\316\044\031\026\366\060\015\006\011\052\206\110\206\367\015



\001\001\014\005\000\003\202\002\001\000\120\153\210\115\140\110  
\316\132\343\042\316\147\174\204\247\315\034\375\351\014\003\214  
\066\257\012\207\016\152\256\127\256\001\320\066\273\362\375\271  
\163\301\137\265\250\256\114\242\372\111\313\007\106\026\066\275  
\343\310\127\070\176\070\344\277\045\063\140\306\334\067\234\143  
\273\136\230\036\032\262\202\360\256\246\167\021\200\104\107\241  
\051\305\360\263\072\316\230\360\270\354\323\016\200\006\167\043  
\060\114\377\171\144\143\042\133\167\223\103\113\165\263\333\073  
\156\073\112\335\361\310\256\265\067\212\225\210\072\020\150\160  
\070\271\133\160\176\325\103\311\374\137\117\345\346\173\066\356  
\360\040\355\107\127\023\046\020\136\024\006\015\173\166\007\302  
\306\055\026\364\256\247\154\017\274\210\017\117\054\002\266\243  
\327\042\346\231\107\065\330\215\245\117\201\022\072\021\175\263  
\314\013\165\363\036\160\243\033\003\352\372\232\350\346\056\066  
\071\314\231\316\072\077\014\267\256\370\103\231\260\223\156\157  
\252\331\017\152\061\221\273\234\323\264\050\373\203\114\172\163  
\202\120\147\322\016\254\355\140\305\262\135\065\230\317\207\176  
\036\131\035\044\274\126\272\332\244\132\330\314\346\274\036\020  
\217\033\214\216\363\301\333\267\276\324\260\133\145\217\026\150  
\363\126\305\052\031\026\115\017\270\145\207\155\044\203\270\142  
\334\340\107\141\032\210\173\316\116\177\375\334\306\015\132\232  
\244\363\265\114\366\335\061\246\350\035\021\041\063\060\004\141  
\175\034\340\076\117\215\077\265\213\022\000\132\175\251\241\000  
\324\203\353\160\273\030\370\244\322\034\201\055\267\010\021\310  
\046\173\266\324\345\017\003\106\162\324\045\100\036\276\111\135  
\155\223\361\134\262\073\165\124\151\072\240\356\114\042\272\254  
\232\342\010\255\105\143\005\112\122\065\166\304\064\365\136\007  
\062\255\334\174\046\321\133\217\255\344\346\252\033\165\237\353  
\135\264\350\300\251\025\174\116\112\007\162\337\106\311\324\221  
\222\165\126\260\341\356\067\066\145\050\305\025\310\053\166\314  
\155\157\031\203\364\375\332\025\342\101\347\063\171\106\203\127  
\371\361\245\266\155\323\274\327\123\347\356\161\155\170\251\227  
\247\356\040\234\031\025\162\025\075\004

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "Symantec Class 3 Public Primary Certification Authority - G6"

# Issuer: CN=Symantec Class 3 Public Primary Certification Authority

- G6,OU=Symantec Trust Network,O=Symantec Corporation,C=US

# Serial Number:65:63:71:85:d3:6f:45:c6:8f:7f:31:f9:09:87:92:82

# Subject: CN=Symantec Class 3 Public Primary Certification Authority - G6,OU=Symantec Trust  
Network,O=Symantec Corporation,C=US

# Not Valid Before: Thu Oct 18 00:00:00 2012

# Not Valid After: Tue Dec 01 23:59:59 2037

```

# Fingerprint (MD5): 8d:d1:96:24:c4:4c:8f:5d:26:f4:6c:8d:52:41:1a:c6
# Fingerprint (SHA1): 26:a1:6c:23:5a:24:72:22:9b:23:62:80:25:bc:80:97:c8:85:24:a1
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Symantec Class 3 Public Primary Certification Authority - G6"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\046\241\154\043\132\044\162\042\233\043\142\200\045\274\200\227
\310\205\044\241
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\215\321\226\044\304\114\217\135\046\364\154\215\122\101\032\306
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\224\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\035\060\033\006\003\125\004\012\023\024\123\171\155\141\156
\164\145\143\040\103\157\162\160\157\162\141\164\151\157\156\061
\037\060\035\006\003\125\004\013\023\026\123\171\155\141\156\164
\145\143\040\124\162\165\163\164\040\116\145\164\167\157\162\153
\061\105\060\103\006\003\125\004\003\023\074\123\171\155\141\156
\164\145\143\040\103\154\141\163\163\040\063\040\120\165\142\154
\151\143\040\120\162\151\155\141\162\171\040\103\145\162\164\151
\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151
\164\171\040\055\040\107\066
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\145\143\161\205\323\157\105\306\217\177\061\371\011\207
\222\202
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

```

```

# Microsoft Code Signing Only Certificate
# Certificate "Symantec Class 3 Public Primary Certification
  Authority - G4"
# Issuer: CN=Symantec Class 3 Public Primary Certification Authority - G4,OU=Symantec Trust
  Network,O=Symantec Corporation,C=US
# Serial Number:4c:79:b5:9a:28:9c:76:31:64:f5:89:44:d0:91:02:de
# Subject: CN=Symantec Class 3 Public Primary Certification Authority - G4,OU=Symantec Trust
  Network,O=Symantec Corporation,C=US
# Not Valid Before: Thu Oct 18 00:00:00 2012
# Not Valid After: Tue Dec 01 23:59:59 2037
# Fingerprint (MD5): 36:c9:b7:4b:6c:b0:21:4c:c7:11:17:b1:18:fe:2b:4d
# Fingerprint (SHA1): 58:d5:2d:b9:33:01:a4:fd:29:1a:8c:96:45:a0:8f:ee:7f:52:92:82

```

```
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Symantec Class 3 Public Primary Certification Authority - G4"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\224\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\035\060\033\006\003\125\004\012\023\024\123\171\155\141\156
\164\145\143\040\103\157\162\160\157\162\141\164\151\157\156\061
\037\060\035\006\003\125\004\013\023\026\123\171\155\141\156\164
\145\143\040\124\162\165\163\164\040\116\145\164\167\157\162\153
\061\105\060\103\006\003\125\004\003\023\074\123\171\155\141\156
\164\145\143\040\103\154\141\163\163\040\063\040\120\165\142\154
\151\143\040\120\162\151\155\141\162\171\040\103\145\162\164\151
\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151
\164\171\040\055\040\107\064
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\224\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\035\060\033\006\003\125\004\012\023\024\123\171\155\141\156
\164\145\143\040\103\157\162\160\157\162\141\164\151\157\156\061
\037\060\035\006\003\125\004\013\023\026\123\171\155\141\156\164
\145\143\040\124\162\165\163\164\040\116\145\164\167\157\162\153
\061\105\060\103\006\003\125\004\003\023\074\123\171\155\141\156
\164\145\143\040\103\154\141\163\163\040\063\040\120\165\142\154
\151\143\040\120\162\151\155\141\162\171\040\103\145\162\164\151
\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151
\164\171\040\055\040\107\064
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\114\171\265\232\050\234\166\061\144\365\211\104\320\221
\002\336
END
CKA_VALUE MULTILINE_OCTAL
\060\202\002\247\060\202\002\055\240\003\002\001\002\002\020\114
\171\265\232\050\234\166\061\144\365\211\104\320\221\002\336\060
\012\006\010\052\206\110\316\075\004\003\003\060\201\224\061\013
\060\011\006\003\125\004\006\023\002\125\123\061\035\060\033\006
\003\125\004\012\023\024\123\171\155\141\156\164\145\143\040\103
\157\162\160\157\162\141\164\151\157\156\061\037\060\035\006\003
\125\004\013\023\026\123\171\155\141\156\164\145\143\040\124\162
\165\163\164\040\116\145\164\167\157\162\153\061\105\060\103\006
\003\125\004\003\023\074\123\171\155\141\156\164\145\143\040\103
\154\141\163\163\040\063\040\120\165\142\154\151\143\040\120\162
```

\151\155\141\162\171\040\103\145\162\164\151\146\151\143\141\164  
\151\157\156\040\101\165\164\150\157\162\151\164\171\040\055\040  
\107\064\060\036\027\015\061\062\061\060\061\070\060\060\060\060  
\060\060\132\027\015\063\067\061\062\060\061\062\063\065\071\065  
\071\132\060\201\224\061\013\060\011\006\003\125\004\006\023\002  
\125\123\061\035\060\033\006\003\125\004\012\023\024\123\171\155  
\141\156\164\145\143\040\103\157\162\160\157\162\141\164\151\157  
\156\061\037\060\035\006\003\125\004\013\023\026\123\171\155\141  
\156\164\145\143\040\124\162\165\163\164\040\116\145\164\167\157  
\162\153\061\105\060\103\006\003\125\004\003\023\074\123\171\155  
\141\156\164\145\143\040\103\154\141\163\163\040\063\040\120\165  
\142\154\151\143\040\120\162\151\155\141\162\171\040\103\145\162  
\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157  
\162\151\164\171\040\055\040\107\064\060\166\060\020\006\007\052  
\206\110\316\075\002\001\006\005\053\201\004\000\042\003\142\000  
\004\127\317\352\263\071\115\077\241\041\340\156\057\070\162\306  
\207\227\363\205\013\107\347\017\121\310\321\364\231\233\312\131  
\145\377\114\371\352\013\267\045\325\322\366\354\061\055\062\142  
\022\327\166\206\247\372\070\311\145\324\376\163\342\204\071\370  
\114\111\142\023\335\272\325\210\240\137\075\310\117\260\077\217  
\241\120\021\344\223\106\255\303\137\313\361\244\152\225\126\350  
\300\243\102\060\100\060\016\006\003\125\035\017\001\001\377\004  
\004\003\002\001\006\060\017\006\003\125\035\023\001\001\377\004  
\005\060\003\001\001\377\060\035\006\003\125\035\016\004\026\004  
\024\044\235\274\322\161\367\035\302\045\276\042\361\211\245\054  
\025\073\064\036\136\060\012\006\010\052\206\110\316\075\004\003  
\003\003\150\000\060\145\002\061\000\271\146\150\145\333\005\320  
\070\175\016\363\310\165\141\270\320\050\304\261\112\063\121\130  
\373\362\074\020\310\256\107\170\166\312\146\044\027\206\076\120  
\126\156\245\055\231\210\270\275\044\002\060\003\352\247\347\250  
\074\352\235\142\306\137\124\332\230\364\167\275\117\217\030\234  
\221\134\107\153\100\115\020\035\263\341\211\312\013\042\310\032  
\305\305\376\213\335\301\337\157\170\237\221

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "Symantec Class 3 Public Primary Certification Authority - G4"

# Issuer: CN=Symantec Class 3 Public Primary Certification Authority - G4,OU=Symantec Trust  
Network,O=Symantec Corporation,C=US

# Serial Number:4c:79:b5:9a:28:9c:76:31:64:f5:89:44:d0:91:02:de

# Subject: CN=Symantec Class 3 Public Primary Certification Authority - G4,OU=Symantec Trust  
Network,O=Symantec Corporation,C=US

# Not Valid Before: Thu Oct 18 00:00:00 2012

# Not Valid After: Tue Dec 01 23:59:59 2037

```

# Fingerprint (MD5): 36:c9:b7:4b:6c:b0:21:4c:c7:11:17:b1:18:fe:2b:4d
# Fingerprint (SHA1): 58:d5:2d:b9:33:01:a4:fd:29:1a:8c:96:45:a0:8f:ee:7f:52:92:82
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE
CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Symantec Class 3 Public Primary Certification Authority - G4"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\130\325\055\271\063\001\244\375\051\032\214\226\105\240\217\356
\177\122\222\202
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\066\311\267\113\154\260\041\114\307\021\027\261\030\376\053\115
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\224\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\035\060\033\006\003\125\004\012\023\024\123\171\155\141\156
\164\145\143\040\103\157\162\160\157\162\141\164\151\157\156\061
\037\060\035\006\003\125\004\013\023\026\123\171\155\141\156\164
\145\143\040\124\162\165\163\164\040\116\145\164\167\157\162\153
\061\105\060\103\006\003\125\004\003\023\074\123\171\155\141\156
\164\145\143\040\103\154\141\163\163\040\063\040\120\165\142\154
\151\143\040\120\162\151\155\141\162\171\040\103\145\162\164\151
\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151
\164\171\040\055\040\107\064
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\114\171\265\232\050\234\166\061\144\365\211\104\320\221
\002\336
END
CKA_TRUST_SERVER_AUTH
CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

```

```

# Microsoft Code Signing Only Certificate
# Certificate "Hellenic Academic and Research Institutions RootCA 2011"
# Issuer: CN=Hellenic Academic and Research Institutions RootCA 2011,O=Hellenic Academic and Research
Institutions Cert. Authority,C=GR
# Serial Number: 0 (0x0)
# Subject: CN=Hellenic Academic and Research Institutions RootCA 2011,O=Hellenic Academic and Research
Institutions Cert. Authority,C=GR
# Not Valid Before: Tue Dec 06 13:49:52 2011
# Not Valid After: Mon Dec 01 13:49:52 2031
# Fingerprint (MD5): 73:9f:4c:4b:73:5b:79:e9:fa:ba:1c:ef:6e:cb:d5:c9
# Fingerprint (SHA1): fe:45:65:9b:79:03:5b:98:a1:61:b5:51:2e:ac:da:58:09:48:22:4d

```

```
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN
CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Hellenic Academic and Research Institutions RootCA 2011"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\225\061\013\060\011\006\003\125\004\006\023\002\107\122
\061\104\060\102\006\003\125\004\012\023\073\110\145\154\154\145
\156\151\143\040\101\143\141\144\145\155\151\143\040\141\156\144
\040\122\145\163\145\141\162\143\150\040\111\156\163\164\151\164
\165\164\151\157\156\163\040\103\145\162\164\056\040\101\165\164
\150\157\162\151\164\171\061\100\060\076\006\003\125\004\003\023
\067\110\145\154\154\145\156\151\143\040\101\143\141\144\145\155
\151\143\040\141\156\144\040\122\145\163\145\141\162\143\150\040
\111\156\163\164\151\164\165\164\151\157\156\163\040\122\157\157
\164\103\101\040\062\060\061\061
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\225\061\013\060\011\006\003\125\004\006\023\002\107\122
\061\104\060\102\006\003\125\004\012\023\073\110\145\154\154\145
\156\151\143\040\101\143\141\144\145\155\151\143\040\141\156\144
\040\122\145\163\145\141\162\143\150\040\111\156\163\164\151\164
\165\164\151\157\156\163\040\103\145\162\164\056\040\101\165\164
\150\157\162\151\164\171\061\100\060\076\006\003\125\004\003\023
\067\110\145\154\154\145\156\151\143\040\101\143\141\144\145\155
\151\143\040\141\156\144\040\122\145\163\145\141\162\143\150\040
\111\156\163\164\151\164\165\164\151\157\156\163\040\122\157\157
\164\103\101\040\062\060\061\061
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\001\000
END
CKA_VALUE MULTILINE_OCTAL
\060\202\004\061\060\202\003\031\240\003\002\001\002\002\001\000
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060
\201\225\061\013\060\011\006\003\125\004\006\023\002\107\122\061
\104\060\102\006\003\125\004\012\023\073\110\145\154\154\145\156
\151\143\040\101\143\141\144\145\155\151\143\040\141\156\144\040
\122\145\163\145\141\162\143\150\040\111\156\163\164\151\164\165
\164\151\157\156\163\040\103\145\162\164\056\040\101\165\164\150
\157\162\151\164\171\061\100\060\076\006\003\125\004\003\023\067
\110\145\154\154\145\156\151\143\040\101\143\141\144\145\155\151
\143\040\141\156\144\040\122\145\163\145\141\162\143\150\040\111
\156\163\164\151\164\165\164\151\157\156\163\040\122\157\157\164
```

\103\101\040\062\060\061\061\060\036\027\015\061\061\061\062\060  
\066\061\063\064\071\065\062\132\027\015\063\061\061\062\060\061  
\061\063\064\071\065\062\132\060\201\225\061\013\060\011\006\003  
\125\004\006\023\002\107\122\061\104\060\102\006\003\125\004\012  
\023\073\110\145\154\154\145\156\151\143\040\101\143\141\144\145  
\155\151\143\040\141\156\144\040\122\145\163\145\141\162\143\150  
\040\111\156\163\164\151\164\165\164\151\157\156\163\040\103\145  
\162\164\056\040\101\165\164\150\157\162\151\164\171\061\100\060  
\076\006\003\125\004\003\023\067\110\145\154\154\145\156\151\143  
\040\101\143\141\144\145\155\151\143\040\141\156\144\040\122\145  
\163\145\141\162\143\150\040\111\156\163\164\151\164\165\164\151  
\157\156\163\040\122\157\157\164\103\101\040\062\060\061\061\060  
\202\001\042\060\015\006\011\052\206\110\206\367\015\001\001\001  
\005\000\003\202\001\017\000\060\202\001\012\002\202\001\001\000  
\251\123\000\343\056\246\366\216\372\140\330\055\225\076\370\054  
\052\124\116\315\271\204\141\224\130\117\217\075\213\344\103\363  
\165\211\215\121\344\303\067\322\212\210\115\171\036\267\022\335  
\103\170\112\212\222\346\327\110\325\017\244\072\051\104\065\270  
\007\366\150\035\125\315\070\121\360\214\044\061\205\257\203\311  
\175\351\167\257\355\032\173\235\027\371\263\235\070\120\017\246  
\132\171\221\200\257\067\256\246\323\061\373\265\046\011\235\074  
\132\357\121\305\053\337\226\135\353\062\036\002\332\160\111\354  
\156\014\310\232\067\215\367\361\066\140\113\046\054\202\236\320  
\170\363\015\017\143\244\121\060\341\371\053\047\022\007\330\352  
\275\030\142\230\260\131\067\175\276\356\363\040\121\102\132\203  
\357\223\272\151\025\361\142\235\237\231\071\202\241\267\164\056  
\213\324\305\013\173\057\360\310\012\332\075\171\012\232\223\034  
\245\050\162\163\221\103\232\247\321\115\205\204\271\251\164\217  
\024\100\307\334\336\254\101\144\154\264\031\233\002\143\155\044  
\144\217\104\262\045\352\316\135\164\014\143\062\134\215\207\345  
\002\003\001\000\001\243\201\211\060\201\206\060\017\006\003\125  
\035\023\001\001\377\004\005\060\003\001\001\377\060\013\006\003  
\125\035\017\004\004\003\002\001\006\060\035\006\003\125\035\016  
\004\026\004\024\246\221\102\375\023\141\112\043\236\010\244\051  
\345\330\023\004\043\356\101\045\060\107\006\003\125\035\036\004  
\100\060\076\240\074\060\005\202\003\056\147\162\060\005\202\003  
\056\145\165\060\006\202\004\056\145\144\165\060\006\202\004\056  
\157\162\147\060\005\201\003\056\147\162\060\005\201\003\056\145  
\165\060\006\201\004\056\145\144\165\060\006\201\004\056\157\162  
\147\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000  
\003\202\001\001\000\037\357\171\101\341\173\156\077\262\214\206  
\067\102\112\116\034\067\036\215\146\272\044\201\311\117\022\017  
\041\300\003\227\206\045\155\135\323\042\051\250\154\242\015\251  
\353\075\006\133\231\072\307\314\303\232\064\177\253\016\310\116  
\034\341\372\344\334\315\015\276\277\044\376\154\347\153\302\015  
\310\006\236\116\215\141\050\246\152\375\345\366\142\352\030\074  
\116\240\123\235\262\072\234\353\245\234\221\026\266\115\202\340  
\014\005\110\251\154\365\314\370\313\235\111\264\360\002\245\375

```
\160\003\355\212\041\245\256\023\206\111\303\063\163\276\207\073
\164\213\027\105\046\114\026\221\203\376\147\175\315\115\143\147
\372\363\003\022\226\170\006\215\261\147\355\216\077\276\237\117
\002\365\263\011\057\363\114\207\337\052\313\225\174\001\314\254
\066\172\277\242\163\172\367\217\301\265\232\241\024\262\217\063
\237\015\357\042\334\146\173\204\275\105\027\006\075\074\312\271
\167\064\217\312\352\317\077\061\076\343\210\343\200\111\045\310
\227\265\235\232\231\115\260\074\370\112\000\233\144\335\237\071
\113\321\047\327\270
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "Hellenic Academic and Research Institutions RootCA 2011"

# Issuer: CN=Hellenic Academic and Research Institutions RootCA 2011,O=Hellenic Academic and Research  
Institutions Cert. Authority,C=GR

# Serial Number: 0 (0x0)

# Subject: CN=Hellenic Academic and Research Institutions RootCA 2011,O=Hellenic Academic and Research  
Institutions Cert. Authority,C=GR

# Not Valid Before: Tue Dec 06 13:49:52 2011

# Not Valid After: Mon Dec 01 13:49:52 2031

# Fingerprint (MD5): 73:9f:4c:4b:73:5b:79:e9:fa:ba:1c:ef:6e:cb:d5:c9

# Fingerprint (SHA1): fe:45:65:9b:79:03:5b:98:a1:61:b5:51:2e:ac:da:58:09:48:22:4d

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Hellenic Academic and Research Institutions RootCA 2011"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\376\105\145\233\171\003\133\230\241\141\265\121\056\254\332\130
\011\110\042\115
```

END

CKA\_CERT\_MD5\_HASH

MULTILINE\_OCTAL

```
\163\237\114\113\163\133\171\351\372\272\034\357\156\313\325\311
```

END

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\201\225\061\013\060\011\006\003\125\004\006\023\002\107\122
\061\104\060\102\006\003\125\004\012\023\073\110\145\154\154\145
\156\151\143\040\101\143\141\144\145\155\151\143\040\141\156\144
\040\122\145\163\145\141\162\143\150\040\111\156\163\164\151\164
\165\164\151\157\156\163\040\103\145\162\164\056\040\101\165\164
\150\157\162\151\164\171\061\100\060\076\006\003\125\004\003\023
\067\110\145\154\154\145\156\151\143\040\101\143\141\144\145\155
\151\143\040\141\156\144\040\122\145\163\145\141\162\143\150\040
```



```
\111\156\163\164\151\164\165\164\151\157\156\163\040\122\157\157
\164\103\101\040\062\060\061\061
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\000
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING
CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
# Microsoft Code Signing Only Certificate
# Certificate "ATHEX Root CA"
# Issuer: CN=ATHEX Root CA,O=Athens Exchange S.A.,C=GR
# Serial Number: 10012 (0x271c)
# Subject: CN=ATHEX Root CA,O=Athens Exchange S.A.,C=GR
# Not Valid Before: Mon Oct 18 15:56:03 2010
# Not Valid After: Thu Oct 17 21:00:00 2030
# Fingerprint (MD5): af:2b:7a:55:2d:3a:35:02:a4:92:40:16:0c:fa:98:26
# Fingerprint (SHA1): db:2b:7b:43:4d:fb:7f:c1:cb:59:26:ec:5d:95:21:fe:35:0f:f2:79
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "ATHEX Root CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\104\061\013\060\011\006\003\125\004\006\023\002\107\122\061
\035\060\033\006\003\125\004\012\023\024\101\164\150\145\156\163
\040\105\170\143\150\141\156\147\145\040\123\056\101\056\061\026
\060\024\006\003\125\004\003\023\015\101\124\110\105\130\040\122
\157\157\164\040\103\101
```

```
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\104\061\013\060\011\006\003\125\004\006\023\002\107\122\061
\035\060\033\006\003\125\004\012\023\024\101\164\150\145\156\163
\040\105\170\143\150\141\156\147\145\040\123\056\101\056\061\026
\060\024\006\003\125\004\003\023\015\101\124\110\105\130\040\122
\157\157\164\040\103\101
```

```
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\002\047\034
END
CKA_VALUE MULTILINE_OCTAL
\060\202\003\067\060\202\002\037\240\003\002\001\002\002\002\047
```

\034\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000  
\060\104\061\013\060\011\006\003\125\004\006\023\002\107\122\061  
\035\060\033\006\003\125\004\012\023\024\101\164\150\145\156\163  
\040\105\170\143\150\141\156\147\145\040\123\056\101\056\061\026  
\060\024\006\003\125\004\003\023\015\101\124\110\105\130\040\122  
\157\157\164\040\103\101\060\036\027\015\061\060\061\060\061\070  
\061\065\065\066\060\063\132\027\015\063\060\061\060\061\067\062  
\061\060\060\060\060\132\060\104\061\013\060\011\006\003\125\004  
\006\023\002\107\122\061\035\060\033\006\003\125\004\012\023\024  
\101\164\150\145\156\163\040\105\170\143\150\141\156\147\145\040  
\123\056\101\056\061\026\060\024\006\003\125\004\003\023\015\101  
\124\110\105\130\040\122\157\157\164\040\103\101\060\202\001\042  
\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003  
\202\001\017\000\060\202\001\012\002\202\001\001\000\315\032\075  
\060\265\263\070\262\277\172\273\256\241\326\327\205\360\042\072  
\244\211\151\304\341\142\004\311\160\323\074\063\022\342\346\070  
\345\167\244\044\104\144\015\267\256\114\132\335\341\030\006\076  
\355\233\132\005\365\341\336\022\355\066\052\334\107\331\221\121  
\231\355\261\277\152\163\241\012\010\044\250\212\215\034\013\131  
\323\277\160\043\125\104\240\214\060\305\316\155\117\260\354\276  
\363\214\061\337\012\132\334\323\127\134\005\240\063\225\073\227  
\217\124\013\270\365\153\175\307\305\254\265\171\216\006\070\361  
\250\051\125\075\232\066\320\047\137\064\152\022\170\027\050\331  
\230\111\354\331\132\122\332\046\072\372\356\114\246\046\216\250  
\076\125\037\262\037\341\265\233\371\072\065\366\355\221\034\375  
\013\020\044\375\037\371\323\343\000\045\261\013\045\300\267\175  
\232\074\007\072\200\013\326\250\376\221\105\350\301\322\305\042  
\157\323\345\161\037\266\054\066\264\130\240\355\315\112\150\344  
\152\127\364\241\165\354\327\000\231\325\366\231\134\353\116\311  
\273\327\032\243\105\131\000\017\214\073\333\164\065\002\003\001  
\000\001\243\063\060\061\060\017\006\003\125\035\023\001\001\377  
\004\005\060\003\001\001\377\060\021\006\003\125\035\016\004\012  
\004\010\103\342\200\350\273\322\267\301\060\013\006\003\125\035  
\017\004\004\003\002\001\006\060\015\006\011\052\206\110\206\367  
\015\001\001\005\005\000\003\202\001\001\000\077\001\143\165\007  
\062\053\137\165\377\166\216\323\251\270\157\314\120\075\204\127  
\117\050\203\350\174\243\156\242\274\367\302\272\256\072\253\116  
\320\017\222\050\270\335\133\054\333\345\326\037\072\223\341\221  
\016\327\252\137\001\141\054\076\141\117\336\225\025\115\314\075  
\352\062\342\243\376\370\026\251\362\274\051\374\051\236\175\162  
\245\135\241\153\002\325\137\110\364\240\073\313\030\106\360\075  
\027\125\203\320\051\141\221\273\232\101\111\321\023\276\101\224  
\362\076\303\044\253\237\307\153\102\220\102\171\176\132\121\373  
\074\136\013\041\037\313\331\110\023\025\261\152\177\003\304\321  
\272\121\322\160\211\252\010\112\207\034\366\172\230\261\324\121  
\005\125\306\220\027\157\303\340\004\300\172\364\057\030\242\126  
\102\163\056\266\262\233\321\071\276\011\302\002\112\044\027\371  
\367\254\275\161\007\277\225\342\227\345\241\204\010\215\262\342

```
\104\241\334\211\060\073\250\014\005\172\135\166\000\117\036\157
\161\177\053\071\332\105\102\071\061\322\251\062\100\324\070\143
\023\226\067\232\111\135\331\307\375\270\114
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER

CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "ATHEX Root CA"

# Issuer: CN=ATHEX Root CA,O=Athens Exchange S.A.,C=GR

# Serial Number: 10012 (0x271c)

# Subject: CN=ATHEX Root CA,O=Athens Exchange S.A.,C=GR

# Not Valid Before: Mon Oct 18 15:56:03 2010

# Not Valid After: Thu Oct 17 21:00:00 2030

# Fingerprint (MD5): af:2b:7a:55:2d:3a:35:02:a4:92:40:16:0c:fa:98:26

# Fingerprint (SHA1): db:2b:7b:43:4d:fb:7f:c1:cb:59:26:ec:5d:95:21:fe:35:0f:f2:79

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "ATHEX Root CA"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\333\053\173\103\115\373\177\301\313\131\046\354\135\225\041\376
\065\017\362\171
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\257\053\172\125\055\072\065\002\244\222\100\026\014\372\230\046
```

END

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\104\061\013\060\011\006\003\125\004\006\023\002\107\122\061
\035\060\033\006\003\125\004\012\023\024\101\164\150\145\156\163
\040\105\170\143\150\141\156\147\145\040\123\056\101\056\061\026
\060\024\006\003\125\004\003\023\015\101\124\110\105\130\040\122
\157\157\164\040\103\101
```

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

```
\002\002\047\034
```

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

```
# Certificate "Halcom Root CA"
# Issuer: CN=Halcom Root CA,O=Halcom,C=SI
# Serial Number: 504275 (0x7b1d3)
# Subject: CN=Halcom Root CA,O=Halcom,C=SI
# Not Valid Before: Wed Feb 08 09:55:41 2012
# Not Valid After: Sun Feb 08 09:55:41 2032
# Fingerprint (MD5): c3:8b:d2:53:ac:00:ec:d1:db:97:61:a5:38:d9:7d:87
# Fingerprint (SHA1): 53:5b:00:16:72:ab:bf:7b:6c:c2:54:05:ae:4d:24:fe:03:3f:d1:cc
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE
CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Halcom Root CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\067\061\013\060\011\006\003\125\004\006\023\002\123\111\061
\017\060\015\006\003\125\004\012\023\006\110\141\154\143\157\155
\061\027\060\025\006\003\125\004\003\023\016\110\141\154\143\157
\155\040\122\157\157\164\040\103\101
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\067\061\013\060\011\006\003\125\004\006\023\002\123\111\061
\017\060\015\006\003\125\004\012\023\006\110\141\154\143\157\155
\061\027\060\025\006\003\125\004\003\023\016\110\141\154\143\157
\155\040\122\157\157\164\040\103\101
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\003\007\261\323
END
CKA_VALUE MULTILINE_OCTAL
\060\202\003\036\060\202\002\006\240\003\002\001\002\002\003\007
\261\323\060\015\006\011\052\206\110\206\367\015\001\001\015\005
\000\060\067\061\013\060\011\006\003\125\004\006\023\002\123\111
\061\017\060\015\006\003\125\004\012\023\006\110\141\154\143\157
\155\061\027\060\025\006\003\125\004\003\023\016\110\141\154\143
\157\155\040\122\157\157\164\040\103\101\060\036\027\015\061\062
\060\062\060\070\060\071\065\065\064\061\132\027\015\063\062\060
\062\060\070\060\071\065\065\064\061\132\060\067\061\013\060\011
\006\003\125\004\006\023\002\123\111\061\017\060\015\006\003\125
\004\012\023\006\110\141\154\143\157\155\061\027\060\025\006\003
\125\004\003\023\016\110\141\154\143\157\155\040\122\157\157\164
\040\103\101\060\202\001\042\060\015\006\011\052\206\110\206\367
\015\001\001\001\005\000\003\202\001\017\000\060\202\001\012\002
\202\001\001\000\211\271\205\312\376\364\165\175\177\354\235\102
\067\272\272\215\274\354\075\027\003\375\331\105\145\326\315\311
\116\137\214\110\134\227\010\127\024\213\055\234\074\220\111\231
```

\317\151\257\111\215\333\034\001\260\156\351\364\352\221\147\135  
\312\263\151\117\330\314\301\015\075\356\252\003\166\340\311\160  
\242\237\376\353\233\320\266\311\226\323\360\373\133\320\360\007  
\253\114\136\115\244\342\107\136\005\150\164\246\216\042\107\356  
\176\323\147\204\124\067\222\107\016\363\243\354\025\032\363\155  
\173\277\031\065\041\217\202\113\254\124\234\011\315\156\266\301  
\127\275\320\111\075\157\237\163\216\261\154\176\275\376\326\273  
\075\003\350\346\114\032\264\356\257\264\203\116\062\220\124\366  
\116\033\341\057\316\245\064\032\216\243\040\371\331\076\042\153  
\157\156\343\372\331\063\134\010\240\367\025\000\075\234\020\222  
\112\125\315\200\262\006\252\375\327\217\267\132\222\047\044\017  
\063\074\050\272\361\037\150\265\167\051\136\256\302\332\215\066  
\160\342\172\062\033\043\246\336\305\141\015\232\245\022\040\265  
\363\226\131\265\002\003\001\000\001\243\063\060\061\060\017\006  
\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060\021  
\006\003\125\035\016\004\012\004\010\116\224\330\212\143\302\317  
\171\060\013\006\003\125\035\017\004\004\003\002\001\006\060\015  
\006\011\052\206\110\206\367\015\001\001\015\005\000\003\202\001  
\001\000\051\276\347\261\344\372\003\242\017\257\166\131\235\370  
\116\123\115\074\004\203\237\241\342\214\366\224\331\264\256\150  
\052\126\153\062\123\050\203\007\162\114\260\116\250\035\201\203  
\041\147\003\067\321\214\306\301\116\204\351\064\073\323\365\365  
\047\266\215\043\005\122\270\114\062\362\056\332\321\052\175\076  
\203\003\052\322\261\343\232\351\212\203\102\360\054\012\241\123  
\017\300\053\342\217\032\116\225\271\105\274\113\147\072\275\062  
\363\255\245\217\217\303\056\352\366\364\173\142\320\156\156\305  
\141\061\023\146\346\147\111\231\073\057\200\117\172\174\163\212  
\003\015\137\365\263\062\050\012\212\300\341\371\270\243\046\356  
\334\033\127\317\166\032\117\123\276\366\112\213\127\027\053\057  
\231\206\252\336\214\332\266\250\154\337\150\066\326\141\213\156  
\300\163\116\267\071\105\364\175\316\111\304\363\035\371\251\167  
\154\357\357\222\025\023\047\231\106\350\237\251\212\033\237\051  
\057\242\035\076\326\053\307\344\125\020\072\030\367\263\173\117  
\056\307\000\042\355\344\061\320\347\270\344\124\117\301\200\105  
\045\156

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "Halcom Root CA"

# Issuer: CN=Halcom Root CA,O=Halcom,C=SI

# Serial Number: 504275 (0x7b1d3)

# Subject: CN=Halcom Root CA,O=Halcom,C=SI

# Not Valid Before: Wed Feb 08 09:55:41 2012

# Not Valid After: Sun Feb 08 09:55:41 2032

```

# Fingerprint (MD5): c3:8b:d2:53:ac:00:ec:d1:db:97:61:a5:38:d9:7d:87
# Fingerprint (SHA1): 53:5b:00:16:72:ab:bf:7b:6c:c2:54:05:ae:4d:24:fe:03:3f:d1:cc
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Halcom Root CA"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\123\133\000\026\162\253\277\173\154\302\124\005\256\115\044\376
\003\077\321\314
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\303\213\322\123\254\000\354\321\333\227\141\245\070\331\175\207
END
CKA_ISSUER MULTILINE_OCTAL
\060\067\061\013\060\011\006\003\125\004\006\023\002\123\111\061
\017\060\015\006\003\125\004\012\023\006\110\141\154\143\157\155
\061\027\060\025\006\003\125\004\003\023\016\110\141\154\143\157
\155\040\122\157\157\164\040\103\101
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\003\007\261\323
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

```

```

# Microsoft Code Signing Only Certificate
# Certificate "Swisscom Root EV CA 2"
# Issuer: CN=Swisscom Root EV CA 2,OU=Digital Certificate Services,O=Swisscom,C=ch
# Serial Number:f2:fa:64:e2:74:63:d3:8d:fd:10:1d:04:1f:76:ca:58
# Subject: CN=Swisscom Root EV CA 2,OU=Digital Certificate Services,O=Swisscom,C=ch
# Not Valid Before: Fri Jun 24 09:45:08 2011
# Not Valid After: Wed Jun 25 08:45:08 2031
# Fingerprint (MD5): 7b:30:34:9f:dd:0a:4b:6b:35:ca:31:51:28:5d:ae:ec
# Fingerprint (SHA1): e7:a1:90:29:d3:d5:52:dc:0d:0f:c6:92:d3:ea:88:0d:15:2e:1a:6b
CKA_CLASS
CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Swisscom Root EV CA 2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\147\061\013\060\011\006\003\125\004\006\023\002\143\150\061
\021\060\017\006\003\125\004\012\023\010\123\167\151\163\163\143

```

\157\155\061\045\060\043\006\003\125\004\013\023\034\104\151\147  
\151\164\141\154\040\103\145\162\164\151\146\151\143\141\164\145  
\040\123\145\162\166\151\143\145\163\061\036\060\034\006\003\125  
\004\003\023\025\123\167\151\163\163\143\157\155\040\122\157\157  
\164\040\105\126\040\103\101\040\062

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\147\061\013\060\011\006\003\125\004\006\023\002\143\150\061  
\021\060\017\006\003\125\004\012\023\010\123\167\151\163\163\143  
\157\155\061\045\060\043\006\003\125\004\013\023\034\104\151\147  
\151\164\141\154\040\103\145\162\164\151\146\151\143\141\164\145  
\040\123\145\162\166\151\143\145\163\061\036\060\034\006\003\125  
\004\003\023\025\123\167\151\163\163\143\157\155\040\122\157\157  
\164\040\105\126\040\103\101\040\062

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\021\000\362\372\144\342\164\143\323\215\375\020\035\004\037  
\166\312\130

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\340\060\202\003\310\240\003\002\001\002\002\021\000  
\362\372\144\342\164\143\323\215\375\020\035\004\037\166\312\130  
\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060  
\147\061\013\060\011\006\003\125\004\006\023\002\143\150\061\021  
\060\017\006\003\125\004\012\023\010\123\167\151\163\163\143\157  
\155\061\045\060\043\006\003\125\004\013\023\034\104\151\147\151  
\164\141\154\040\103\145\162\164\151\146\151\143\141\164\145\040  
\123\145\162\166\151\143\145\163\061\036\060\034\006\003\125\004  
\003\023\025\123\167\151\163\163\143\157\155\040\122\157\157\164  
\040\105\126\040\103\101\040\062\060\036\027\015\061\061\060\066  
\062\064\060\071\064\065\060\070\132\027\015\063\061\060\066\062  
\065\060\070\064\065\060\070\132\060\147\061\013\060\011\006\003  
\125\004\006\023\002\143\150\061\021\060\017\006\003\125\004\012  
\023\010\123\167\151\163\163\143\157\155\061\045\060\043\006\003  
\125\004\013\023\034\104\151\147\151\164\141\154\040\103\145\162  
\164\151\146\151\143\141\164\145\040\123\145\162\166\151\143\145  
\163\061\036\060\034\006\003\125\004\003\023\025\123\167\151\163  
\163\143\157\155\040\122\157\157\164\040\105\126\040\103\101\040  
\062\060\202\002\042\060\015\006\011\052\206\110\206\367\015\001  
\001\001\005\000\003\202\002\017\000\060\202\002\012\002\202\002  
\001\000\304\367\035\057\127\352\127\154\367\160\135\143\260\161  
\122\011\140\104\050\063\243\172\116\012\372\330\352\154\213\121  
\026\032\125\256\124\046\304\314\105\007\101\117\020\171\177\161  
\322\172\116\077\070\116\263\000\306\225\312\133\315\301\052\203  
\327\047\037\061\016\043\026\267\045\313\034\264\271\200\062\136  
\032\235\223\361\350\074\140\054\247\136\127\031\130\121\136\274

\054\126\013\270\330\357\213\202\264\074\270\302\044\250\023\307  
\240\041\066\033\172\127\051\050\247\056\277\161\045\220\363\104  
\203\151\120\244\344\341\033\142\031\224\011\243\363\303\274\357  
\364\275\354\333\023\235\317\235\110\011\122\147\300\067\051\021  
\036\373\322\021\247\205\030\164\171\344\117\205\024\353\122\067  
\342\261\105\330\314\015\103\177\256\023\322\153\053\077\247\302  
\342\250\155\166\133\103\237\276\264\235\263\046\206\073\037\177  
\345\362\350\146\050\026\045\320\113\227\070\247\344\317\011\321  
\066\303\013\276\332\073\104\130\215\276\361\236\011\153\076\363  
\062\307\053\207\306\354\136\234\366\207\145\255\063\051\304\057  
\211\331\271\313\311\003\235\373\154\224\121\227\020\033\206\013  
\032\033\077\366\002\176\173\324\305\121\144\050\235\365\323\254  
\203\201\210\323\164\264\131\235\301\353\141\063\132\105\321\313  
\071\320\006\152\123\140\035\257\366\373\151\274\152\334\001\317  
\275\371\217\331\275\133\301\072\137\216\332\017\113\251\233\235  
\052\050\153\032\012\174\074\253\042\013\345\167\055\161\366\202  
\065\201\256\370\173\201\346\352\376\254\364\032\233\164\134\350  
\217\044\366\135\235\106\304\054\322\036\053\041\152\203\047\147  
\125\112\244\343\310\062\227\146\220\162\332\343\324\144\056\137  
\343\241\152\366\140\324\347\065\315\312\304\150\215\327\161\310  
\323\044\063\163\261\154\371\152\341\050\333\137\306\075\350\276  
\125\346\067\033\355\044\331\017\031\217\137\143\030\130\120\201  
\121\145\157\362\237\176\152\004\347\064\044\161\272\166\113\130  
\036\031\275\025\140\105\252\014\022\100\001\235\020\342\307\070  
\007\162\012\145\300\266\273\045\051\332\026\236\213\065\213\141  
\355\345\161\127\203\265\074\161\237\343\117\277\176\036\201\237  
\101\227\002\003\001\000\001\243\201\206\060\201\203\060\016\006  
\003\125\035\017\001\001\377\004\004\003\002\001\206\060\035\006  
\003\125\035\041\004\026\060\024\060\022\006\007\140\205\164\001  
\123\002\002\006\007\140\205\164\001\123\002\002\060\022\006\003  
\125\035\023\001\001\377\004\010\060\006\001\001\377\002\001\003  
\060\035\006\003\125\035\016\004\026\004\024\105\331\245\201\156  
\075\210\115\215\161\322\106\301\156\105\036\363\304\200\235\060  
\037\006\003\125\035\043\004\030\060\026\200\024\105\331\245\201  
\156\075\210\115\215\161\322\106\301\156\105\036\363\304\200\235  
\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\003  
\202\002\001\000\224\072\163\006\237\122\113\060\134\324\376\261  
\134\045\371\327\216\157\365\207\144\237\355\024\216\270\004\216  
\050\113\217\252\173\216\071\264\331\130\366\173\241\065\012\241  
\235\212\367\143\345\353\275\071\202\324\343\172\055\157\337\023  
\074\272\376\176\126\230\013\363\124\237\315\104\116\156\074\341  
\076\025\277\006\046\235\344\360\220\266\324\302\236\060\056\037  
\357\307\172\304\120\307\352\173\332\120\313\172\046\313\000\264  
\132\253\265\223\037\200\211\204\004\225\215\215\177\011\223\277  
\324\250\250\344\143\155\331\144\344\270\051\132\010\277\120\341  
\204\017\125\173\137\010\042\033\365\275\231\036\024\366\316\364  
\130\020\202\263\012\075\031\301\277\133\253\252\231\330\362\061  
\275\345\070\146\334\130\005\307\355\143\032\056\012\227\174\207



```
\223\053\262\212\343\361\354\030\345\165\266\051\207\347\334\213
\032\176\264\330\311\323\212\027\154\175\051\104\276\212\252\365
\176\072\056\150\061\223\271\152\332\232\340\333\351\056\245\204
\315\034\012\270\112\010\371\234\361\141\046\230\223\267\173\146
\354\221\136\335\121\077\333\163\017\255\004\130\011\335\004\002
\225\012\076\323\166\337\246\020\036\200\075\350\315\244\144\321
\063\307\222\307\342\116\104\343\011\311\116\302\135\207\016\022
\236\277\017\311\005\020\336\172\243\261\074\362\077\245\252\047
\171\255\061\175\037\375\374\031\151\305\335\271\077\174\315\306
\264\302\060\036\176\156\222\327\177\141\166\132\217\353\225\115
\274\021\156\041\174\131\067\231\320\006\274\371\006\155\062\026
\245\331\151\250\341\334\074\200\036\140\121\334\327\124\041\036
\312\142\167\117\372\330\217\263\053\072\015\170\162\311\150\101
\132\107\112\302\243\353\032\327\012\253\074\062\125\310\012\021
\234\337\164\326\360\100\025\035\310\271\217\265\066\305\257\370
\042\270\312\035\363\326\266\031\017\237\141\145\152\352\164\310
\174\217\303\117\135\145\202\037\331\015\211\332\165\162\373\357
\361\107\147\023\263\310\321\031\210\047\046\232\231\171\177\036
\344\054\077\173\356\361\336\115\213\226\227\303\325\077\174\033
\043\355\244\263\035\026\162\103\113\040\341\131\176\302\350\255
\046\277\242\367
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "Swisscom Root EV CA 2"

# Issuer: CN=Swisscom Root EV CA 2,OU=Digital Certificate Services,O=Swisscom,C=ch

# Serial Number:f2:fa:64:e2:74:63:d3:8d:fd:10:1d:04:1f:76:ca:58

# Subject: CN=Swisscom Root EV CA 2,OU=Digital Certificate Services,O=Swisscom,C=ch

# Not Valid Before: Fri Jun 24 09:45:08 2011

# Not Valid After: Wed Jun 25 08:45:08

2031

# Fingerprint (MD5): 7b:30:34:9f:dd:0a:4b:6b:35:ca:31:51:28:5d:ae:ec

# Fingerprint (SHA1): e7:a1:90:29:d3:d5:52:dc:0d:0f:c6:92:d3:ea:88:0d:15:2e:1a:6b

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Swisscom Root EV CA 2"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\347\241\220\051\323\325\122\334\015\017\306\222\323\352\210\015
\025\056\032\153
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\173\060\064\237\335\012\113\153\065\312\061\121\050\135\256\354
```

```

END
CKA_ISSUER MULTILINE_OCTAL
\060\147\061\013\060\011\006\003\125\004\006\023\002\143\150\061
\021\060\017\006\003\125\004\012\023\010\123\167\151\163\163\143
\157\155\061\045\060\043\006\003\125\004\013\023\034\104\151\147
\151\164\141\154\040\103\145\162\164\151\146\151\143\141\164\145
\040\123\145\162\166\151\143\145\163\061\036\060\034\006\003\125
\004\003\023\025\123\167\151\163\163\143\157\155\040\122\157\157
\164\040\105\126\040\103\101\040\062
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\021\000\362\372\144\342\164\143\323\215\375\020\035\004\037
\166\312\130
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "CFCA GT CA"
# Issuer: O=CFCA GT CA,C=CN
# Serial Number:19:99:3c:3f
# Subject: O=CFCA GT CA,C=CN
# Not Valid Before: Mon Jun 13 08:15:09 2011
# Not Valid After: Tue Jun 09 08:15:09 2026
# Fingerprint (MD5): 2c:cd:f3:c5:59:a6:84:64:a0:67:50:ff:4b:4c:d6:14
# Fingerprint (SHA1): ea:bd:a2:40:44:0a:bb:d6:94:93:0a:01:d0:97:64:c6:c2:d7:79:66
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "CFCA GT CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\042\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\023\060\021\006\003\125\004\012\023\012\103\106\103\101\040\107
\124\040\103\101
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\042\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\023\060\021\006\003\125\004\012\023\012\103\106\103\101\040\107
\124\040\103\101
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL

```

\002\004\031\231\074\077

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\037\060\202\002\007\240\003\002\001\002\002\004\031  
\231\074\077\060\015\006\011\052\206\110\206\367\015\001\001\005  
\005\000\060\042\061\013\060\011\006\003\125\004\006\023\002\103  
\116\061\023\060\021\006\003\125\004\012\023\012\103\106\103\101  
\040\107\124\040\103\101\060\036\027\015\061\061\060\066\061\063  
\060\070\061\065\060\071\132\027\015\062\066\060\066\060\071\060  
\070\061\065\060\071\132\060\042\061\013\060\011\006\003\125\004  
\006\023\002\103\116\061\023\060\021\006\003\125\004\012\023\012  
\103\106\103\101\040\107\124\040\103\101\060\202\001\042\060\015  
\006\011\052\206\110\206\367\015\001\001\001\005\000\003\202\001  
\017\000\060\202\001\012\002\202\001\001\000\277\163\306\132\053  
\214\170\366\130\267\374\322\027\220\245\053\164\354\201\054\223  
\315\122\314\156\344\052\313\044\241\061\344\255\060\156\343\230  
\042\061\327\041\233\237\325\017\067\057\132\273\070\242\267\171  
\046\147\326\015\305\027\052\234\271\124\004\341\015\165\206\156  
\330\314\305\200\147\033\310\214\055\000\046\206\074\172\171\076  
\266\251\302\116\040\260\067\227\306\205\166\022\202\012\347\124  
\273\213\376\075\256\343\354\153\130\103\366\245\067\353\130\242  
\275\220\304\345\373\312\153\312\060\154\267\173\211\366\061\322  
\214\377\117\302\226\045\103\251\161\065\045\013\030\341\254\310  
\243\044\266\161\223\214\361\135\374\234\020\005\173\377\300\133  
\340\261\227\255\037\330\376\105\365\300\037\235\133\107\071\034  
\006\372\333\146\205\333\044\043\352\173\322\071\040\370\353\052  
\262\032\121\363\224\132\050\002\116\247\134\107\156\317\374\331  
\350\346\141\132\026\047\307\025\015\230\331\350\323\003\065\220  
\051\337\262\057\215\020\167\043\310\270\172\323\021\141\152\363  
\377\201\222\245\354\102\113\150\116\200\327\002\003\001\000\001  
\243\135\060\133\060\037\006\003\125\035\043\004\030\060\026\200  
\024\214\166\120\316\045\323\171\053\074\364\155\235\232\341\236  
\005\117\350\075\045\060\014\006\003\125\035\023\004\005\060\003  
\001\001\377\060\013\006\003\125\035\017\004\004\003\002\001\306  
\060\035\006\003\125\035\016\004\026\004\024\214\166\120\316\045  
\323\171\053\074\364\155\235\232\341\236\005\117\350\075\045\060  
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\003\202  
\001\001\000\276\273\226\130\324\335\211\211\017\054\315\372\143  
\105\166\015\071\200\232\215\372\250\105\141\075\041\125\350\316  
\150\307\031\351\302\261\007\302\213\073\057\317\141\205\220\247  
\122\027\062\072\257\012\005\025\310\306\316\335\216\224\046\006  
\370\320\140\356\263\156\324\015\272\132\335\253\240\174\120\162  
\246\325\220\223\126\327\131\071\333\350\177\263\225\170\123\201  
\122\122\137\364\222\201\002\301\373\042\271\321\003\127\247\176  
\313\373\300\106\274\023\164\114\050\053\166\222\151\037\301\120  
\221\021\305\114\336\013\224\214\027\203\214\257\067\207\264\352  
\153\157\242\132\065\101\141\205\057\234\027\300\373\271\016\242  
\141\006\107\166\274\220\011\230\164\015\322\010\057\275\344\015

```
\162\361\246\137\303\174\300\175\352\274\323\253\040\221\313\134
\005\214\235\250\065\372\066\126\273\011\363\204\135\326\361\342
\054\236\331\176\361\202\240\341\267\057\176\355\371\173\240\000
\270\262\336\035\171\341\201\363\122\131\232\024\135\347\302\021
\363\232\303\072\170\043\276\116\146\336\244\071\151\362\230\072
\054\012\000
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "CFCA GT CA"

# Issuer: O=CFCA GT CA,C=CN

# Serial Number:19:99:3c:3f

# Subject: O=CFCA GT CA,C=CN

# Not Valid Before: Mon

Jun 13 08:15:09 2011

# Not Valid After: Tue Jun 09 08:15:09 2026

# Fingerprint (MD5): 2c:cd:f3:c5:59:a6:84:64:a0:67:50:ff:4b:4c:d6:14

# Fingerprint (SHA1): ea:bd:a2:40:44:0a:bb:d6:94:93:0a:01:d0:97:64:c6:c2:d7:79:66

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "CFCA GT CA"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\352\275\242\100\104\012\273\326\224\223\012\001\320\227\144\306
\302\327\171\146
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\054\315\363\305\131\246\204\144\240\147\120\377\113\114\326\024
```

END

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\042\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\023\060\021\006\003\125\004\012\023\012\103\106\103\101\040\107
\124\040\103\101
```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

```
\002\004\031\231\074\077
```

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED

CK\_BBOOL CK\_FALSE

```

# Microsoft Code Signing Only Certificate
# Certificate "Digidentity L3 Root CA - G2"
# Issuer: CN=Digidentity L3 Root CA - G2,O=Digidentity B.V.,C=NL
# Serial Number: 1 (0x1)
# Subject: CN=Digidentity L3 Root CA - G2,O=Digidentity B.V.,C=NL
# Not Valid Before: Fri Apr 29 10:44:19 2011
# Not Valid After: Mon Nov 10 10:44:19 2031
# Fingerprint (MD5): 26:8f:5b:c8:b6:3f:88:8c:4c:49:08:2e:18:c1:02:10
# Fingerprint (SHA1): f1:38:a3:30:a4:ea:98:6b:eb:52:0b:b1:10:35:87:6e:fb:9d:7f:1c
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Digidentity L3 Root CA - G2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\116\061\013\060\011\006\003\125\004\006\023\002\116\114\061
\031\060\027\006\003\125\004\012\023\020\104\151\147\151\144\145
\156\164\151\164\171\040\102\056\126\056\061\044\060\042\006\003
\125\004\003\023\033\104\151\147\151\144\145\156\164\151\164\171
\040\114\063\040\122\157\157\164\040\103\101\040\055\040\107\062
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\116\061\013\060\011\006\003\125\004\006\023\002\116\114\061
\031\060\027\006\003\125\004\012\023\020\104\151\147\151\144\145
\156\164\151\164\171\040\102\056\126\056\061\044\060\042\006\003
\125\004\003\023\033\104\151\147\151\144\145\156\164\151\164\171
\040\114\063\040\122\157\157\164\040\103\101\040\055\040\107\062
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\001
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\241\060\202\003\211\240\003\002\001\002\002\001\001
\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060
\116\061\013\060\011\006\003\125\004\006\023\002\116\114\061\031
\060\027\006\003\125\004\012\023\020\104\151\147\151\144\145\156
\164\151\164\171\040\102\056\126\056\061\044\060\042\006\003\125
\004\003\023\033\104\151\147\151\144\145\156\164\151\164\171\040
\114\063\040\122\157\157\164\040\103\101\040\055\040\107\062\060
\036\027\015\061\061\060\064\062\071\061\060\064\064\061\071\132
\027\015\063\061\061\061\061\060\061\060\064\064\061\071\132\060
\116\061\013\060\011\006\003\125\004\006\023\002\116\114\061\031
\060\027\006\003\125\004\012\023\020\104\151\147\151\144\145\156
\164\151\164\171\040\102\056\126\056\061\044\060\042\006\003\125
\004\003\023\033\104\151\147\151\144\145\156\164\151\164\171\040

```

\114\063\040\122\157\157\164\040\103\101\040\055\040\107\062\060  
\202\002\042\060\015\006\011\052\206\110\206\367\015\001\001\001  
\005\000\003\202\002\017\000\060\202\002\012\002\202\002\001\000  
\270\021\243\105\336\001\107\126\015\142\270\216\272\130\146\134  
\372\062\306\153\200\156\270\177\370\123\337\176\337\142\250\301  
\127\117\232\105\045\310\112\105\055\123\070\044\263\040\254\117  
\352\255\377\232\020\257\177\342\016\312\264\016\044\045\221\316  
\166\216\020\251\057\231\123\247\220\113\004\213\155\172\271\101  
\033\323\001\171\214\237\101\153\271\220\327\201\022\032\007\226  
\320\011\257\351\344\152\041\123\200\270\206\236\142\150\103\255  
\263\152\025\372\366\155\003\062\152\065\261\120\023\110\307\172  
\265\041\023\234\004\234\332\223\371\152\053\301\247\030\375\366  
\300\176\131\366\373\347\016\021\265\334\043\352\034\357\147\005  
\127\316\027\351\361\173\261\321\062\044\214\317\145\347\324\274  
\066\031\160\174\242\047\041\326\200\322\055\025\117\112\265\340  
\125\220\225\121\223\041\200\363\234\104\037\377\035\125\125\344  
\342\020\021\224\026\123\320\376\257\363\357\227\272\106\342\167  
\133\313\326\242\131\021\210\246\347\125\101\303\222\145\035\043  
\024\142\024\177\045\162\040\366\244\207\051\157\007\374\376\340  
\320\030\322\227\371\024\216\066\306\350\014\030\227\361\166\034  
\364\044\332\343\112\371\267\114\022\031\147\363\360\341\123\373  
\135\344\300\164\143\137\045\221\012\331\076\364\063\254\344\013  
\165\137\316\346\230\274\124\015\235\242\061\305\025\124\135\042  
\034\213\072\124\246\015\321\327\043\072\254\076\252\112\027\144  
\166\055\015\373\124\345\353\202\074\071\101\103\235\341\256\171  
\140\317\146\356\307\161\203\173\014\153\011\333\236\242\115\116  
\106\223\150\267\372\147\341\332\277\337\221\200\332\243\242\211  
\255\136\154\314\113\167\165\144\157\215\044\343\210\210\013\343  
\077\351\277\247\345\126\142\015\203\177\275\152\141\310\220\211  
\170\133\014\257\022\052\342\223\255\144\347\331\105\056\366\260  
\310\253\105\356\160\070\157\273\065\076\026\376\253\236\303\146  
\057\363\276\011\140\325\157\200\275\115\333\257\215\376\014\140  
\063\153\017\350\235\153\304\060\167\237\054\120\070\320\230\151  
\354\067\350\236\017\344\142\352\372\377\021\104\124\331\357\315  
\223\165\221\114\341\211\145\246\224\271\123\371\371\111\143\305  
\002\003\001\000\001\243\201\211\060\201\206\060\017\006\003\125  
\035\023\001\001\377\004\005\060\003\001\001\377\060\016\006\003  
\125\035\017\001\001\377\004\004\003\002\001\006\060\035\006\003  
\125\035\016\004\026\004\024\053\043\040\140\275\055\212\210\107  
\254\255\053\276\002\071\272\230\324\354\230\060\104\006\003\125  
\035\040\004\075\060\073\060\071\006\004\125\035\040\000\060\061  
\060\057\006\010\053\006\001\005\005\007\002\001\026\043\150\164  
\164\160\072\057\057\160\153\151\056\144\151\147\151\144\145\156  
\164\151\164\171\056\145\165\057\166\141\154\151\144\141\164\151  
\145\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000  
\003\202\002\001\000\251\375\357\272\217\033\176\062\022\147\035  
\101\015\055\246\213\317\362\364\255\126\170\176\012\230\330\233  
\250\321\264\113\054\046\254\344\322\177\147\067\275\011\215\345

\271\163\021\072\156\011\307\127\144\007\041\064\370\016\135\052  
\330\221\174\361\124\121\274\234\360\014\152\102\364\074\001\116  
\223\105\101\075\254\363\230\113\036\161\036\063\131\062\377\174  
\060\360\134\344\341\276\055\056\265\352\335\142\041\016\075\264  
\015\225\374\311\270\331\272\240\367\142\247\355\303\003\256\010  
\054\101\325\357\103\161\070\267\024\162\256\077\364\024\164\107  
\330\336\214\121\171\316\357\261\124\254\160\107\226\176\055\056  
\335\233\356\241\001\056\031\357\276\130\140\161\055\255\227\133  
\132\140\060\313\062\202\142\116\126\345\147\152\264\322\061\124  
\162\077\002\320\274\060\071\217\267\103\011\052\037\046\073\014  
\307\174\035\233\200\140\204\016\351\056\322\371\025\273\133\340  
\212\244\000\351\343\051\373\050\133\275\066\105\140\041\103\061  
\377\160\241\137\134\203\133\227\174\015\267\123\131\354\230\265  
\116\342\051\261\324\174\106\343\350\343\103\352\072\226\065\037  
\123\361\004\026\045\343\054\363\150\241\246\221\337\025\373\275  
\237\346\116\236\302\124\153\176\042\127\343\244\234\134\042\045  
\037\201\257\231\310\337\021\025\110\103\370\263\063\251\043\177  
\016\063\217\274\106\035\103\264\073\140\365\227\205\031\242\026  
\260\125\334\032\160\051\145\332\331\176\011\027\064\353\211\272  
\351\141\222\330\336\064\143\074\112\125\152\277\332\206\355\316  
\063\336\273\123\157\317\034\332\224\117\166\124\254\145\125\020  
\123\232\310\270\153\334\006\346\272\345\121\325\101\177\037\304  
\300\101\241\140\221\064\363\023\202\321\241\167\323\367\114\344  
\031\377\327\104\232\260\265\274\334\312\136\217\334\316\361\240  
\151\066\340\104\222\056\231\372\274\257\263\307\170\072\125\146  
\307\153\245\344\151\046\351\064\035\037\052\227\012\351\167\251  
\167\133\163\110\062\201\277\377\321\354\203\305\160\203\151\236  
\230\033\303\127\337\221\225\034\200\374\215\350\226\203\005\323  
\237\172\210\173\372\350\127\361\301\204\050\275\315\326\034\314  
\245\342\111\012\163

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "Digidentity L3 Root CA - G2"

# Issuer: CN=Digidentity L3 Root CA - G2,O=Digidentity B.V.,C=NL

# Serial Number: 1 (0x1)

# Subject: CN=Digidentity L3 Root CA - G2,O=Digidentity B.V.,C=NL

# Not Valid Before: Fri Apr 29 10:44:19 2011

# Not Valid After: Mon Nov 10 10:44:19 2031

# Fingerprint (MD5): 26:8f:5b:c8:b6:3f:88:8c:4c:49:08:2e:18:c1:02:10

# Fingerprint

(SHA1): f1:38:a3:30:a4:ea:98:6b:eb:52:0b:b1:10:35:87:6e:fb:9d:7f:1c

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

```

CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Digidentity L3 Root CA - G2"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\361\070\243\060\244\352\230\153\353\122\013\261\020\065\207\156
\373\235\177\034
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\046\217\133\310\266\077\210\214\114\111\010\056\030\301\002\020
END
CKA_ISSUER MULTILINE_OCTAL
\060\116\061\013\060\011\006\003\125\004\006\023\002\116\114\061
\031\060\027\006\003\125\004\012\023\020\104\151\147\151\144\145
\156\164\151\164\171\040\102\056\126\056\061\044\060\042\006\003
\125\004\003\023\033\104\151\147\151\144\145\156\164\151\164\171
\040\114\063\040\122\157\157\164\040\103\101\040\055\040\107\062
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\001
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING
CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "SITHS Root CA v1"
# Issuer: CN=SITHS Root CA v1,O=Inera AB,C=SE
# Serial Number:90:66:61:a8:62:3d:65:44:77:04:3f:71:9a:c3:97:0c
# Subject: CN=SITHS Root CA v1,O=Inera AB,C=SE
# Not Valid Before: Thu Mar 29 07:54:49 2012
# Not Valid After: Mon Mar 29 07:54:49 2032
# Fingerprint (MD5): 7f:7b:02:6c:68:9f:32:03:c7:af:04:9d:ec:23:df:f3
# Fingerprint (SHA1): 58:5f:78:75:be:e7:43:3e:b0:79:ea:ab:7d:05:bb:0f:7a:f2:bc:cc
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "SITHS Root CA v1"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\073\061\013\060\011\006\003\125\004\006\023\002\123\105\061
\021\060\017\006\003\125\004\012\014\010\111\156\145\162\141\040
\101\102\061\031\060\027\006\003\125\004\003\014\020\123\111\124
\110\123\040\122\157\157\164\040\103\101\040\166\061
END
CKA_ID

```



UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\073\061\013\060\011\006\003\125\004\006\023\002\123\105\061  
\021\060\017\006\003\125\004\012\014\010\111\156\145\162\141\040  
\101\102\061\031\060\027\006\003\125\004\003\014\020\123\111\124  
\110\123\040\122\157\157\164\040\103\101\040\166\061

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\021\000\220\146\141\250\142\075\145\104\167\004\077\161\232  
\303\227\014

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\223\060\202\003\173\240\003\002\001\002\002\021\000  
\220\146\141\250\142\075\145\104\167\004\077\161\232\303\227\014  
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060  
\073\061\013\060\011\006\003\125\004\006\023\002\123\105\061\021  
\060\017\006\003\125\004\012\014\010\111\156\145\162\141\040\101  
\102\061\031\060\027\006\003\125\004\003\014\020\123\111\124\110  
\123\040\122\157\157\164\040\103\101\040\166\061\060\036\027\015  
\061\062\060\063\062\071\060\067\065\064\064\071\132\027\015\063  
\062\060\063\062\071\060\067\065\064\064\071\132\060\073\061\013  
\060\011\006\003\125\004\006\023\002\123\105\061\021\060\017\006  
\003\125\004\012\014\010\111\156\145\162\141\040\101\102\061\031  
\060\027\006\003\125\004\003\014\020\123\111\124\110\123\040\122  
\157\157\164\040\103\101\040\166\061\060\202\002\042\060\015\006  
\011\052\206\110\206\367\015\001\001\001\005\000\003\202\002\017  
\000\060\202\002\012\002\202\002\001\000\300\355\346\236\250\254  
\250\377\330\065\271\374\373\360\225\117\077\075\107\043\321\222  
\311\311\370\360\342\037\206\255\210\077\340\000\317\117\021\225  
\141\075\245\326\040\031\321\210\322\302\126\011\105\040\241\052  
\352\042\303\352\272\314\102\151\236\270\205\237\160\300\154\247  
\276\157\243\134\335\103\210\007\315\312\051\337\151\172\037\055  
\237\126\152\033\142\040\041\141\306\120\113\145\165\111\106\277  
\134\327\051\036\302\036\205\102\341\016\070\115\303\066\161\102  
\104\121\072\321\130\314\311\264\252\154\100\307\203\361\307\011  
\237\112\363\153\363\007\026\065\364\202\216\136\213\204\334\161  
\171\271\373\156\127\105\267\305\160\072\377\102\002\321\064\277  
\205\160\155\117\217\347\037\031\041\367\325\064\274\356\131\346  
\056\042\363\161\202\142\031\237\005\144\174\073\042\161\030\245  
\055\301\170\130\231\321\257\336\224\100\006\031\166\023\120\207  
\043\313\107\127\256\154\305\023\352\232\205\122\303\312\127\046  
\037\336\026\155\255\161\176\362\330\141\375\346\066\116\161\032  
\235\323\040\065\255\022\041\130\165\066\213\211\026\244\067\050  
\317\240\203\072\100\243\312\021\357\264\345\220\033\343\145\222  
\147\230\157\016\051\345\147\030\327\210\372\215\266\307\172\245  
\240\177\221\036\253\266\371\164\230\166\122\140\057\132\067\231  
\250\333\321\076\326\204\152\157\122\323\264\332\032\307\270\262  
\321\224\021\037\305\210\211\351\133\251\243\224\346\242\175\115

\247\062\211\241\336\046\153\315\325\243\362\062\033\332\065\023  
\211\021\111\115\277\106\061\273\351\055\023\370\016\000\245\376  
\003\365\126\106\074\217\023\053\340\345\307\036\003\337\212\352  
\106\205\105\206\331\355\136\013\270\144\223\364\320\130\056\051  
\215\105\127\115\211\165\220\145\314\152\073\301\234\200\271\264  
\200\065\003\216\337\156\052\223\276\246\276\012\001\104\157\100  
\163\252\052\202\034\204\166\177\151\335\261\273\222\130\350\100  
\121\162\134\367\076\071\104\372\245\231\240\177\215\213\260\101  
\130\167\255\042\305\240\300\272\375\061\231\065\152\331\311\040  
\032\136\363\275\274\010\177\335\111\055\057\235\221\020\015\133  
\250\077\317\264\127\163\073\133\340\147\002\003\001\000\001\243  
\201\221\060\201\216\060\017\006\003\125\035\023\001\001\377\004  
\005\060\003\001\001\377\060\114\006\003\125\035\040\004\105\060  
\103\060\101\006\011\052\205\160\112\010\001\002\001\001\060\064  
\060\062\006\010\053\006\001\005\005\007\002\001\026\046\150\164  
\164\160\072\057\057\143\160\163\056\163\151\164\150\163\056\163  
\145\057\163\151\164\150\163\162\157\157\164\143\141\166\061\056  
\150\164\155\154\060\016\006\003\125\035\017\001\001\377\004\004  
\003\002\001\006\060\035\006\003\125\035\016\004\026\004\024\062  
\371\235\117\151\351\230\215\240\326\214\175\371\035\316\243\074  
\272\166\025\060\015\006\011\052\206\110\206\367\015\001\001\005  
\005\000\003\202\002\001\000\037\077\343\170\130\310\012\312\064  
\042\011\330\262\005\213\321\145\234\341\327\327\175\012\300\034  
\230\245\044\122\070\063\332\144\042\043\200\256\376\075\200\276  
\117\217\335\203\366\015\114\063\132\325\243\073\120\212\122\132  
\046\024\163\121\224\344\122\227\143\333\267\006\250\357\217\255  
\342\355\336\243\277\040\321\106\333\055\170\350\054\047\104\234  
\074\354\267\027\374\211\227\363\243\242\136\302\131\123\340\317  
\344\265\001\073\143\123\050\323\257\146\113\064\071\257\141\016  
\076\233\356\263\211\326\223\240\073\001\304\263\043\124\020\074  
\115\327\252\260\332\331\154\312\060\104\055\335\262\050\142\212  
\101\140\362\100\023\154\260\174\076\101\340\213\246\064\361\347  
\256\121\207\003\216\231\177\331\150\242\366\234\015\171\202\262  
\237\337\044\310\146\140\350\266\110\104\047\310\153\126\267\104  
\205\316\002\267\323\212\161\134\127\121\127\041\214\352\302\121  
\017\120\077\200\253\004\115\311\122\335\344\245\362\056\037\155  
\165\272\207\035\220\013\356\030\204\200\163\273\213\225\204\212  
\141\015\116\135\142\237\343\146\014\373\066\016\047\323\110\370  
\006\210\006\245\137\356\176\134\335\255\012\035\075\034\252\100  
\171\230\171\270\120\214\066\215\013\012\066\013\325\076\347\135  
\201\335\154\334\155\261\157\015\164\236\054\057\302\005\362\104  
\021\262\063\372\201\305\112\155\076\105\326\054\342\153\137\056  
\344\103\225\121\033\231\061\005\337\045\033\163\321\173\234\304  
\163\111\373\142\140\331\151\143\335\321\076\145\155\107\372\144  
\114\003\130\120\331\246\276\345\052\150\353\077\213\020\361\346  
\273\042\006\050\232\240\244\230\151\157\066\264\324\015\016\014  
\175\300\051\061\273\054\003\047\341\147\247\275\321\213\056\266  
\207\304\012\340\011\013\202\241\346\117\130\235\373\330\370\141

```
\341\312\227\304\270\267\120\071\314\061\116\375\055\034\032\366
\107\343\154\354\033\005\350\177\027\065\020\204\332\063\347\064
\346\265\244\353\304\042\007\112\366\233\130\330\017\234\100\373
\261\213\137\242\375\231\352\242\173\131\142\321\136\256\321\112
\162\030\053\113\066\071\162\007\232\132\360\143\072\317\033\371
\317\335\110\163\131\160\344
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "SITHS Root CA v1"

# Issuer: CN=SITHS Root CA v1,O=Inera AB,C=SE

# Serial Number:90:66:61:a8:62:3d:65:44:77:04:3f:71:9a:c3:97:0c

# Subject: CN=SITHS Root CA v1,O=Inera AB,C=SE

# Not Valid Before: Thu Mar 29 07:54:49 2012

# Not Valid After: Mon Mar 29 07:54:49 2032

# Fingerprint (MD5): 7f:7b:02:6c:68:9f:32:03:c7:af:04:9d:ec:23:df:f3

# Fingerprint (SHA1): 58:5f:78:75:be:e7:43:3e:b0:79:ea:ab:7d:05:bb:0f:7a:f2:bc:cc

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE

CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "SITHS Root CA v1"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\130\137\170\165\276\347\103\076\260\171\352\253\175\005\273\017
\172\362\274\314
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\177\173\002\154\150\237\062\003\307\257\004\235\354\043\337\363
```

END

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\073\061\013\060\011\006\003\125\004\006\023\002\123\105\061
\021\060\017\006\003\125\004\012\014\010\111\156\145\162\141\040
\101\102\061\031\060\027\006\003\125\004\003\014\020\123\111\124
\110\123\040\122\157\157\164\040\103\101\040\166\061
```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

```
\002\021\000\220\146\141\250\142\075\145\104\167\004\077\161\232
\303\227\014
```

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

```
# Microsoft Code Signing Only Certificate
# Certificate
"Macao Post eSignTrust Root Certification Authority (G02)"
# Issuer: CN=Macao Post eSignTrust Root Certification Authority (G02),O=Macao Post,C=MO
# Serial Number:52:ac:be:07:11:49:97:bb:1f:bf:87:1b:25:17:bf:a4
# Subject: CN=Macao Post eSignTrust Root Certification Authority (G02),O=Macao Post,C=MO
# Not Valid Before: Wed Jan 06 00:00:00 2010
# Not Valid After: Sun Jan 05 23:59:59 2020
# Fingerprint (MD5): a1:2d:ed:eb:8a:3b:88:2f:fa:38:f3:86:a4:fb:bc:f2
# Fingerprint (SHA1): 06:14:31:51:e0:2b:45:dd:ba:dd:5d:8e:56:53:0d:aa:e3:28:cf:90
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Macao Post eSignTrust Root Certification Authority (G02)"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\145\061\013\060\011\006\003\125\004\006\023\002\115\117\061
\023\060\021\006\003\125\004\012\023\012\115\141\143\141\157\040
\120\157\163\164\061\101\060\077\006\003\125\004\003\023\070\115
\141\143\141\157\040\120\157\163\164\040\145\123\151\147\156\124
\162\165\163\164\040\122\157\157\164\040\103\145\162\164\151\146
\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164
\171\040\050\107\060\062\051
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\145\061\013\060\011\006\003\125\004\006\023\002\115\117\061
\023\060\021\006\003\125\004\012\023\012\115\141\143\141\157\040
\120\157\163\164\061\101\060\077\006\003\125\004\003\023\070\115
\141\143\141\157\040\120\157\163\164\040\145\123\151\147\156\124
\162\165\163\164\040\122\157\157\164\040\103\145\162\164\151\146
\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164
\171\040\050\107\060\062\051
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\122\254\276\007\021\111\227\273\037\277\207\033\045\027
\277\244
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\226\060\202\003\176\240\003\002\001\002\002\020\122
\254\276\007\021\111\227\273\037\277\207\033\045\027\277\244\060
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\145
\061\013\060\011\006\003\125\004\006\023\002\115\117\061\023\060
\021\006\003\125\004\012\023\012\115\141\143\141\157\040\120\157
\163\164\061\101\060\077\006\003\125\004\003\023\070\115\141\143
```

\141\157\040\120\157\163\164\040\145\123\151\147\156\124\162\165  
\163\164\040\122\157\157\164\040\103\145\162\164\151\146\151\143  
\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171\040  
\050\107\060\062\051\060\036\027\015\061\060\060\061\060\066\060  
\060\060\060\060\060\132\027\015\062\060\060\061\060\065\062\063  
\065\071\065\071\132\060\145\061\013\060\011\006\003\125\004\006  
\023\002\115\117\061\023\060\021\006\003\125\004\012\023\012\115  
\141\143\141\157\040\120\157\163\164\061\101\060\077\006\003\125  
\004\003\023\070\115\141\143\141\157\040\120\157\163\164\040\145  
\123\151\147\156\124\162\165\163\164\040\122\157\157\164\040\103  
\145\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164  
\150\157\162\151\164\171\040\050\107\060\062\051\060\202\002\042  
\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003  
\202\002\017\000\060\202\002\012\002\202\002\001\000\266\370\207  
\247\164\314\135\043\136\256\253\226\334\327\044\050\035\244\024  
\146\327\240\150\214\136\235\105\324\324\051\323\263\013\353\255  
\026\352\235\122\021\311\244\341\160\345\335\276\016\034\021\167  
\353\237\243\160\170\027\217\271\076\027\123\151\251\353\365\125  
\371\225\227\351\337\071\166\236\037\122\027\264\033\000\022\320  
\315\074\343\252\111\321\236\101\067\066\365\141\315\043\017\127  
\261\366\115\323\333\015\102\123\002\210\364\360\251\206\213\127  
\317\162\012\325\224\113\132\332\067\345\075\107\131\147\276\323  
\216\126\325\127\071\320\047\333\237\111\117\250\026\124\277\170  
\137\317\034\235\136\241\013\214\203\003\263\014\024\311\132\251  
\273\377\306\256\131\317\365\145\037\043\211\001\123\212\325\133  
\027\235\233\377\230\121\017\103\111\367\252\054\355\345\351\206  
\072\063\120\163\334\122\245\153\143\204\351\023\242\174\307\167  
\032\363\252\251\015\013\116\116\035\104\303\162\073\231\131\347  
\101\042\073\054\124\136\022\061\226\150\101\031\325\355\165\247  
\271\127\133\021\366\232\244\111\057\142\363\013\230\121\033\263  
\063\102\322\314\324\141\031\303\323\334\233\373\223\262\142\315  
\066\373\214\351\032\156\032\261\071\044\216\135\331\076\073\206  
\174\210\346\267\047\003\370\225\121\260\277\120\067\376\370\116  
\023\001\033\047\055\233\222\320\162\127\327\243\232\126\350\153  
\243\367\125\336\100\135\342\010\037\134\273\121\246\236\264\335  
\016\246\032\131\142\147\206\163\020\225\235\225\315\272\277\330  
\234\052\016\213\166\231\223\324\113\260\350\124\077\015\330\212  
\371\200\317\101\375\001\172\105\174\175\326\075\116\371\142\117  
\101\045\174\252\155\130\126\033\007\264\163\252\037\021\037\074  
\272\123\043\340\355\112\315\226\211\334\110\320\115\142\313\223  
\007\366\240\256\123\027\174\137\134\007\034\005\114\253\114\152  
\252\302\017\240\031\153\171\171\302\174\263\251\375\075\373\314  
\174\161\305\273\276\045\155\041\247\373\326\276\140\363\265\251  
\251\154\164\030\077\250\236\102\140\101\362\071\055\035\302\015  
\163\362\340\261\266\112\032\030\275\167\151\031\327\322\172\261  
\334\226\065\232\330\046\205\203\266\023\051\302\343\002\003\001  
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\206\004\227\011\050\313\107\347\100\324\054\136\032\136\110\372  
\256\307\351\004\352\107\044\233\276\361\107\236\325\325\172\321  
\136\324\205\362\013\043\004\230\324\053\232\126\162\106\114\101  
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\257\133\324\362\321\101\360\107\135\172\274\172\131\361\175\140  
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\046\251\160\373\361\211\226\142\025\134\131\240\265\043\372\226  
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\033\023\140\117\171\133\374\032\234\376\242\237\240\021\063\221  
\311\113\155\072\146\226\055\323\070\370\331\231\201\264\104\046  
\177\261\347\236\160\155\035\155\365\042\011\344\254\031\066\373  
\047\005\330\172\233\331\274\236\033\332\031\067\330\361\335\025  
\230\144\033\217\123\360\050\235\254\024\272\137\151\317\226\043  
\356\126\254\231\315\072\217\325\136\031\346\142\023\072\137\353  
\213\137\026\300\073\341\321\223\217\126\141\067\005\320\171\033  
\375\250\274\017\171\322\263\346\323\146

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "Macao Post eSignTrust Root Certification Authority (G02)"

# Issuer: CN=Macao Post eSignTrust Root Certification Authority  
(G02),O=Macao Post,C=MO

# Serial Number:52:ac:be:07:11:49:97:bb:1f:bf:87:1b:25:17:bf:a4

# Subject: CN=Macao Post eSignTrust Root Certification Authority (G02),O=Macao Post,C=MO

```

# Not Valid Before: Wed Jan 06 00:00:00 2010
# Not Valid After: Sun Jan 05 23:59:59 2020
# Fingerprint (MD5): a1:2d:ed:eb:8a:3b:88:2f:fa:38:f3:86:a4:fb:bc:f2
# Fingerprint (SHA1): 06:14:31:51:e0:2b:45:dd:ba:dd:5d:8e:56:53:0d:aa:e3:28:cf:90
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Macao Post eSignTrust Root Certification Authority (G02)"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\006\024\061\121\340\053\105\335\272\335\135\216\126\123\015\252
\343\050\317\220
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\241\055\355\353\212\073\210\057\372\070\363\206\244\373\274\362
END
CKA_ISSUER MULTILINE_OCTAL
\060\145\061\013\060\011\006\003\125\004\006\023\002\115\117\061
\023\060\021\006\003\125\004\012\023\012\115\141\143\141\157\040
\120\157\163\164\061\101\060\077\006\003\125\004\003\023\070\115
\141\143\141\157\040\120\157\163\164\040\145\123\151\147\156\124
\162\165\163\164\040\122\157\157\164\040\103\145\162\164\151\146
\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164
\171\040\050\107\060\062\051
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\122\254\276\007\021\111\227\273\037\277\207\033\045\027
\277\244
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "Autoridade Certificadora Raiz Brasileira v2"
# Issuer: CN=Autoridade Certificadora Raiz Brasileira v2,OU=Instituto Nacional de Tecnologia da Informacao -
ITI,O=ICP-Brasil,C=BR
# Serial Number: 1 (0x1)
# Subject: CN=Autoridade Certificadora Raiz Brasileira v2,OU=Instituto Nacional de Tecnologia da Informacao -
ITI,O=ICP-Brasil,C=BR
#
Not Valid Before: Mon Jun 21 19:04:57 2010
# Not Valid After: Wed Jun 21 19:04:57 2023
# Fingerprint (MD5): 00:11:ae:73:15:fb:2d:6d:88:d8:43:bd:b4:b6:4c:5f
# Fingerprint (SHA1): a9:82:2e:6c:69:33:c6:3c:14:8c:2d:ca:a4:4a:5c:f1:aa:d2:c4:2e
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

```

```
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Autoridade Certificadora Raiz Brasileira v2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\227\061\013\060\011\006\003\125\004\006\023\002\102\122
\061\023\060\021\006\003\125\004\012\023\012\111\103\120\055\102
\162\141\163\151\154\061\075\060\073\006\003\125\004\013\023\064
\111\156\163\164\151\164\165\164\157\040\116\141\143\151\157\156
\141\154\040\144\145\040\124\145\143\156\157\154\157\147\151\141
\040\144\141\040\111\156\146\157\162\155\141\143\141\157\040\055
\040\111\124\111\061\064\060\062\006\003\125\004\003\023\053\101
\165\164\157\162\151\144\141\144\145\040\103\145\162\164\151\146
\151\143\141\144\157\162\141\040\122\141\151\172\040\102\162\141
\163\151\154\145\151\162\141\040\166\062
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\227\061\013\060\011\006\003\125\004\006\023\002\102\122
\061\023\060\021\006\003\125\004\012\023\012\111\103\120\055\102
\162\141\163\151\154\061\075\060\073\006\003\125\004\013\023\064
\111\156\163\164\151\164\165\164\157\040\116\141\143\151\157\156
\141\154\040\144\145\040\124\145\143\156\157\154\157\147\151\141
\040\144\141\040\111\156\146\157\162\155\141\143\141\157\040\055
\040\111\124\111\061\064\060\062\006\003\125\004\003\023\053\101
\165\164\157\162\151\144\141\144\145\040\103\145\162\164\151\146
\151\143\141\144\157\162\141\040\122\141\151\172\040\102\162\141
\163\151\154\145\151\162\141\040\166\062
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\001
END
CKA_VALUE MULTILINE_OCTAL
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\060\015\006\011\052\206\110\206\367\015\001\001\015\005\000\060
\201\227\061\013\060\011\006\003\125\004\006\023\002\102\122\061
\023\060\021\006\003\125\004\012\023\012\111\103\120\055\102\162
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\154\040\144\145\040\124\145\143\156\157\154\157\147\151\141\040
\144\141\040\111\156\146\157\162\155\141\143\141\157\040\055\040
\111\124\111\061\064\060\062\006\003\125\004\003\023\053\101\165
\164\157\162\151\144\141\144\145\040\103\145\162\164\151\146\151
\143\141\144\157\162\141\040\122\141\151\172\040\102\162\141\163
\151\154\145\151\162\141\040\166\062\060\036\027\015\061\060\060
\066\062\061\061\071\060\064\065\067\132\027\015\062\063\060\066
```



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\225\127\105\374\155\204\363\206\001\311\205\003\255\230\253\322  
\362\136\005\231\311\273\157\142\147\375\167\104\271\003\007\074  
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\274\152\111\275\363\164\017\142\267\353\133\007\146\224\102\044  
\235\106\254\232\102\030\060\360\044\250\121\101\352\253\225\361  
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\223\144\116\303\101\222\123\040\052\317\374\164\156\324\333\063  
\070\142\344\376\216\114\130\034\367\217\052\115\377\305\222\331  
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\314\022\351\367\336\327\057\324\110\057\107\077\046\141\004\261  
\022\232\063\153\265\206\113\023\053\320\206\235\107\355\151\373  
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\266\214\047\012\323\015\360\232\053\042\203\203\263\275\203\065  
\255\233\074\274\170\203\051\065\141\066\370\021\161\063\040\124  
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\321\005\274\006\002\143\004\053\015\211\335\344\134\133\062\200  
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\024\215\325\162\155\013\346\375\215\344\250\363\005\215\165\027  
\167\233\012\271\372\220\222\231\145\210\062\147\103\005\216\055  
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\153\064\077\216\203\263\367\352\017\112\036\076\065\204\235\214  
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\236\344\066\213\271\271\243\102\045\007\076\303\345\325\150\117  
\240\146\034\246\263\266\163\034\220\032\077\100\271\032\126\102  
\160\207\377\157\055\017\021\375\036\377\367\205\060\025\016\343  
\027\061\356\047\225\314\311\351\231\036\227\307\155\133\007\265  
\005\152\075\362\105\337\272\202\171\044\160\056\233\202\037\146  
\251\245\155\047\314\366\052\242\321\137\205\157\340\106\235\252  
\322\245\116\125\016

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

```

CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRUST_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRUST_AFTER CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
#
Trust for "Autoridade Certificadora Raiz Brasileira v2"
# Issuer: CN=Autoridade Certificadora Raiz Brasileira v2,OU=Instituto Nacional de Tecnologia da Informacao -
ITI,O=ICP-Brasil,C=BR
# Serial Number: 1 (0x1)
# Subject: CN=Autoridade Certificadora Raiz Brasileira v2,OU=Instituto Nacional de Tecnologia da Informacao -
ITI,O=ICP-Brasil,C=BR
# Not Valid Before: Mon Jun 21 19:04:57 2010
# Not Valid After: Wed Jun 21 19:04:57 2023
# Fingerprint (MD5): 00:11:ae:73:15:fb:2d:6d:88:d8:43:bd:b4:b6:4c:5f
# Fingerprint (SHA1): a9:82:2e:6c:69:33:c6:3c:14:8c:2d:ca:a4:4a:5c:f1:aa:d2:c4:2e
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Autoridade Certificadora Raiz Brasileira v2"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\251\202\056\154\151\063\306\074\024\214\055\312\244\112\134\361
\252\322\304\056
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\000\021\256\163\025\373\055\155\210\330\103\275\264\266\114\137
END
CKA_ISSUER
MULTILINE_OCTAL
\060\201\227\061\013\060\011\006\003\125\004\006\023\002\102\122
\061\023\060\021\006\003\125\004\012\023\012\111\103\120\055\102
\162\141\163\151\154\061\075\060\073\006\003\125\004\013\023\064
\111\156\163\164\151\164\165\164\157\040\116\141\143\151\157\156
\141\154\040\144\145\040\124\145\143\156\157\154\157\147\151\141
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\040\111\124\111\061\064\060\062\006\003\125\004\003\023\053\101
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\151\143\141\144\157\162\141\040\122\141\151\172\040\102\162\141
\163\151\154\145\151\162\141\040\166\062
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\001
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

```

```
# Microsoft Code Signing Only Certificate
# Certificate "Swisscom
  Root CA 2"
# Issuer: CN=Swisscom Root CA 2,OU=Digital Certificate Services,O=Swisscom,C=ch
# Serial Number:1e:9e:28:e8:48:f2:e5:ef:c3:7c:4a:1e:5a:18:67:b6
# Subject: CN=Swisscom Root CA 2,OU=Digital Certificate Services,O=Swisscom,C=ch
# Not Valid Before: Fri Jun 24 08:38:14 2011
# Not Valid After: Wed Jun 25 07:38:14 2031
# Fingerprint (MD5): 5b:04:69:ec:a5:83:94:63:18:a7:86:d0:e4:f2:6e:19
# Fingerprint (SHA1): 77:47:4f:c6:30:e4:0f:4c:47:64:3f:84:ba:b8:c6:95:4a:8a:41:ec
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Swisscom Root CA 2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\144\061\013\060\011\006\003\125\004\006\023\002\143\150\061
\021\060\017\006\003\125\004\012\023\010\123\167\151\163\163\143
\157\155\061\045\060\043\006\003\125\004\013\023\034\104\151\147
\151\164\141\154\040\103\145\162\164\151\146\151\143\141\164\145
\040\123\145\162\166\151\143\145\163\061\033\060\031\006\003\125
\004\003\023\022\123\167\151\163\163\143\157\155\040\122\157\157
\164\040\103\101\040\062
END
CKA_ID
  UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\144\061\013\060\011\006\003\125\004\006\023\002\143\150\061
\021\060\017\006\003\125\004\012\023\010\123\167\151\163\163\143
\157\155\061\045\060\043\006\003\125\004\013\023\034\104\151\147
\151\164\141\154\040\103\145\162\164\151\146\151\143\141\164\145
\040\123\145\162\166\151\143\145\163\061\033\060\031\006\003\125
\004\003\023\022\123\167\151\163\163\143\157\155\040\122\157\157
\164\040\103\101\040\062
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\036\236\050\350\110\362\345\357\303\174\112\036\132\030
\147\266
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\331\060\202\003\301\240\003\002\001\002\002\020\036
\236\050\350\110\362\345\357\303\174\112\036\132\030\147\266\060
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\144
\061\013\060\011\006\003\125\004\006\023\002\143\150\061\021\060
\017\006\003\125\004\012\023\010\123\167\151\163\163\143\157\155
\061\045\060\043\006\003\125\004\013\023\034\104\151\147\151\164
```

\141\154\040\103\145\162\164\151\146\151\143\141\164\145\040\123  
\145\162\166\151\143\145\163\061\033\060\031\006\003\125\004\003  
\023\022\123\167\151\163\163\143\157\155\040\122\157\157\164\040  
\103\101\040\062\060\036\027\015\061\061\060\066\062\064\060\070  
\063\070\061\064\132\027\015\063\061\060\066\062\065\060\067\063  
\070\061\064\132\060\144\061\013\060\011\006\003\125\004\006\023  
\002\143\150\061\021\060\017\006\003\125\004\012\023\010\123\167  
\151\163\163\143\157\155\061\045\060\043\006\003\125\004\013\023  
\034\104\151\147\151\164\141\154\040\103\145\162\164\151\146\151  
\143\141\164\145\040\123\145\162\166\151\143\145\163\061\033\060  
\031\006\003\125\004\003\023\022\123\167\151\163\163\143\157\155  
\040\122\157\157\164\040\103\101\040\062\060\202\002\042\060\015  
\006\011\052\206\110\206\367\015\001\001\001\005\000\003\202\002  
\017\000\060\202\002\012\002\202\002\001\000\225\102\116\204\235  
\121\346\323\011\350\162\132\043\151\333\170\160\216\026\361\053  
\217\015\003\316\223\314\056\000\010\173\253\063\214\364\351\100  
\346\027\114\253\236\270\107\024\062\167\062\335\050\014\336\030  
\113\137\166\237\370\071\073\374\116\211\330\174\305\147\357\253  
\322\271\064\137\153\072\363\144\066\316\302\260\317\023\150\312  
\310\313\353\265\342\075\056\041\337\352\054\324\340\371\160\226  
\114\377\152\130\230\267\027\344\033\122\345\176\007\000\035\137  
\332\346\076\225\004\267\151\210\071\241\101\140\045\141\113\225  
\071\150\142\034\261\013\005\211\300\066\202\024\041\077\256\333  
\241\375\274\157\034\140\206\266\123\224\111\271\053\106\305\117  
\000\053\277\241\273\313\077\340\307\127\034\127\350\326\151\370  
\301\044\122\235\210\125\335\302\207\056\164\043\320\024\375\052  
\107\132\273\246\235\375\224\344\321\212\245\137\206\143\166\205  
\313\257\377\111\050\374\200\355\114\171\322\273\344\300\357\001  
\356\120\101\010\065\043\160\053\251\026\264\214\156\205\351\266  
\021\317\061\335\123\046\033\337\055\132\112\002\100\374\304\300  
\266\351\061\032\010\050\345\140\303\037\304\220\216\020\142\140  
\104\015\354\012\276\125\030\161\054\245\364\262\274\025\142\377  
\034\343\276\035\332\036\127\263\074\176\315\202\035\221\343\113  
\353\054\122\064\260\212\375\022\116\226\260\353\160\177\236\071  
\367\146\102\261\253\254\122\332\166\100\127\173\052\275\350\156  
\003\262\013\200\205\210\235\014\307\302\167\260\232\232\127\364  
\270\372\023\134\150\223\072\147\244\227\320\033\231\267\206\062  
\113\140\330\316\357\320\014\177\225\237\157\207\117\207\212\216  
\137\010\174\252\133\374\132\276\241\221\237\125\175\116\260\013  
\151\314\260\224\250\247\207\362\323\112\120\334\137\162\260\026  
\165\036\313\264\030\142\232\260\247\071\252\233\237\146\330\215  
\246\154\226\025\343\346\362\370\361\203\142\154\273\125\351\141  
\223\243\075\365\261\127\213\117\043\260\233\345\224\152\057\337  
\214\337\225\121\051\140\241\013\051\344\134\125\130\267\250\374  
\231\356\045\115\114\016\263\323\114\217\204\350\051\017\375\020  
\124\002\205\310\371\345\303\213\317\347\017\002\003\001\000\001  
\243\201\206\060\201\203\060\016\006\003\125\035\017\001\001\377  
\004\004\003\002\001\206\060\035\006\003\125\035\041\004\026\060

\024\060\022\006\007\140\205\164\001\123\002\001\006\007\140\205  
\164\001\123\002\001\060\022\006\003\125\035\023\001\001\377\004  
\010\060\006\001\001\377\002\001\007\060\035\006\003\125\035\016  
\004\026\004\024\115\046\040\042\211\113\323\325\244\012\241\157  
\336\342\022\201\305\361\074\056\060\037\006\003\125\035\043\004  
\030\060\026\200\024\115\046\040\042\211\113\323\325\244\012\241  
\157\336\342\022\201\305\361\074\056\060\015\006\011\052\206\110  
\206\367\015\001\001\013\005\000\003\202\002\001\000\062\012\262  
\244\033\313\175\276\202\127\211\271\152\177\363\364\301\056\021  
\175\270\031\076\171\267\250\250\162\067\146\233\032\355\254\023  
\073\016\277\142\360\234\337\236\173\241\123\110\016\101\172\312  
\040\247\027\033\266\170\354\100\221\363\102\255\020\303\134\357  
\377\140\131\177\315\205\243\213\075\110\034\045\002\074\147\175  
\365\062\351\057\060\345\175\245\172\070\320\363\146\052\146\036  
\215\063\203\212\157\174\156\250\132\165\232\270\327\332\130\110  
\104\107\250\114\372\114\111\012\112\302\022\067\250\100\014\303  
\310\341\320\127\015\227\062\225\307\072\237\227\323\127\370\013  
\336\345\162\363\243\333\377\265\330\131\262\163\335\115\052\161  
\262\272\111\365\313\034\325\365\171\310\231\263\374\301\114\164  
\343\264\275\051\067\025\004\050\036\336\105\106\160\354\257\272  
\170\016\212\052\316\000\171\334\300\137\031\147\054\153\113\357  
\150\150\013\103\343\254\301\142\011\357\246\335\145\141\240\257  
\204\125\110\221\122\034\306\045\221\052\320\301\042\043\141\131  
\257\105\021\205\035\001\044\064\217\317\263\377\027\162\040\023  
\302\200\252\041\054\161\071\016\320\217\134\301\323\321\216\042  
\162\106\114\035\226\256\117\161\261\341\005\051\226\131\364\273  
\236\165\075\317\015\067\015\142\333\046\214\143\251\043\337\147  
\006\074\174\072\332\064\102\341\146\264\106\004\336\306\226\230  
\017\113\110\172\044\062\165\221\237\254\367\150\351\052\271\125  
\145\316\135\141\323\047\160\330\067\376\237\271\257\240\056\126  
\267\243\145\121\355\073\253\024\277\114\121\003\350\137\212\005  
\233\356\212\156\234\357\277\150\372\310\332\013\343\102\311\320  
\027\024\234\267\112\340\257\223\047\041\125\046\265\144\057\215  
\361\377\246\100\005\205\005\134\312\007\031\134\013\023\050\114  
\130\177\302\245\357\105\332\140\323\256\145\141\235\123\203\164  
\302\256\362\134\302\026\355\222\076\204\076\163\140\210\274\166  
\364\054\317\320\175\175\323\270\136\321\221\022\020\351\315\335  
\312\045\343\325\355\231\057\276\165\201\113\044\371\105\106\224  
\311\051\041\123\234\046\105\252\023\027\344\347\315\170\342\071  
\301\053\022\236\246\236\033\305\346\016\331\061\331

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft

Code Signing Only Certificate

```
# Trust for "Swisscom Root CA 2"
# Issuer: CN=Swisscom Root CA 2,OU=Digital Certificate Services,O=Swisscom,C=ch
# Serial Number:1e:9e:28:e8:48:f2:e5:ef:c3:7c:4a:1e:5a:18:67:b6
# Subject: CN=Swisscom Root CA 2,OU=Digital Certificate Services,O=Swisscom,C=ch
# Not Valid Before: Fri Jun 24 08:38:14 2011
# Not Valid After: Wed Jun 25 07:38:14 2031
# Fingerprint (MD5): 5b:04:69:ec:a5:83:94:63:18:a7:86:d0:e4:f2:6e:19
# Fingerprint (SHA1): 77:47:4f:c6:30:e4:0f:4c:47:64:3f:84:ba:b8:c6:95:4a:8a:41:ec
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Swisscom Root CA 2"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\167\107\117\306\060\344\017\114\107\144\077\204\272\270\306\225
\112\212\101\354
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\133\004\151\354\245\203\224\143\030\247\206\320\344\362\156\031
END
CKA_ISSUER MULTILINE_OCTAL
\060\144\061\013\060\011\006\003\125\004\006\023\002\143\150\061
\021\060\017\006\003\125\004\012\023\010\123\167\151\163\163\143
\157\155\061\045\060\043\006\003\125\004\013\023\034\104\151\147
\151\164\141\154\040\103\145\162\164\151\146\151\143\141\164\145
\040\123\145\162\166\151\143\145\163\061\033\060\031\006\003\125
\004\003\023\022\123\167\151\163\163\143\157\155\040\122\157\157
\164\040\103\101\040\062
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\036\236\050\350\110\362\345\357\303\174\112\036\132\030
\147\266
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

# Microsoft Code Signing Only Certificate

```
# Certificate "IGC/A AC racine Etat francais"
# Issuer: CN=IGC/A AC racine Etat francais,OU=0002 130007669,O=ANSSI,C=FR
# Serial Number:11:21:85:0c:b3:9c:6a:32:fa:be:67:1b:81:3f:a4:86:15:8f
# Subject: CN=IGC/A AC racine Etat francais,OU=0002 130007669,O=ANSSI,C=FR
#
Not Valid Before: Fri Jul 08 09:00:00 2011
# Not Valid After: Sat Apr 15 09:00:00 2028
```

```
# Fingerprint (MD5): f4:f5:81:33:de:2e:15:b5:70:3a:57:3c:26:0a:72:8d
# Fingerprint (SHA1): 1a:c9:2f:09:ea:89:e2:8b:12:6d:fa:c5:1e:3a:f7:ea:90:95:a3:ee
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "IGC/A AC racine Etat francais"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\136\061\013\060\011\006\003\125\004\006\023\002\106\122\061
\016\060\014\006\003\125\004\012\023\005\101\116\123\123\111\061
\027\060\025\006\003\125\004\013\023\016\060\060\060\062\040\061
\063\060\060\060\067\066\066\071\061\046\060\044\006\003\125\004
\003\023\035\111\107\103\057\101\040\101\103\040\162\141\143\151
\156\145\040\105\164\141\164\040\146\162\141\156\143\141\151\163
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\136\061\013\060\011\006\003\125\004\006\023\002\106\122\061
\016\060\014\006\003\125\004\012\023\005\101\116\123\123\111\061
\027\060\025\006\003\125\004\013\023\016\060\060\060\062\040\061
\063\060\060\060\067\066\066\071\061\046\060\044\006\003\125\004
\003\023\035\111\107\103\057\101\040\101\103\040\162\141\143\151
\156\145\040\105\164\141\164\040\146\162\141\156\143\141\151\163
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\022\021\041\205\014\263\234\152\062\372\276\147\033\201\077
\244\206\025\217
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\303\060\202\003\253\240\003\002\001\002\002\022\021
\041\205\014\263\234\152\062\372\276\147\033\201\077\244\206\025
\217\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000
\060\136\061\013\060\011\006\003\125\004\006\023\002\106\122\061
\016\060\014\006\003\125\004\012\023\005\101\116\123\123\111\061
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\063\060\060\060\067\066\066\071\061\046\060\044\006\003\125\004
\003\023\035\111\107\103\057\101\040\101\103\040\162\141\143\151
\156\145\040\105\164\141\164\040\146\162\141\156\143\141\151\163
\060\036\027\015\061\061\060\067\060\070\060\071\060\060\060\060
\132\027\015\062\070\060\064\061\065\060\071\060\060\060\060\132
\060\136\061\013\060\011\006\003\125\004\006\023\002\106\122\061
\016\060\014\006\003\125\004\012\023\005\101\116\123\123\111\061
\027\060\025\006\003\125\004\013\023\016\060\060\060\062\040\061
\063\060\060\060\067\066\066\071\061\046\060\044\006\003\125\004
\003\023\035\111\107\103\057\101\040\101\103\040\162\141\143\151
\156\145\040\105\164\141\164\040\146\162\141\156\143\141\151\163
```



\060\202\002\042\060\015\006\011\052\206\110\206\367\015\001\001  
\001\005\000\003\202\002\017\000\060\202\002\012\002\202\002\001  
\000\252\174\050\237\021\060\230\315\157\156\054\205\022\046\073  
\010\006\312\101\375\122\117\103\275\300\046\047\161\166\032\131  
\226\330\011\353\007\252\046\116\117\076\113\241\343\227\207\205  
\146\201\161\311\271\025\166\157\167\120\030\223\020\055\067\210  
\115\027\267\363\105\275\042\056\267\047\230\133\307\005\375\275  
\063\355\242\365\123\035\050\043\145\277\100\065\156\316\152\013  
\303\251\365\045\014\253\042\360\270\300\304\175\067\014\243\142  
\174\356\264\333\075\041\071\247\234\211\343\233\242\020\370\212  
\266\112\057\056\230\151\053\152\240\206\332\361\010\345\276\114  
\147\026\055\045\141\363\325\015\013\027\104\107\011\324\106\005  
\235\017\300\210\115\141\344\044\304\307\150\011\257\254\322\257  
\271\225\046\157\200\004\374\166\254\252\307\043\266\344\006\221  
\125\104\354\144\333\231\201\034\322\126\164\375\326\062\050\273  
\313\311\067\015\373\151\154\157\272\243\153\006\214\152\100\056  
\027\072\071\352\320\014\337\132\034\272\157\244\062\260\270\314  
\076\167\033\323\213\037\206\372\377\076\076\157\134\210\106\347  
\343\017\372\253\035\363\175\113\370\124\156\116\314\334\062\132  
\143\170\242\062\257\063\170\352\103\341\114\172\115\327\224\006  
\055\346\117\245\102\222\257\050\212\117\303\025\354\251\153\251  
\337\340\335\023\002\274\314\175\377\055\346\007\251\276\165\226  
\352\102\136\133\032\336\242\063\263\143\275\253\005\371\213\346  
\275\115\321\155\126\232\353\211\074\237\300\170\344\276\045\160  
\006\305\021\163\240\310\312\024\313\072\324\362\234\052\074\332  
\137\027\063\331\166\024\067\252\111\207\145\331\364\331\056\031  
\137\371\240\315\250\271\101\062\155\161\246\244\313\367\143\042  
\320\051\344\272\201\032\152\051\035\232\245\244\134\106\124\044  
\105\324\310\355\172\171\205\354\204\167\156\147\115\144\017\103  
\336\172\203\244\247\330\333\265\123\114\376\142\310\023\303\142  
\066\245\050\061\062\233\264\226\207\342\231\306\037\126\277\106  
\243\251\144\061\345\325\261\113\250\146\314\133\241\377\026\374  
\012\070\052\150\217\167\045\046\255\221\164\205\150\310\177\032  
\345\132\024\270\175\016\267\043\061\300\144\267\005\057\101\130  
\125\002\003\001\000\001\243\173\060\171\060\017\006\003\125\035  
\023\001\001\377\004\005\060\003\001\001\377\060\016\006\003\125  
\035\017\001\001\377\004\004\003\002\001\006\060\026\006\003\125  
\035\040\004\017\060\015\060\013\006\011\052\201\172\001\201\137  
\001\001\002\060\035\006\003\125\035\016\004\026\004\024\237\252  
\323\051\226\337\000\345\103\340\361\143\254\336\022\216\302\047  
\170\372\060\037\006\003\125\035\043\004\030\060\026\200\024\237  
\252\323\051\226\337\000\345\103\340\361\143\254\336\022\216\302  
\047\170\372\060\015\006\011\052\206\110\206\367\015\001\001\013  
\005\000\003\202\002\001\000\165\265\165\321\216\066\146\234\110  
\367\205\015\116\005\273\115\232\234\264\016\050\242\004\274\120  
\060\273\364\224\114\230\220\205\253\340\122\144\117\322\322\056  
\142\223\220\260\205\015\210\124\373\306\124\154\236\353\225\171  
\200\136\242\227\026\037\362\147\164\101\234\125\364\267\152\233

\112\026\206\275\005\037\146\200\160\176\311\321\365\055\041\161  
\120\071\245\255\210\246\046\034\213\327\045\034\072\326\343\364  
\302\014\237\127\301\144\310\127\121\043\026\043\215\017\043\152  
\126\113\377\372\306\237\065\223\306\042\300\145\361\257\336\251  
\154\030\276\127\145\131\315\364\043\125\144\041\330\355\225\141  
\151\063\162\152\121\366\237\345\225\155\216\336\153\163\047\023  
\224\136\176\227\110\300\062\026\276\075\067\355\326\334\216\274  
\134\055\374\142\250\317\366\220\367\261\213\011\353\072\044\143  
\015\310\226\105\324\057\167\110\102\365\055\142\347\047\013\340  
\021\206\031\335\247\020\367\143\006\221\060\151\132\165\364\254  
\371\241\215\227\306\240\357\072\037\223\045\110\126\072\032\210  
\041\031\223\303\225\040\111\010\125\111\115\242\123\234\231\234  
\163\151\056\247\365\312\267\016\045\357\067\043\137\220\330\103  
\176\356\204\027\152\047\136\177\322\055\077\254\076\257\060\247  
\215\221\304\364\217\011\035\363\367\221\016\343\030\272\334\104  
\311\175\005\123\003\267\156\240\363\171\327\321\032\117\320\270  
\154\210\166\301\200\230\125\205\123\141\317\104\127\114\336\116  
\015\026\121\361\075\211\201\256\175\013\255\212\265\356\126\304  
\306\314\021\013\030\324\374\375\171\373\376\004\021\234\043\357  
\166\162\307\215\276\271\036\170\166\362\232\034\255\143\102\307  
\330\355\155\141\220\302\041\052\017\010\024\055\040\103\045\174  
\030\265\267\240\244\175\271\245\014\031\376\311\253\075\347\133  
\336\257\372\127\031\047\205\347\043\016\364\315\015\031\060\076  
\212\344\306\021\036\360\264\175\151\143\233\016\226\206\220\340  
\373\003\157\133\131\076\035\041\365\127\147\126\046\362\207\031  
\007\204\272\054\220\072\303\050\244\005\132\040\315\251\133\225  
\165\071\177\042\120\012\116\177\027\367\263\254\323\007\246\276  
\055\122\012\060\114\170\020

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "IGC/A AC racine Etat francais"

# Issuer: CN=IGC/A AC racine Etat francais,OU=0002 130007669,O=ANSSI,C=FR

# Serial Number: 11:21:85:0c:b3:9c:6a:32:fa:be:67:1b:81:3f:a4:86:15:8f

# Subject: CN=IGC/A AC racine Etat francais,OU=0002 130007669,O=ANSSI,C=FR

# Not Valid Before: Fri Jul 08 09:00:00 2011

# Not Valid After:

Sat Apr 15 09:00:00 2028

# Fingerprint (MD5): f4:f5:81:33:de:2e:15:b5:70:3a:57:3c:26:0a:72:8d

# Fingerprint (SHA1): 1a:c9:2f:09:ea:89:e2:8b:12:6d:fa:c5:1e:3a:f7:ea:90:95:a3:ee

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

```

CKA_LABEL UTF8 "IGC/A AC racine Etat francais"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\032\311\057\011\352\211\342\213\022\155\372\305\036\072\367\352
\220\225\243\356
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\364\365\201\063\336\056\025\265\160\072\127\074\046\012\162\215
END
CKA_ISSUER MULTILINE_OCTAL
\060\136\061\013\060\011\006\003\125\004\006\023\002\106\122\061
\016\060\014\006\003\125\004\012\023\005\101\116\123\123\111\061
\027\060\025\006\003\125\004\013\023\016\060\060\060\062\040\061
\063\060\060\060\067\066\066\071\061\046\060\044\006\003\125\004
\003\023\035\111\107\103\057\101\040\101\103\040\162\141\143\151
\156\145\040\105\164\141\164\040\146\162\141\156\143\141\151\163
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\022\021\041\205\014\263\234\152\062\372\276\147\033\201\077
\244\206\025\217
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "PersonalID Trustworthy RootCA 2011"
# Issuer: CN=PersonalID Trustworthy RootCA 2011,OU=Certificate Services,O=PersonalID Ltd.,C=IL
# Serial Number:58:cb:f9:64:96:71:74:95:40:f4:ad:08:ac:64:e4:e3
# Subject: CN=PersonalID Trustworthy RootCA 2011,OU=Certificate Services,O=PersonalID Ltd.,C=IL
# Not Valid Before: Thu Sep 01 08:35:21 2011
# Not Valid After: Sun Sep 01 08:45:16 2041
# Fingerprint (MD5): 20:3c:23:dc:f6:7a:97:14:0e:5f:48:b4:7d:ad:ac:c8
# Fingerprint (SHA1): 43:94:ce:31:26:ff:1a:22:4c:dd:4d:ee:b4:f4:ec:1d:a3:68:ef:6a
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE
CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "PersonalID Trustworthy RootCA 2011"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\163\061\013\060\011\006\003\125\004\006\023\002\111\114\061
\030\060\026\006\003\125\004\012\014\017\120\145\162\163\157\156
\141\154\111\104\040\114\164\144\056\061\035\060\033\006\003\125
\004\013\014\024\103\145\162\164\151\146\151\143\141\164\145\040
\123\145\162\166\151\143\145\163\061\053\060\051\006\003\125\004

```

\003\014\042\120\145\162\163\157\156\141\154\111\104\040\124\162  
\165\163\164\167\157\162\164\150\171\040\122\157\157\164\103\101  
\040\062\060\061\061

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\163\061\013\060\011\006\003\125\004\006\023\002\111\114\061  
\030\060\026\006\003\125\004\012\014\017\120\145\162\163\157\156  
\141\154\111\104\040\114\164\144\056\061\035\060\033\006\003\125  
\004\013\014\024\103\145\162\164\151\146\151\143\141\164\145\040  
\123\145\162\166\151\143\145\163\061\053\060\051\006\003\125\004  
\003\014\042\120\145\162\163\157\156\141\154\111\104\040\124\162  
\165\163\164\167\157\162\164\150\171\040\122\157\157\164\103\101  
\040\062\060\061\061

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\020\130\313\371\144\226\161\164\225\100\364\255\010\254\144  
\344\343

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\006\062\060\202\004\032\240\003\002\001\002\002\020\130  
\313\371\144\226\161\164\225\100\364\255\010\254\144\344\343\060  
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\163  
\061\013\060\011\006\003\125\004\006\023\002\111\114\061\030\060  
\026\006\003\125\004\012\014\017\120\145\162\163\157\156\141\154  
\111\104\040\114\164\144\056\061\035\060\033\006\003\125\004\013  
\014\024\103\145\162\164\151\146\151\143\141\164\145\040\123\145  
\162\166\151\143\145\163\061\053\060\051\006\003\125\004\003\014  
\042\120\145\162\163\157\156\141\154\111\104\040\124\162\165\163  
\164\167\157\162\164\150\171\040\122\157\157\164\103\101\040\062  
\060\061\061\060\036\027\015\061\061\060\071\060\061\060\070\063  
\065\062\061\132\027\015\064\061\060\071\060\061\060\070\064\065  
\061\066\132\060\163\061\013\060\011\006\003\125\004\006\023\002  
\111\114\061\030\060\026\006\003\125\004\012\014\017\120\145\162  
\163\157\156\141\154\111\104\040\114\164\144\056\061\035\060\033  
\006\003\125\004\013\014\024\103\145\162\164\151\146\151\143\141  
\164\145\040\123\145\162\166\151\143\145\163\061\053\060\051\006  
\003\125\004\003\014\042\120\145\162\163\157\156\141\154\111\104  
\040\124\162\165\163\164\167\157\162\164\150\171\040\122\157\157  
\164\103\101\040\062\060\061\061\060\202\002\042\060\015\006\011  
\052\206\110\206\367\015\001\001\001\005\000\003\202\002\017\000  
\060\202\002\012\002\202\002\001\000\260\225\214\140\376\005\016  
\152\063\355\367\213\343\362\325\362\174\323\126\102\124\367\053  
\362\210\245\365\347\267\154\207\001\053\151\276\005\111\104\330  
\333\041\172\052\327\212\061\241\041\020\236\323\342\156\143\202  
\205\124\204\115\050\046\033\342\023\367\121\373\057\353\022\325  
\075\071\214\144\237\244\023\207\303\330\311\372\051\043\216\011

\217\111\106\304\324\311\127\130\151\237\027\317\163\164\245\356  
\312\030\271\307\301\060\315\117\072\065\010\123\370\354\032\373  
\157\060\355\366\237\011\360\360\320\304\216\073\171\116\056\205  
\042\134\324\175\160\321\377\222\272\037\324\125\123\147\272\050  
\130\055\367\023\214\374\245\013\234\070\246\106\034\016\350\252  
\170\053\365\012\060\323\073\140\206\310\177\245\233\242\143\001  
\057\320\323\022\045\205\176\226\315\061\261\344\233\216\352\054  
\223\244\142\250\067\325\366\217\337\041\232\323\076\035\341\120  
\021\160\124\233\004\027\235\115\253\141\316\217\052\054\357\171  
\346\167\105\131\326\150\325\266\113\232\253\221\113\016\141\027  
\271\130\302\236\146\241\217\211\301\103\040\102\260\177\200\234  
\112\052\267\172\040\101\306\115\304\222\157\172\176\135\133\271  
\243\311\116\312\345\120\145\274\000\000\171\107\360\105\004\260  
\042\373\016\230\252\141\035\117\140\143\162\217\265\260\004\224  
\177\020\254\031\077\047\142\151\326\034\127\335\071\117\070\352  
\000\232\375\050\235\100\046\300\100\235\304\240\111\310\101\265  
\147\075\240\113\224\051\022\251\130\047\131\004\177\217\321\214  
\176\014\263\010\027\064\254\217\271\134\275\351\160\241\176\302  
\245\145\141\351\266\020\120\217\334\344\164\141\361\137\162\173  
\177\134\057\055\174\253\326\103\061\020\034\131\167\312\110\112  
\030\242\144\013\000\131\147\307\324\312\303\233\032\010\122\025  
\276\327\305\306\267\057\346\142\234\246\307\330\336\360\025\373  
\256\071\125\055\157\120\165\056\375\240\007\264\137\172\176\004  
\213\366\231\242\165\355\311\073\325\075\317\147\122\075\076\357  
\037\160\232\030\074\247\040\006\111\014\261\145\254\063\273\324  
\177\107\151\210\366\212\201\356\235\324\264\307\057\003\350\256  
\032\311\126\005\147\151\250\310\201\002\003\001\000\001\243\201  
\301\060\201\276\060\013\006\003\125\035\017\004\004\003\002\001  
\206\060\022\006\003\125\035\023\001\001\377\004\010\060\006\001  
\001\377\002\001\002\060\035\006\003\125\035\016\004\026\004\024  
\307\177\013\310\057\127\216\051\362\366\001\213\353\047\245\126  
\216\375\244\036\060\020\006\011\053\006\001\004\001\202\067\025  
\001\004\003\002\001\000\060\152\006\003\125\035\040\004\143\060  
\141\060\137\006\010\053\006\001\004\001\341\030\001\060\123\060  
\121\006\010\053\006\001\005\005\007\002\001\026\105\150\164\164  
\160\072\057\057\167\167\167\056\151\143\141\056\143\157\056\151  
\154\057\162\145\160\157\163\151\164\157\162\171\057\143\160\163  
\057\120\145\162\163\157\156\141\154\111\104\137\120\162\141\143  
\164\151\143\145\137\123\164\141\164\145\155\145\156\164\056\160  
\144\146\060\015\006\011\052\206\110\206\367\015\001\001\013\005  
\000\003\202\002\001\000\102\145\213\044\372\222\025\064\032\034  
\372\310\316\115\172\057\173\337\320\003\101\034\324\244\341\373  
\350\314\255\011\335\035\244\010\331\250\040\175\227\237\014\111  
\361\245\302\346\325\167\106\227\176\244\220\242\171\351\275\032  
\136\064\202\146\011\122\374\120\321\217\320\253\034\242\377\377  
\075\356\376\043\370\277\043\263\315\276\341\367\317\344\330\022  
\343\224\310\116\314\327\173\260\067\233\167\352\355\134\201\310  
\314\217\316\071\343\344\145\135\336\202\330\217\043\151\341\121

\257\137\267\117\220\151\244\231\145\123\272\346\375\257\170\147  
\224\112\310\303\177\214\002\117\112\346\207\230\366\070\267\110  
\370\155\050\177\367\306\154\045\124\375\056\326\352\332\006\342  
\261\375\007\150\360\257\200\214\264\302\351\164\025\244\032\277  
\271\312\103\133\022\347\205\107\136\122\003\360\221\340\351\120  
\161\324\041\002\054\173\206\221\160\066\306\234\266\164\371\052  
\125\367\041\373\157\240\006\135\327\060\022\362\121\361\311\070  
\066\217\310\146\141\101\331\307\113\202\150\122\243\365\211\014  
\025\274\116\052\225\254\061\151\247\033\342\324\327\110\364\221  
\365\003\174\171\026\076\054\015\151\341\212\067\036\237\174\030  
\125\101\057\137\347\244\162\233\125\363\343\001\260\002\245\204  
\022\152\100\246\253\344\241\254\353\003\331\274\137\044\126\047  
\255\040\340\146\065\105\075\107\011\360\005\261\157\161\176\100  
\260\320\025\136\053\254\122\201\250\373\203\365\054\127\104\206  
\064\344\024\152\343\317\175\232\167\330\154\110\134\313\232\341  
\246\373\277\021\242\006\345\037\161\275\064\265\317\275\304\102  
\026\305\051\370\324\300\114\212\262\336\305\224\202\206\233\314  
\340\251\006\104\061\044\044\115\372\355\341\102\045\146\242\301  
\327\200\027\357\172\225\145\103\076\146\323\005\361\001\344\102  
\126\104\000\170\153\235\066\040\373\145\377\100\134\350\150\065  
\037\341\046\240\202\003\166\003\313\160\106\021\044\256\337\057  
\140\375\361\047\000\003\275\113\047\333\274\234\227\067\121\053  
\345\170\264\301\066\220\020\214\377\075\000\324\272\110\237\110  
\312\207\061\232\355\304\232\123\322\335\163\024\077\011\202\241  
\135\145\116\115\046\342

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "PersonalID

Trustworthy RootCA 2011"

# Issuer: CN=PersonalID Trustworthy RootCA 2011,OU=Certificate Services,O=PersonalID Ltd.,C=IL

# Serial Number:58:cb:f9:64:96:71:74:95:40:f4:ad:08:ac:64:e4:e3

# Subject: CN=PersonalID Trustworthy RootCA 2011,OU=Certificate Services,O=PersonalID Ltd.,C=IL

# Not Valid Before: Thu Sep 01 08:35:21 2011

# Not Valid After: Sun Sep 01 08:45:16 2041

# Fingerprint (MD5): 20:3c:23:dc:f6:7a:97:14:0e:5f:48:b4:7d:ad:ac:c8

# Fingerprint (SHA1): 43:94:ce:31:26:ff:1a:22:4c:dd:4d:ee:b4:f4:ec:1d:a3:68:ef:6a

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "PersonalID Trustworthy RootCA 2011"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\103\224\316\061\046\377\032\042\114\335\115\356\264\364\354\035

\243\150\357\152

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\040\074\043\334\366\172\227\024\016\137\110\264\175\255\254\310

END

CKA\_ISSUER MULTILINE\_OCTAL

\060\163\061\013\060\011\006\003\125\004\006\023\002\111\114\061  
\030\060\026\006\003\125\004\012\014\017\120\145\162\163\157\156  
\141\154\111\104\040\114\164\144\056\061\035\060\033\006\003\125  
\004\013\014\024\103\145\162\164\151\146\151\143\141\164\145\040  
\123\145\162\166\151\143\145\163\061\053\060\051\006\003\125\004  
\003\014\042\120\145\162\163\157\156\141\154\111\104\040\124\162  
\165\163\164\167\157\162\164\150\171\040\122\157\157\164\103\101  
\040\062\060\061\061

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\020\130\313\371\144\226\161\164\225\100\364\255\010\254\144  
\344\343

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "Swiss Government Root CA II"

# Issuer: CN=Swiss Government Root CA II,OU=Certification Authorities,OU=Services,O=The Federal Authorities  
of the Swiss Confederation,C=CH

#

Serial Number:0e:9f:17:99:a5:b1:3d:9c:cb:ec:06:eb:a3:f0:0e:69

# Subject: CN=Swiss Government Root CA II,OU=Certification Authorities,OU=Services,O=The Federal  
Authorities of the Swiss Confederation,C=CH

# Not Valid Before: Wed Feb 16 09:00:00 2011

# Not Valid After: Fri Feb 16 08:59:59 2035

# Fingerprint (MD5): 30:b0:e4:cf:bf:f5:89:dc:bf:52:2d:88:1c:cb:aa:b3

# Fingerprint (SHA1): c7:f7:cb:e2:02:36:66:f9:86:02:5d:4a:3e:31:3f:29:eb:0c:5b:38

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Swiss Government Root CA II"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\201\247\061\013\060\011\006\003\125\004\006\023\002\103\110  
\061\073\060\071\006\003\125\004\012\023\062\124\150\145\040\106  
\145\144\145\162\141\154\040\101\165\164\150\157\162\151\164\151  
\145\163\040\157\146\040\164\150\145\040\123\167\151\163\163\040

\103\157\156\146\145\144\145\162\141\164\151\157\156\061\021\060  
\017\006\003\125\004\013\023\010\123\145\162\166\151\143\145\163  
\061\042\060\040\006\003\125\004\013\023\031\103\145\162\164\151  
\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151  
\164\151\145\163\061\044\060\042\006\003\125\004\003\023\033\123  
\167\151\163\163\040\107\157\166\145\162\156\155\145\156\164\040  
\122\157\157\164\040\103\101\040\111\111

END

CKA\_ID

UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\247\061\013\060\011\006\003\125\004\006\023\002\103\110  
\061\073\060\071\006\003\125\004\012\023\062\124\150\145\040\106  
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\145\163\040\157\146\040\164\150\145\040\123\167\151\163\163\040  
\103\157\156\146\145\144\145\162\141\164\151\157\156\061\021\060  
\017\006\003\125\004\013\023\010\123\145\162\166\151\143\145\163  
\061\042\060\040\006\003\125\004\013\023\031\103\145\162\164\151  
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\164\151\145\163\061\044\060\042\006\003\125\004\003\023\033\123  
\167\151\163\163\040\107\157\166\145\162\156\155\145\156\164\040  
\122\157\157\164\040\103\101\040\111\111

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\020\016\237\027\231\245\261\075\234\313\354\006\353\243\360  
\016\151

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\010\070\060\202\006\040\240\003\002\001\002\002\020\016  
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\247\061\013\060\011\006\003\125\004\006\023\002\103\110\061\073  
\060\071\006\003\125\004\012\023\062\124\150\145\040\106\145\144  
\145\162\141\154\040\101\165\164\150\157\162\151\164\151\145\163  
\040\157\146\040\164\150\145\040\123\167\151\163\163\040\103\157  
\156\146\145\144\145\162\141\164\151\157\156\061\021\060\017\006  
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\060\040\006\003\125\004\013\023\031\103\145\162\164\151\146\151  
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\145\163\061\044\060\042\006\003\125\004\003\023\033\123\167\151  
\163\163\040\107\157\166\145\162\156\155\145\156\164\040\122\157  
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\145\040\123\167\151\163\163\040\103\157\156\146\145\144\145\162  
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\123\145\162\166\151\143\145\163\061\042\060\040\006\003\125\004  
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\040\101\165\164\150\157\162\151\164\151\145\163\061\044\060\042  
\006\003\125\004\003\023\033\123\167\151\163\163\040\107\157\166  
\145\162\156\155\145\156\164\040\122\157\157\164\040\103\101\040  
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\203\233\150\005\157\026\343\210\250\001\017\313\161\236\177\107  
\220\113\314\045\167\310\360\327\151\056\221\150\127\041\262\262  
\007\041\063\356\114\244\067\045\230\114\264\106\062\116\326\371  
\153\213\121\212\357\054\067\362\230\325\365\324\264\267\347\000  
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\036\066\126\151\070\146\072\320\364\063\015\000\071\002\250\305  
\034\013\041\267\134\040\014\141\320\255\256\316\216\136\331\072  
\351\336\377\107\174\170\127\016\034\161\364\140\034\335\333\232  
\030\051\257\331\200\243\237\205\204\143\063\221\357\275\164\356  
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\373\151\116\357\217\122\034\317\365\054\132\154\354\376\202\233  
\333\174\071\253\165\043\176\070\220\117\224\216\055\142\130\236  
\367\347\162\374\224\133\162\126\305\235\243\256\253\265\266\300  
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\032\207\306\171\376\231\152\351\164\354\360\022\371\024\050\040  
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\066\137\067\065\066\137\061\137\061\067\137\063\137\062\061\137  
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\146\040\164\150\145\040\123\167\151\163\163\040\103\157\156\146  
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END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code

Signing Only Certificate

# Trust for "Swiss Government Root CA II"

# Issuer: CN=Swiss Government Root CA II,OU=Certification Authorities,OU=Services,O=The Federal Authorities  
of the Swiss Confederation,C=CH

# Serial Number:0e:9f:17:99:a5:b1:3d:9c:cb:ec:06:eb:a3:f0:0e:69

# Subject: CN=Swiss Government Root CA II,OU=Certification Authorities,OU=Services,O=The Federal  
Authorities of the Swiss Confederation,C=CH

# Not Valid Before: Wed Feb 16 09:00:00 2011

# Not Valid After: Fri Feb 16 08:59:59 2035

# Fingerprint (MD5): 30:b0:e4:cf:bf:f5:89:dc:bf:52:2d:88:1c:cb:aa:b3

# Fingerprint (SHA1): c7:f7:cb:e2:02:36:66:f9:86:02:5d:4a:3e:31:3f:29:eb:0c:5b:38

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Swiss Government Root CA II"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\307\367\313\342\002\066\146\371\206\002\135\112\076\061\077\051  
\353\014\133\070

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\060\260\344\317\277\365\211\334\277\122\055\210\034\313\252\263

END

CKA\_ISSUER

MULTILINE\_OCTAL

\060\201\247\061\013\060\011\006\003\125\004\006\023\002\103\110  
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\103\157\156\146\145\144\145\162\141\164\151\157\156\061\021\060  
\017\006\003\125\004\013\023\010\123\145\162\166\151\143\145\163  
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END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\016\237\027\231\245\261\075\234\313\354\006\353\243\360  
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END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING

CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "Swiss Government Root CA I"

# Issuer: CN=Swiss Government Root CA I,OU=Certification Authorities,OU=Services,O=The Federal Authorities  
of the Swiss Confederation,C=CH

# Serial Number:fd:75:04:8d:7a:60:86:93:69:4c:aa:00:3c:65:d3:3d

# Subject: CN=Swiss Government Root CA I,OU=Certification Authorities,OU=Services,O=The Federal  
Authorities of the Swiss Confederation,C=CH

# Not Valid Before: Tue Feb 15 09:00:00 2011

# Not Valid After: Thu Feb 15 08:59:59 2035

# Fingerprint (MD5): c7:c9:da:9b:76:e1:ac:86:6b:34:bd:03:3f:e3:cf:d2

# Fingerprint (SHA1): a1:58:51:87:15:65:86:ce:f9:c4:54:e2:2a:b1:5c:58:74:56:07:b4

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Swiss Government Root CA I"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT

MULTILINE\_OCTAL

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\103\157\156\146\145\144\145\162\141\164\151\157\156\061\021\060  
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\061\042\060\040\006\003\125\004\013\023\031\103\145\162\164\151  
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END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

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END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

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END

CKA\_VALUE MULTILINE\_OCTAL

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\104\014\176\147\343\144\237\372\132\052\130\167\121\151\261\315
\054\232\247\064\020\005\164\372\156\105\143\313\213\122\255\107
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END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "Swiss Government Root CA I"

# Issuer: CN=Swiss Government Root CA I,OU=Certification Authorities,OU=Services,O=The Federal Authorities  
of the Swiss Confederation,C=CH

# Serial Number:fd:75:04:8d:7a:60:86:93:69:4c:aa:00:3c:65:d3:3d

# Subject: CN=Swiss Government Root CA I,OU=Certification Authorities,OU=Services,O=The Federal  
Authorities of the Swiss Confederation,C=CH

# Not Valid Before: Tue Feb 15 09:00:00 2011

# Not Valid After: Thu Feb 15 08:59:59 2035

# Fingerprint (MD5): c7:c9:da:9b:76:e1:ac:86:6b:34:bd:03:3f:e3:cf:d2

# Fingerprint (SHA1): a1:58:51:87:15:65:86:ce:f9:c4:54:e2:2a:b1:5c:58:74:56:07:b4

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN

CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Swiss Government Root CA I"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

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\164\126\007\264
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END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

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\307\311\332\233\166\341\254\206\153\064\275\003\077\343\317\322
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END

CKA\_ISSUER MULTILINE\_OCTAL

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\145\144\145\162\141\154\040\101\165\164\150\157\162\151\164\151
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\145\163\040\157\146\040\164\150\145\040\123\167\151\163\163\040
\103\157\156\146\145\144\145\162\141\164\151\157\156\061\021\060
\017\006\003\125\004\013\023\010\123\145\162\166\151\143\145\163
\061\042\060\040\006\003\125\004\013\023\031\103\145\162\164\151
\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151
\164\151\145\163\061\043\060\041\006\003\125\004\003\023\032\123
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END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

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\145\323\075
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END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "Network Solutions Certificate Authority"

# Issuer: CN=Network Solutions Certificate Authority,O=Network Solutions L.L.C.,C=US

# Serial Number:1c:a0:2d:c1:52:3b:6a:6d:8b:5c:1f:95:4a:ed:ac:30

# Subject: CN=Network Solutions Certificate Authority,O=Network Solutions L.L.C.,C=US

# Not Valid Before: Sat Jan 01 00:00:00 2011

# Not Valid After: Tue Dec 31 23:59:59 2030

# Fingerprint (MD5): bd:a4:1d:36:de:c2:7a:8a:04:37:cb:f2:00:a6:65:54

# Fingerprint (SHA1): 71:89:9a:67:bf:33:af:31:be:fd:c0:71:f8:f7:33:b1:83:85:63:32

CKA\_CLASS CK\_OBJECT\_CLASS

CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Network Solutions Certificate Authority"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

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\041\060\037\006\003\125\004\012\023\030\116\145\164\167\157\162
\153\040\123\157\154\165\164\151\157\156\163\040\114\056\114\056
\103\056\061\060\060\056\006\003\125\004\003\023\047\116\145\164
\167\157\162\153\040\123\157\154\165\164\151\157\156\163\040\103
\145\162\164\151\146\151\143\141\164\145\040\101\165\164\150\157
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END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

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END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\020\034\240\055\301\122\073\152\155\213\134\037\225\112\355  
\254\060

END

CKA\_VALUE MULTILINE\_OCTAL

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\074\270\316\217\010\252\010\220\007\134\165\325\341\116\054\313
\002\044\351\242\136\351\365\170\065\042\006\034\362\037\210\261
\341\134\314\226\124\372\157\111\314\215\361\126\003\355\317\054
\237\047\336\345\312\203\104\276\106\100\371\127\056\322\177\061
\055\316\203\334\376\160\153\204\320\243\237\377\227\320\250\327
\002\354\261\054\360\357\163\070\075\231\254\304\117\001\277\325
\152\352\306\056\062\051\027\012\313\346\151\236\321\112\265\366
\337\216\031\370\225\351\105\251\016\315\155\101\131\040\236\163
\306\154\161\034\234\324\115\060\250\163\011\240\025\363\240\105
\046\303\133\375\273\271\330\055\327\037\365\005\060\031\366\256
\017\216\142\217\337\310\117\206\331\035\141\026\263\311\360\273
\373\307\365\257\001\042\107\354\330\332\317\034\363\123\146\272
\123\011\001\371
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "Network Solutions Certificate Authority"

# Issuer: CN=Network Solutions Certificate Authority,O=Network Solutions L.L.C.,C=US

# Serial Number: 1c:a0:2d:c1:52:3b:6a:6d:8b:5c:1f:95:4a:ed:ac:30

# Subject: CN=Network Solutions Certificate Authority,O=Network Solutions L.L.C.,C=US

# Not Valid Before: Sat Jan 01 00:00:00 2011

# Not Valid After: Tue Dec 31 23:59:59 2030

# Fingerprint (MD5): bd:a4:1d:36:de:c2:7a:8a:04:37:cb:f2:00:a6:65:54

# Fingerprint (SHA1): 71:89:9a:67:bf:33:af:31:be:fd:c0:71:f8:f7:33:b1:83:85:63:32

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Network Solutions Certificate Authority"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\161\211\232\147\277\063\257\061\276\375\300\161\370\367\063\261
\203\205\143\062
```

END

CKA\_CERT\_MD5\_HASH

```

MULTILINE_OCTAL
\275\244\035\066\336\302\172\212\004\067\313\362\000\246\145\124
END
CKA_ISSUER MULTILINE_OCTAL
\060\142\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\041\060\037\006\003\125\004\012\023\030\116\145\164\167\157\162
\153\040\123\157\154\165\164\151\157\156\163\040\114\056\114\056
\103\056\061\060\060\056\006\003\125\004\003\023\047\116\145\164
\167\157\162\153\040\123\157\154\165\164\151\157\156\163\040\103
\145\162\164\151\146\151\143\141\164\145\040\101\165\164\150\157
\162\151\164\171
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\034\240\055\301\122\073\152\155\213\134\037\225\112\355
\254\060
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "LuxTrust Global Root"
# Issuer: CN=LuxTrust Global Root,O=LuxTrust
s.a.,C=LU
# Serial Number: 3000 (0xbb8)
# Subject: CN=LuxTrust Global Root,O=LuxTrust s.a.,C=LU
# Not Valid Before: Thu Mar 17 09:51:37 2011
# Not Valid After: Wed Mar 17 09:51:37 2021
# Fingerprint (MD5): 42:a5:21:7a:4c:af:c7:bf:fd:a7:f5:b2:10:4c:3e:be
# Fingerprint (SHA1): c9:3c:34:ea:90:d9:13:0c:0f:03:00:4b:98:bd:8b:35:70:91:56:11
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "LuxTrust Global Root"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\104\061\013\060\011\006\003\125\004\006\023\002\114\125\061
\026\060\024\006\003\125\004\012\023\015\114\165\170\124\162\165
\163\164\040\163\056\141\056\061\035\060\033\006\003\125\004\003
\023\024\114\165\170\124\162\165\163\164\040\107\154\157\142\141
\154\040\122\157\157\164
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\104\061\013\060\011\006\003\125\004\006\023\002\114\125\061
\026\060\024\006\003\125\004\012\023\015\114\165\170\124\162\165

```

\163\164\040\163\056\141\056\061\035\060\033\006\003\125\004\003  
\023\024\114\165\170\124\162\165\163\164\040\107\154\157\142\141  
\154\040\122\157\157\164

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\002\013\270

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\144\060\202\002\114\240\003\002\001\002\002\002\013  
\270\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000  
\060\104\061\013\060\011\006\003\125\004\006\023\002\114\125\061  
\026\060\024\006\003\125\004\012\023\015\114\165\170\124\162\165  
\163\164\040\163\056\141\056\061\035\060\033\006\003\125\004\003  
\023\024\114\165\170\124\162\165\163\164\040\107\154\157\142\141  
\154\040\122\157\157\164\060\036\027\015\061\061\060\063\061\067  
\060\071\065\061\063\067\132\027\015\062\061\060\063\061\067\060  
\071\065\061\063\067\132\060\104\061\013\060\011\006\003\125\004  
\006\023\002\114\125\061\026\060\024\006\003\125\004\012\023\015  
\114\165\170\124\162\165\163\164\040\163\056\141\056\061\035\060  
\033\006\003\125\004\003\023\024\114\165\170\124\162\165\163\164  
\040\107\154\157\142\141\154\040\122\157\157\164\060\202\001\042  
\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003  
\202\001\017\000\060\202\001\012\002\202\001\001\000\262\177\247  
\100\360\042\312\014\366\353\261\361\313\016\225\127\100\165\257  
\240\077\076\316\354\252\062\127\346\031\261\147\103\230\132\153  
\174\263\270\372\170\234\252\246\204\262\140\033\200\101\316\143  
\315\037\027\010\231\244\365\357\076\022\307\114\260\127\232\134  
\170\100\170\374\105\215\332\221\147\334\072\121\271\155\163\346  
\267\071\216\166\072\264\037\005\365\151\125\371\223\317\170\210  
\112\276\252\233\327\173\107\133\106\004\114\202\026\246\065\366  
\374\164\337\326\264\257\330\342\265\047\021\164\131\242\302\146  
\054\150\012\341\230\210\210\074\212\005\165\024\343\270\256\363  
\010\204\233\152\301\077\061\030\257\047\245\113\233\244\375\171  
\061\336\230\075\016\141\312\207\230\301\370\212\060\234\372\076  
\063\325\245\304\003\007\341\367\226\164\030\000\047\070\047\321  
\053\252\252\341\101\105\213\157\361\045\302\334\242\227\225\307  
\102\024\063\135\171\204\043\152\347\145\300\127\240\330\135\251  
\143\001\347\260\344\213\350\370\305\143\270\345\154\164\220\075  
\307\167\374\053\272\171\351\244\306\022\170\247\377\002\003\001  
\000\001\243\140\060\136\060\014\006\003\125\035\023\004\005\060  
\003\001\001\377\060\016\006\003\125\035\017\001\001\377\004\004  
\003\002\001\006\060\037\006\003\125\035\043\004\030\060\026\200  
\024\027\025\205\211\011\057\044\207\157\077\035\033\344\362\226  
\171\203\110\023\316\060\035\006\003\125\035\016\004\026\004\024  
\027\025\205\211\011\057\044\207\157\077\035\033\344\362\226\171  
\203\110\023\316\060\015\006\011\052\206\110\206\367\015\001\001  
\013\005\000\003\202\001\001\000\132\360\034\320\324\120\317\101

```
\176\346\270\235\175\303\160\320\136\066\377\156\216\172\057\336
\110\021\325\064\056\074\267\105\302\124\045\247\341\301\036\067
\203\266\224\256\366\105\110\003\352\225\276\353\234\152\264\067
\134\037\056\323\153\202\201\103\133\012\077\021\125\143\254\372
\174\010\002\067\240\074\071\004\063\376\227\062\310\122\345\331
\045\115\260\306\356\150\037\160\252\163\316\127\003\334\175\012
\015\063\362\322\132\337\012\154\073\314\021\121\227\032\244\041
\242\205\065\002\327\200\042\322\204\262\370\300\252\150\277\325
\353\252\303\013\253\241\174\053\367\365\073\207\341\124\127\354
\005\044\357\171\102\116\363\213\150\237\344\156\313\202\231\311
\314\052\334\123\302\037\160\203\253\041\017\126\264\110\377\337
\007\042\263\214\371\035\246\004\337\055\003\066\271\335\157\376
\061\210\146\377\154\155\104\064\257\010\167\076\046\322\162\364
\273\107\126\223\074\230\143\341\063\273\231\043\222\265\203\171
\350\035\237\147\255\142\326\211\326\366\374\047\336\062\047\313
\204\332\167\205\041\241\022\041
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only

Certificate

# Trust for "LuxTrust Global Root"

# Issuer: CN=LuxTrust Global Root,O=LuxTrust s.a.,C=LU

# Serial Number: 3000 (0xbb8)

# Subject: CN=LuxTrust Global Root,O=LuxTrust s.a.,C=LU

# Not Valid Before: Thu Mar 17 09:51:37 2011

# Not Valid After: Wed Mar 17 09:51:37 2021

# Fingerprint (MD5): 42:a5:21:7a:4c:af:c7:bf:fd:a7:f5:b2:10:4c:3e:be

# Fingerprint (SHA1): c9:3c:34:ea:90:d9:13:0c:0f:03:00:4b:98:bd:8b:35:70:91:56:11

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "LuxTrust Global Root"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\311\074\064\352\220\331\023\014\017\003\000\113\230\275\213\065
\160\221\126\021
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\102\245\041\172\114\257\307\277\375\247\365\262\020\114\076\276
```

END

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\104\061\013\060\011\006\003\125\004\006\023\002\114\125\061
\026\060\024\006\003\125\004\012\023\015\114\165\170\124\162\165
\163\164\040\163\056\141\056\061\035\060\033\006\003\125\004\003
```

\023\024\114\165\170\124\162\165\163\164\040\107\154\157\142\141  
\154\040\122\157\157\164

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\002\013\270

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "AC1 RAIZ MTIN"

# Issuer: C=ES,L=MADRID,O=MINISTERIO DE TRABAJO E INMIGRACION,OU=SUBDIRECCION  
GENERAL DE PROCESO DE DATOS,OU=PRESTADOR DE SERVICIOS DE CERTIFICACION  
MTIN,2.5.4.5=S2819001E,CN=AC1 RAIZ MTIN

# Serial Number:05:0b:41:5e:82:7b

# Subject: C=ES,L=MADRID,O=MINISTERIO DE TRABAJO E INMIGRACION,OU=SUBDIRECCION  
GENERAL DE PROCESO DE DATOS,OU=PRESTADOR DE SERVICIOS DE CERTIFICACION  
MTIN,2.5.4.5=S2819001E,CN=AC1 RAIZ MTIN

# Not Valid Before: Thu Nov 05 16:17:45 2009

# Not Valid After: Sun Nov 03 16:17:45 2019

# Fingerprint

(MD5): 27:13:d5:2c:70:06:3e:15:7b:d3:62:59:32:ea:01:05

# Fingerprint (SHA1): 6a:d2:3b:9d:c4:8e:37:5f:85:9a:d9:ca:b5:85:32:5c:23:89:40:71

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "AC1 RAIZ MTIN"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\201\342\061\026\060\024\006\003\125\004\003\023\015\101\103

\061\040\122\101\111\132\040\115\124\111\116\061\022\060\020\006

\003\125\004\005\023\011\123\062\070\061\071\060\060\061\105\061

\065\060\063\006\003\125\004\013\023\054\120\122\105\123\124\101

\104\117\122\040\104\105\040\123\105\122\126\111\103\111\117\123

\040\104\105\040\103\105\122\124\111\106\111\103\101\103\111\117

\116\040\115\124\111\116\061\061\060\057\006\003\125\004\013\023

\050\123\125\102\104\111\122\105\103\103\111\117\116\040\107\105

\116\105\122\101\114\040\104\105\040\120\122\117\103\105\123\117

\040\104\105\040\104\101\124\117\123\061\054\060\052\006\003\125

\004\012\023\043\115\111\116\111\123\124\105\122\111\117\040\104

\105\040\124\122\101\102\101\112\117\040\105\040\111\116\115\111

\107\122\101\103\111\117\116\061\017\060\015\006\003\125\004\007

\023\006\115\101\104\122\111\104\061\013\060\011\006\003\125\004

\006\023\002\105\123

END

CKA\_ID

UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\342\061\026\060\024\006\003\125\004\003\023\015\101\103  
\061\040\122\101\111\132\040\115\124\111\116\061\022\060\020\006  
\003\125\004\005\023\011\123\062\070\061\071\060\060\061\105\061  
\065\060\063\006\003\125\004\013\023\054\120\122\105\123\124\101  
\104\117\122\040\104\105\040\123\105\122\126\111\103\111\117\123  
\040\104\105\040\103\105\122\124\111\106\111\103\101\103\111\117  
\116\040\115\124\111\116\061\061\060\057\006\003\125\004\013\023  
\050\123\125\102\104\111\122\105\103\103\111\117\116\040\107\105  
\116\105\122\101\114\040\104\105\040\120\122\117\103\105\123\117  
\040\104\105\040\104\101\124\117\123\061\054\060\052\006\003\125  
\004\012\023\043\115\111\116\111\123\124\105\122\111\117\040\104  
\105\040\124\122\101\102\101\112\117\040\105\040\111\116\115\111  
\107\122\101\103\111\117\116\061\017\060\015\006\003\125\004\007  
\023\006\115\101\104\122\111\104\061\013\060\011\006\003\125\004  
\006\023\002\105\123

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\006\005\013\101\136\202\173

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\011\111\060\202\007\061\240\003\002\001\002\002\006\005  
\013\101\136\202\173\060\015\006\011\052\206\110\206\367\015\001  
\001\005\005\000\060\201\342\061\026\060\024\006\003\125\004\003  
\023\015\101\103\061\040\122\101\111\132\040\115\124\111\116\061  
\022\060\020\006\003\125\004\005\023\011\123\062\070\061\071\060  
\060\061\105\061\065\060\063\006\003\125\004\013\023\054\120\122  
\105\123\124\101\104\117\122\040\104\105\040\123\105\122\126\111  
\103\111\117\123\040\104\105\040\103\105\122\124\111\106\111\103  
\101\103\111\117\116\040\115\124\111\116\061\061\060\057\006\003  
\125\004\013\023\050\123\125\102\104\111\122\105\103\103\111\117  
\116\040\107\105\116\105\122\101\114\040\104\105\040\120\122\117  
\103\105\123\117\040\104\105\040\104\101\124\117\123\061\054\060  
\052\006\003\125\004\012\023\043\115\111\116\111\123\124\105\122  
\111\117\040\104\105\040\124\122\101\102\101\112\117\040\105\040  
\111\116\115\111\107\122\101\103\111\117\116\061\017\060\015\006  
\003\125\004\007\023\006\115\101\104\122\111\104\061\013\060\011  
\006\003\125\004\006\023\002\105\123\060\036\027\015\060\071\061  
\061\060\065\061\066\061\067\064\065\132\027\015\061\071\061\061  
\060\063\061\066\061\067\064\065\132\060\201\342\061\026\060\024  
\006\003\125\004\003\023\015\101\103\061\040\122\101\111\132\040  
\115\124\111\116\061\022\060\020\006\003\125\004\005\023\011\123  
\062\070\061\071\060\060\061\105\061\065\060\063\006\003\125\004  
\013\023\054\120\122\105\123\124\101\104\117\122\040\104\105\040



\123\105\122\126\111\103\111\117\123\040\104\105\040\103\105\122  
\124\111\106\111\103\101\103\111\117\116\040\115\124\111\116\061  
\061\060\057\006\003\125\004\013\023\050\123\125\102\104\111\122  
\105\103\103\111\117\116\040\107\105\116\105\122\101\114\040\104  
\105\040\120\122\117\103\105\123\117\040\104\105\040\104\101\124  
\117\123\061\054\060\052\006\003\125\004\012\023\043\115\111\116  
\111\123\124\105\122\111\117\040\104\105\040\124\122\101\102\101  
\112\117\040\105\040\111\116\115\111\107\122\101\103\111\117\116  
\061\017\060\015\006\003\125\004\007\023\006\115\101\104\122\111  
\104\061\013\060\011\006\003\125\004\006\023\002\105\123\060\202  
\002\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005  
\000\003\202\002\017\000\060\202\002\012\002\202\002\001\000\334  
\315\315\261\277\336\045\365\377\034\063\163\231\074\033\241\155  
\365\240\304\175\233\070\146\215\011\337\003\154\127\065\264\023  
\101\376\343\137\346\042\004\130\030\271\116\151\063\004\077\225  
\307\331\116\377\063\064\247\062\100\062\223\127\376\201\257\045  
\103\134\035\375\173\127\013\142\010\147\147\142\264\343\345\130  
\045\200\346\252\206\142\100\347\117\020\141\051\111\046\253\115  
\174\241\253\133\141\061\201\006\152\144\224\115\047\370\113\036  
\321\325\103\342\327\261\155\366\366\377\264\160\125\366\010\231  
\267\164\001\340\363\236\265\174\344\004\210\010\120\131\170\037  
\032\224\333\357\310\311\211\323\067\270\363\075\206\321\031\313  
\203\132\020\007\010\117\231\164\002\007\360\062\121\310\373\346  
\320\074\046\166\175\162\176\254\166\067\301\212\165\040\134\100  
\334\204\077\320\111\174\115\147\256\071\357\344\316\200\341\312  
\235\346\055\253\056\346\022\225\332\371\373\337\343\342\214\075  
\207\373\105\156\104\253\366\170\222\047\024\241\135\153\117\160  
\173\127\163\357\371\135\250\017\165\237\357\021\140\031\204\260  
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END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "AC1 RAIZ MTIN"

# Issuer: C=ES,L=MADRID,O=MINISTERIO DE TRABAJO E INMIGRACION,OU=SUBDIRECCION  
GENERAL DE PROCESO DE DATOS,OU=PRESTADOR DE SERVICIOS DE CERTIFICACION  
MTIN,2.5.4.5=S2819001E,CN=AC1 RAIZ MTIN

# Serial Number:05:0b:41:5e:82:7b

# Subject: C=ES,L=MADRID,O=MINISTERIO DE TRABAJO E INMIGRACION,OU=SUBDIRECCION  
GENERAL DE PROCESO DE DATOS,OU=PRESTADOR DE SERVICIOS DE CERTIFICACION  
MTIN,2.5.4.5=S2819001E,CN=AC1 RAIZ MTIN

# Not Valid Before: Thu Nov 05 16:17:45 2009

# Not Valid After: Sun Nov 03 16:17:45 2019

# Fingerprint (MD5): 27:13:d5:2c:70:06:3e:15:7b:d3:62:59:32:ea:01:05

# Fingerprint (SHA1): 6a:d2:3b:9d:c4:8e:37:5f:85:9a:d9:ca:b5:85:32:5c:23:89:40:71

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE

CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "AC1 RAIZ MTIN"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

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\043\211\100\161

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

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END

CKA\_ISSUER MULTILINE\_OCTAL

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END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\006\005\013\101\136\202\173

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "Microsoft Root Certificate Authority 2011"

# Issuer: CN=Microsoft Root Certificate Authority 2011,O=Microsoft  
Corporation,L=Redmond,ST=Washington,C=US

# Serial Number:3f:8b:c8:b5:fc:9f:b2:96:43:b5:69:d6:6c:42:e1:44

# Subject: CN=Microsoft Root Certificate Authority 2011,O=Microsoft  
Corporation,L=Redmond,ST=Washington,C=US

# Not Valid Before: Tue Mar 22 22:05:28 2011

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#
Not Valid After: Sat Mar 22 22:13:04 2036
# Fingerprint (MD5): ce:04:90:d5:e5:6c:34:a5:ae:0b:e9:8b:e5:81:18:5d
# Fingerprint (SHA1): 8f:43:28:8a:d2:72:f3:10:3b:6f:b1:42:84:85:ea:30:14:c0:bc:fe
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Microsoft Root Certificate Authority 2011"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\210\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\023\060\021\006\003\125\004\010\023\012\127\141\163\150\151
\156\147\164\157\156\061\020\060\016\006\003\125\004\007\023\007
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\040\103\145\162\164\151\146\151\143\141\164\145\040\101\165\164
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END
CKA_ID
UTF8 "0"
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\000\177\162\317\017\267\305\025\333\233\300\111\312\046\133\376  
\236\023\346\323\360\322\333\227\137\362\113\077\115\263\256\031  
\256\355\327\227\240\254\357\251\072\243\302\101\260\345\270\221  
\236\023\201\044\003\346\011\375\077\127\100\071\041\044\126\321  
\020\057\113\100\251\066\206\113\264\123\127\232\373\361\176\211  
\217\021\376\030\154\121\252\350\355\011\225\265\345\161\311\241  
\351\207\165\246\025\177\311\176\067\124\136\164\223\305\303\147  
\314\015\117\153\250\027\014\155\010\222\176\213\335\201\252\055  
\160\041\303\075\006\024\273\277\044\136\247\204\327\077\017\041  
\042\275\113\000\006\333\227\034\330\136\324\305\013\134\207\156  
\120\244\350\303\070\244\373\313\054\305\222\146\233\205\136\313  
\172\154\223\174\200\051\130\133\127\265\100\151\272\010\171\246  
\144\142\025\235\207\226\105\265\146\043\040\003\213\034\163\240  
\323\242\171\063\340\120\131\206\333\057\345\002\045\352\163\052  
\237\000\024\310\066\307\222\073\351\116\000\354\330\126\011\271  
\063\111\022\322\124\013\001\253\254\107\266\221\051\175\114\264  
\165\200\122\001\350\312\202\366\237\314\254\234\217\027\352\057  
\046\260\253\162\254\013\376\236\121\036\307\103\125\147\117\121  
\263\127\326\266\354\356\122\267\072\351\116\341\327\201\210\274  
\117\216\165\273\113\250\360\065\252\046\324\147\147\111\262\160  
\114\073\223\334\035\337\170\220\206\162\262\070\244\321\334\222  
\115\311\130\353\053\022\134\324\073\256\214\153\260\203\345\001  
\077\370\011\062\366\223\065\064\042\257\335\067\015\167\011\200  
\053\315\110\000\361\214\231\031\107\005\001\351\321\277\321\116  
\320\346\050\103\067\231\244\012\112\010\331\232\161\163\322\252  
\315\061\023\143\166\241\067\157\222\070\036\175\022\074\146\062  
\347\313\155\341\374\122\211\335\312\326\146\005\232\226\141\276  
\242\050\307\034\243\247\066\120\074\072\244\337\112\156\346\207  
\073\316\353\360\340\201\067\235\023\074\122\216\275\271\035\064  
\306\035\325\012\152\075\230\051\160\214\211\052\321\253\202\020  
\110\037\334\364\357\245\305\273\125\032\070\143\204\116\267\154  
\255\225\124\354\145\042\020\111\027\270\300\036\307\017\254\124  
\107

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL

CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "Microsoft Root Certificate Authority 2011"

```

# Issuer: CN=Microsoft Root Certificate Authority 2011,O=Microsoft
Corporation,L=Redmond,ST=Washington,C=US
# Serial Number:3f:8b:c8:b5:fc:9f:b2:96:43:b5:69:d6:6c:42:e1:44
# Subject: CN=Microsoft Root Certificate Authority 2011,O=Microsoft
Corporation,L=Redmond,ST=Washington,C=US
# Not Valid Before: Tue Mar 22 22:05:28 2011
# Not Valid After: Sat Mar 22 22:13:04 2036
# Fingerprint (MD5): ce:04:90:d5:e5:6c:34:a5:ae:0b:e9:8b:e5:81:18:5d
# Fingerprint (SHA1): 8f:43:28:8a:d2:72:f3:10:3b:6f:b1:42:84:85:ea:30:14:c0:bc:fe
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Microsoft Root Certificate Authority 2011"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\217\103\050\212\322\162\363\020\073\157\261\102\204\205\352\060
\024\300\274\376
END
CKA_CERT_MD5_HASH
MULTILINE_OCTAL
\316\004\220\325\345\154\064\245\256\013\351\213\345\201\030\135
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\210\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\023\060\021\006\003\125\004\010\023\012\127\141\163\150\151
\156\147\164\157\156\061\020\060\016\006\003\125\004\007\023\007
\122\145\144\155\157\156\144\061\036\060\034\006\003\125\004\012
\023\025\115\151\143\162\157\163\157\146\164\040\103\157\162\160
\157\162\141\164\151\157\156\061\062\060\060\006\003\125\004\003
\023\051\115\151\143\162\157\163\157\146\164\040\122\157\157\164
\040\103\145\162\164\151\146\151\143\141\164\145\040\101\165\164
\150\157\162\151\164\171\040\062\060\061\061
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\077\213\310\265\374\237\262\226\103\265\151\326\154\102
\341\104
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST
CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "CCA India 2011"
# Issuer: CN=CCA India 2011,O=India PKI,C=IN
# Serial Number: 10126 (0x278e)
# Subject: CN=CCA India 2011,O=India PKI,C=IN

```



```
# Not Valid Before: Fri Mar 11 06:48:52 2011
# Not Valid After: Fri Mar 11 06:48:52 2016
# Fingerprint (MD5): 6e:3e:bc:f1:11:03:dc:4f:58:d5:2c:b0:74:f4:18:c8
# Fingerprint (SHA1): be:d5:25:d1:ac:63:a7:fc:6a:66:0b:a7:a8:95:81:8d:5e:8d:d5:64
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "CCA India 2011"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\072\061\013\060\011\006\003\125\004\006\023\002\111\116\061
\022\060\020\006\003\125\004\012\023\011\111\156\144\151\141\040
\120\113\111\061\027\060\025\006\003\125\004\003\023\016\103\103
\101\040\111\156\144\151\141\040\062\060\061\061
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\072\061\013\060\011\006\003\125\004\006\023\002\111\116\061
\022\060\020\006\003\125\004\012\023\011\111\156\144\151\141\040
\120\113\111\061\027\060\025\006\003\125\004\003\023\016\103\103
\101\040\111\156\144\151\141\040\062\060\061\061
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\002\047\216
END
CKA_VALUE MULTILINE_OCTAL
\060\202\003\043\060\202\002\013\240\003\002\001\002\002\002\047
\216\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000
\060\072\061\013\060\011\006\003\125\004\006\023\002\111\116\061
\022\060\020\006\003\125\004\012\023\011\111\156\144\151\141\040
\120\113\111\061\027\060\025\006\003\125\004\003\023\016\103\103
\101\040\111\156\144\151\141\040\062\060\061\061\060\036\027\015
\061\061\060\063\061\061\060\066\064\070\065\062\132\027\015\061
\066\060\063\061\061\060\066\064\070\065\062\132\060\072\061\013
\060\011\006\003\125\004\006\023\002\111\116\061\022\060\020\006
\003\125\004\012\023\011\111\156\144\151\141\040\120\113\111\061
\027\060\025\006\003\125\004\003\023\016\103\103\101\040\111\156
\144\151\141\040\062\060\061\061\060\202\001\042\060\015\006\011
\052\206\110\206\367\015\001\001\001\005\000\003\202\001\017\000
\060\202\001\012\002\202\001\001\000\207\012\036\016\271\240\250
\040\230\032\270\172\025\366\107\361\277\322\306\047\344\022\152
\226\004\147\165\315\214\306\343\364\335\312\325\304\034\065\356
\115\351\344\042\324\227\070\327\254\143\151\110\300\174\171\142
\277\307\042\111\133\106\301\361\030\024\116\030\035\054\245\132
\222\270\205\025\257\027\126\023\216\237\026\016\042\226\201\204
\171\043\102\354\117\336\257\366\277\211\117\000\136\346\327\010
```

\322\225\224\232\023\054\004\021\203\357\221\217\010\125\254\172  
\126\104\233\305\364\324\027\353\344\167\115\224\341\101\130\021  
\351\242\252\011\206\055\046\041\040\365\300\314\303\025\314\114  
\011\273\335\334\365\122\003\171\140\217\074\171\072\045\064\043  
\207\110\165\362\101\160\115\032\060\010\206\165\316\130\031\250  
\327\025\176\043\362\347\111\276\377\376\127\122\170\102\363\046  
\167\335\172\367\142\345\313\135\226\063\224\223\273\304\032\026  
\257\010\127\353\234\345\367\043\164\215\351\035\013\261\212\224  
\163\231\021\221\305\150\240\361\212\015\201\255\264\121\150\156  
\111\206\000\006\122\116\051\103\347\002\003\001\000\001\243\063  
\060\061\060\017\006\003\125\035\023\001\001\377\004\005\060\003  
\001\001\377\060\021\006\003\125\035\016\004\012\004\010\115\007  
\250\143\362\333\034\337\060\013\006\003\125\035\017\004\004\003  
\002\001\006\060\015\006\011\052\206\110\206\367\015\001\001\013  
\005\000\003\202\001\001\000\156\024\332\040\362\110\153\144\377  
\052\164\315\126\265\305\071\017\176\141\037\065\131\033\035\050  
\155\043\164\235\170\277\253\255\211\000\271\160\205\365\350\024  
\076\344\354\237\226\144\134\322\261\042\040\243\010\234\350\014  
\113\150\050\216\125\005\277\076\340\116\332\330\234\320\156\040  
\354\376\172\073\302\066\107\227\330\053\010\263\256\302\321\346  
\010\077\112\350\072\077\126\365\340\345\077\362\151\266\171\022  
\340\360\071\267\030\354\322\351\204\016\030\070\026\212\111\073  
\157\127\325\071\073\277\023\360\300\247\315\362\075\036\154\221  
\247\167\143\274\253\331\126\070\017\112\271\031\300\053\214\373  
\227\037\306\247\354\206\316\323\215\343\321\373\165\321\361\367  
\246\143\304\317\350\261\244\222\105\150\362\350\214\261\255\176  
\055\040\373\270\245\124\355\312\015\217\062\035\150\246\061\156  
\260\310\236\325\372\277\006\233\157\051\175\172\003\111\277\053  
\173\131\223\024\305\352\313\361\114\051\202\016\051\356\212\124  
\174\074\315\125\202\045\162\016\161\116\045\170\115\323\116\131  
\100\312\316\363\231\321\242

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "CCA India 2011"

# Issuer: CN=CCA India 2011,O=India PKI,C=IN

# Serial Number: 10126 (0x278e)

# Subject: CN=CCA India 2011,O=India PKI,C=IN

# Not Valid

Before: Fri Mar 11 06:48:52 2011

# Not Valid After: Fri Mar 11 06:48:52 2016

# Fingerprint (MD5): 6e:3e:bc:f1:11:03:dc:4f:58:d5:2c:b0:74:f4:18:c8

# Fingerprint (SHA1): be:d5:25:d1:ac:63:a7:fc:6a:66:0b:a7:a8:95:81:8d:5e:8d:d5:64

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

```
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "CCA India 2011"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\276\325\045\321\254\143\247\374\152\146\013\247\250\225\201\215
\136\215\325\144
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\156\076\274\361\021\003\334\117\130\325\054\260\164\364\030\310
END
CKA_ISSUER MULTILINE_OCTAL
\060\072\061\013\060\011\006\003\125\004\006\023\002\111\116\061
\022\060\020\006\003\125\004\012\023\011\111\156\144\151\141\040
\120\113\111\061\027\060\025\006\003\125\004\003\023\016\103\103
\101\040\111\156\144\151\141\040\062\060\061\061
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\002\047\216
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION
CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
# Microsoft Code Signing Only Certificate
# Certificate "ANCERT Certificados Notariales V2"
# Issuer: CN=ANCERT Certificados Notariales V2,O=Agencia Notarial de Certificacion S.L.U. - CIF
B83395988,C=ES
# Serial Number:09:bd:56:05:2a:13:16:f4:68:4f:74:0e:a9:7d:1c:48
# Subject: CN=ANCERT Certificados Notariales V2,O=Agencia Notarial de Certificacion S.L.U. - CIF
B83395988,C=ES
```

```
# Not Valid Before: Tue May 25 16:56:14 2010
# Not Valid After: Sat May 25 16:56:14 2030
# Fingerprint (MD5): 75:70:cb:6e:6b:d6:9b:7d:90:bb:69:5e:59:f0:62:b4
# Fingerprint (SHA1): 6f:62:de:b8:6c:85:58:5a:e4:2e:47:8d:b4:d7:6d:b3:67:58:5a:e6
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "ANCERT Certificados Notariales V2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE
CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\174\061\013\060\011\006\003\125\004\006\023\002\105\123\061
\101\060\077\006\003\125\004\012\023\070\101\147\145\156\143\151
\141\040\116\157\164\141\162\151\141\154\040\144\145\040\103\145
```

\162\164\151\146\151\143\141\143\151\157\156\040\123\056\114\056  
\125\056\040\055\040\103\111\106\040\102\070\063\063\071\065\071  
\070\070\061\052\060\050\006\003\125\004\003\023\041\101\116\103  
\105\122\124\040\103\145\162\164\151\146\151\143\141\144\157\163  
\040\116\157\164\141\162\151\141\154\145\163\040\126\062

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\174\061\013\060\011\006\003\125\004\006\023\002\105\123\061  
\101\060\077\006\003\125\004\012\023\070\101\147\145\156\143\151  
\141\040\116\157\164\141\162\151\141\154\040\144\145\040\103\145  
\162\164\151\146\151\143\141\143\151\157\156\040\123\056\114\056  
\125\056\040\055\040\103\111\106\040\102\070\063\063\071\065\071  
\070\070\061\052\060\050\006\003\125\004\003\023\041\101\116\103  
\105\122\124\040\103\145\162\164\151\146\151\143\141\144\157\163  
\040\116\157\164\141\162\151\141\154\145\163\040\126\062

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\020\011\275\126\005\052\023\026\364\150\117\164\016\251\175  
\034\110

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\007\022\060\202\004\372\240\003\002\001\002\002\020\011  
\275\126\005\052\023\026\364\150\117\164\016\251\175\034\110\060  
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\174  
\061\013\060\011\006\003\125\004\006\023\002\105\123\061\101\060  
\077\006\003\125\004\012\023\070\101\147\145\156\143\151\141\040  
\116\157\164\141\162\151\141\154\040\144\145\040\103\145\162\164  
\151\146\151\143\141\143\151\157\156\040\123\056\114\056\125\056  
\040\055\040\103\111\106\040\102\070\063\063\071\065\071\070\070  
\061\052\060\050\006\003\125\004\003\023\041\101\116\103\105\122  
\124\040\103\145\162\164\151\146\151\143\141\144\157\163\040\116  
\157\164\141\162\151\141\154\145\163\040\126\062\060\036\027\015  
\061\060\060\065\062\065\061\066\065\066\061\064\132\027\015\063  
\060\060\065\062\065\061\066\065\066\061\064\132\060\174\061\013  
\060\011\006\003\125\004\006\023\002\105\123\061\101\060\077\006  
\003\125\004\012\023\070\101\147\145\156\143\151\141\040\116\157  
\164\141\162\151\141\154\040\144\145\040\103\145\162\164\151\146  
\151\143\141\143\151\157\156\040\123\056\114\056\125\056\040\055  
\040\103\111\106\040\102\070\063\063\071\065\071\070\070\061\052  
\060\050\006\003\125\004\003\023\041\101\116\103\105\122\124\040  
\103\145\162\164\151\146\151\143\141\144\157\163\040\116\157\164  
\141\162\151\141\154\145\163\040\126\062\060\202\002\042\060\015  
\006\011\052\206\110\206\367\015\001\001\001\005\000\003\202\002  
\017\000\060\202\002\012\002\202\002\001\000\262\346\271\306\035  
\152\052\055\111\305\374\374\324\144\100\320\340\024\056\367\240  
\302\377\222\363\101\246\264\077\332\276\031\024\221\224\166\323

\025\314\136\177\170\120\172\333\332\305\105\252\313\034\043\171  
\163\220\250\273\147\001\163\216\316\100\371\032\251\252\207\344  
\223\222\017\134\150\134\136\360\006\140\053\130\334\074\155\074  
\307\172\060\153\005\252\222\206\163\052\322\362\032\210\304\333  
\345\132\146\216\165\311\102\077\233\210\050\100\036\365\251\134  
\036\372\310\101\241\060\253\013\234\356\026\242\301\055\245\205  
\372\355\240\014\350\177\226\112\173\275\217\232\242\030\166\322  
\257\335\267\075\020\253\122\020\210\256\035\353\270\062\164\226  
\364\267\252\047\367\245\007\015\343\224\127\152\124\040\167\315  
\035\274\171\055\344\234\264\336\121\210\376\126\326\075\213\241  
\317\372\122\036\214\005\163\167\326\005\317\143\000\121\207\141  
\343\120\276\231\227\341\374\036\021\171\153\116\152\317\234\205  
\012\034\226\052\300\040\066\024\305\011\027\142\073\364\255\352  
\325\327\375\320\071\052\170\323\320\242\317\310\163\060\011\107  
\305\116\031\375\270\060\324\017\200\230\210\206\301\114\101\172  
\043\305\103\375\136\022\270\076\017\261\267\201\142\014\176\157  
\343\173\232\302\302\107\021\041\037\317\236\321\060\316\203\301  
\020\115\100\167\327\265\302\113\062\100\102\372\233\260\254\317  
\353\041\330\031\353\144\305\153\335\125\055\200\207\104\174\114  
\074\253\015\330\022\277\064\202\214\261\252\304\270\153\350\016  
\106\167\322\213\006\035\102\373\254\275\311\347\063\263\042\157  
\176\325\056\003\305\137\005\026\206\174\355\343\236\321\026\167  
\032\106\330\311\320\214\344\134\134\041\005\221\361\144\344\254  
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CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

```
# Trust for "ANCERT Certificados Notariales V2"
# Issuer: CN=ANCERT Certificados Notariales V2,O=Agencia Notarial de Certificacion S.L.U. - CIF
B83395988,C=ES
# Serial Number:09:bd:56:05:2a:13:16:f4:68:4f:74:0e:a9:7d:1c:48
#
Subject: CN=ANCERT Certificados Notariales V2,O=Agencia Notarial de Certificacion S.L.U. - CIF
B83395988,C=ES
# Not Valid Before: Tue May 25 16:56:14 2010
# Not Valid After: Sat May 25 16:56:14 2030
# Fingerprint (MD5): 75:70:cb:6e:6b:d6:9b:7d:90:bb:69:5e:59:f0:62:b4
# Fingerprint (SHA1): 6f:62:de:b8:6c:85:58:5a:e4:2e:47:8d:b4:d7:6d:b3:67:58:5a:e6
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "ANCERT Certificados Notariales V2"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\157\142\336\270\154\205\130\132\344\056\107\215\264\327\155\263
\147\130\132\346
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\165\160\313\156\153\326\233\175\220\273\151\136\131\360\142\264
END
CKA_ISSUER MULTILINE_OCTAL
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\101\060\077\006\003\125\004\012\023\070\101\147\145\156\143\151
\141\040\116\157\164\141\162\151\141\154\040\144\145\040\103\145
\162\164\151\146\151\143\141\143\151\157\156\040\123\056\114\056
\125\056\040\055\040\103\111\106\040\102\070\063\063\071\065\071
\070\070\061\052\060\050\006\003\125\004\003\023\041\101\116\103
\105\122\124\040\103\145\162\164\151\146\151\143\141\144\157\163
\040\116\157\164\141\162\151\141\154\145\163\040\126\062
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
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\034\110
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "ANCERT Certificados CGN V2"
# Issuer: CN=ANCERT Certificados CGN V2,O=Agencia Notarial de Certificacion S.L.U. - CIF B83395988,C=ES
# Serial Number:0f:38:8c:70:fe:a6:95:5d:e9:5d:9c:87:af:79:04:99
# Subject: CN=ANCERT Certificados CGN V2,O=Agencia Notarial de Certificacion
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S.L.U. - CIF B83395988,C=ES  
# Not Valid Before: Tue May 25 16:31:22 2010  
# Not Valid After: Sat May 25 16:31:23 2030  
# Fingerprint (MD5): 92:45:af:c3:89:71:e6:87:1d:8e:5a:20:a6:33:0e:93  
# Fingerprint (SHA1): 7e:b1:a0:42:9b:e5:f4:28:ac:2b:93:97:1d:7c:84:48:a5:36:07:0c  
CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE  
CKA\_TOKEN CK\_BBOOL CK\_TRUE  
CKA\_PRIVATE CK\_BBOOL CK\_FALSE  
CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE  
CKA\_LABEL UTF8 "ANCERT Certificados CGN V2"  
CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509  
CKA\_SUBJECT MULTILINE\_OCTAL  
\060\165\061\013\060\011\006\003\125\004\006\023\002\105\123\061  
\101\060\077\006\003\125\004\012\023\070\101\147\145\156\143\151  
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\055\046\377\060\215\247\366\275\333\232\217\345\341\337\273\267  
\062\016\371\222\157\151\343\344\166\323\000\066\361\055\136\307  
\023\137\325\331\152\055\350\321\033\153\166\313\030\156\016\005

```
\020\365\132\362\111\033\131\264\205\352\312\031\164\314\273\122
\342\067\214\302\152\002\045\302\322\161\244\222\333\216\311\326
\251\156\320\205\050\155\134\155\010\170\002\260\171\014\127\157
\013\132\001\343\204\204\002\366\317\362\253\143\353\002\152\271
\313\112\030\325\071\042\074\126\112\252\225\210\346\060\000\037
\215\041\041\311\127\356\271\267\104\051\210\117\266\053\247\024
\356\216\356\157\276\026\320\023
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "ANCERT Certificados CGN V2"

# Issuer: CN=ANCERT Certificados CGN V2,O=Agencia Notarial de Certificacion S.L.U. - CIF B83395988,C=ES

# Serial Number:0f:38:8c:70:fe:a6:95:5d:e9:5d:9c:87:af:79:04:99

# Subject: CN=ANCERT Certificados CGN V2,O=Agencia Notarial de Certificacion S.L.U. - CIF  
B83395988,C=ES

# Not Valid Before: Tue May 25 16:31:22 2010

# Not Valid After: Sat May 25 16:31:23 2030

# Fingerprint (MD5): 92:45:af:c3:89:71:e6:87:1d:8e:5a:20:a6:33:0e:93

# Fingerprint (SHA1): 7e:b1:a0:42:9b:e5:f4:28:ac:2b:93:97:1d:7c:84:48:a5:36:07:0c

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "ANCERT Certificados CGN V2"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\176\261\240\102\233\345\364\050\254\053\223\227\035\174\204\110
\245\066\007\014
```

END

CKA\_CERT\_MD5\_HASH

MULTILINE\_OCTAL

```
\222\105\257\303\211\161\346\207\035\216\132\040\246\063\016\223
```

END

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\165\061\013\060\011\006\003\125\004\006\023\002\105\123\061
\101\060\077\006\003\125\004\012\023\070\101\147\145\156\143\151
\141\040\116\157\164\141\162\151\141\154\040\144\145\040\103\145
\162\164\151\146\151\143\141\143\151\157\156\040\123\056\114\056
\125\056\040\055\040\103\111\106\040\102\070\063\063\071\065\071
\070\070\061\043\060\041\006\003\125\004\003\023\032\101\116\103
\105\122\124\040\103\145\162\164\151\146\151\143\141\144\157\163
\040\103\107\116\040\126\062
```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

```
\002\020\017\070\214\160\376\246\225\135\351\135\234\207\257\171
```

```
\004\231
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
# Microsoft Code
```

```
  Signing Only Certificate
```

```
# Certificate "EE Certification Centre Root CA"
```

```
# Issuer: 1.2.840.113549.1.9.1=pki@sk.ee,CN=EE Certification Centre Root CA,O=AS
Sertifitseerimiskeskus,C=EE
```

```
# Serial Number:54:80:f9:a0:73:ed:3f:00:4c:ca:89:d8:e3:71:e6:4a
```

```
# Subject: 1.2.840.113549.1.9.1=pki@sk.ee,CN=EE Certification Centre Root CA,O=AS
Sertifitseerimiskeskus,C=EE
```

```
# Not Valid Before: Sat Oct 30 10:10:30 2010
```

```
# Not Valid After: Tue Dec 17 23:59:59 2030
```

```
# Fingerprint (MD5): 43:5e:88:d4:7d:1a:4a:7e:fd:84:2e:52:eb:01:d4:6f
```

```
# Fingerprint (SHA1): c9:a8:b9:e7:55:80:5e:58:e3:53:77:a7:25:eb:af:c3:7b:27:cc:d7
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "EE Certification Centre Root CA"
```

```
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
```

```
CKA_SUBJECT MULTILINE_OCTAL
```

```
\060\165\061\013\060\011\006\003\125\004\006\023\002\105\105\061
\042\060\040\006\003\125\004\012\014\031\101\123\040\123\145\162
\164\151\146\151\164\163\145\145\162\151\155\151\163\153\145\163
\153\165\163\061\050\060\046\006\003\125\004\003\014\037\105\105
\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\103
\145\156\164\162\145\040\122\157\157\164\040\103\101\061\030\060
\026\006\011\052\206\110\206\367\015\001\011\001\026\011\160\153
\151\100\163\153\056\145\145
```

```
END
```

```
CKA_ID
```

```
  UTF8 "0"
```

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\165\061\013\060\011\006\003\125\004\006\023\002\105\105\061
\042\060\040\006\003\125\004\012\014\031\101\123\040\123\145\162
\164\151\146\151\164\163\145\145\162\151\155\151\163\153\145\163
\153\165\163\061\050\060\046\006\003\125\004\003\014\037\105\105
\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\103
\145\156\164\162\145\040\122\157\157\164\040\103\101\061\030\060
\026\006\011\052\206\110\206\367\015\001\011\001\026\011\160\153
\151\100\163\153\056\145\145
```

```
END
```

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
```

\002\020\124\200\371\240\163\355\077\000\114\312\211\330\343\161  
\346\112

END

CKA\_VALUE

MULTILINE\_OCTAL

\060\202\004\003\060\202\002\353\240\003\002\001\002\002\020\124  
\200\371\240\163\355\077\000\114\312\211\330\343\161\346\112\060  
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\165  
\061\013\060\011\006\003\125\004\006\023\002\105\105\061\042\060  
\040\006\003\125\004\012\014\031\101\123\040\123\145\162\164\151  
\146\151\164\163\145\145\162\151\155\151\163\153\145\163\153\165  
\163\061\050\060\046\006\003\125\004\003\014\037\105\105\040\103  
\145\162\164\151\146\151\143\141\164\151\157\156\040\103\145\156  
\164\162\145\040\122\157\157\164\040\103\101\061\030\060\026\006  
\011\052\206\110\206\367\015\001\011\001\026\011\160\153\151\100  
\163\153\056\145\145\060\042\030\017\062\060\061\060\061\060\063  
\060\061\060\061\060\063\060\132\030\017\062\060\063\060\061\062  
\061\067\062\063\065\071\065\071\132\060\165\061\013\060\011\006  
\003\125\004\006\023\002\105\105\061\042\060\040\006\003\125\004  
\012\014\031\101\123\040\123\145\162\164\151\146\151\164\163\145  
\145\162\151\155\151\163\153\145\163\153\165\163\061\050\060\046  
\006\003\125\004\003\014\037\105\105\040\103\145\162\164\151\146  
\151\143\141\164\151\157\156\040\103\145\156\164\162\145\040\122  
\157\157\164\040\103\101\061\030\060\026\006\011\052\206\110\206  
\367\015\001\011\001\026\011\160\153\151\100\163\153\056\145\145  
\060\202\001\042\060\015\006\011\052\206\110\206\367\015\001\001  
\001\005\000\003\202\001\017\000\060\202\001\012\002\202\001\001  
\000\310\040\300\354\340\305\113\253\007\170\225\363\104\356\373  
\013\014\377\164\216\141\273\261\142\352\043\330\253\241\145\062  
\172\353\216\027\117\226\330\012\173\221\242\143\154\307\214\114  
\056\171\277\251\005\374\151\134\225\215\142\371\271\160\355\303  
\121\175\320\223\346\154\353\060\113\341\274\175\277\122\233\316  
\156\173\145\362\070\261\300\242\062\357\142\262\150\340\141\123  
\301\066\225\377\354\224\272\066\256\234\034\247\062\017\345\174  
\264\306\157\164\375\173\030\350\254\127\355\006\040\113\062\060  
\130\133\375\315\250\346\241\374\160\274\216\222\163\333\227\247  
\174\041\256\075\301\365\110\207\154\047\275\237\045\164\201\125  
\260\367\165\366\075\244\144\153\326\117\347\316\100\255\017\335  
\062\323\274\212\022\123\230\311\211\373\020\035\115\176\315\176  
\037\126\015\041\160\205\366\040\203\037\366\272\037\004\217\352  
\167\210\065\304\377\352\116\241\213\115\077\143\033\104\303\104  
\324\045\166\312\267\215\327\036\112\146\144\315\134\305\234\203  
\341\302\010\210\232\354\116\243\361\076\034\054\331\154\035\241  
\113\002\003\001\000\001\243\201\212\060\201\207\060\017\006\003  
\125\035\023\001\001\377\004\005\060\003\001\001\377\060\016\006  
\003\125\035\017\001\001\377\004\004\003\002\001\006\060\035\006  
\003\125\035\016\004\026\004\024\022\362\132\076\352\126\034\277  
\315\006\254\361\361\045\311\251\113\324\024\231\060\105\006\003

\125\035\045\004\076\060\074\006\010\053\006\001\005\005\007\003  
\002\006\010\053\006\001\005\005\007\003\001\006\010\053\006\001  
\005\005\007\003\003\006\010\053\006\001\005\005\007\003\004\006  
\010\053\006\001\005\005\007\003\010\006\010\053\006\001\005\005  
\007\003\011\060\015\006\011\052\206\110\206\367\015\001\001\005  
\005\000\003\202\001\001\000\173\366\344\300\015\252\031\107\267  
\115\127\243\376\255\273\261\152\325\017\236\333\344\143\305\216  
\241\120\126\223\226\270\070\300\044\042\146\274\123\024\141\225  
\277\320\307\052\226\071\077\175\050\263\020\100\041\152\304\257  
\260\122\167\030\341\226\330\126\135\343\335\066\136\035\247\120  
\124\240\305\052\344\252\214\224\212\117\235\065\377\166\244\006  
\023\221\242\242\175\000\104\077\125\323\202\074\032\325\133\274  
\126\114\042\056\106\103\212\044\100\055\363\022\270\073\160\032  
\244\226\271\032\257\207\101\032\152\030\015\006\117\307\076\156  
\271\051\115\015\111\211\021\207\062\133\346\113\004\310\344\134  
\346\164\163\224\135\026\230\023\225\376\373\333\261\104\345\072  
\160\254\067\153\346\263\063\162\050\311\263\127\240\366\002\026  
\210\006\013\266\246\113\040\050\324\336\075\213\255\067\005\123  
\164\376\156\314\274\103\027\161\136\371\305\314\032\251\141\356  
\367\166\014\363\162\364\162\255\317\162\002\066\007\107\317\357  
\031\120\211\140\314\351\044\225\017\302\313\035\362\157\166\220  
\307\314\165\301\226\305\235

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "EE Certification Centre Root CA"

# Issuer: 1.2.840.113549.1.9.1=pki@sk.ee,CN=EE Certification Centre Root CA,O=AS  
Sertifitseerimiskeskus,C=EE

# Serial Number:54:80:f9:a0:73:ed:3f:00:4c:ca:89:d8:e3:71:e6:4a

# Subject: 1.2.840.113549.1.9.1=pki@sk.ee,CN=EE Certification Centre Root CA,O=AS  
Sertifitseerimiskeskus,C=EE

# Not Valid Before: Sat Oct 30 10:10:30 2010

# Not Valid After: Tue Dec 17 23:59:59 2030

# Fingerprint (MD5): 43:5e:88:d4:7d:1a:4a:7e:fd:84:2e:52:eb:01:d4:6f

# Fingerprint (SHA1): c9:a8:b9:e7:55:80:5e:58:e3:53:77:a7:25:eb:af:c3:7b:27:cc:d7

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN

CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "EE Certification Centre Root CA"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\311\250\271\347\125\200\136\130\343\123\167\247\045\353\257\303  
\173\047\314\327

```

END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\103\136\210\324\175\032\112\176\375\204\056\122\353\001\324\157
END
CKA_ISSUER MULTILINE_OCTAL
\060\165\061\013\060\011\006\003\125\004\006\023\002\105\105\061
\042\060\040\006\003\125\004\012\014\031\101\123\040\123\145\162
\164\151\146\151\164\163\145\145\162\151\155\151\163\153\145\163
\153\165\163\061\050\060\046\006\003\125\004\003\014\037\105\105
\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\103
\145\156\164\162\145\040\122\157\157\164\040\103\101\061\030\060
\026\006\011\052\206\110\206\367\015\001\011\001\026\011\160\153
\151\100\163\153\056\145\145
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\124\200\371\240\163\355\077\000\114\312\211\330\343\161
\346\112
END
CKA_TRUST_SERVER_AUTH
CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "Autoridad de Certificacion Raiz del Estado Venezolano"
# Issuer: 1.2.840.113549.1.9.1=acraiz@suscerte.gob.ve,OU=Superintendencia de Servicios de Certificacion
Electronica,O=Sistema Nacional de Certificacion Electronica,ST=Distrito Capital,L=Caracas,C=VE,CN=Autoridad
de Certificacion Raiz del Estado Venezolano
# Serial Number: 10 (0xa)
# Subject: 1.2.840.113549.1.9.1=acraiz@suscerte.gob.ve,OU=Superintendencia de Servicios de Certificacion
Electronica,O=Sistema Nacional de Certificacion Electronica,ST=Distrito Capital,L=Caracas,C=VE,CN=Autoridad
de Certificacion Raiz del Estado Venezolano
# Not Valid Before: Tue Dec 28 16:41:36 2010
# Not Valid After: Mon Dec 23 23:59:59 2030
# Fingerprint (MD5): 96:14:69:08:a8:36:59:d7:a0:35:14:89:58:50:5b:ab
#
Fingerprint (SHA1): 39:8e:be:9c:0f:46:c0:79:c3:c7:af:e0:7a:2f:dd:9f:ae:5f:8a:5c
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Autoridad de Certificacion Raiz del Estado Venezolano"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\202\001\036\061\076\060\074\006\003\125\004\003\023\065\101
\165\164\157\162\151\144\141\144\040\144\145\040\103\145\162\164
\151\146\151\143\141\143\151\157\156\040\122\141\151\172\040\144

```

\145\154\040\105\163\164\141\144\157\040\126\145\156\145\172\157  
\154\141\156\157\061\013\060\011\006\003\125\004\006\023\002\126  
\105\061\020\060\016\006\003\125\004\007\023\007\103\141\162\141  
\143\141\163\061\031\060\027\006\003\125\004\010\023\020\104\151  
\163\164\162\151\164\157\040\103\141\160\151\164\141\154\061\066  
\060\064\006\003\125\004\012\023\055\123\151\163\164\145\155\141  
\040\116\141\143\151\157\156\141\154\040\144\145\040\103\145\162  
\164\151\146\151\143\141\143\151\157\156\040\105\154\145\143\164  
\162\157\156\151\143\141\061\103\060\101\006\003\125\004\013\023  
\072\123\165\160\145\162\151\156\164\145\156\144\145\156\143\151  
\141\040\144\145\040\123\145\162\166\151\143\151\157\163\040\144  
\145\040\103\145\162\164\151\146\151\143\141\143\151\157\156\040  
\105\154\145\143\164\162\157\156\151\143\141\061\045\060\043\006  
\011\052\206\110\206\367\015\001\011\001\026\026\141\143\162\141  
\151\172\100\163\165\163\143\145\162\164\145\056\147\157\142\056  
\166\145

END

CKA\_ID

UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\202\001\036\061\076\060\074\006\003\125\004\003\023\065\101  
\165\164\157\162\151\144\141\144\040\144\145\040\103\145\162\164  
\151\146\151\143\141\143\151\157\156\040\122\141\151\172\040\144  
\145\154\040\105\163\164\141\144\157\040\126\145\156\145\172\157  
\154\141\156\157\061\013\060\011\006\003\125\004\006\023\002\126  
\105\061\020\060\016\006\003\125\004\007\023\007\103\141\162\141  
\143\141\163\061\031\060\027\006\003\125\004\010\023\020\104\151  
\163\164\162\151\164\157\040\103\141\160\151\164\141\154\061\066  
\060\064\006\003\125\004\012\023\055\123\151\163\164\145\155\141  
\040\116\141\143\151\157\156\141\154\040\144\145\040\103\145\162  
\164\151\146\151\143\141\143\151\157\156\040\105\154\145\143\164  
\162\157\156\151\143\141\061\103\060\101\006\003\125\004\013\023  
\072\123\165\160\145\162\151\156\164\145\156\144\145\156\143\151  
\141\040\144\145\040\123\145\162\166\151\143\151\157\163\040\144  
\145\040\103\145\162\164\151\146\151\143\141\143\151\157\156\040  
\105\154\145\143\164\162\157\156\151\143\141\061\045\060\043\006  
\011\052\206\110\206\367\015\001\011\001\026\026\141\143\162\141  
\151\172\100\163\165\163\143\145\162\164\145\056\147\157\142\056  
\166\145

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\001\012

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\011\230\060\202\007\200\240\003\002\001\002\002\001\012  
\060\015\006\011\052\206\110\206\367\015\001\001\014\005\000\060  
\202\001\036\061\076\060\074\006\003\125\004\003\023\065\101\165



\164\157\162\151\144\141\144\040\144\145\040\103\145\162\164\151  
\146\151\143\141\143\151\157\156\040\122\141\151\172\040\144\145  
\154\040\105\163\164\141\144\157\040\126\145\156\145\172\157\154  
\141\156\157\061\013\060\011\006\003\125\004\006\023\002\126\105  
\061\020\060\016\006\003\125\004\007\023\007\103\141\162\141\143  
\141\163\061\031\060\027\006\003\125\004\010\023\020\104\151\163  
\164\162\151\164\157\040\103\141\160\151\164\141\154\061\066\060  
\064\006\003\125\004\012\023\055\123\151\163\164\145\155\141\040  
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END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL

CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "Autoridad de Certificacion Raiz del Estado Venezolano"

# Issuer: 1.2.840.113549.1.9.1=acraiz@suscerte.gob.ve,OU=Superintendencia de Servicios de Certificacion

Electronica,O=Sistema Nacional de Certificacion Electronica,ST=Distrito Capital,L=Caracas,C=VE,CN=Autoridad de Certificacion Raiz del Estado Venezolano

# Serial Number: 10 (0xa)

# Subject: 1.2.840.113549.1.9.1=acraiz@suscerte.gob.ve,OU=Superintendencia de Servicios de Certificacion

Electronica,O=Sistema Nacional de Certificacion Electronica,ST=Distrito Capital,L=Caracas,C=VE,CN=Autoridad de Certificacion Raiz del Estado Venezolano

# Not Valid Before: Tue Dec 28 16:41:36 2010

# Not Valid After: Mon Dec 23 23:59:59 2030

# Fingerprint (MD5): 96:14:69:08:a8:36:59:d7:a0:35:14:89:58:50:5b:ab

# Fingerprint (SHA1): 39:8e:be:9c:0f:46:c0:79:c3:c7:af:e0:7a:2f:dd:9f:ae:5f:8a:5c

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE

CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Autoridad de Certificacion Raiz del Estado Venezolano"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

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\071\216\276\234\017\106\300\171\303\307\257\340\172\057\335\237
\256\137\212\134
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END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

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\226\024\151\010\250\066\131\327\240\065\024\211\130\120\133\253
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END

CKA\_ISSUER MULTILINE\_OCTAL

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\151\146\151\143\141\143\151\157\156\040\122\141\151\172\040\144
\145\154\040\105\163\164\141\144\157\040\126\145\156\145\172\157
\154\141\156\157\061\013\060\011\006\003\125\004\006\023\002\126
\105\061\020\060\016\006\003\125\004\007\023\007\103\141\162\141
\143\141\163\061\031\060\027\006\003\125\004\010\023\020\104\151
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\163\164\162\151\164\157\040\103\141\160\151\164\141\154\061\066
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\040\116\141\143\151\157\156\141\154\040\144\145\040\103\145\162
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\162\157\156\151\143\141\061\103\060\101\006\003\125\004\013\023
\072\123\165\160\145\162\151\156\164\145\156\144\145\156\143\151
\141\040\144\145\040\123\145\162\166\151\143\151\157\163\040\144
\145\040\103\145\162\164\151\146\151\143\141\143\151\157\156\040
\105\154\145\143\164\162\157\156\151\143\141\061\045\060\043\006
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\151\172\100\163\165\163\143\145\162\164\145\056\147\157\142\056
\166\145
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END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

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\002\001\012
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END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "China Internet Network Information Center EV Certificates Root"

# Issuer: CN=China Internet Network Information Center EV Certificates

Root,O=China Internet Network Information Center,C=CN

# Serial Number:48:9f:00:01

# Subject: CN=China Internet Network Information Center EV Certificates Root,O=China Internet Network Information Center,C=CN

# Not Valid Before: Tue Aug 31 07:11:25 2010

# Not Valid After: Sat Aug 31 07:11:25 2030

# Fingerprint (MD5): 55:5d:63:00:97:bd:6a:97:f5:67:ab:4b:fb:6e:63:15

# Fingerprint (SHA1): 4f:99:aa:93:fb:2b:d1:37:26:a1:99:4a:ce:7f:f0:05:f2:93:5d:1e

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "China Internet Network Information Center EV Certificates Root"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

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\150\151\156\141\040\111\156\164\145\162\156\145\164\040\116\145
\164\167\157\162\153\040\111\156\146\157\162\155\141\164\151\157
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\164\167\157\162\153\040\111\156\146\157\162\155\141\164\151\157
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END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\004\110\237\000\001
END
CKA_VALUE
MULTILINE_OCTAL
\060\202\003\367\060\202\002\337\240\003\002\001\002\002\004\110
\237\000\001\060\015\006\011\052\206\110\206\367\015\001\001\005
\005\000\060\201\212\061\013\060\011\006\003\125\004\006\023\002
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\111\156\164\145\162\156\145\164\040\116\145\164\167\157\162\153
\040\111\156\146\157\162\155\141\164\151\157\156\040\103\145\156
\164\145\162\061\107\060\105\006\003\125\004\003\014\076\103\150
\151\156\141\040\111\156\164\145\162\156\145\164\040\116\145\164
\167\157\162\153\040\111\156\146\157\162\155\141\164\151\157\156
\040\103\145\156\164\145\162\040\105\126\040\103\145\162\164\151
\146\151\143\141\164\145\163\040\122\157\157\164\060\202\001\042
\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003
\202\001\017\000\060\202\001\012\002\202\001\001\000\233\176\163
\356\275\073\170\252\144\103\101\365\120\337\224\362\056\262\215
\112\216\106\124\322\041\022\310\071\062\102\006\351\203\325\237
\122\355\345\147\003\073\124\301\214\231\231\314\351\300\017\377
\015\331\204\021\262\270\321\313\133\334\036\371\150\061\144\341
```

\233\372\164\353\150\271\040\225\367\306\017\215\107\254\132\006  
\335\141\253\342\354\330\237\027\055\234\312\074\065\227\125\161  
\315\103\205\261\107\026\365\054\123\200\166\317\323\000\144\275  
\100\231\335\314\330\333\304\237\326\023\137\101\203\213\371\015  
\207\222\126\064\154\032\020\013\027\325\132\034\227\130\204\074  
\204\032\056\134\221\064\156\031\137\177\027\151\305\145\357\153  
\041\306\325\120\072\277\141\271\005\215\357\157\064\072\262\157  
\024\143\277\026\073\233\251\052\375\267\053\070\146\006\305\054  
\342\252\147\036\105\247\215\004\146\102\366\217\053\357\210\040  
\151\217\062\214\024\163\332\053\206\221\143\042\232\362\247\333  
\316\211\213\253\135\307\024\301\133\060\152\037\261\267\236\056  
\201\001\002\355\317\226\136\143\333\250\346\070\267\002\003\001  
\000\001\243\143\060\141\060\037\006\003\125\035\043\004\030\060  
\026\200\024\174\162\113\071\307\300\333\142\245\117\233\252\030  
\064\222\242\312\203\202\131\060\017\006\003\125\035\023\001\001  
\377\004\005\060\003\001\001\377\060\016\006\003\125\035\017\001  
\001\377\004\004\003\002\001\006\060\035\006\003\125\035\016\004  
\026\004\024\174\162\113\071\307\300\333\142\245\117\233\252\030  
\064\222\242\312\203\202\131\060\015\006\011\052\206\110\206\367  
\015\001\001\005\005\000\003\202\001\001\000\052\303\307\103\067  
\217\335\255\244\262\014\356\334\024\155\217\050\244\230\111\313  
\014\200\352\363\355\043\146\165\175\305\323\041\147\171\321\163  
\305\265\003\267\130\254\014\124\057\306\126\023\017\061\332\006  
\347\145\073\035\157\066\333\310\035\371\375\200\006\312\243\075  
\146\026\250\235\114\026\175\300\225\106\265\121\344\342\037\327  
\352\006\115\143\215\226\214\357\347\063\127\102\072\353\214\301  
\171\310\115\166\175\336\366\261\267\201\340\240\371\241\170\106  
\027\032\126\230\360\116\075\253\034\355\354\071\334\007\110\367  
\143\376\006\256\302\244\134\152\133\062\210\305\307\063\205\254  
\146\102\107\302\130\044\231\341\345\076\345\165\054\216\103\326  
\135\074\170\036\250\225\202\051\120\321\321\026\272\357\301\276  
\172\331\264\330\314\036\114\106\341\167\261\061\253\275\052\310  
\316\217\156\241\135\177\003\165\064\344\255\211\105\124\136\276  
\256\050\245\273\077\170\171\353\163\263\012\015\375\276\311\367  
\126\254\366\267\355\057\233\041\051\307\070\266\225\304\004\362  
\303\055\375\024\052\220\231\271\007\314\237

END

CKA\_NSS\_Mozilla\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "China Internet Network Information Center EV Certificates Root"

# Issuer: CN=China Internet Network Information Center EV Certificates Root,O=China Internet Network  
Information Center,C=CN

# Serial Number:48:9f:00:01

# Subject: CN=China Internet Network Information Center EV Certificates Root,O=China Internet Network

```

Information Center,C=CN
# Not Valid Before: Tue Aug 31 07:11:25 2010
# Not Valid After: Sat Aug 31 07:11:25 2030
# Fingerprint (MD5): 55:5d:63:00:97:bd:6a:97:f5:67:ab:4b:fb:6e:63:15
# Fingerprint (SHA1): 4f:99:aa:93:fb:2b:d1:37:26:a1:99:4a:ce:7f:f0:05:f2:93:5d:1e
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL
CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "China Internet Network Information Center EV Certificates Root"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\117\231\252\223\373\053\321\067\046\241\231\112\316\177\360\005
\362\223\135\036
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\125\135\143\000\227\275\152\227\365\147\253\113\373\156\143\025
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\212\061\013\060\011\006\003\125\004\006\023\002\103\116
\061\062\060\060\006\003\125\004\012\014\051\103\150\151\156\141
\040\111\156\164\145\162\156\145\164\040\116\145\164\167\157\162
\153\040\111\156\146\157\162\155\141\164\151\157\156\040\103\145
\156\164\145\162\061\107\060\105\006\003\125\004\003\014\076\103
\150\151\156\141\040\111\156\164\145\162\156\145\164\040\116\145
\164\167\157\162\153\040\111\156\146\157\162\155\141\164\151\157
\156\040\103\145\156\164\145\162\040\105\126\040\103\145\162\164
\151\146\151\143\141\164\145\163\040\122\157\157\164
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\004\110\237\000\001
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "Verizon Global Root CA"
# Issuer: CN=Verizon Global Root CA,OU=OmniRoot,O=Verizon Business,C=US
# Serial Number: 1 (0x1)
# Subject: CN=Verizon Global Root CA,OU=OmniRoot,O=Verizon Business,C=US
# Not Valid Before: Thu Jul 30 14:27:04 2009
# Not Valid After: Sun Jul 30 14:27:04 2034
# Fingerprint (MD5): f4:c3:f3:e9:53:c2:94:65:27:3d:52:89:f1:8e:5b:1c
# Fingerprint (SHA1): 91:21:98:ee:f2:3d:ca:c4:09:39:31:2f:ee:97:dd:56:0b:ae:49:b1
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

```



```
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Verizon Global Root CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\134\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\031\060\027\006\003\125\004\012\014\020\126\145\162\151\172\157
\156\040\102\165\163\151\156\145\163\163\061\021\060\017\006\003
\125\004\013\014\010\117\155\156\151\122\157\157\164\061\037\060
\035\006\003\125\004\003\014\026\126\145\162\151\172\157\156\040
\107\154\157\142\141\154\040\122\157\157\164\040\103\101
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\134\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\031\060\027\006\003\125\004\012\014\020\126\145\162\151\172\157
\156\040\102\165\163\151\156\145\163\163\061\021\060\017\006\003
\125\004\013\014\010\117\155\156\151\122\157\157\164\061\037\060
\035\006\003\125\004\003\014\026\126\145\162\151\172\157\156\040
\107\154\157\142\141\154\040\122\157\157\164\040\103\101
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\001
END
CKA_VALUE MULTILINE_OCTAL
\060\202\003\165\060\202\002\135\240\003\002\001\002\002\001\001
\060\015\006\011\052\206\110\206\367\015\001\001\001\013\005\000\060
\134\061\013\060\011\006\003\125\004\006\023\002\125\123\061\031
\060\027\006\003\125\004\012\014\020\126\145\162\151\172\157\156
\040\102\165\163\151\156\145\163\163\061\021\060\017\006\003\125
\004\013\014\010\117\155\156\151\122\157\157\164\061\037\060\035
\006\003\125\004\003\014\026\126\145\162\151\172\157\156\040\107
\154\157\142\141\154\040\122\157\157\164\040\103\101\060\036\027
\015\060\071\060\067\063\060\061\064\062\067\060\064\132\027\015
\063\064\060\067\063\060\061\064\062\067\060\064\132\060\134\061
\013\060\011\006\003\125\004\006\023\002\125\123\061\031\060\027
\006\003\125\004\012\014\020\126\145\162\151\172\157\156\040\102
\165\163\151\156\145\163\163\061\021\060\017\006\003\125\004\013
\014\010\117\155\156\151\122\157\157\164\061\037\060\035\006\003
\125\004\003\014\026\126\145\162\151\172\157\156\040\107\154\157
\142\141\154\040\122\157\157\164\040\103\101\060\202\001\042\060
\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003\202
\001\017\000\060\202\001\012\002\202\001\001\000\212\000\014\160
\035\277\353\064\206\303\231\105\065\036\177\103\367\253\157\044
\055\315\031\302\020\273\260\312\051\133\251\040\253\253\162\054
\304\342\002\071\155\202\270\305\021\352\370\373\263\236\142\370
```

\063\036\260\037\311\343\366\067\333\004\310\073\143\117\066\342  
\205\244\045\035\307\151\037\004\275\150\105\023\226\007\037\224  
\120\365\076\305\047\124\236\300\111\127\104\216\007\143\324\246  
\256\355\042\231\314\115\226\151\004\023\156\166\211\237\164\026  
\224\371\035\124\275\242\271\322\203\001\042\014\115\104\200\252  
\376\065\211\047\045\247\206\211\306\325\032\222\343\217\305\225  
\240\024\162\232\350\126\305\002\125\034\227\371\040\056\320\365  
\074\023\031\132\366\341\371\013\003\202\151\247\214\267\326\157  
\234\126\076\235\350\052\011\140\155\113\346\373\213\231\024\367  
\064\117\145\131\200\215\271\127\310\242\065\041\330\210\161\126  
\135\356\202\127\055\046\220\030\237\232\234\234\217\357\324\305  
\143\247\124\175\107\221\207\175\032\022\250\033\030\157\251\157  
\261\047\272\344\004\164\316\067\036\177\146\305\002\003\001\000  
\001\243\102\060\100\060\017\006\003\125\035\023\001\001\377\004  
\005\060\003\001\001\377\060\016\006\003\125\035\017\001\001\377  
\004\004\003\002\001\006\060\035\006\003\125\035\016\004\026\004  
\024\114\070\021\270\230\000\133\132\053\160\076\252\170\344\325  
\147\147\147\247\176\060\015\006\011\052\206\110\206\367\015\001  
\001\013\005\000\003\202\001\001\000\001\137\240\261\006\001\364  
\171\327\145\030\140\076\317\171\240\272\302\043\117\043\337\207  
\226\137\201\016\070\025\056\134\310\002\150\051\040\374\213\356  
\245\212\030\201\144\134\230\065\176\071\060\202\244\202\212\120  
\265\272\303\350\132\326\250\236\342\303\027\333\333\304\353\260  
\012\040\015\351\236\343\377\140\124\107\361\073\235\324\050\074  
\242\256\243\373\252\213\202\042\052\065\207\220\270\034\131\107  
\220\325\235\056\372\111\343\145\250\066\353\307\344\034\150\334  
\263\061\154\253\116\316\044\200\025\310\020\131\020\021\162\115  
\172\234\230\234\304\374\141\340\263\262\235\116\240\306\302\131  
\253\030\326\242\125\105\354\051\252\045\067\326\116\112\075\013  
\100\301\344\223\344\374\315\221\013\370\346\253\314\263\166\304  
\142\277\031\355\206\266\171\303\051\124\124\274\231\175\106\127  
\317\246\317\364\124\052\232\003\145\107\001\241\102\052\313\045  
\107\156\174\136\000\113\221\331\371\033\020\006\160\371\102\025  
\246\137\252\327\100\036\375\311\110\235\227\201\352\134\150\302  
\240\347\211\241\123\115\277\307\343

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "Verizon Global Root CA"

# Issuer: CN=Verizon Global Root CA,OU=OmniRoot,O=Verizon Business,C=US

# Serial Number: 1 (0x1)

# Subject: CN=Verizon Global Root CA,OU=OmniRoot,O=Verizon Business,C=US

# Not Valid Before: Thu Jul 30 14:27:04 2009

# Not Valid After: Sun Jul 30 14:27:04 2034

```

#
Fingerprint (MD5): f4:c3:f3:e9:53:c2:94:65:27:3d:52:89:f1:8e:5b:1c
# Fingerprint (SHA1): 91:21:98:ee:f2:3d:ca:c4:09:39:31:2f:ee:97:dd:56:0b:ae:49:b1
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Verizon Global Root CA"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\221\041\230\356\362\075\312\304\011\071\061\057\356\227\335\126
\013\256\111\261
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\364\303\363\351\123\302\224\145\047\075\122\211\361\216\133\034
END
CKA_ISSUER MULTILINE_OCTAL
\060\134\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\031\060\027\006\003\125\004\012\014\020\126\145\162\151\172\157
\156\040\102\165\163\151\156\145\163\163\061\021\060\017\006\003
\125\004\013\014\010\117\155\156\151\122\157\157\164\061\037\060
\035\006\003\125\004\003\014\026\126\145\162\151\172\157\156\040
\107\154\157\142\141\154\040\122\157\157\164\040\103\101
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\001
END
CKA_TRUST_SERVER_AUTH
CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "SwissSign Silver Root CA - G3"
# Issuer: CN=SwissSign Silver Root CA - G3,O=SwissSign AG,C=CH
# Serial Number:aa:88:b0:5a:0b:b1:76:9b
# Subject: CN=SwissSign Silver Root CA - G3,O=SwissSign AG,C=CH
# Not Valid Before: Tue Aug 04 13:19:14 2009
# Not Valid After: Tue Aug 04 13:19:14 2037
# Fingerprint (MD5): 40:e4:e0:25:6e:96:e0:01:a1:c8:4c:43:4c:f9:dc:33
# Fingerprint (SHA1): 8d:08:fc:43:c0:77:0c:a8:4f:4d:cc:b2:d4:1a:5d:95:6d:78:6d:c4
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "SwissSign Silver Root CA - G3"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL

```

\060\114\061\013\060\011\006\003\125\004\006\023\002\103\110\061  
\025\060\023\006\003\125\004\012\023\014\123\167\151\163\163\123  
\151\147\156\040\101\107\061\046\060\044\006\003\125\004\003\023  
\035\123\167\151\163\163\123\151\147\156\040\123\151\154\166\145  
\162\040\122\157\157\164\040\103\101\040\055\040\107\063

END

CKA\_ID

UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\114\061\013\060\011\006\003\125\004\006\023\002\103\110\061  
\025\060\023\006\003\125\004\012\023\014\123\167\151\163\163\123  
\151\147\156\040\101\107\061\046\060\044\006\003\125\004\003\023  
\035\123\167\151\163\163\123\151\147\156\040\123\151\154\166\145  
\162\040\122\157\157\164\040\103\101\040\055\040\107\063

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\011\000\252\210\260\132\013\261\166\233

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\176\060\202\003\146\240\003\002\001\002\002\011\000  
\252\210\260\132\013\261\166\233\060\015\006\011\052\206\110\206  
\367\015\001\001\013\005\000\060\114\061\013\060\011\006\003\125  
\004\006\023\002\103\110\061\025\060\023\006\003\125\004\012\023  
\014\123\167\151\163\163\123\151\147\156\040\101\107\061\046\060  
\044\006\003\125\004\003\023\035\123\167\151\163\163\123\151\147  
\156\040\123\151\154\166\145\162\040\122\157\157\164\040\103\101  
\040\055\040\107\063\060\036\027\015\060\071\060\070\060\064\061  
\063\061\071\061\064\132\027\015\063\067\060\070\060\064\061\063  
\061\071\061\064\132\060\114\061\013\060\011\006\003\125\004\006  
\023\002\103\110\061\025\060\023\006\003\125\004\012\023\014\123  
\167\151\163\163\123\151\147\156\040\101\107\061\046\060\044\006  
\003\125\004\003\023\035\123\167\151\163\163\123\151\147\156\040  
\123\151\154\166\145\162\040\122\157\157\164\040\103\101\040\055  
\040\107\063\060\202\002\042\060\015\006\011\052\206\110\206\367  
\015\001\001\001\005\000\003\202\002\017\000\060\202\002\012\002  
\202\002\001\000\276\207\233\005\346\161\174\122\157\155\354\067  
\251\351\263\334\314\137\177\323\120\352\041\233\004\360\075\277  
\276\216\311\245\024\026\062\020\317\231\374\354\160\255\110\066  
\147\044\014\027\062\326\051\345\112\071\261\067\353\246\170\014  
\154\157\031\312\116\367\121\332\032\350\372\041\070\154\225\234  
\057\326\213\314\073\002\233\277\046\233\021\105\266\270\064\132  
\035\246\124\110\122\310\235\170\161\316\110\112\314\247\170\203  
\334\150\253\146\036\167\007\323\066\030\010\327\324\155\140\370  
\360\171\323\063\066\011\222\143\267\004\232\365\247\226\332\105  
\257\164\032\374\202\343\250\133\016\072\077\122\127\230\176\274  
\234\214\301\300\262\132\337\304\176\376\014\246\124\166\203\176  
\272\335\347\052\364\112\066\117\207\145\056\245\272\071\215\131  
\141\051\363\323\216\044\160\214\123\233\021\245\107\007\262\165

\005\134\015\204\331\104\331\315\311\046\104\127\156\002\175\225  
\001\324\253\044\206\356\075\160\373\127\372\260\051\024\320\235  
\362\305\227\313\011\312\361\362\075\347\330\113\226\351\210\057  
\236\107\121\212\124\145\230\110\322\022\344\124\167\014\007\346  
\276\133\234\361\335\003\176\215\204\374\276\311\142\325\374\311  
\072\350\211\265\137\302\005\122\141\360\234\076\354\056\115\214  
\162\221\216\310\103\301\242\050\136\365\200\044\334\342\057\207  
\073\123\000\345\313\360\262\174\215\171\031\240\210\315\170\370  
\305\212\132\167\345\006\254\335\112\336\346\160\156\276\257\276  
\365\261\253\016\010\260\333\240\077\224\305\276\022\271\274\173  
\047\171\265\062\051\135\256\305\040\043\222\003\173\124\071\260  
\211\042\124\155\022\343\303\170\352\072\100\375\244\223\254\351  
\055\210\074\333\246\107\146\114\337\330\027\355\026\336\032\326  
\327\101\146\277\035\200\361\244\340\144\021\051\136\014\047\005  
\142\353\345\304\004\142\321\304\237\014\152\125\326\130\070\234  
\146\017\235\373\253\124\200\231\234\354\111\326\202\237\332\105  
\326\077\123\006\003\267\375\037\354\206\175\164\340\244\264\350  
\062\266\252\007\043\370\357\044\101\236\143\060\170\364\124\335  
\216\360\132\070\216\022\177\170\307\157\002\126\041\063\316\270  
\270\255\151\125\002\003\001\000\001\243\143\060\141\060\016\006  
\003\125\035\017\001\001\377\004\004\003\002\001\006\060\017\006  
\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060\035  
\006\003\125\035\016\004\026\004\024\241\214\105\223\012\022\143  
\013\247\127\137\062\112\175\341\041\347\267\076\146\060\037\006  
\003\125\035\043\004\030\060\026\200\024\241\214\105\223\012\022  
\143\013\247\127\137\062\112\175\341\041\347\267\076\146\060\015  
\006\011\052\206\110\206\367\015\001\001\013\005\000\003\202\002  
\001\000\207\256\141\155\110\070\052\306\034\334\112\056\204\170  
\111\300\043\052\105\270\065\115\321\005\372\271\005\063\304\144  
\275\333\255\124\026\052\260\076\015\132\050\332\246\032\200\163  
\014\304\101\157\257\270\064\266\167\324\133\216\035\013\213\106  
\220\104\265\263\356\111\030\211\301\113\064\263\207\065\164\242  
\236\105\147\355\105\161\146\266\271\241\045\163\327\302\254\210  
\373\322\035\247\153\332\300\132\346\330\131\144\064\227\145\040  
\061\063\003\117\316\255\011\236\256\351\302\076\030\165\264\063  
\045\022\273\005\354\120\272\161\100\342\275\336\210\106\005\041  
\204\213\243\053\036\353\060\060\211\277\021\365\134\104\370\221  
\213\113\131\105\013\060\015\312\014\117\157\143\276\004\376\301  
\355\340\207\376\310\315\126\277\345\334\216\172\324\326\051\116  
\200\333\253\233\077\216\145\007\042\367\104\315\226\037\055\307  
\365\011\266\230\160\377\070\334\120\025\021\204\073\177\251\360  
\330\044\124\310\027\214\053\023\111\326\231\177\105\321\017\216  
\277\151\162\067\123\007\364\346\256\375\133\076\171\271\006\315  
\270\201\170\264\115\240\320\065\272\344\256\377\323\111\274\065  
\355\143\306\263\374\343\253\141\132\005\266\013\344\377\251\052  
\276\337\124\116\302\113\134\150\332\243\062\242\311\115\127\030  
\123\064\131\074\146\231\327\074\002\170\247\114\161\320\277\333  
\361\304\074\347\001\346\004\362\104\366\110\046\060\063\311\261

```
\001\031\353\002\361\314\041\372\072\002\060\027\235\310\137\200
\077\335\045\254\002\233\343\027\336\275\312\222\024\322\122\201
\123\346\352\374\060\147\062\251\142\366\223\027\025\007\061\136
\017\033\151\365\364\251\267\174\055\263\355\204\104\062\107\050
\007\073\206\151\105\251\307\066\226\220\162\164\330\022\246\163
\043\321\116\271\266\172\072\304\051\241\120\006\021\271\331\364
\046\156\142\010\022\040\026\360\001\127\027\324\005\066\147\227
\353\121\371\377\063\044\014\005\017\126\277\357\075\034\122\216
\212\336\151\017\132\037\360\325\003\061\104\263\222\306\352\165
\250\256\273\307\140\003\210\230\377\307\004\204\122\220\206\341
\264\223\251\120\057\350\353\322\066\254\060\140\247\320\003\023
\265\012
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "SwissSign Silver Root CA - G3"

# Issuer: CN=SwissSign Silver Root CA - G3,O=SwissSign AG,C=CH

# Serial Number:aa:88:b0:5a:0b:b1:76:9b

# Subject: CN=SwissSign Silver Root CA - G3,O=SwissSign AG,C=CH

# Not Valid Before: Tue Aug 04 13:19:14 2009

# Not Valid After: Tue Aug 04 13:19:14 2037

# Fingerprint

(MD5): 40:e4:e0:25:6e:96:e0:01:a1:c8:4c:43:4c:f9:dc:33

# Fingerprint (SHA1): 8d:08:fc:43:c0:77:0c:a8:4f:4d:cc:b2:d4:1a:5d:95:6d:78:6d:c4

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "SwissSign Silver Root CA - G3"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\215\010\374\103\300\167\014\250\117\115\314\262\324\032\135\225
\155\170\155\304
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\100\344\340\045\156\226\340\001\241\310\114\103\114\371\334\063
```

END

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\114\061\013\060\011\006\003\125\004\006\023\002\103\110\061
\025\060\023\006\003\125\004\012\023\014\123\167\151\163\163\123
\151\147\156\040\101\107\061\046\060\044\006\003\125\004\003\023
\035\123\167\151\163\163\123\151\147\156\040\123\151\154\166\145
\162\040\122\157\157\164\040\103\101\040\055\040\107\063
```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

```
\002\011\000\252\210\260\132\013\261\166\233
END
CKA_TRUST_SERVER_AUTH CK_TRUST
CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
# Microsoft Code Signing Only Certificate
# Certificate "SwissSign Platinum Root CA - G3"
# Issuer: CN=SwissSign Platinum Root CA - G3,O=SwissSign AG,C=CH
# Serial Number:22:3f:a9:17:20:de:81:94
# Subject: CN=SwissSign Platinum Root CA - G3,O=SwissSign AG,C=CH
# Not Valid Before: Tue Aug 04 13:34:04 2009
# Not Valid After: Tue Aug 04 13:34:04 2037
# Fingerprint (MD5): 20:de:12:0b:a8:6e:d9:34:a8:4e:b2:0d:1e:a6:43:39
# Fingerprint (SHA1): a1:e7:c6:00:aa:41:70:e5:b7:4b:c9:4f:9b:97:03:ed:c2:61:b4:b9
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "SwissSign Platinum Root CA - G3"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\116\061\013\060\011\006\003\125\004\006\023\002\103\110\061
\025\060\023\006\003\125\004\012\023\014\123\167\151\163\163\123
\151\147\156\040\101\107\061\050\060\046\006\003\125\004\003\023
\037\123\167\151\163\163\123\151\147\156\040\120\154\141\164\151
\156\165\155\040\122\157\157\164\040\103\101\040\055\040\107\063
END
```

```
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\116\061\013\060\011\006\003\125\004\006\023\002\103\110\061
\025\060\023\006\003\125\004\012\023\014\123\167\151\163\163\123
\151\147\156\040\101\107\061\050\060\046\006\003\125\004\003\023
\037\123\167\151\163\163\123\151\147\156\040\120\154\141\164\151
\156\165\155\040\122\157\157\164\040\103\101\040\055\040\107\063
END
```

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\010\042\077\251\027\040\336\201\224
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\201\060\202\003\151\240\003\002\001\002\002\010\042
\077\251\027\040\336\201\224\060\015\006\011\052\206\110\206\367
\015\001\001\013\005\000\060\116\061\013\060\011\006\003\125\004
\006\023\002\103\110\061\025\060\023\006\003\125\004\012\023\014
\123\167\151\163\163\123\151\147\156\040\101\107\061\050\060\046
```

\006\003\125\004\003\023\037\123\167\151\163\163\123\151\147\156  
\040\120\154\141\164\151\156\165\155\040\122\157\157\164\040\103  
\101\040\055\040\107\063\060\036\027\015\060\071\060\070\060\064  
\061\063\063\064\060\064\132\027\015\063\067\060\070\060\064\061  
\063\063\064\060\064\132\060\116\061\013\060\011\006\003\125\004  
\006\023\002\103\110\061\025\060\023\006\003\125\004\012\023\014  
\123\167\151\163\163\123\151\147\156\040\101\107\061\050\060\046  
\006\003\125\004\003\023\037\123\167\151\163\163\123\151\147\156  
\040\120\154\141\164\151\156\165\155\040\122\157\157\164\040\103  
\101\040\055\040\107\063\060\202\002\042\060\015\006\011\052\206  
\110\206\367\015\001\001\001\005\000\003\202\002\017\000\060\202  
\002\012\002\202\002\001\000\224\240\357\023\033\237\104\040\033  
\315\305\252\042\273\331\362\122\076\172\132\130\167\346\215\241  
\053\311\334\244\363\344\263\023\224\000\142\233\034\362\103\120  
\103\201\176\257\060\066\111\254\030\211\014\030\105\270\076\307  
\124\155\343\330\232\131\153\212\032\045\251\266\265\015\267\175  
\043\360\137\175\250\007\251\367\076\206\056\310\001\115\334\346  
\066\355\035\345\067\007\151\022\113\343\203\321\004\034\044\360  
\037\160\161\347\031\355\163\110\156\225\053\025\266\126\346\002  
\337\126\351\233\372\352\246\356\340\302\303\272\340\314\306\310  
\173\327\157\072\225\233\072\217\276\133\054\322\251\240\070\076  
\326\210\341\261\142\023\216\334\253\060\147\315\250\152\246\143  
\053\202\260\313\307\075\116\355\162\366\175\253\062\116\145\002  
\353\017\231\164\370\034\032\050\214\016\105\000\223\054\024\237  
\155\307\033\236\366\212\334\173\170\343\264\224\107\035\115\005  
\155\204\172\220\124\262\236\213\165\302\200\337\207\071\077\237  
\373\110\124\007\215\240\051\365\371\140\137\132\162\350\273\233  
\240\102\340\010\000\064\243\025\074\023\343\326\032\153\002\262  
\224\041\243\235\101\274\052\153\116\063\073\246\224\070\374\075  
\307\053\063\263\056\053\006\164\254\233\020\157\305\116\105\367  
\135\241\126\003\054\015\137\172\275\036\336\035\167\220\153\332  
\245\055\212\114\351\337\101\364\347\113\354\175\225\102\237\114  
\251\011\017\103\210\077\075\223\347\053\364\172\110\332\150\304  
\335\022\200\061\032\135\044\124\046\246\044\041\263\114\255\332  
\027\010\066\002\127\306\234\206\160\311\165\311\236\174\141\330  
\170\346\271\350\024\151\371\034\020\050\022\135\113\165\120\272  
\074\320\147\160\125\125\126\113\373\075\034\330\333\171\115\227  
\337\270\236\333\027\054\325\065\007\270\120\251\367\216\367\126  
\377\172\147\103\117\040\331\312\146\326\070\140\113\356\224\061  
\326\015\242\110\233\377\064\151\224\306\065\365\226\210\357\252  
\146\314\201\246\353\114\123\377\062\164\247\266\235\230\127\264  
\272\046\251\361\063\063\142\176\072\260\003\021\127\377\334\157  
\021\043\255\076\306\012\320\314\124\267\055\302\223\035\345\302  
\246\214\307\330\357\123\367\002\003\001\000\001\243\143\060\141  
\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001\006  
\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001  
\377\060\035\006\003\125\035\016\004\026\004\024\126\052\077\220  
\130\364\027\132\024\262\327\010\033\205\133\124\152\124\032\050



\060\037\006\003\125\035\043\004\030\060\026\200\024\126\052\077  
\220\130\364\027\132\024\262\327\010\033\205\133\124\152\124\032  
\050\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000  
\003\202\002\001\000\154\355\212\347\103\250\171\047\233\270\317  
\207\076\144\070\030\214\021\102\222\206\067\340\130\303\033\356  
\004\056\367\204\354\203\020\150\014\177\170\055\234\302\227\216  
\066\116\026\330\016\352\153\110\255\117\236\135\015\314\015\251  
\076\030\205\176\314\150\231\071\065\326\330\237\206\301\062\373  
\115\145\263\042\024\113\310\205\146\332\027\377\161\221\254\234  
\126\127\336\161\054\126\102\277\370\315\016\360\242\323\377\322  
\042\025\373\320\170\012\176\341\260\132\316\216\067\333\251\236  
\347\225\317\143\362\054\015\322\372\157\363\310\325\373\000\267  
\367\065\147\020\323\173\122\354\020\062\370\277\335\136\311\246  
\202\244\361\260\277\035\056\335\045\344\275\115\360\065\251\221  
\001\107\370\020\002\224\133\353\076\353\015\272\325\035\143\054  
\245\056\253\347\343\036\243\356\113\252\137\261\146\001\264\202  
\132\371\106\113\307\361\370\337\054\276\375\165\335\226\070\232  
\067\072\156\245\346\062\025\156\263\220\300\071\212\164\245\225  
\240\276\015\056\211\171\315\051\126\216\303\136\127\121\304\005  
\157\004\125\217\201\351\114\275\131\106\313\052\274\115\311\035  
\362\306\117\005\344\310\004\015\367\156\117\332\303\072\234\322  
\302\365\351\306\044\172\024\076\034\102\060\250\002\105\061\251  
\374\120\251\334\334\206\070\017\133\223\077\177\010\116\152\015  
\047\072\020\171\126\303\025\270\076\006\206\366\331\160\147\257  
\165\172\213\342\130\314\306\165\117\062\125\305\154\024\011\050  
\073\362\225\344\152\336\054\050\007\255\240\175\007\050\335\324  
\132\243\351\246\174\023\214\231\013\122\170\333\331\321\337\076  
\132\103\166\177\106\140\123\302\315\347\166\107\174\125\315\264  
\071\144\020\133\225\113\065\135\104\203\044\325\340\056\044\014  
\301\200\156\151\000\200\006\167\012\146\202\020\014\121\157\067  
\211\127\333\363\114\345\270\271\356\043\146\227\140\267\122\335  
\331\226\373\272\212\073\240\115\316\136\360\104\114\220\314\041  
\117\033\072\230\153\216\061\203\371\203\010\122\313\031\301\065  
\153\356\241\025\133\210\077\155\254\362\064\222\123\246\060\052  
\023\327\346\206\250\135\331\102\322\307\235\251\172\213\313\337  
\356\242\061\302\345

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "SwissSign Platinum Root CA - G3"

# Issuer: CN=SwissSign Platinum Root CA - G3,O=SwissSign AG,C=CH

# Serial Number:22:3f:a9:17:20:de:81:94

# Subject: CN=SwissSign Platinum Root CA - G3,O=SwissSign AG,C=CH

# Not Valid Before: Tue Aug 04 13:34:04 2009

```

# Not Valid After: Tue Aug 04 13:34:04 2037
#
Fingerprint (MD5): 20:de:12:0b:a8:6e:d9:34:a8:4e:b2:0d:1e:a6:43:39
# Fingerprint (SHA1): a1:e7:c6:00:aa:41:70:e5:b7:4b:c9:4f:9b:97:03:ed:c2:61:b4:b9
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "SwissSign Platinum Root CA - G3"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\241\347\306\000\252\101\160\345\267\113\311\117\233\227\003\355
\302\141\264\271
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\040\336\022\013\250\156\331\064\250\116\262\015\036\246\103\071
END
CKA_ISSUER MULTILINE_OCTAL
\060\116\061\013\060\011\006\003\125\004\006\023\002\103\110\061
\025\060\023\006\003\125\004\012\023\014\123\167\151\163\163\123
\151\147\156\040\101\107\061\050\060\046\006\003\125\004\003\023
\037\123\167\151\163\163\123\151\147\156\040\120\154\141\164\151
\156\165\155\040\122\157\157\164\040\103\101\040\055\040\107\063
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\010\042\077\251\027\040\336\201\224
END
CKA_TRUST_SERVER_AUTH
CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "SwissSign Gold Root CA - G3"
# Issuer: CN=SwissSign Gold Root CA - G3,O=SwissSign AG,C=CH
# Serial Number:de:c4:f2:44:f3:1d:a6:fc
# Subject: CN=SwissSign Gold Root CA - G3,O=SwissSign AG,C=CH
# Not Valid Before: Tue Aug 04 13:31:47 2009
# Not Valid After: Tue Aug 04 13:31:47 2037
# Fingerprint (MD5): c2:64:4c:e2:7d:eb:6c:7b:ec:36:e0:39:df:68:9c:67
# Fingerprint (SHA1): 0b:71:99:a1:c7:f3:ad:df:7b:a7:ea:b8:eb:57:4a:e8:0d:60:dd:de
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "SwissSign Gold Root CA - G3"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL

```

\060\112\061\013\060\011\006\003\125\004\006\023\002\103\110\061  
\025\060\023\006\003\125\004\012\023\014\123\167\151\163\163\123  
\151\147\156\040\101\107\061\044\060\042\006\003\125\004\003\023  
\033\123\167\151\163\163\123\151\147\156\040\107\157\154\144\040  
\122\157\157\164\040\103\101\040\055\040\107\063

END

CKA\_ID

UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\112\061\013\060\011\006\003\125\004\006\023\002\103\110\061  
\025\060\023\006\003\125\004\012\023\014\123\167\151\163\163\123  
\151\147\156\040\101\107\061\044\060\042\006\003\125\004\003\023  
\033\123\167\151\163\163\123\151\147\156\040\107\157\154\144\040  
\122\157\157\164\040\103\101\040\055\040\107\063

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\011\000\336\304\362\104\363\035\246\374

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\172\060\202\003\142\240\003\002\001\002\002\011\000  
\336\304\362\104\363\035\246\374\060\015\006\011\052\206\110\206  
\367\015\001\001\013\005\000\060\112\061\013\060\011\006\003\125  
\004\006\023\002\103\110\061\025\060\023\006\003\125\004\012\023  
\014\123\167\151\163\163\123\151\147\156\040\101\107\061\044\060  
\042\006\003\125\004\003\023\033\123\167\151\163\163\123\151\147  
\156\040\107\157\154\144\040\122\157\157\164\040\103\101\040\055  
\040\107\063\060\036\027\015\060\071\060\070\060\064\061\063\063  
\061\064\067\132\027\015\063\067\060\070\060\064\061\063\063\061  
\064\067\132\060\112\061\013\060\011\006\003\125\004\006\023\002  
\103\110\061\025\060\023\006\003\125\004\012\023\014\123\167\151  
\163\163\123\151\147\156\040\101\107\061\044\060\042\006\003\125  
\004\003\023\033\123\167\151\163\163\123\151\147\156\040\107\157  
\154\144\040\122\157\157\164\040\103\101\040\055\040\107\063\060  
\202\002\042\060\015\006\011\052\206\110\206\367\015\001\001\001  
\005\000\003\202\002\017\000\060\202\002\012\002\202\002\001\000  
\303\350\237\310\145\132\235\147\033\301\105\227\264\264\207\103  
\133\141\140\200\236\362\177\136\371\147\104\335\104\372\253\265  
\253\167\377\052\031\114\316\157\304\217\101\237\340\342\315\162  
\340\321\324\122\141\101\011\012\277\012\160\373\340\203\151\141  
\051\312\333\042\232\133\245\346\335\027\225\260\157\204\216\072  
\076\144\132\101\373\033\130\374\375\053\076\262\244\346\254\311  
\202\274\316\366\225\370\227\167\355\046\366\130\256\236\047\342  
\017\203\354\305\066\130\310\173\317\325\207\241\251\207\032\023  
\147\141\001\155\246\151\234\342\220\361\053\150\145\363\350\260  
\174\374\202\075\336\255\330\012\000\011\104\171\023\234\360\376  
\156\165\173\302\274\263\131\001\013\174\305\325\055\360\277\377  
\155\127\322\111\201\353\264\263\120\254\133\371\013\025\025\214  
\151\377\243\071\001\355\374\334\334\047\227\216\173\213\325\152

\246\326\340\035\137\315\001\221\346\365\042\230\272\056\011\030  
\070\157\023\250\201\322\373\041\067\347\055\264\142\347\201\220  
\260\306\171\131\267\147\165\376\276\217\073\372\066\354\257\255  
\322\117\164\066\001\345\127\253\043\004\314\112\136\227\317\176  
\306\357\214\314\225\043\151\215\313\070\307\031\366\326\212\000  
\024\036\064\075\157\332\014\013\303\272\227\374\021\113\122\141  
\076\277\063\147\123\020\277\170\033\011\302\107\272\036\257\130  
\365\165\201\177\275\126\361\353\126\327\331\151\014\007\351\067  
\061\260\022\034\062\357\126\331\276\172\053\174\275\323\075\274  
\152\063\115\072\074\120\020\207\047\307\172\012\147\123\333\177  
\200\233\350\236\043\372\371\010\072\213\241\216\064\132\110\063  
\137\144\323\227\206\007\031\175\210\224\316\052\174\305\152\337  
\257\274\251\237\315\072\246\272\273\124\371\177\217\337\317\016  
\132\304\255\232\274\263\072\167\163\203\114\223\074\220\150\265  
\174\120\225\021\310\202\136\224\161\320\101\030\373\311\306\145  
\354\316\211\266\316\042\263\021\133\077\340\235\076\033\030\150  
\015\252\003\241\147\131\277\153\235\274\370\362\145\057\232\101  
\072\105\330\136\320\066\154\157\073\036\143\264\216\230\114\023  
\333\041\016\237\173\355\352\240\252\161\303\353\243\240\322\045  
\002\003\001\000\001\243\143\060\141\060\016\006\003\125\035\017  
\001\001\377\004\004\003\002\001\006\060\017\006\003\125\035\023  
\001\001\377\004\005\060\003\001\001\377\060\035\006\003\125\035  
\016\004\026\004\024\134\227\006\106\064\253\337\060\305\174\305  
\015\125\161\146\060\265\140\217\236\060\037\006\003\125\035\043  
\004\030\060\026\200\024\134\227\006\106\064\253\337\060\305\174  
\305\015\125\161\146\060\265\140\217\236\060\015\006\011\052\206  
\110\206\367\015\001\001\013\005\000\003\202\002\001\000\167\113  
\115\336\352\205\112\253\054\047\326\105\307\361\137\040\301\133  
\140\355\007\313\242\063\334\066\317\307\224\361\006\307\325\332  
\317\315\255\204\076\377\022\110\177\101\350\245\146\127\060\304  
\035\344\247\032\057\055\102\301\357\106\163\262\325\365\132\375  
\016\172\153\322\310\061\243\015\110\226\127\145\143\125\030\300  
\374\344\212\314\230\206\133\253\014\212\047\067\372\043\150\131  
\134\046\327\241\301\302\271\116\054\377\051\136\346\224\013\276  
\315\162\117\225\350\217\366\367\270\076\136\316\317\236\021\311  
\254\003\051\110\212\251\266\246\064\271\254\100\377\304\266\163  
\067\261\307\177\251\121\333\113\052\107\137\100\044\007\210\006  
\267\044\263\373\177\367\260\213\063\372\277\043\165\243\134\376  
\252\145\032\302\276\361\175\201\167\003\201\261\215\327\225\015  
\172\074\102\230\267\217\251\175\120\341\337\122\006\232\240\122  
\124\170\203\007\141\122\011\067\136\212\234\247\306\121\321\134  
\143\321\204\334\302\333\322\372\133\030\066\175\146\274\324\050  
\227\057\165\226\034\204\007\254\213\216\123\021\276\044\041\252  
\147\362\301\255\210\234\323\260\170\147\170\365\323\130\003\040  
\012\135\040\361\265\347\145\314\016\040\343\325\337\346\057\031  
\053\205\150\301\004\046\317\217\355\005\123\241\335\007\016\353  
\101\046\307\264\251\054\133\343\151\075\146\300\142\033\300\252  
\206\300\067\303\061\004\206\160\071\276\153\137\041\100\101\240

```
\177\345\331\017\070\113\160\137\111\370\205\270\053\056\252\037
\223\101\103\370\373\262\164\074\037\113\127\133\267\324\121\241
\222\112\316\276\020\242\356\330\024\042\173\271\101\275\215\351
\210\251\321\217\003\032\140\377\077\207\211\240\231\047\042\146
\260\076\150\236\162\210\121\070\235\023\076\105\155\005\345\106
\265\163\355\103\206\261\024\012\036\274\332\015\277\036\044\134
\146\217\016\276\241\375\306\353\151\274\103\171\327\003\166\371
\334\207\231\270\230\304\315\177\155\020\371\020\276\054\102\376
\234\051\115\203\153\012\275\265\216\304\110\212\375\041\007\246
\200\175\037\233\351\253\275\202\141\104\012\161\047\137\155\233
\220\236\256\377\066\044\263\150\003\326\225\214\153\163
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "SwissSign Gold Root CA - G3"

# Issuer: CN=SwissSign Gold Root CA - G3,O=SwissSign AG,C=CH

# Serial Number:de:c4:f2:44:f3:1d:a6:fc

# Subject: CN=SwissSign Gold Root CA - G3,O=SwissSign AG,C=CH

# Not Valid Before: Tue Aug 04 13:31:47 2009

# Not Valid After: Tue Aug 04 13:31:47 2037

# Fingerprint (MD5): c2:64:4c:e2:7d:eb:6c:7b:ec:36:e0:39:df:68:9c:67

# Fingerprint

(SHA1): 0b:71:99:a1:c7:f3:ad:df:7b:a7:ea:b8:eb:57:4a:e8:0d:60:dd:de

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "SwissSign Gold Root CA - G3"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\013\161\231\241\307\363\255\337\173\247\352\270\353\127\112\350
\015\140\335\336
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\302\144\114\342\175\353\154\173\354\066\340\071\337\150\234\147
END
```

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\112\061\013\060\011\006\003\125\004\006\023\002\103\110\061
\025\060\023\006\003\125\004\012\023\014\123\167\151\163\163\123
\151\147\156\040\101\107\061\044\060\042\006\003\125\004\003\023
\033\123\167\151\163\163\123\151\147\156\040\107\157\154\144\040
\122\157\157\164\040\103\101\040\055\040\107\063
```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

```
\002\011\000\336\304\362\104\363\035\246\374
```

```
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING
CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
# Microsoft Code Signing Only Certificate
# Certificate "SITHS CA v3"
# Issuer: CN=SITHS CA v3,O=Carelink,C=SE
# Serial Number:1b:d4:0e:d4:34:d1:da:15:a6:00:30:15:02:4d:a4:6c
# Subject: CN=SITHS CA v3,O=Carelink,C=SE
# Not Valid Before: Mon Nov 28 10:27:50 2005
# Not Valid After: Sat Nov 28 06:02:38 2015
# Fingerprint (MD5): 51:c6:bb:37:df:2c:7b:55:0f:84:d4:f3:68:5a:be:eb
# Fingerprint (SHA1): 16:d8:66:35:af:13:41:cd:34:79:94:45:eb:60:3e:27:37:02:96:5d
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "SITHS CA v3"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
```

```
\060\066\061\013\060\011\006\003\125\004\006\023\002\123\105\061
\021\060\017\006\003\125\004\012\014\010\103\141\162\145\154\151
\156\153\061\024\060\022\006\003\125\004\003\014\013\123\111\124
\110\123\040\103\101\040\166\063
```

```
END
```

```
CKA_ID
UTF8 "0"
```

```
CKA_ISSUER MULTILINE_OCTAL
\060\066\061\013\060\011\006\003\125\004\006\023\002\123\105\061
\021\060\017\006\003\125\004\012\014\010\103\141\162\145\154\151
\156\153\061\024\060\022\006\003\125\004\003\014\013\123\111\124
\110\123\040\103\101\040\166\063
```

```
END
```

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\033\324\016\324\064\321\332\025\246\000\060\025\002\115
\244\154
```

```
END
```

```
CKA_VALUE MULTILINE_OCTAL
\060\202\003\141\060\202\002\111\240\003\002\001\002\002\020\033
\324\016\324\064\321\332\025\246\000\060\025\002\115\244\154\060
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\066
\061\013\060\011\006\003\125\004\006\023\002\123\105\061\021\060
\017\006\003\125\004\012\014\010\103\141\162\145\154\151\156\153
\061\024\060\022\006\003\125\004\003\014\013\123\111\124\110\123
\040\103\101\040\166\063\060\036\027\015\060\065\061\061\062\070
```

\061\060\062\067\065\060\132\027\015\061\065\061\061\062\070\060  
\066\060\062\063\070\132\060\066\061\013\060\011\006\003\125\004  
\006\023\002\123\105\061\021\060\017\006\003\125\004\012\014\010  
\103\141\162\145\154\151\156\153\061\024\060\022\006\003\125\004  
\003\014\013\123\111\124\110\123\040\103\101\040\166\063\060\202  
\001\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005  
\000\003\202\001\017\000\060\202\001\012\002\202\001\001\000\305  
\331\133\321\324\053\177\100\147\356\241\133\135\321\332\152\271  
\031\061\362\360\046\111\001\145\374\101\124\361\226\221\354\052  
\356\004\104\044\036\100\234\347\027\120\077\352\034\174\356\270  
\067\071\374\307\323\257\233\156\135\337\076\276\005\374\352\312  
\331\371\105\126\341\225\234\261\320\132\217\376\310\052\246\327  
\152\154\340\155\135\354\134\166\376\341\231\107\232\251\173\247  
\352\346\157\124\002\047\115\121\116\050\075\254\006\072\201\202  
\246\034\275\113\244\355\122\022\334\212\052\353\047\364\301\042  
\112\020\204\132\165\265\200\042\126\145\353\314\200\362\245\341  
\144\276\174\336\017\275\047\007\114\051\133\252\261\357\264\173  
\377\207\064\350\243\223\102\313\075\140\273\167\323\302\057\136  
\024\370\163\157\244\177\240\234\001\325\325\251\273\014\127\217  
\314\300\073\221\170\236\222\071\171\062\114\104\177\307\013\175  
\336\372\314\176\332\314\336\015\324\146\266\142\246\063\277\154  
\371\325\335\107\122\160\224\313\145\340\105\267\015\327\257\225  
\110\327\101\243\073\040\120\015\074\024\125\223\314\352\015\002  
\003\001\000\001\243\153\060\151\060\022\006\003\125\035\023\001  
\001\377\004\010\060\006\001\001\377\002\001\000\060\021\006\011  
\140\206\110\001\206\370\102\001\001\004\004\003\002\002\004\060  
\024\006\003\125\035\040\004\015\060\013\060\011\006\007\052\205  
\160\112\001\001\003\060\013\006\003\125\035\017\004\004\003\002  
\001\006\060\035\006\003\125\035\016\004\026\004\024\174\056\071  
\043\062\104\350\017\116\146\362\015\050\376\100\276\302\266\342  
\240\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000  
\003\202\001\001\000\010\123\132\210\051\015\365\124\330\253\261  
\203\271\047\151\132\252\137\053\130\111\324\271\337\157\353\307  
\006\353\375\207\232\277\312\022\337\172\236\001\042\045\143\122  
\205\157\247\057\016\227\164\140\214\340\110\200\163\335\102\215  
\041\355\017\162\177\164\006\156\120\126\073\055\207\354\201\130  
\213\066\307\312\000\373\244\004\266\057\070\130\216\167\361\006  
\304\055\054\047\055\030\202\013\212\137\042\224\024\025\143\070  
\306\245\261\272\340\254\276\076\046\077\221\273\034\203\374\016  
\312\311\067\276\067\327\360\173\363\214\330\274\220\013\364\000  
\277\124\274\152\112\130\347\312\133\014\031\123\102\007\225\127  
\065\270\117\226\123\232\250\230\335\116\175\125\264\234\343\272  
\300\066\271\267\334\002\230\370\366\345\060\276\054\167\262\363  
\311\342\002\243\346\367\104\174\326\152\177\320\170\276\071\163  
\370\013\302\037\122\000\016\115\173\306\012\356\142\313\011\325  
\017\012\060\207\202\223\274\312\021\244\037\011\372\372\067\120  
\354\073\342\074\044\240\200\050\314\373\246\335\357\067\232\251  
\061\335\337\352\121

```

END
CKA_NSS_MOZILLA_CA_POLICY
CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Trust for "SITHS CA v3"
# Issuer: CN=SITHS CA v3,O=Carelink,C=SE
# Serial Number: 1b:d4:0e:d4:34:d1:da:15:a6:00:30:15:02:4d:a4:6c
# Subject: CN=SITHS CA v3,O=Carelink,C=SE
# Not Valid Before: Mon Nov 28 10:27:50 2005
# Not Valid After: Sat Nov 28 06:02:38 2015
# Fingerprint (MD5): 51:c6:bb:37:df:2c:7b:55:0f:84:d4:f3:68:5a:be:eb
# Fingerprint (SHA1): 16:d8:66:35:af:13:41:cd:34:79:94:45:eb:60:3e:27:37:02:96:5d
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "SITHS CA v3"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\026\330\146\065\257\023\101\315\064\171\224\105\353\140\076\047
\067\002\226\135
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\121\306\273\067\337\054\173\125\017\204\324\363\150\132\276\353
END
CKA_ISSUER MULTILINE_OCTAL
\060\066\061\013\060\011\006\003\125\004\006\023\002\123\105\061
\021\060\017\006\003\125\004\012\014\010\103\141\162\145\154\151
\156\153\061\024\060\022\006\003\125\004\003\014\013\123\111\124
\110\123\040\103\101\040\166\063
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\033\324\016\324\064\321\332\025\246\000\060\025\002\115
\244\154
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "Certinomis - Autorité Racine"
# Issuer: CN=Certinomis - Autorité Racine,OU=0002 433998903,O=Certinomis,C=FR
# Serial Number: 1 (0x1)
# Subject: CN=Certinomis - Autorité Racine,OU=0002 433998903,O=Certinomis,C=FR

```



```
# Not Valid Before: Wed Sep 17 08:28:59 2008
# Not Valid After: Sun Sep 17 08:28:59 2028
# Fingerprint (MD5): 7f:30:78:8c:03:e3:ca:c9:0a:e2:c9:ea:1e:aa:55:1a
#
Fingerprint (SHA1): 2e:14:da:ec:28:f0:fa:1e:8e:38:9a:4e:ab:eb:26:c0:0a:d3:83:c3
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Certinomis - Autorité Racine"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\143\061\013\060\011\006\003\125\004\006\023\002\106\122\061
\023\060\021\006\003\125\004\012\023\012\103\145\162\164\151\156
\157\155\151\163\061\027\060\025\006\003\125\004\013\023\016\060
\060\060\062\040\064\063\063\071\071\070\071\060\063\061\046\060
\044\006\003\125\004\003\014\035\103\145\162\164\151\156\157\155
\151\163\040\055\040\101\165\164\157\162\151\164\303\251\040\122
\141\143\151\156\145
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\143\061\013\060\011\006\003\125\004\006\023\002\106\122\061
\023\060\021\006\003\125\004\012\023\012\103\145\162\164\151\156
\157\155\151\163\061\027\060\025\006\003\125\004\013\023\016\060
\060\060\062\040\064\063\063\071\071\070\071\060\063\061\046\060
\044\006\003\125\004\003\014\035\103\145\162\164\151\156\157\155
\151\163\040\055\040\101\165\164\157\162\151\164\303\251\040\122
\141\143\151\156\145
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\001\001
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\234\060\202\003\204\240\003\002\001\002\002\001\001
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060
\143\061\013\060\011\006\003\125\004\006\023\002\106\122\061\023
\060\021\006\003\125\004\012\023\012\103\145\162\164\151\156\157
\155\151\163\061\027\060\025\006\003\125\004\013\023\016\060\060
\060\062\040\064\063\063\071\071\070\071\060\063\061\046\060\044
\006\003\125\004\003\014\035\103\145\162\164\151\156\157\155\151
\163\040\055\040\101\165\164\157\162\151\164\303\251\040\122\141
\143\151\156\145\060\036\027\015\060\070\060\071\061\067\060\070
\062\070\065\071\132\027\015\062\070\060\071\061\067\060\070\062
\070\065\071\132\060\143\061\013\060\011\006\003\125\004\006\023
\002\106\122\061\023\060\021\006\003\125\004\012\023\012\103\145
\162\164\151\156\157\155\151\163\061\027\060\025\006\003\125\004
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\013\023\016\060\060\060\062\040\064\063\063\071\071\070\071\060  
\063\061\046\060\044\006\003\125\004\003\014\035\103\145\162\164  
\151\156\157\155\151\163\040\055\040\101\165\164\157\162\151\164  
\303\251\040\122\141\143\151\156\145\060\202\002\042\060\015\006  
\011\052\206\110\206\367\015\001\001\001\005\000\003\202\002\017  
\000\060\202\002\012\002\202\002\001\000\235\205\237\206\323\343  
\257\307\262\153\156\063\340\236\267\102\064\125\235\371\201\276  
\143\330\043\166\016\227\124\315\231\114\032\361\071\307\210\330  
\027\120\014\236\141\332\300\116\125\336\347\132\270\172\116\167  
\207\015\345\270\353\372\236\136\173\036\304\317\050\164\307\223  
\365\024\306\042\050\004\371\221\303\253\047\163\152\016\056\115  
\363\056\050\037\160\337\125\057\116\355\307\161\157\011\162\056  
\355\325\062\227\320\361\130\167\321\140\274\116\136\333\232\204  
\366\107\141\105\053\366\120\246\177\152\161\047\110\204\065\236  
\254\376\151\251\236\172\136\065\045\372\264\247\111\065\167\226  
\247\066\133\341\315\337\043\160\330\135\114\245\010\203\361\246  
\044\070\023\250\354\057\250\241\147\307\246\055\206\107\356\212  
\374\354\233\016\164\364\053\111\002\173\220\165\214\374\231\071  
\001\071\326\112\211\345\236\166\253\076\226\050\070\046\213\335  
\215\214\300\366\001\036\157\245\061\022\070\175\225\302\161\356  
\355\164\256\344\066\242\103\165\325\361\000\233\342\344\327\314  
\102\003\113\170\172\345\175\273\270\256\056\040\223\323\344\141  
\337\161\341\166\147\227\077\266\337\152\163\132\144\042\345\102  
\333\317\201\003\223\330\364\343\020\340\162\366\000\160\254\360  
\301\172\017\005\177\317\064\151\105\265\223\344\031\333\122\026  
\043\005\211\016\215\110\344\045\157\263\170\277\142\365\007\372  
\225\044\302\226\262\350\243\043\302\135\003\374\303\323\345\174  
\311\165\043\327\364\365\274\336\344\337\315\200\277\221\210\175  
\247\023\264\071\272\054\272\275\321\153\314\363\245\050\355\104  
\236\175\122\243\157\226\056\031\176\034\363\133\307\026\216\273  
\140\175\167\146\107\124\202\000\021\140\154\062\301\250\070\033  
\353\156\230\023\326\356\070\365\360\237\016\357\376\061\201\301  
\322\044\225\057\123\172\151\242\360\017\206\105\216\130\202\053  
\114\042\324\136\240\347\175\046\047\110\337\045\106\215\112\050  
\174\206\236\371\233\032\131\271\145\277\005\335\266\102\135\075  
\346\000\110\202\136\040\367\021\202\336\312\330\237\346\067\107  
\046\036\353\170\367\141\303\101\144\130\002\101\371\332\340\321  
\370\371\350\375\122\070\266\365\211\337\002\003\001\000\001\243  
\133\060\131\060\017\006\003\125\035\023\001\001\377\004\005\060  
\003\001\001\377\060\016\006\003\125\035\017\001\001\377\004\004  
\003\002\001\006\060\035\006\003\125\035\016\004\026\004\024\015  
\214\266\141\332\104\270\321\024\175\303\276\175\136\110\360\316  
\312\152\260\060\027\006\003\125\035\040\004\020\060\016\060\014  
\006\012\052\201\172\001\126\002\002\000\001\001\060\015\006\011  
\052\206\110\206\367\015\001\001\005\005\000\003\202\002\001\000  
\044\076\140\006\176\035\357\072\076\333\352\257\034\232\054\001  
\013\364\305\265\331\111\061\364\135\101\215\211\014\116\377\154  
\242\375\377\342\006\310\071\237\361\132\251\335\042\130\025\250

\212\323\261\346\062\011\202\003\154\327\077\010\307\370\271\272  
\000\155\271\326\374\122\062\135\244\177\244\061\224\273\266\114  
\070\177\050\060\065\377\237\043\123\267\266\356\024\160\000\100  
\053\332\107\253\064\176\136\247\126\060\141\053\213\103\254\375  
\266\210\050\365\153\266\076\140\112\272\102\220\064\147\215\352  
\353\137\105\124\073\027\254\213\344\306\145\017\356\320\214\135  
\146\071\316\062\247\330\020\227\300\176\064\234\237\224\363\366  
\206\037\317\033\163\255\224\171\207\150\160\303\063\245\160\347  
\330\325\070\224\157\143\171\353\277\012\016\010\347\305\057\017  
\102\240\053\024\100\377\041\340\005\305\047\341\204\021\023\272  
\326\206\035\101\013\023\043\211\323\311\013\350\212\272\172\243  
\243\163\067\065\200\175\022\270\063\167\100\070\300\372\136\060  
\322\362\266\243\261\326\242\225\227\201\233\122\355\151\114\377  
\200\344\123\333\124\133\003\155\124\137\261\270\357\044\275\157  
\237\021\303\307\144\302\017\050\142\205\146\136\032\173\262\267  
\357\256\065\311\031\063\250\270\047\333\063\125\277\150\341\165  
\110\104\126\373\315\323\110\273\107\211\072\254\151\365\200\306  
\344\104\120\057\124\304\252\103\305\061\061\130\275\226\305\352  
\165\154\232\165\261\115\370\367\227\377\226\026\362\227\115\350  
\366\363\021\371\072\175\212\070\156\004\313\341\323\105\025\252  
\245\321\035\235\135\143\350\044\346\066\024\342\207\255\033\131  
\365\104\233\373\327\167\174\037\001\160\142\241\040\032\242\305  
\032\050\364\041\003\356\056\331\301\200\352\271\331\202\326\133  
\166\302\313\073\265\322\000\360\243\016\341\255\156\100\367\333  
\240\264\320\106\256\025\327\104\302\115\065\371\322\013\362\027  
\366\254\146\325\044\262\117\321\034\231\300\156\365\175\353\164  
\004\270\371\115\167\011\327\264\317\007\060\011\361\270\000\126  
\331\027\026\026\012\053\206\337\217\001\031\032\345\273\202\143  
\377\276\013\166\026\136\067\067\346\330\164\227\242\231\105\171  
END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "Certinomis - Autorité Racine"

# Issuer: CN=Certinomis - Autorité Racine,OU=0002 433998903,O=Certinomis,C=FR

# Serial Number: 1 (0x1)

# Subject: CN=Certinomis - Autorité Racine,OU=0002 433998903,O=Certinomis,C=FR

# Not Valid Before: Wed Sep 17 08:28:59 2008

# Not Valid After: Sun Sep 17 08:28:59 2028

# Fingerprint (MD5): 7f:30:78:8c:03:e3:ca:c9:0a:e2:c9:ea:1e:aa:55:1a

# Fingerprint (SHA1): 2e:14:da:ec:28:f0:fa:1e:8e:38:9a:4e:ab:eb:26:c0:0a:d3:83:c3

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

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CKA_LABEL UTF8 "Certinomis - Autorité Racine"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\056\024\332\354\050\360\372\036\216\070\232\116\253\353\046\300
\012\323\203\303
END
CKA_CERT_MD5_HASH
MULTILINE_OCTAL
\177\060\170\214\003\343\312\311\012\342\311\352\036\252\125\032
END
CKA_ISSUER MULTILINE_OCTAL
\060\143\061\013\060\011\006\003\125\004\006\023\002\106\122\061
\023\060\021\006\003\125\004\012\023\012\103\145\162\164\151\156
\157\155\151\163\061\027\060\025\006\003\125\004\013\023\016\060
\060\060\062\040\064\063\063\071\071\070\071\060\063\061\046\060
\044\006\003\125\004\003\014\035\103\145\162\164\151\156\157\155
\151\163\040\055\040\101\165\164\157\162\151\164\303\251\040\122
\141\143\151\156\145
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\001
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "ANF Server CA"
# Issuer: CN=ANF Server
CA,2.5.4.5=G63287510,OU=ANF Clase 1 CA,O=ANF Autoridad de Certificación,L=Barcelona (see current
address at https://www.anf.es/address/),ST=Barcelona,C=ES
# Serial Number: 78923 (0x1344b)
# Subject: CN=ANF Server CA,2.5.4.5=G63287510,OU=ANF Clase 1 CA,O=ANF Autoridad de
Certificación,L=Barcelona (see current address at https://www.anf.es/address/),ST=Barcelona,C=ES
# Not Valid Before: Mon Nov 30 23:00:00 2009
# Not Valid After: Tue Nov 30 23:00:00 2021
# Fingerprint (MD5): 8c:18:ed:28:bf:45:19:e6:49:98:e1:35:22:2f:54:c6
# Fingerprint (SHA1): ce:a9:89:0d:85:d8:07:53:a6:26:28:6c:da:d7:8c:b5:66:d7:0c:f2
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "ANF Server CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\331\061\013\060\011\006\003\125\004\006\023\002\105\123
\061\022\060\020\006\003\125\004\010\014\011\102\141\162\143\145
\154\157\156\141\061\107\060\105\006\003\125\004\007\014\076\102

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\141\162\143\145\154\157\156\141\040\050\163\145\145\040\143\165  
\162\162\145\156\164\040\141\144\144\162\145\163\163\040\141\164  
\040\150\164\164\160\163\072\057\057\167\167\167\056\141\156\146  
\056\145\163\057\141\144\144\162\145\163\163\057\051\061\050\060  
\046\006\003\125\004\012\014\037\101\116\106\040\101\165\164\157  
\162\151\144\141\144\040\144\145\040\103\145\162\164\151\146\151  
\143\141\143\151\303\263\156\061\027\060\025\006\003\125\004\013  
\014\016\101\116\106\040\103\154\141\163\145\040\061\040\103\101  
\061\022\060\020\006\003\125\004\005\023\011\107\066\063\062\070  
\067\065\061\060\061\026\060\024\006\003\125\004\003\014\015\101  
\116\106\040\123\145\162\166\145\162\040\103\101

END

CKA\_ID

UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\331\061\013\060\011\006\003\125\004\006\023\002\105\123  
\061\022\060\020\006\003\125\004\010\014\011\102\141\162\143\145  
\154\157\156\141\061\107\060\105\006\003\125\004\007\014\076\102  
\141\162\143\145\154\157\156\141\040\050\163\145\145\040\143\165  
\162\162\145\156\164\040\141\144\144\162\145\163\163\040\141\164  
\040\150\164\164\160\163\072\057\057\167\167\167\056\141\156\146  
\056\145\163\057\141\144\144\162\145\163\163\057\051\061\050\060  
\046\006\003\125\004\012\014\037\101\116\106\040\101\165\164\157  
\162\151\144\141\144\040\144\145\040\103\145\162\164\151\146\151  
\143\141\143\151\303\263\156\061\027\060\025\006\003\125\004\013  
\014\016\101\116\106\040\103\154\141\163\145\040\061\040\103\101  
\061\022\060\020\006\003\125\004\005\023\011\107\066\063\062\070  
\067\065\061\060\061\026\060\024\006\003\125\004\003\014\015\101  
\116\106\040\123\145\162\166\145\162\040\103\101

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\003\001\064\113

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\006\235\060\202\005\205\240\003\002\001\002\002\003\001  
\064\113\060\015\006\011\052\206\110\206\367\015\001\001\005\005  
\000\060\201\331\061\013\060\011\006\003\125\004\006\023\002\105  
\123\061\022\060\020\006\003\125\004\010\014\011\102\141\162\143  
\145\154\157\156\141\061\107\060\105\006\003\125\004\007\014\076  
\102\141\162\143\145\154\157\156\141\040\050\163\145\145\040\143  
\165\162\162\145\156\164\040\141\144\144\162\145\163\163\040\141  
\164\040\150\164\164\160\163\072\057\057\167\167\167\056\141\156  
\146\056\145\163\057\141\144\144\162\145\163\163\057\051\061\050  
\060\046\006\003\125\004\012\014\037\101\116\106\040\101\165\164  
\157\162\151\144\141\144\040\144\145\040\103\145\162\164\151\146  
\151\143\141\143\151\303\263\156\061\027\060\025\006\003\125\004  
\013\014\016\101\116\106\040\103\154\141\163\145\040\061\040\103

\101\061\022\060\020\006\003\125\004\005\023\011\107\066\063\062  
\070\067\065\061\060\061\026\060\024\006\003\125\004\003\014\015  
\101\116\106\040\123\145\162\166\145\162\040\103\101\060\036\027  
\015\060\071\061\061\063\060\062\063\060\060\060\060\132\027\015  
\062\061\061\061\063\060\062\063\060\060\060\060\132\060\201\331  
\061\013\060\011\006\003\125\004\006\023\002\105\123\061\022\060  
\020\006\003\125\004\010\014\011\102\141\162\143\145\154\157\156  
\141\061\107\060\105\006\003\125\004\007\014\076\102\141\162\143  
\145\154\157\156\141\040\050\163\145\145\040\143\165\162\162\145  
\156\164\040\141\144\144\162\145\163\163\040\141\164\040\150\164  
\164\160\163\072\057\057\167\167\167\056\141\156\146\056\145\163  
\057\141\144\144\162\145\163\163\057\051\061\050\060\046\006\003  
\125\004\012\014\037\101\116\106\040\101\165\164\157\162\151\144  
\141\144\040\144\145\040\103\145\162\164\151\146\151\143\141\143  
\151\303\263\156\061\027\060\025\006\003\125\004\013\014\016\101  
\116\106\040\103\154\141\163\145\040\061\040\103\101\061\022\060  
\020\006\003\125\004\005\023\011\107\066\063\062\070\067\065\061  
\060\061\026\060\024\006\003\125\004\003\014\015\101\116\106\040  
\123\145\162\166\145\162\040\103\101\060\202\001\042\060\015\006  
\011\052\206\110\206\367\015\001\001\001\005\000\003\202\001\017  
\000\060\202\001\012\002\202\001\001\000\277\352\110\247\232\210  
\071\153\054\110\100\007\004\223\174\367\270\055\176\245\067\342  
\141\326\041\374\220\067\313\151\076\136\213\067\337\133\157\073  
\330\266\303\210\100\220\364\235\014\134\020\122\261\263\345\137  
\221\020\346\375\250\200\024\137\323\213\275\134\275\017\043\222  
\011\067\343\162\322\146\224\013\134\164\224\057\136\362\116\330  
\003\306\263\316\126\245\034\331\173\375\117\007\114\324\267\332  
\137\051\115\165\362\037\125\317\062\043\034\106\011\047\035\105  
\354\361\214\064\211\336\173\026\247\103\136\212\053\351\224\103  
\036\327\076\223\155\157\211\075\274\356\261\310\267\377\311\175  
\343\137\015\157\167\170\365\052\056\215\304\213\230\227\060\261  
\106\132\013\143\160\324\170\307\206\263\177\377\047\102\252\237  
\212\156\155\241\224\312\354\207\002\034\326\124\113\375\274\211  
\233\246\143\070\146\214\026\211\211\227\303\120\350\366\102\001  
\247\167\175\020\031\222\003\350\135\105\310\025\305\207\033\015  
\221\362\306\071\234\173\363\300\012\231\370\356\203\157\176\102  
\167\021\216\303\037\034\162\057\075\033\002\003\001\000\001\243  
\202\002\152\060\202\002\146\060\035\006\003\125\035\016\004\026  
\004\024\276\073\366\264\061\267\163\044\110\071\305\127\023\224  
\165\252\237\201\077\054\060\202\001\011\006\003\125\035\043\004  
\202\001\000\060\201\375\200\024\276\073\366\264\061\267\163\044  
\110\071\305\127\023\224\165\252\237\201\077\054\241\201\337\244  
\201\334\060\201\331\061\013\060\011\006\003\125\004\006\023\002  
\105\123\061\022\060\020\006\003\125\004\010\014\011\102\141\162  
\143\145\154\157\156\141\061\107\060\105\006\003\125\004\007\014  
\076\102\141\162\143\145\154\157\156\141\040\050\163\145\145\040  
\143\165\162\162\145\156\164\040\141\144\144\162\145\163\163\040  
\141\164\040\150\164\164\160\163\072\057\057\167\167\167\056\141

\156\146\056\145\163\057\141\144\144\162\145\163\163\057\051\061  
\050\060\046\006\003\125\004\012\014\037\101\116\106\040\101\165  
\164\157\162\151\144\141\144\040\144\145\040\103\145\162\164\151  
\146\151\143\141\143\151\303\263\156\061\027\060\025\006\003\125  
\004\013\014\016\101\116\106\040\103\154\141\163\145\040\061\040  
\103\101\061\022\060\020\006\003\125\004\005\023\011\107\066\063  
\062\070\067\065\061\060\061\026\060\024\006\003\125\004\003\014  
\015\101\116\106\040\123\145\162\166\145\162\040\103\101\202\003  
\001\064\113\060\014\006\003\125\035\023\004\005\060\003\001\001  
\377\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001  
\006\060\061\006\012\053\006\001\004\001\201\217\034\052\006\004  
\043\033\041\150\164\164\160\163\072\057\057\167\167\167\056\141  
\156\146\056\145\163\057\101\103\057\101\103\124\101\123\057\067  
\070\071\062\063\060\030\006\012\053\006\001\004\001\201\217\034  
\023\001\004\012\033\010\070\060\061\055\063\064\060\060\060\070  
\006\010\053\006\001\005\005\007\001\001\004\054\060\052\060\050  
\006\010\053\006\001\005\005\007\060\001\206\034\150\164\164\160  
\072\057\057\167\167\167\056\141\156\146\056\145\163\057\101\103  
\057\122\103\057\157\143\163\160\060\143\006\003\125\035\037\004  
\134\060\132\060\053\240\051\240\047\206\045\150\164\164\160\163  
\072\057\057\167\167\167\056\141\156\146\056\145\163\057\101\103  
\057\101\116\106\123\145\162\166\145\162\103\101\056\143\162\154  
\060\053\240\051\240\047\206\045\150\164\164\160\163\072\057\057  
\143\162\154\056\141\156\146\056\145\163\057\101\103\057\101\116  
\106\123\145\162\166\145\162\103\101\056\143\162\154\060\026\006  
\003\125\035\022\004\017\060\015\201\013\151\156\146\157\100\141  
\156\146\056\145\163\060\026\006\003\125\035\021\004\017\060\015  
\201\013\151\156\146\157\100\141\156\146\056\145\163\060\015\006  
\011\052\206\110\206\367\015\001\001\005\005\000\003\202\001\001  
\000\265\306\307\274\106\372\102\134\023\301\224\165\063\126\277  
\057\247\007\163\354\067\343\103\164\352\371\146\117\136\215\177  
\360\346\171\303\115\365\331\070\245\314\312\103\364\123\200\206  
\277\274\320\021\135\220\304\302\100\107\353\305\207\223\301\266  
\170\136\232\256\207\365\142\020\131\114\114\155\006\276\231\023  
\025\263\263\372\034\162\176\340\042\041\001\130\065\070\150\242  
\344\370\341\360\360\066\120\221\340\264\167\334\143\204\063\222  
\140\270\313\026\362\322\143\073\114\134\065\072\347\254\002\123  
\305\034\201\001\167\307\034\021\037\124\060\357\124\217\045\372  
\211\047\224\064\243\017\024\117\157\351\163\331\030\142\347\356  
\010\350\311\203\173\310\063\233\174\104\232\174\032\220\265\322  
\161\211\337\075\364\034\117\116\121\340\311\153\266\252\013\036  
\331\060\017\323\143\325\355\160\364\301\203\355\006\105\232\250  
\352\264\211\067\375\132\067\107\357\221\171\247\065\377\360\334  
\060\355\015\024\147\333\174\132\340\217\155\063\376\074\236\025  
\063\303\303\055\016\135\252\174\015\216\061\226\115\213\377\005  
\325

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

```

CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRUST_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRUST_AFTER CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Trust for "ANF Server CA"
# Issuer: CN=ANF Server CA,2.5.4.5=G63287510,OU=ANF Clase 1 CA,O=ANF Autoridad de
Certificación,L=Barcelona (see current
address at https://www.anf.es/address/),ST=Barcelona,C=ES
# Serial Number: 78923 (0x1344b)
# Subject: CN=ANF Server CA,2.5.4.5=G63287510,OU=ANF Clase 1 CA,O=ANF Autoridad de
Certificación,L=Barcelona (see current address at https://www.anf.es/address/),ST=Barcelona,C=ES
# Not Valid Before: Mon Nov 30 23:00:00 2009
# Not Valid After: Tue Nov 30 23:00:00 2021
# Fingerprint (MD5): 8c:18:ed:28:bf:45:19:e6:49:98:e1:35:22:2f:54:c6
# Fingerprint (SHA1): ce:a9:89:0d:85:d8:07:53:a6:26:28:6c:da:d7:8c:b5:66:d7:0c:f2
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "ANF Server CA"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\316\251\211\015\205\330\007\123\246\046\050\154\332\327\214\265
\146\327\014\362
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\214\030\355\050\277\105\031\346\111\230\341\065\042\057\124\306
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\331\061\013\060\011\006\003\125\004\006\023\002\105\123
\061\022\060\020\006\003\125\004\010\014\011\102\141\162\143\145
\154\157\156\141\061\107\060\105\006\003\125\004\007\014\076\102
\141\162\143\145\154\157\156\141\040\050\163\145\145\040\143\165
\162\162\145\156\164\040\141\144\144\162\145\163\163\040\141\164
\040\150\164\164\160\163\072\057\057\167\167\167\056\141\156\146
\056\145\163\057\141\144\144\162\145\163\163\057\051\061\050\060
\046\006\003\125\004\012\014\037\101\116\106\040\101\165\164\157
\162\151\144\141\144\040\144\145\040\103\145\162\164\151\146\151
\143\141\143\151\303\263\156\061\027\060\025\006\003\125\004\013
\014\016\101\116\106\040\103\154\141\163\145\040\061\040\103\101
\061\022\060\020\006\003\125\004\005\023\011\107\066\063\062\070
\067\065\061\060\061\026\060\024\006\003\125\004\003\014\015\101
\116\106\040\123\145\162\166\145\162\040\103\101
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\003\001\064\113
END

```



```
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING
CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
# Microsoft Code Signing Only Certificate
# Certificate "KEYNECTIS ROOT CA"
# Issuer: CN=KEYNECTIS ROOT CA,OU=ROOT,O=KEYNECTIS,C=FR
# Serial Number:11:21:bc:27:6c:55:47:af:58:4e:ef:d4:ce:d6:29:b2:a2:85
# Subject: CN=KEYNECTIS ROOT CA,OU=ROOT,O=KEYNECTIS,C=FR
# Not Valid Before: Tue May 26 00:00:00 2009
# Not Valid After: Tue May 26 00:00:00 2020
# Fingerprint (MD5): cc:4d:ae:fb:30:6b:d8:38:fe:50:eb:86:61:4b:d2:26
# Fingerprint (SHA1): 9c:61:5c:4d:4d:85:10:3a:53:26:c2:4d:ba:ea:e4:a2:d2:d5:cc:97
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "KEYNECTIS ROOT CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\114\061\013\060\011\006\003\125\004\006\023\002\106\122\061
\022\060\020\006\003\125\004\012\023\011\113\105\131\116\105\103
\124\111\123\061\015\060\013\006\003\125\004\013\023\004\122\117
\117\124\061\032\060\030\006\003\125\004\003\023\021\113\105\131
\116\105\103\124\111\123\040\122\117\117\124\040\103\101
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\114\061\013\060\011\006\003\125\004\006\023\002\106\122\061
\022\060\020\006\003\125\004\012\023\011\113\105\131\116\105\103
\124\111\123\061\015\060\013\006\003\125\004\013\023\004\122\117
\117\124\061\032\060\030\006\003\125\004\003\023\021\113\105\131
\116\105\103\124\111\123\040\122\117\117\124\040\103\101
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\022\021\041\274\047\154\125\107\257\130\116\357\324\316\326
\051\262\242\205
END
CKA_VALUE MULTILINE_OCTAL
\060\202\003\345\060\202\002\315\240\003\002\001\002\002\022\021
\041\274\047\154\125\107\257\130\116\357\324\316\326\051\262\242
\205\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000
\060\114\061\013\060\011\006\003\125\004\006\023\002\106\122\061
\022\060\020\006\003\125\004\012\023\011\113\105\131\116\105\103
\124\111\123\061\015\060\013\006\003\125\004\013\023\004\122\117
```

\117\124\061\032\060\030\006\003\125\004\003\023\021\113\105\131  
\116\105\103\124\111\123\040\122\117\117\124\040\103\101\060\036  
\027\015\060\071\060\065\062\066\060\060\060\060\060\132\027  
\015\062\060\060\065\062\066\060\060\060\060\060\132\060\114  
\061\013\060\011\006\003\125\004\006\023\002\106\122\061\022\060  
\020\006\003\125\004\012\023\011\113\105\131\116\105\103\124\111  
\123\061\015\060\013\006\003\125\004\013\023\004\122\117\117\124  
\061\032\060\030\006\003\125\004\003\023\021\113\105\131\116\105  
\103\124\111\123\040\122\117\117\124\040\103\101\060\202\001\042  
\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003  
\202\001\017\000\060\202\001\012\002\202\001\001\000\306\375\263  
\027\205\241\255\046\033\225\151\065\041\075\244\210\372\336\333  
\140\066\100\027\151\302\024\143\373\270\331\302\164\025\067\056  
\234\320\040\315\151\215\204\062\242\205\114\024\264\233\362\045  
\263\124\052\203\077\055\276\017\363\073\144\321\377\240\120\357  
\167\117\073\116\341\077\013\144\205\232\272\130\176\322\303\142  
\323\144\045\242\324\262\227\074\167\135\143\052\063\222\374\315  
\202\015\233\124\225\207\365\265\353\214\315\133\321\312\060\057  
\311\210\106\265\315\015\021\264\030\217\356\321\241\076\135\025  
\350\050\317\337\303\220\233\154\314\321\014\105\167\263\072\353  
\212\220\035\351\257\144\152\211\173\251\075\103\164\372\344\147  
\042\241\373\334\115\304\365\142\311\312\045\264\311\200\140\063  
\251\335\173\240\002\277\226\045\012\136\311\137\051\173\264\027  
\201\213\155\201\031\320\331\203\134\005\217\101\151\032\151\103  
\200\237\250\257\340\351\214\221\213\047\053\242\046\140\315\017  
\362\244\243\002\203\216\030\201\302\027\212\103\025\371\155\363  
\035\020\244\132\234\104\141\043\041\172\330\373\321\002\003\001  
\000\001\243\201\300\060\201\275\060\022\006\003\125\035\023\001  
\001\377\004\010\060\006\001\001\377\002\001\004\060\016\006\003  
\125\035\017\001\001\377\004\004\003\002\001\006\060\127\006\003  
\125\035\037\004\120\060\116\060\114\240\112\240\110\206\106\150  
\164\164\160\072\057\057\164\162\165\163\164\143\145\156\164\145  
\162\055\143\162\154\056\143\145\162\164\151\146\151\143\141\164  
\062\056\143\157\155\057\113\145\171\156\145\143\164\151\163\057  
\113\105\131\116\105\103\124\111\123\137\122\117\117\124\137\103  
\101\056\143\162\154\060\035\006\003\125\035\016\004\026\004\024  
\357\267\043\227\320\250\221\177\246\317\246\041\300\064\237\314  
\167\101\341\320\060\037\006\003\125\035\043\004\030\060\026\200  
\024\357\267\043\227\320\250\221\177\246\317\246\041\300\064\237  
\314\167\101\341\320\060\015\006\011\052\206\110\206\367\015\001  
\001\013\005\000\003\202\001\001\000\032\061\151\231\102\302\345  
\100\205\242\237\222\303\143\324\217\041\071\250\031\041\376\172  
\374\303\115\100\363\053\350\113\254\133\114\131\223\306\334\176  
\013\257\174\137\225\205\153\275\307\157\272\301\276\370\306\072  
\147\113\223\306\005\151\076\044\055\360\033\221\306\076\077\354  
\102\030\223\154\003\044\212\156\371\040\147\053\174\155\253\064  
\311\052\042\063\015\327\175\217\356\322\066\144\102\310\065\232  
\156\031\141\313\215\147\360\150\247\320\044\005\346\303\027\272

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\105\256\174\103\265\200\170\003\115\040\163\005\374\103\020\235
\065\151\102\165\224\045\202\053\246\073\220\030\336\301\251\257
\363\055\225\277\225\247\317\030\227\341\131\342\242\257\032\026
\141\015\367\023\161\123\223\067\375\074\257\000\035\154\213\024
\257\106\226\214\266\122\174\314\055\116\315\341\351\113\012\356
\232\376\172\230\347\051\272\033\332\034\272\334\153\315\004\016
\046\100\251\353\163\074\376\120\250\021\047\125\275\333\216\113
\357\117\030\355\025\377\275\206\230\146\356\232\045\161\064\154
\120\361\262\121\313\146\235\115\051
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "KEYNECTIS ROOT CA"

# Issuer: CN=KEYNECTIS ROOT CA,OU=ROOT,O=KEYNECTIS,C=FR

#

Serial Number:11:21:bc:27:6c:55:47:af:58:4e:ef:d4:ce:d6:29:b2:a2:85

# Subject: CN=KEYNECTIS ROOT CA,OU=ROOT,O=KEYNECTIS,C=FR

# Not Valid Before: Tue May 26 00:00:00 2009

# Not Valid After: Tue May 26 00:00:00 2020

# Fingerprint (MD5): cc:4d:ae:fb:30:6b:d8:38:fe:50:eb:86:61:4b:d2:26

# Fingerprint (SHA1): 9c:61:5c:4d:4d:85:10:3a:53:26:c2:4d:ba:ea:e4:a2:d2:d5:cc:97

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "KEYNECTIS ROOT CA"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\234\141\134\115\115\205\020\072\123\046\302\115\272\352\344\242
\322\325\314\227
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\314\115\256\373\060\153\330\070\376\120\353\206\141\113\322\046
```

END

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\114\061\013\060\011\006\003\125\004\006\023\002\106\122\061
\022\060\020\006\003\125\004\012\023\011\113\105\131\116\105\103
\124\111\123\061\015\060\013\006\003\125\004\013\023\004\122\117
\117\124\061\032\060\030\006\003\125\004\003\023\021\113\105\131
\116\105\103\124\111\123\040\122\117\117\124\040\103\101
```

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

```
\002\022\021\041\274\047\154\125\107\257\130\116\357\324\316\326
\051\262\242\205
```

```

END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "I.CA - Standard Certification Authority, 09/2009"
# Issuer: OU=I.CA - Provider of Certification Services,O=První certifikační autorita\, a.s.,CN=I.CA - Standard
Certification Authority\, 09/2009,C=CZ
# Serial Number:16:e3:60
# Subject: OU=I.CA - Provider of Certification Services,O=První certifikační autorita\, a.s.,CN=I.CA - Standard
Certification Authority\, 09/2009,C=CZ
# Not Valid Before: Tue Sep 01 00:00:00 2009
# Not Valid After: Sun Sep 01 00:00:00 2019
# Fingerprint
(MD5): 86:ef:8e:31:9d:9f:85:69:a2:a4:1a:12:71:68:ba:1b
# Fingerprint (SHA1): 90:de:ce:77:f8:c8:25:34:0e:62:eb:d6:35:e1:be:20:cf:73:27:dd
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "I.CA - Standard Certification Authority, 09/2009"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\253\061\013\060\011\006\003\125\004\006\023\002\103\132
\061\071\060\067\006\003\125\004\003\014\060\111\056\103\101\040
\055\040\123\164\141\156\144\141\162\144\040\103\145\162\164\151
\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151
\164\171\054\040\060\071\057\062\060\060\071\061\055\060\053\006
\003\125\004\012\014\044\120\162\166\156\303\255\040\143\145\162
\164\151\146\151\153\141\304\215\156\303\255\040\141\165\164\157
\162\151\164\141\054\040\141\056\163\056\061\062\060\060\006\003
\125\004\013\014\051\111\056\103\101\040\055\040\120\162\157\166
\151\144\145\162\040\157\146\040\103\145\162\164\151\146\151\143
\141\164\151\157\156\040\123\145\162\166\151\143\145\163
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\253\061\013\060\011\006\003\125\004\006\023\002\103\132
\061\071\060\067\006\003\125\004\003\014\060\111\056\103\101\040
\055\040\123\164\141\156\144\141\162\144\040\103\145\162\164\151
\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151
\164\171\054\040\060\071\057\062\060\060\071\061\055\060\053\006
\003\125\004\012\014\044\120\162\166\156\303\255\040\143\145\162
\164\151\146\151\153\141\304\215\156\303\255\040\141\165\164\157
\162\151\164\141\054\040\141\056\163\056\061\062\060\060\006\003

```

\125\004\013\014\051\111\056\103\101\040\055\040\120\162\157\166  
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END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "I.CA - Standard Certification Authority, 09/2009"

# Issuer: OU=I.CA - Provider of Certification Services,O=První certifikační autorita, a.s.,CN=I.CA - Standard  
Certification Authority, 09/2009,C=CZ

# Serial Number: 16:e3:60

# Subject: OU=I.CA - Provider of Certification Services,O=První certifikační autorita, a.s.,CN=I.CA - Standard  
Certification Authority, 09/2009,C=CZ

# Not Valid Before: Tue Sep 01 00:00:00 2009

# Not Valid After: Sun Sep 01 00:00:00 2019

# Fingerprint (MD5):

86:ef:8e:31:9d:9f:85:69:a2:a4:1a:12:71:68:ba:1b

# Fingerprint (SHA1): 90:de:ce:77:f8:c8:25:34:0e:62:eb:d6:35:e1:be:20:cf:73:27:dd

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CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE  
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END

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END

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CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

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CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR  
CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "I.CA - Qualified Certification Authority, 09/2009"

# Issuer: OU=I.CA - Accredited Provider of Certification Services,O=První certifikační autorita\, a.s.,CN=I.CA -  
Qualified Certification Authority\, 09/2009,C=CZ

# Serial Number:a0:37:a0

# Subject: OU=I.CA - Accredited Provider of Certification Services,O=První certifikační autorita\, a.s.,CN=I.CA -  
Qualified Certification

Authority\, 09/2009,C=CZ

# Not Valid Before: Tue Sep 01 00:00:00 2009

# Not Valid After: Sun Sep 01 00:00:00 2019

# Fingerprint (MD5): 8d:63:9b:56:c1:14:e4:ee:9a:12:85:86:11:90:82:a3

# Fingerprint (SHA1): d2:44:1a:a8:c2:03:ae:ca:a9:6e:50:1f:12:4d:52:b6:8f:e4:c3:75

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "I.CA - Qualified Certification Authority, 09/2009"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

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CKA\_ISSUER MULTILINE\_OCTAL

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END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "I.CA - Qualified Certification Authority, 09/2009"

# Issuer: OU=I.CA - Accredited Provider of Certification Services,O=První certifikační autorita, a.s.,CN=I.CA -  
Qualified Certification Authority, 09/2009,C=CZ

# Serial Number:a0:37:a0

# Subject: OU=I.CA - Accredited

Provider of Certification Services,O=První certifikační autorita, a.s.,CN=I.CA - Qualified Certification Authority,  
09/2009,C=CZ

# Not Valid Before: Tue Sep 01 00:00:00 2009

# Not Valid After: Sun Sep 01 00:00:00 2019

# Fingerprint (MD5): 8d:63:9b:56:c1:14:e4:ee:9a:12:85:86:11:90:82:a3

# Fingerprint (SHA1): d2:44:1a:a8:c2:03:ae:ca:a9:6e:50:1f:12:4d:52:b6:8f:e4:c3:75

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "I.CA - Qualified Certification Authority, 09/2009"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\322\104\032\250\302\003\256\312\251\156\120\037\022\115\122\266

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\217\344\303\165
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\215\143\233\126\301\024\344\356\232\022\205\206\021\220\202\243
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\267\061\013\060\011\006\003\125\004\006\023\002\103\132
\061\072\060\070\006\003\125\004\003\014\061\111\056\103\101\040
\055\040\121\165\141\154\151\146\151\145\144\040\103\145\162\164
\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162
\151\164\171\054\040\060\071\057\062\060\060\071\061\055\060\053
\006\003\125\004\012\014\044\120\162\166\156\303\255\040\143\145
\162\164\151\146\151\153\141\304\215\156\303\255\040\141\165\164
\157\162\151\164\141\054\040\141\056\163\056\061\075\060\073\006
\003\125\004\013\014\064\111\056\103\101\040\055\040\101\143\143
\162\145\144\151\164\145\144\040\120\162\157\166\151\144\145\162
\040\157\146\040\103\145\162\164\151\146\151\143\141\164\151\157
\156\040\123\145\162\166\151\143\145\163
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\004\000\240\067\240
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "VI Registru Centras RCSC (RootCA)"
# Issuer: CN=VI Registru Centras
RCSC (RootCA),OU=Registru Centro Sertifikavimo Centras,O=VI Registru Centras - I.k. 124110246,C=LT
# Serial Number:03:a3:a4:57:b5:f0:f3:86:4a:11:63:e8:98:ff:16:9c
# Subject: CN=VI Registru Centras RCSC (RootCA),OU=Registru Centro Sertifikavimo Centras,O=VI Registru
Centras - I.k. 124110246,C=LT
# Not Valid Before: Mon Jul 21 11:47:46 2008
# Not Valid After: Sun Jul 21 11:47:46 2024
# Fingerprint (MD5): 41:5b:95:78:0d:d1:c3:a7:dc:d9:ba:fe:e7:27:b6:14
# Fingerprint (SHA1): 97:1d:34:86:fc:1e:8e:63:15:f7:c6:f2:e1:29:67:c7:24:34:22:14
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "VI Registru Centras RCSC (RootCA)"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\230\061\013\060\011\006\003\125\004\006\023\002\114\124
\061\055\060\053\006\003\125\004\012\023\044\126\111\040\122\145

```

\147\151\163\164\162\165\040\103\145\156\164\162\141\163\040\055  
\040\111\056\153\056\040\061\062\064\061\061\060\062\064\066\061  
\056\060\054\006\003\125\004\013\023\045\122\145\147\151\163\164  
\162\165\040\103\145\156\164\162\157\040\123\145\162\164\151\146  
\151\153\141\166\151\155\157\040\103\145\156\164\162\141\163\061  
\052\060\050\006\003\125\004\003\023\041\126\111\040\122\145\147  
\151\163\164\162\165\040\103\145\156\164\162\141\163\040\122\103  
\123\103\040\050\122\157\157\164\103\101\051

END

CKA\_ID

UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\230\061\013\060\011\006\003\125\004\006\023\002\114\124  
\061\055\060\053\006\003\125\004\012\023\044\126\111\040\122\145  
\147\151\163\164\162\165\040\103\145\156\164\162\141\163\040\055  
\040\111\056\153\056\040\061\062\064\061\061\060\062\064\066\061  
\056\060\054\006\003\125\004\013\023\045\122\145\147\151\163\164  
\162\165\040\103\145\156\164\162\157\040\123\145\162\164\151\146  
\151\153\141\166\151\155\157\040\103\145\156\164\162\141\163\061  
\052\060\050\006\003\125\004\003\023\041\126\111\040\122\145\147  
\151\163\164\162\165\040\103\145\156\164\162\141\163\040\122\103  
\123\103\040\050\122\157\157\164\103\101\051

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\020\003\243\244\127\265\360\363\206\112\021\143\350\230\377  
\026\234

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\006\212\060\202\004\162\240\003\002\001\002\002\020\003  
\243\244\127\265\360\363\206\112\021\143\350\230\377\026\234\060  
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\201  
\230\061\013\060\011\006\003\125\004\006\023\002\114\124\061\055  
\060\053\006\003\125\004\012\023\044\126\111\040\122\145\147\151  
\163\164\162\165\040\103\145\156\164\162\141\163\040\055\040\111  
\056\153\056\040\061\062\064\061\061\060\062\064\066\061\056\060  
\054\006\003\125\004\013\023\045\122\145\147\151\163\164\162\165  
\040\103\145\156\164\162\157\040\123\145\162\164\151\146\151\153  
\141\166\151\155\157\040\103\145\156\164\162\141\163\061\052\060  
\050\006\003\125\004\003\023\041\126\111\040\122\145\147\151\163  
\164\162\165\040\103\145\156\164\162\141\163\040\122\103\123\103  
\040\050\122\157\157\164\103\101\051\060\036\027\015\060\070\060  
\067\062\061\061\061\064\067\064\066\132\027\015\062\064\060\067  
\062\061\061\061\064\067\064\066\132\060\201\230\061\013\060\011  
\006\003\125\004\006\023\002\114\124\061\055\060\053\006\003\125  
\004\012\023\044\126\111\040\122\145\147\151\163\164\162\165\040  
\103\145\156\164\162\141\163\040\055\040\111\056\153\056\040\061  
\062\064\061\061\060\062\064\066\061\056\060\054\006\003\125\004

\013\023\045\122\145\147\151\163\164\162\165\040\103\145\156\164  
\162\157\040\123\145\162\164\151\146\151\153\141\166\151\155\157  
\040\103\145\156\164\162\141\163\061\052\060\050\006\003\125\004  
\003\023\041\126\111\040\122\145\147\151\163\164\162\165\040\103  
\145\156\164\162\141\163\040\122\103\123\103\040\050\122\157\157  
\164\103\101\051\060\202\002\042\060\015\006\011\052\206\110\206  
\367\015\001\001\001\005\000\003\202\002\017\000\060\202\002\012  
\002\202\002\001\000\310\231\362\042\307\263\207\025\056\247\313  
\115\106\253\147\227\317\017\163\167\003\367\144\174\166\110\062  
\040\364\243\330\131\235\024\251\037\240\036\221\016\015\255\365  
\376\147\222\221\023\040\041\115\012\125\156\161\372\254\027\313  
\000\375\016\120\002\063\333\251\330\275\141\032\375\340\020\127  
\261\125\171\140\031\264\124\171\236\373\200\060\342\310\102\311  
\122\002\010\330\254\057\303\161\101\124\002\365\201\212\022\343  
\151\002\245\207\241\160\175\005\276\245\142\277\005\260\010\226  
\107\157\177\223\212\255\340\254\323\102\336\275\346\217\024\345  
\163\050\240\003\233\101\372\345\076\367\071\164\056\144\364\237  
\113\300\365\170\231\124\153\345\025\040\374\351\062\162\100\253  
\145\165\274\074\106\064\322\370\020\141\307\014\170\307\174\300  
\021\121\321\005\066\373\370\234\377\055\270\345\161\055\111\360  
\127\110\263\223\216\234\373\072\311\113\155\061\327\122\325\126  
\351\204\056\221\324\002\035\262\200\005\201\305\200\312\051\301  
\064\147\271\257\004\060\103\366\257\102\107\336\374\001\056\350  
\102\234\276\262\013\024\344\064\334\335\255\123\204\172\330\003  
\126\321\302\014\324\227\051\370\114\362\265\034\337\235\203\256  
\137\132\045\113\242\260\050\345\277\132\013\320\234\250\234\160  
\052\155\016\056\341\047\277\255\013\157\021\323\370\106\055\364  
\227\104\113\312\260\310\346\066\157\042\272\216\344\122\225\026  
\354\104\152\324\120\036\230\050\371\150\244\272\336\236\060\355  
\242\311\122\241\311\065\212\100\341\215\233\233\375\361\106\213  
\244\307\117\160\140\121\215\362\222\251\316\272\214\057\111\122  
\022\147\320\365\253\004\045\100\164\003\342\330\255\241\164\130  
\141\267\265\016\363\177\045\054\021\143\257\361\022\303\364\244  
\163\232\144\254\356\246\006\217\362\274\234\254\050\251\134\025  
\323\063\255\320\066\310\041\160\153\274\052\037\325\253\270\001  
\130\166\374\073\021\115\373\362\034\110\044\021\375\115\217\031  
\051\256\153\350\155\136\262\241\015\170\316\322\143\203\164\264  
\315\051\114\277\233\160\210\117\022\015\105\347\276\017\145\304  
\326\070\044\344\112\025\213\321\152\352\273\066\241\241\220\245  
\123\310\245\326\145\002\003\001\000\001\243\201\315\060\201\312  
\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001\006  
\060\057\006\010\053\006\001\005\005\007\001\003\004\043\060\041  
\060\010\006\006\004\000\216\106\001\001\060\013\006\006\004\000  
\216\106\001\003\002\001\012\060\010\006\006\004\000\216\106\001  
\004\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001  
\001\377\060\035\006\003\125\035\016\004\026\004\024\274\163\076  
\057\234\221\014\273\217\315\167\231\076\314\205\344\314\130\150  
\021\060\020\006\011\053\006\001\004\001\202\067\025\001\004\003

\002\001\000\060\105\006\003\125\035\040\004\076\060\074\060\072  
\006\013\053\006\001\004\001\201\361\067\001\001\001\060\053\060  
\051\006\010\053\006\001\005\005\007\002\001\026\035\150\164\164  
\160\072\057\057\167\167\167\056\162\143\163\143\056\154\164\057  
\162\145\160\157\163\151\164\157\162\171\060\015\006\011\052\206  
\110\206\367\015\001\001\005\005\000\003\202\002\001\000\031\170  
\054\121\023\137\274\231\116\134\247\001\374\336\266\376\251\035  
\206\061\021\173\172\231\212\263\210\222\245\140\322\004\143\071  
\274\257\216\330\361\053\105\162\062\051\074\055\342\331\330\075  
\164\372\107\065\207\334\020\000\066\101\075\355\252\176\262\314  
\304\032\351\061\264\365\221\321\204\112\347\365\334\317\106\147  
\002\231\257\270\167\372\176\355\041\157\226\043\024\161\077\320  
\130\276\252\333\103\054\067\240\035\006\151\064\360\117\217\165  
\356\263\322\001\273\354\034\351\217\251\211\357\370\324\033\101  
\002\231\276\360\137\272\216\054\302\041\160\336\121\201\330\367  
\274\270\303\063\203\303\227\312\011\163\304\351\167\310\162\364  
\134\255\017\015\212\352\355\322\012\001\316\353\127\235\025\360  
\051\025\357\131\234\257\254\222\202\160\014\230\330\042\235\057  
\230\065\251\321\212\211\274\325\235\125\302\056\236\007\045\106  
\366\222\115\120\372\075\211\362\337\223\277\223\224\320\331\257  
\127\243\363\146\346\216\361\350\240\033\030\006\223\132\054\211  
\015\066\304\372\040\263\334\050\365\152\356\217\061\233\131\070  
\330\116\152\240\043\041\344\206\253\345\373\140\243\321\315\132  
\054\102\111\246\016\125\044\045\065\375\322\072\257\153\130\246  
\221\106\137\151\313\275\176\046\233\336\010\275\036\354\236\246  
\370\234\165\244\100\066\225\113\042\117\306\266\175\162\121\274  
\343\302\150\315\315\345\213\276\300\302\117\233\156\145\316\026  
\267\010\210\307\207\336\377\062\214\313\353\102\101\254\373\327  
\317\001\103\370\157\300\326\013\360\367\222\351\313\105\135\144  
\261\367\312\074\273\211\010\226\311\332\016\341\161\052\017\354  
\244\102\055\343\152\017\107\107\260\123\246\326\205\120\227\060  
\327\214\056\137\106\042\320\254\316\074\136\234\036\162\203\375  
\014\247\370\027\062\273\141\336\343\117\057\030\216\202\265\207  
\033\164\005\060\112\277\152\036\110\074\124\050\261\135\235\222  
\137\233\020\343\056\042\212\257\335\066\144\177\023\166\107\203  
\065\225\032\224\217\365\304\123\155\071\275\325\213\365\312\317  
\030\103\005\001\223\244\066\336\060\322\024\363\260\144\265\312  
\316\225\367\272\164\354\212\163\076\122\323\136\123\000

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "VI Registru Centras RCSC (RootCA)"

# Issuer: CN=VI Registru Centras RCSC (RootCA),OU=Registru Centro Sertifikavimo Centras,O=VI Registru Centras - I.k. 124110246,C=LT

```
# Serial Number:03:a3:a4:57:b5:f0:f3:86:4a:11:63:e8:98:ff:16:9c
# Subject: CN=VI Regstru Centras RCSC (RootCA),OU=Regstru Centro Sertifikavimo Centras,O=VI Regstru
Centras - I.k. 124110246,C=LT
# Not Valid Before: Mon Jul 21 11:47:46 2008
# Not Valid After: Sun Jul 21 11:47:46 2024
# Fingerprint (MD5): 41:5b:95:78:0d:d1:c3:a7:dc:d9:ba:fe:e7:27:b6:14
# Fingerprint (SHA1): 97:1d:34:86:fc:1e:8e:63:15:f7:c6:f2:e1:29:67:c7:24:34:22:14
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL
UTF8 "VI Regstru Centras RCSC (RootCA)"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\227\035\064\206\374\036\216\143\025\367\306\362\341\051\147\307
\044\064\042\024
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\101\133\225\170\015\321\303\247\334\331\272\376\347\047\266\024
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\230\061\013\060\011\006\003\125\004\006\023\002\114\124
\061\055\060\053\006\003\125\004\012\023\044\126\111\040\122\145
\147\151\163\164\162\165\040\103\145\156\164\162\141\163\040\055
\040\111\056\153\056\040\061\062\064\061\061\060\062\064\066\061
\056\060\054\006\003\125\004\013\023\045\122\145\147\151\163\164
\162\165\040\103\145\156\164\162\157\040\123\145\162\164\151\146
\151\153\141\166\151\155\157\040\103\145\156\164\162\141\163\061
\052\060\050\006\003\125\004\003\023\041\126\111\040\122\145\147
\151\163\164\162\165\040\103\145\156\164\162\141\163\040\122\103
\123\103\040\050\122\157\157\164\103\101\051
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\003\243\244\127\265\360\363\206\112\021\143\350\230\377
\026\234
END
CKA_TRUST_SERVER_AUTH
CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "Autoridade Certificadora Raiz Brasileira v1"
# Issuer: CN=Autoridade Certificadora Raiz Brasileira v1,OU=Instituto Nacional de Tecnologia da Informacao -
ITI,O=ICP-Brasil,C=BR
# Serial Number: 1 (0x1)
# Subject: CN=Autoridade Certificadora Raiz Brasileira v1,OU=Instituto Nacional de Tecnologia da Informacao -
```

```
ITI,O=ICP-Brasil,C=BR
# Not Valid Before: Tue Jul 29 19:17:10 2008
# Not Valid After: Thu Jul 29 19:17:10 2021
# Fingerprint (MD5): 93:f1:ad:34:0b:2b:e7:a8:54:60:e2:73:8c:a4:94:31
# Fingerprint (SHA1): 70:5d:2b:45:65:c7:04:7a:54:06:94:a7:9a:f7:ab:b8:42:bd:c1:61
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE
CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Autoridade Certificadora Raiz Brasileira v1"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\227\061\013\060\011\006\003\125\004\006\023\002\102\122
\061\023\060\021\006\003\125\004\012\023\012\111\103\120\055\102
\162\141\163\151\154\061\075\060\073\006\003\125\004\013\023\064
\111\156\163\164\151\164\165\164\157\040\116\141\143\151\157\156
\141\154\040\144\145\040\124\145\143\156\157\154\157\147\151\141
\040\144\141\040\111\156\146\157\162\155\141\143\141\157\040\055
\040\111\124\111\061\064\060\062\006\003\125\004\003\023\053\101
\165\164\157\162\151\144\141\144\145\040\103\145\162\164\151\146
\151\143\141\144\157\162\141\040\122\141\151\172\040\102\162\141
\163\151\154\145\151\162\141\040\166\061
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\227\061\013\060\011\006\003\125\004\006\023\002\102\122
\061\023\060\021\006\003\125\004\012\023\012\111\103\120\055\102
\162\141\163\151\154\061\075\060\073\006\003\125\004\013\023\064
\111\156\163\164\151\164\165\164\157\040\116\141\143\151\157\156
\141\154\040\144\145\040\124\145\143\156\157\154\157\147\151\141
\040\144\141\040\111\156\146\157\162\155\141\143\141\157\040\055
\040\111\124\111\061\064\060\062\006\003\125\004\003\023\053\101
\165\164\157\162\151\144\141\144\145\040\103\145\162\164\151\146
\151\143\141\144\157\162\141\040\122\141\151\172\040\102\162\141
\163\151\154\145\151\162\141\040\166\061
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\001\001
END
CKA_VALUE MULTILINE_OCTAL
\060\202\004\200\060\202\003\150\240\003\002\001\002\002\001\001
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060
\201\227\061\013\060\011\006\003\125\004\006\023\002\102\122\061
\023\060\021\006\003\125\004\012\023\012\111\103\120\055\102\162
\141\163\151\154\061\075\060\073\006\003\125\004\013\023\064\111
\156\163\164\151\164\165\164\157\040\116\141\143\151\157\156\141
```



\154\040\144\145\040\124\145\143\156\157\154\157\147\151\141\040  
\144\141\040\111\156\146\157\162\155\141\143\141\157\040\055\040  
\111\124\111\061\064\060\062\006\003\125\004\003\023\053\101\165  
\164\157\162\151\144\141\144\145\040\103\145\162\164\151\146\151  
\143\141\144\157\162\141\040\122\141\151\172\040\102\162\141\163  
\151\154\145\151\162\141\040\166\061\060\036\027\015\060\070\060  
\067\062\071\061\071\061\067\061\060\132\027\015\062\061\060\067  
\062\071\061\071\061\067\061\060\132\060\201\227\061\013\060\011  
\006\003\125\004\006\023\002\102\122\061\023\060\021\006\003\125  
\004\012\023\012\111\103\120\055\102\162\141\163\151\154\061\075  
\060\073\006\003\125\004\013\023\064\111\156\163\164\151\164\165  
\164\157\040\116\141\143\151\157\156\141\154\040\144\145\040\124  
\145\143\156\157\154\157\147\151\141\040\144\141\040\111\156\146  
\157\162\155\141\143\141\157\040\055\040\111\124\111\061\064\060  
\062\006\003\125\004\003\023\053\101\165\164\157\162\151\144\141  
\144\145\040\103\145\162\164\151\146\151\143\141\144\157\162\141  
\040\122\141\151\172\040\102\162\141\163\151\154\145\151\162\141  
\040\166\061\060\202\001\042\060\015\006\011\052\206\110\206\367  
\015\001\001\001\005\000\003\202\001\017\000\060\202\001\012\002  
\202\001\001\000\316\034\350\276\223\064\316\311\261\344\124\356  
\011\366\354\244\010\205\240\077\306\212\306\160\060\247\200\214  
\355\076\001\124\007\214\031\043\073\237\273\307\264\213\040\261  
\342\367\101\026\055\136\207\146\272\260\007\335\157\321\077\074  
\332\310\131\063\235\025\260\237\222\310\126\124\130\212\072\047  
\242\064\036\233\170\265\267\315\345\233\351\300\056\022\236\160  
\170\007\372\216\362\114\300\370\345\162\174\036\251\251\140\003  
\127\046\107\333\203\166\303\316\310\022\273\321\377\357\256\263  
\142\175\232\240\344\274\156\175\001\056\064\140\334\207\340\137  
\177\005\160\134\060\025\054\302\165\243\077\120\003\146\043\146  
\054\347\164\167\170\333\146\027\337\371\037\015\202\150\217\165  
\207\367\351\061\172\123\117\317\130\142\273\100\242\064\317\300  
\160\204\120\227\025\332\040\113\351\373\114\102\255\053\150\216  
\243\331\255\005\142\376\010\164\304\350\301\314\205\023\316\255  
\050\060\120\335\336\300\201\301\111\260\136\056\046\070\351\143  
\004\063\167\265\200\166\315\052\177\362\074\254\135\223\102\071  
\364\242\163\105\002\003\001\000\001\243\201\324\060\201\321\060  
\116\006\003\125\035\040\004\107\060\105\060\103\006\005\140\114  
\001\001\000\060\072\060\070\006\010\053\006\001\005\005\007\002  
\001\026\054\150\164\164\160\072\057\057\141\143\162\141\151\172  
\056\151\143\160\142\162\141\163\151\154\056\147\157\166\056\142  
\162\057\104\120\103\141\143\162\141\151\172\056\160\144\146\060  
\077\006\003\125\035\037\004\070\060\066\060\064\240\062\240\060  
\206\056\150\164\164\160\072\057\057\141\143\162\141\151\172\056  
\151\143\160\142\162\141\163\151\154\056\147\157\166\056\142\162  
\057\114\103\122\141\143\162\141\151\172\166\061\056\143\162\154  
\060\035\006\003\125\035\016\004\026\004\024\102\262\054\134\164  
\001\007\276\233\377\125\063\073\356\051\273\135\221\277\006\060  
\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377

```
\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001\006
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\003
\202\001\001\000\131\154\212\166\351\031\161\127\203\376\247\364
\172\017\236\201\320\317\007\034\014\043\351\044\015\121\313\063
\350\052\011\303\172\377\016\243\200\206\140\301\160\227\340\300
\012\125\335\244\145\114\217\247\107\260\127\267\363\253\304\303
\031\343\230\354\015\260\033\121\221\311\331\011\326\351\152\263
\347\014\260\262\222\207\373\216\115\025\354\022\024\031\170\014
\142\352\024\071\030\012\305\125\333\123\205\334\173\050\372\025
\161\243\312\164\045\202\017\147\047\064\327\256\122\023\002\373
\305\357\232\200\045\245\122\236\071\016\355\072\364\170\007\137
\325\050\172\012\112\365\320\303\147\367\214\130\027\157\012\000
\243\046\020\264\140\042\072\112\110\245\332\340\251\204\336\103
\333\237\103\247\077\050\004\107\222\057\367\347\144\165\041\322
\117\201\316\252\076\144\016\343\016\255\125\232\176\224\233\064
\301\320\256\151\116\036\243\331\263\207\127\332\160\302\132\175
\207\315\371\277\067\336\355\126\065\367\267\042\016\117\222\270
\077\010\337\234\236\230\136\362\157\271\372\233\054\370\315\105
\330\162\262\040
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "Autoridade Certificadora Raiz Brasileira v1"

# Issuer: CN=Autoridade Certificadora Raiz Brasileira v1,OU=Instituto Nacional de Tecnologia da Informacao - ITI,O=ICP-Brasil,C=BR

# Serial Number: 1 (0x1)

# Subject: CN=Autoridade Certificadora Raiz Brasileira v1,OU=Instituto Nacional de Tecnologia da Informacao - ITI,O=ICP-Brasil,C=BR

# Not Valid Before: Tue Jul 29 19:17:10 2008

# Not Valid After: Thu Jul 29 19:17:10 2021

# Fingerprint (MD5): 93:f1:ad:34:0b:2b:e7:a8:54:60:e2:73:8c:a4:94:31

# Fingerprint (SHA1): 70:5d:2b:45:65:c7:04:7a:54:06:94:a7:9a:f7:ab:b8:42:bd:c1:61

CKA\_CLASS

CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Autoridade Certificadora Raiz Brasileira v1"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\160\135\053\105\145\307\004\172\124\006\224\247\232\367\253\270
\102\275\301\141
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\223\361\255\064\013\053\347\250\124\140\342\163\214\244\224\061
```

END

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\227\061\013\060\011\006\003\125\004\006\023\002\102\122  
\061\023\060\021\006\003\125\004\012\023\012\111\103\120\055\102  
\162\141\163\151\154\061\075\060\073\006\003\125\004\013\023\064  
\111\156\163\164\151\164\165\164\157\040\116\141\143\151\157\156  
\141\154\040\144\145\040\124\145\143\156\157\154\157\147\151\141  
\040\144\141\040\111\156\146\157\162\155\141\143\141\157\040\055  
\040\111\124\111\061\064\060\062\006\003\125\004\003\023\053\101  
\165\164\157\162\151\144\141\144\145\040\103\145\162\164\151\146  
\151\143\141\144\157\162\141\040\122\141\151\172\040\102\162\141  
\163\151\154\145\151\162\141\040\166\061

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\001\001

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "Actalis Authentication CA G1"

# Issuer: CN=Actalis Authentication CA G1,O=Actalis S.p.A./03358520967,L=Milano,C=IT

# Serial Number: 1 (0x1)

# Subject: CN=Actalis Authentication CA G1,O=Actalis S.p.A./03358520967,L=Milano,C=IT

# Not Valid Before: Tue Jun 23 14:06:00 2009

# Not Valid After: Sat Jun 25 14:06:00 2022

# Fingerprint (MD5): c2:2a:59:ab:cf:15:2f:4c:f7:e6:31:a3:16:ae:84:0c

# Fingerprint (SHA1): 91:58:c5:ef:98:73:01:a8:90:3c:fd:ab:03:d7:2d:a1:d8:89:09:c9

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE

CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Actalis Authentication CA G1"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\152\061\013\060\011\006\003\125\004\006\023\002\111\124\061  
\017\060\015\006\003\125\004\007\014\006\115\151\154\141\156\157  
\061\043\060\041\006\003\125\004\012\014\032\101\143\164\141\154  
\151\163\040\123\056\160\056\101\056\057\060\063\063\065\070\065  
\062\060\071\066\067\061\045\060\043\006\003\125\004\003\014\034  
\101\143\164\141\154\151\163\040\101\165\164\150\145\156\164\151  
\143\141\164\151\157\156\040\103\101\040\107\061

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\152\061\013\060\011\006\003\125\004\006\023\002\111\124\061  
\017\060\015\006\003\125\004\007\014\006\115\151\154\141\156\157  
\061\043\060\041\006\003\125\004\012\014\032\101\143\164\141\154  
\151\163\040\123\056\160\056\101\056\057\060\063\063\065\070\065  
\062\060\071\066\067\061\045\060\043\006\003\125\004\003\014\034  
\101\143\164\141\154\151\163\040\101\165\164\150\145\156\164\151  
\143\141\164\151\157\156\040\103\101\040\107\061

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\001\001

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\224\060\202\002\174\240\003\002\001\002\002\001\001  
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060  
\152\061\013\060\011\006\003\125\004\006\023\002\111\124\061\017  
\060\015\006\003\125\004\007\014\006\115\151\154\141\156\157\061  
\043\060\041\006\003\125\004\012\014\032\101\143\164\141\154\151  
\163\040\123\056\160\056\101\056\057\060\063\063\065\070\065\062  
\060\071\066\067\061\045\060\043\006\003\125\004\003\014\034\101  
\143\164\141\154\151\163\040\101\165\164\150\145\156\164\151\143  
\141\164\151\157\156\040\103\101\040\107\061\060\036\027\015\060  
\071\060\066\062\063\061\064\060\066\060\060\132\027\015\062\062  
\060\066\062\065\061\064\060\066\060\060\132\060\152\061\013\060  
\011\006\003\125\004\006\023\002\111\124\061\017\060\015\006\003  
\125\004\007\014\006\115\151\154\141\156\157\061\043\060\041\006  
\003\125\004\012\014\032\101\143\164\141\154\151\163\040\123\056  
\160\056\101\056\057\060\063\063\065\070\065\062\060\071\066\067  
\061\045\060\043\006\003\125\004\003\014\034\101\143\164\141\154  
\151\163\040\101\165\164\150\145\156\164\151\143\141\164\151\157  
\156\040\103\101\040\107\061\060\202\001\042\060\015\006\011\052  
\206\110\206\367\015\001\001\001\005\000\003\202\001\017\000\060  
\202\001\012\002\202\001\001\000\303\034\206\064\077\047\122\102  
\140\272\053\140\320\041\053\311\327\351\100\165\072\154\130\017  
\043\073\317\206\076\324\144\253\156\332\352\310\052\330\225\105  
\337\311\034\322\045\222\236\020\230\132\213\161\151\300\225\351  
\366\153\150\334\367\266\304\015\376\156\365\160\073\301\244\250  
\117\040\242\047\013\237\361\022\165\174\317\256\177\136\313\170  
\002\130\050\327\057\252\333\240\256\164\075\176\253\366\351\162  
\241\052\317\326\220\140\337\340\240\065\312\300\333\004\304\007  
\126\374\146\165\214\216\172\023\241\074\006\153\032\346\177\071  
\234\210\344\204\157\242\342\177\153\237\354\001\252\322\304\313  
\262\354\232\075\270\027\030\254\037\140\231\063\346\353\005\335  
\314\362\151\147\260\016\276\050\044\103\313\055\271\107\204\031  
\371\352\344\361\365\150\364\237\307\173\120\121\257\242\374\157  
\167\210\061\277\222\333\177\234\305\265\254\241\010\230\347\152  
\063\376\321\273\000\341\267\005\010\257\363\246\126\210\066\075

```
\343\212\112\342\015\235\200\206\146\237\324\302\243\120\272\034
\022\327\207\212\061\112\270\025\002\003\001\000\001\243\105\060
\103\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001
\006\060\022\006\003\125\035\023\001\001\377\004\010\060\006\001
\001\377\002\001\000\060\035\006\003\125\035\016\004\026\004\024
\001\273\326\233\126\264\176\346\305\130\335\054\230\364\312\162
\366\137\063\206\060\015\006\011\052\206\110\206\367\015\001\001
\005\005\000\003\202\001\001\000\241\040\326\313\242\064\155\074
\156\341\125\322\112\320\331\272\262\067\121\210\167\047\356\002
\110\223\105\101\342\165\121\362\031\224\011\240\363\270\175\272
\003\200\043\240\045\357\001\031\265\331\032\172\055\343\102\212
\261\206\061\017\226\354\146\204\362\316\043\022\106\226\153\061
\136\006\272\257\243\122\252\102\040\250\321\256\252\233\337\304
\027\236\123\160\001\264\251\032\332\150\310\143\017\266\132\163
\123\321\151\021\006\023\122\347\153\250\005\061\267\260\374\207
\106\305\165\210\201\361\137\170\002\347\237\255\234\273\124\355
\137\231\152\067\325\353\125\263\052\300\103\140\121\334\264\161
\222\046\243\017\314\172\075\334\300\102\211\027\051\010\147\124
\144\305\371\250\104\274\204\161\130\226\075\147\127\177\273\254
\220\263\161\042\277\076\272\254\146\046\105\020\263\360\037\072
\072\150\245\120\065\312\264\027\221\006\001\054\367\015\260\160
\262\133\126\165\271\167\231\300\331\225\205\002\055\163\146\007
\311\117\231\021\356\133\053\250\343\150\043\005\250\363\004\017
\006\273\037\011\216\306\133\035
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER

CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "Actalis Authentication CA G1"

# Issuer: CN=Actalis Authentication CA G1,O=Actalis S.p.A./03358520967,L=Milano,C=IT

# Serial Number: 1 (0x1)

# Subject: CN=Actalis Authentication CA G1,O=Actalis S.p.A./03358520967,L=Milano,C=IT

# Not Valid Before: Tue Jun 23 14:06:00 2009

# Not Valid After: Sat Jun 25 14:06:00 2022

# Fingerprint (MD5): c2:2a:59:ab:cf:15:2f:4c:f7:e6:31:a3:16:ae:84:0c

# Fingerprint (SHA1): 91:58:c5:ef:98:73:01:a8:90:3c:fd:ab:03:d7:2d:a1:d8:89:09:c9

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Actalis Authentication CA G1"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\221\130\305\357\230\163\001\250\220\074\375\253\003\327\055\241
```

```
\330\211\011\311
```

```

END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\302\052\131\253\317\025\057\114\367\346\061\243\026\256\204\014
END
CKA_ISSUER MULTILINE_OCTAL
\060\152\061\013\060\011\006\003\125\004\006\023\002\111\124\061
\017\060\015\006\003\125\004\007\014\006\115\151\154\141\156\157
\061\043\060\041\006\003\125\004\012\014\032\101\143\164\141\154
\151\163\040\123\056\160\056\101\056\057\060\063\063\065\070\065
\062\060\071\066\067\061\045\060\043\006\003\125\004\003\014\034
\101\143\164\141\154\151\163\040\101\165\164\150\145\156\164\151
\143\141\164\151\157\156\040\103\101\040\107\061
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\001\001
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "A-Trust-Qual-03"
# Issuer: CN=A-Trust-Qual-03,OU=A-Trust-Qual-03,O=A-Trust Ges. f. Sicherheitssysteme im elektr. Datenverkehr
GmbH,C=AT
# Serial Number: 255636 (0x3e694)
# Subject: CN=A-Trust-Qual-03,OU=A-Trust-Qual-03,O=A-Trust Ges. f. Sicherheitssysteme
im elektr. Datenverkehr GmbH,C=AT
# Not Valid Before: Thu Apr 24 22:00:00 2008
# Not Valid After: Tue Apr 24 22:00:00 2018
# Fingerprint (MD5): d8:7e:32:ef:69:f8:bf:72:03:1d:40:82:e8:a7:75:af
# Fingerprint (SHA1): 42:ef:dd:e6:bf:f3:5e:d0:ba:e6:ac:dd:20:4c:50:ae:86:c4:f4:fa
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "A-Trust-Qual-03"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\213\061\013\060\011\006\003\125\004\006\023\002\101\124
\061\110\060\106\006\003\125\004\012\014\077\101\055\124\162\165
\163\164\040\107\145\163\056\040\146\056\040\123\151\143\150\145
\162\150\145\151\164\163\163\171\163\164\145\155\145\040\151\155
\040\145\154\145\153\164\162\056\040\104\141\164\145\156\166\145
\162\153\145\150\162\040\107\155\142\110\061\030\060\026\006\003
\125\004\013\014\017\101\055\124\162\165\163\164\055\121\165\141
\154\055\060\063\061\030\060\026\006\003\125\004\003\014\017\101

```

```
\055\124\162\165\163\164\055\121\165\141\154\055\060\063
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\213\061\013\060\011\006\003\125\004\006\023\002\101\124
\061\110\060\106\006\003\125\004\012\014\077\101\055\124\162\165
\163\164\040\107\145\163\056\040\146\056\040\123\151\143\150\145
\162\150\145\151\164\163\163\171\163\164\145\155\145\040\151\155
\040\145\154\145\153\164\162\056\040\104\141\164\145\156\166\145
\162\153\145\150\162\040\107\155\142\110\061\030\060\026\006\003
\125\004\013\014\017\101\055\124\162\165\163\164\055\121\165\141
\154\055\060\063\061\030\060\026\006\003\125\004\003\014\017\101
\055\124\162\165\163\164\055\121\165\141\154\055\060\063
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\003\003\346\224
END
CKA_VALUE MULTILINE_OCTAL
\060\202\003\313\060\202\002\263\240\003\002\001\002\002\003\003
\346\224\060\015\006\011\052\206\110\206\367\015\001\001\005\005
\000\060\201\213\061\013\060\011\006\003\125\004\006\023\002\101
\124\061\110\060\106\006\003\125\004\012\014\077\101\055\124\162
\165\163\164\040\107\145\163\056\040\146\056\040\123\151\143\150
\145\162\150\145\151\164\163\163\171\163\164\145\155\145\040\151
\155\040\145\154\145\153\164\162\056\040\104\141\164\145\156\166
\145\162\153\145\150\162\040\107\155\142\110\061\030\060\026\006
\003\125\004\013\014\017\101\055\124\162\165\163\164\055\121\165
\141\154\055\060\063\061\030\060\026\006\003\125\004\003\014\017
\101\055\124\162\165\163\164\055\121\165\141\154\055\060\063\060
\036\027\015\060\070\060\064\062\064\062\062\060\060\060\060\132
\027\015\061\070\060\064\062\064\062\062\060\060\060\060\132\060
\201\213\061\013\060\011\006\003\125\004\006\023\002\101\124\061
\110\060\106\006\003\125\004\012\014\077\101\055\124\162\165\163
\164\040\107\145\163\056\040\146\056\040\123\151\143\150\145\162
\150\145\151\164\163\163\171\163\164\145\155\145\040\151\155\040
\145\154\145\153\164\162\056\040\104\141\164\145\156\166\145\162
\153\145\150\162\040\107\155\142\110\061\030\060\026\006\003\125
\004\013\014\017\101\055\124\162\165\163\164\055\121\165\141\154
\055\060\063\061\030\060\026\006\003\125\004\003\014\017\101\055
\124\162\165\163\164\055\121\165\141\154\055\060\063\060\202\001
\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000
\003\202\001\017\000\060\202\001\012\002\202\001\001\000\263\236
\044\210\034\322\317\100\003\110\152\252\245\240\053\275\226\365
\174\012\237\237\253\120\220\333\101\316\126\200\171\052\300\375
\223\123\172\234\133\363\131\141\044\210\143\243\325\030\356\233
\204\164\204\234\354\214\075\332\301\206\172\157\066\056\046\353
\176\075\311\076\255\347\256\113\164\167\050\053\044\040\377\052
```

\056\302\225\144\020\366\176\173\303\267\332\021\175\236\253\355  
\057\214\031\242\034\235\214\314\063\160\165\011\007\376\136\373  
\100\244\045\214\057\375\265\121\147\072\250\053\114\237\326\150  
\235\140\233\244\305\143\260\356\160\315\050\077\112\164\352\131  
\371\165\305\000\006\156\037\260\143\301\052\252\023\135\374\313  
\322\145\033\071\061\042\132\302\171\042\135\031\361\113\302\276  
\316\034\210\001\164\361\046\101\167\062\071\306\214\120\150\317  
\123\205\103\212\017\240\217\356\216\013\222\243\000\100\276\300  
\242\131\136\054\241\104\270\376\037\042\323\014\272\320\350\357  
\051\344\162\067\112\213\370\026\354\042\062\007\052\043\054\363  
\243\327\315\312\251\247\117\162\277\274\021\216\250\033\002\003  
\001\000\001\243\066\060\064\060\017\006\003\125\035\023\001\001  
\377\004\005\060\003\001\001\377\060\021\006\003\125\035\016\004  
\012\004\010\106\006\337\067\362\302\067\020\060\016\006\003\125  
\035\017\001\001\377\004\004\003\002\001\006\060\015\006\011\052  
\206\110\206\367\015\001\001\005\005\000\003\202\001\001\000\161  
\010\324\046\104\276\200\342\153\102\265\052\120\375\135\350\214  
\140\363\234\266\222\201\162\070\262\157\251\076\201\362\303\064  
\044\123\241\121\122\310\245\211\323\274\334\333\022\271\333\251  
\260\130\357\300\010\146\062\142\343\341\363\243\130\243\167\156  
\356\344\241\273\127\021\150\167\063\010\364\315\131\270\352\135  
\033\011\306\254\314\215\013\272\315\337\326\232\276\253\166\000  
\255\175\026\113\144\134\337\230\076\153\155\136\054\174\071\025  
\131\102\067\040\074\237\303\334\177\365\123\066\267\342\307\244  
\042\214\172\276\161\275\115\263\150\310\270\251\211\377\161\060  
\213\317\221\155\362\205\056\245\112\042\176\162\336\324\256\261  
\355\014\357\374\105\175\055\334\044\255\355\171\007\345\255\117  
\262\351\122\164\111\270\214\122\372\275\022\344\031\303\374\121  
\215\026\343\153\150\156\071\232\337\051\071\245\273\261\241\027  
\301\027\343\165\152\374\175\261\162\074\337\301\352\345\243\034  
\324\235\131\033\032\164\037\151\052\203\124\044\030\323\356\345  
\340\203\127\276\033\342\320\037\255\154\065\276\215\272\137

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "A-Trust-Qual-03"

# Issuer:

CN=A-Trust-Qual-03,OU=A-Trust-Qual-03,O=A-Trust Ges. f. Sicherheitssysteme im elektr. Datenverkehr GmbH,C=AT

# Serial Number: 255636 (0x3e694)

# Subject: CN=A-Trust-Qual-03,OU=A-Trust-Qual-03,O=A-Trust Ges. f. Sicherheitssysteme im elektr. Datenverkehr GmbH,C=AT

# Not Valid Before: Thu Apr 24 22:00:00 2008

# Not Valid After: Tue Apr 24 22:00:00 2018



```

# Fingerprint (MD5): d8:7e:32:ef:69:f8:bf:72:03:1d:40:82:e8:a7:75:af
# Fingerprint (SHA1): 42:ef:dd:e6:bf:f3:5e:d0:ba:e6:ac:dd:20:4c:50:ae:86:c4:f4:fa
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "A-Trust-Qual-03"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\102\357\335\346\277\363\136\320\272\346\254\335\040\114\120\256
\206\304\364\372
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\330\176\062\357\151\370\277\162\003\035\100\202\350\247\165\257
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\213\061\013\060\011\006\003\125\004\006\023\002\101\124
\061\110\060\106\006\003\125\004\012\014\077\101\055\124\162\165
\163\164\040\107\145\163\056\040\146\056\040\123\151\143\150\145
\162\150\145\151\164\163\163\171\163\164\145\155\145\040\151\155
\040\145\154\145\153\164\162\056\040\104\141\164\145\156\166\145
\162\153\145\150\162\040\107\155\142\110\061\030\060\026\006\003
\125\004\013\014\017\101\055\124\162\165\163\164\055\121\165\141
\154\055\060\063\061\030\060\026\006\003\125\004\003\014\017\101
\055\124\162\165\163\164\055\121\165\141\154\055\060\063
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\003\003\346\224
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "AddTrust External CA Root"
# Issuer: CN=AddTrust External CA Root,OU=AddTrust External TTP Network,O=AddTrust AB,C=SE
# Serial Number: 1 (0x1)
# Subject: CN=AddTrust
External CA Root,OU=AddTrust External TTP Network,O=AddTrust AB,C=SE
# Not Valid Before: Tue May 30 10:48:38 2000
# Not Valid After: Sat May 30 10:48:38 2020
# Fingerprint (MD5): 1d:35:54:04:85:78:b0:3f:42:42:4d:bf:20:73:0a:3f
# Fingerprint (SHA1): 02:fa:f3:e2:91:43:54:68:60:78:57:69:4d:f5:e4:5b:68:85:18:68
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE

```

```
CKA_LABEL UTF8 "AddTrust External CA Root"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\157\061\013\060\011\006\003\125\004\006\023\002\123\105\061
\024\060\022\006\003\125\004\012\023\013\101\144\144\124\162\165
\163\164\040\101\102\061\046\060\044\006\003\125\004\013\023\035
\101\144\144\124\162\165\163\164\040\105\170\164\145\162\156\141
\154\040\124\124\120\040\116\145\164\167\157\162\153\061\042\060
\040\006\003\125\004\003\023\031\101\144\144\124\162\165\163\164
\040\105\170\164\145\162\156\141\154\040\103\101\040\122\157\157
\164
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\157\061\013\060\011\006\003\125\004\006\023\002\123\105\061
\024\060\022\006\003\125\004\012\023\013\101\144\144\124\162\165
\163\164\040\101\102\061\046\060\044\006\003\125\004\013\023\035
\101\144\144\124\162\165\163\164\040\105\170\164\145\162\156\141
\154\040\124\124\120\040\116\145\164\167\157\162\153\061\042\060
\040\006\003\125\004\003\023\031\101\144\144\124\162\165\163\164
\040\105\170\164\145\162\156\141\154\040\103\101\040\122\157\157
\164
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\001
END
CKA_VALUE MULTILINE_OCTAL
\060\202\004\066\060\202\003\036\240\003\002\001\002\002\001\001
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060
\157\061\013\060\011\006\003\125\004\006\023\002\123\105\061\024
\060\022\006\003\125\004\012\023\013\101\144\144\124\162\165\163
\164\040\101\102\061\046\060\044\006\003\125\004\013\023\035\101
\144\144\124\162\165\163\164\040\105\170\164\145\162\156\141\154
\040\124\124\120\040\116\145\164\167\157\162\153\061\042\060\040
\006\003\125\004\003\023\031\101\144\144\124\162\165\163\164\040
\105\170\164\145\162\156\141\154\040\103\101\040\122\157\157\164
\060\036\027\015\060\060\060\065\063\060\061\060\064\070\063\070
\132\027\015\062\060\060\065\063\060\061\060\064\070\063\070\132
\060\157\061\013\060\011\006\003\125\004\006\023\002\123\105\061
\024\060\022\006\003\125\004\012\023\013\101\144\144\124\162\165
\163\164\040\101\102\061\046\060\044\006\003\125\004\013\023\035
\101\144\144\124\162\165\163\164\040\105\170\164\145\162\156\141
\154\040\124\124\120\040\116\145\164\167\157\162\153\061\042\060
\040\006\003\125\004\003\023\031\101\144\144\124\162\165\163\164
\040\105\170\164\145\162\156\141\154\040\103\101\040\122\157\157
\164\060\202\001\042\060\015\006\011\052\206\110\206\367\015\001
\001\001\005\000\003\202\001\017\000\060\202\001\012\002\202\001
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\001\000\267\367\032\063\346\362\000\004\055\071\340\116\133\355  
\037\274\154\017\315\265\372\043\266\316\336\233\021\063\227\244  
\051\114\175\223\237\275\112\274\223\355\003\032\343\217\317\345  
\155\120\132\326\227\051\224\132\200\260\111\172\333\056\225\375  
\270\312\277\067\070\055\036\076\221\101\255\160\126\307\360\117  
\077\350\062\236\164\312\310\220\124\351\306\137\017\170\235\232  
\100\074\016\254\141\252\136\024\217\236\207\241\152\120\334\327  
\232\116\257\005\263\246\161\224\234\161\263\120\140\012\307\023  
\235\070\007\206\002\250\351\250\151\046\030\220\253\114\260\117  
\043\253\072\117\204\330\337\316\237\341\151\157\273\327\102\327  
\153\104\344\307\255\356\155\101\137\162\132\161\010\067\263\171  
\145\244\131\240\224\067\367\000\057\015\302\222\162\332\320\070  
\162\333\024\250\105\304\135\052\175\267\264\326\304\356\254\315  
\023\104\267\311\053\335\103\000\045\372\141\271\151\152\130\043  
\021\267\247\063\217\126\165\131\365\315\051\327\106\267\012\053  
\145\266\323\102\157\025\262\270\173\373\357\351\135\123\325\064  
\132\047\002\003\001\000\001\243\201\334\060\201\331\060\035\006  
\003\125\035\016\004\026\004\024\255\275\230\172\064\264\046\367  
\372\304\046\124\357\003\275\340\044\313\124\032\060\013\006\003  
\125\035\017\004\004\003\002\001\006\060\017\006\003\125\035\023  
\001\001\377\004\005\060\003\001\001\377\060\201\231\006\003\125  
\035\043\004\201\221\060\201\216\200\024\255\275\230\172\064\264  
\046\367\372\304\046\124\357\003\275\340\044\313\124\032\241\163  
\244\161\060\157\061\013\060\011\006\003\125\004\006\023\002\123  
\105\061\024\060\022\006\003\125\004\012\023\013\101\144\144\124  
\162\165\163\164\040\101\102\061\046\060\044\006\003\125\004\013  
\023\035\101\144\144\124\162\165\163\164\040\105\170\164\145\162  
\156\141\154\040\124\124\120\040\116\145\164\167\157\162\153\061  
\042\060\040\006\003\125\004\003\023\031\101\144\144\124\162\165  
\163\164\040\105\170\164\145\162\156\141\154\040\103\101\040\122  
\157\157\164\202\001\001\060\015\006\011\052\206\110\206\367\015  
\001\001\005\005\000\003\202\001\001\000\260\233\340\205\045\302  
\326\043\342\017\226\006\222\235\101\230\234\331\204\171\201\331  
\036\133\024\007\043\066\145\217\260\330\167\273\254\101\154\107  
\140\203\121\260\371\062\075\347\374\366\046\023\307\200\026\245  
\277\132\374\207\317\170\171\211\041\232\342\114\007\012\206\065  
\274\362\336\121\304\322\226\267\334\176\116\356\160\375\034\071  
\353\014\002\121\024\055\216\275\026\340\301\337\106\165\347\044  
\255\354\364\102\264\205\223\160\020\147\272\235\006\065\112\030  
\323\053\172\314\121\102\241\172\143\321\346\273\241\305\053\302  
\066\276\023\015\346\275\143\176\171\173\247\011\015\100\253\152  
\335\217\212\303\366\366\214\032\102\005\121\324\105\365\237\247  
\142\041\150\025\040\103\074\231\347\174\275\044\330\251\221\027  
\163\210\077\126\033\061\070\030\264\161\017\232\315\310\016\236  
\216\056\033\341\214\230\203\313\037\061\361\104\114\306\004\163  
\111\166\140\017\307\370\275\027\200\153\056\351\314\114\016\132  
\232\171\017\040\012\056\325\236\143\046\036\125\222\224\330\202  
\027\132\173\320\274\307\217\116\206\004

```

END
CKA_NSS_MOZILLA_CA_POLICY
CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Trust for "AddTrust External CA Root"
# Issuer: CN=AddTrust External CA Root,OU=AddTrust External TTP Network,O=AddTrust AB,C=SE
# Serial Number: 1 (0x1)
# Subject: CN=AddTrust External CA Root,OU=AddTrust External TTP Network,O=AddTrust AB,C=SE
# Not Valid Before: Tue May 30 10:48:38 2000
# Not Valid After: Sat May 30 10:48:38 2020
# Fingerprint (MD5): 1d:35:54:04:85:78:b0:3f:42:42:4d:bf:20:73:0a:3f
# Fingerprint (SHA1): 02:fa:f3:e2:91:43:54:68:60:78:57:69:4d:f5:e4:5b:68:85:18:68
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "AddTrust External CA Root"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\002\372\363\342\221\103\124\150\140\170\127\151\115\365\344\133
\150\205\030\150
END
CKA_CERT_MD5_HASH
MULTILINE_OCTAL
\035\065\124\004\205\170\260\077\102\102\115\277\040\163\012\077
END
CKA_ISSUER MULTILINE_OCTAL
\060\157\061\013\060\011\006\003\125\004\006\023\002\123\105\061
\024\060\022\006\003\125\004\012\023\013\101\144\144\124\162\165
\163\164\040\101\102\061\046\060\044\006\003\125\004\013\023\035
\101\144\144\124\162\165\163\164\040\105\170\164\145\162\156\141
\154\040\124\124\120\040\116\145\164\167\157\162\153\061\042\060
\040\006\003\125\004\003\023\031\101\144\144\124\162\165\163\164
\040\105\170\164\145\162\156\141\154\040\103\101\040\122\157\157
\164
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\001
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "ECRaizEstado"

```

```
# Issuer: CN=ECRaizEstado,O=SCEE,C=PT
# Serial Number:42:ea:5b:0a:51:11:26:7c:d8:27:74:b7:df:7f:71
#
Subject: CN=ECRaizEstado,O=SCEE,C=PT
# Not Valid Before: Fri Jun 23 13:41:27 2006
# Not Valid After: Sun Jun 23 13:41:27 2030
# Fingerprint (MD5): c2:db:ab:8e:96:52:c5:ee:ae:f2:55:00:89:6d:55:95
# Fingerprint (SHA1): 39:13:85:3e:45:c4:39:a2:da:71:8c:df:b6:f3:e0:33:e0:4f:ee:71
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "ECRaizEstado"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\063\061\013\060\011\006\003\125\004\006\023\002\120\124\061
\015\060\013\006\003\125\004\012\014\004\123\103\105\105\061\025
\060\023\006\003\125\004\003\014\014\105\103\122\141\151\172\105
\163\164\141\144\157
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
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\015\060\013\006\003\125\004\012\014\004\123\103\105\105\061\025
\060\023\006\003\125\004\003\014\014\105\103\122\141\151\172\105
\163\164\141\144\157
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\017\102\352\133\012\121\021\046\174\330\047\164\267\337\177
\161
END
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\060\202\005\156\060\202\003\126\240\003\002\001\002\002\017\102
\352\133\012\121\021\046\174\330\047\164\267\337\177\161\060\015
\006\011\052\206\110\206\367\015\001\001\005\005\000\060\063\061
\013\060\011\006\003\125\004\006\023\002\120\124\061\015\060\013
\006\003\125\004\012\014\004\123\103\105\105\061\025\060\023\006
\003\125\004\003\014\014\105\103\122\141\151\172\105\163\164\141
\144\157\060\036\027\015\060\066\060\066\062\063\061\063\064\061
\062\067\132\027\015\063\060\060\066\062\063\061\063\064\061\062
\067\132\060\063\061\013\060\011\006\003\125\004\006\023\002\120
\124\061\015\060\013\006\003\125\004\012\014\004\123\103\105\105
\061\025\060\023\006\003\125\004\003\014\014\105\103\122\141\151
\172\105\163\164\141\144\157\060\202\002\042\060\015\006\011\052
\206\110\206\367\015\001\001\001\005\000\003\202\002\017\000\060
\202\002\012\002\202\002\001\000\333\357\242\103\156\310\251\375
\156\327\337\254\242\222\204\241\310\131\240\014\232\123\376\357
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\256\314\031\015\162\212\244\302\063\043\357\347\006\162\352\155  
\113\072\101\122\017\311\110\016\055\347\272\144\356\242\072\114  
\143\134\146\051\213\337\251\210\305\275\350\361\367\216\113\374  
\001\074\104\022\071\052\160\242\300\333\305\242\337\137\307\113  
\306\250\334\075\141\174\112\130\301\104\062\223\336\160\231\241  
\043\046\126\077\243\341\352\137\060\106\330\170\365\060\243\226  
\011\211\260\075\361\206\223\005\266\022\152\030\215\360\245\144  
\073\053\207\144\136\075\027\216\013\156\346\230\314\227\070\070  
\040\214\160\132\151\053\275\145\215\315\067\131\134\154\321\162  
\164\131\006\116\310\267\001\327\167\277\360\110\206\250\263\032  
\135\101\324\067\027\021\020\137\112\156\215\165\305\003\100\175  
\041\256\000\360\333\374\237\154\072\146\244\337\367\312\337\200  
\146\132\331\330\177\024\242\046\031\364\256\013\041\340\312\076  
\005\335\026\330\176\131\332\241\260\151\303\235\064\023\372\145  
\111\071\207\356\166\057\215\275\074\047\031\003\116\255\016\013  
\053\054\306\056\161\023\065\051\127\351\160\334\033\121\352\315  
\227\361\225\215\262\206\372\046\006\057\200\032\225\361\230\073  
\356\366\345\206\245\316\033\001\345\364\351\063\312\017\125\104  
\137\150\212\054\307\133\146\050\335\226\113\203\235\136\035\176  
\030\325\376\262\140\373\232\121\150\303\226\214\037\150\113\120  
\122\013\066\346\061\047\344\327\051\014\033\332\033\057\341\004  
\123\270\324\171\111\260\073\201\136\010\210\042\167\342\051\300  
\256\162\252\253\264\162\122\275\154\273\365\272\170\331\234\270  
\040\157\060\215\112\235\062\371\364\001\346\142\171\230\102\100  
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\216\334\063\216\121\156\021\342\101\375\314\267\215\052\137\076  
\222\345\362\261\340\244\043\342\242\267\306\215\030\233\051\112  
\321\106\177\364\144\040\030\335\002\003\001\000\001\243\177\060  
\175\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001  
\001\377\060\016\006\003\125\035\017\001\001\377\004\004\003\002  
\001\006\060\035\006\003\125\035\016\004\026\004\024\161\177\065  
\336\365\167\161\155\035\022\234\341\220\244\272\360\251\203\217  
\200\060\073\006\003\125\035\040\004\064\060\062\060\060\006\004  
\125\035\040\000\060\050\060\046\006\010\053\006\001\005\005\007  
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\143\145\145\056\147\157\166\056\160\164\057\144\160\143\060\015  
\006\011\052\206\110\206\367\015\001\001\005\005\000\003\202\002  
\001\000\214\255\234\162\245\265\147\166\147\070\207\351\072\214  
\376\235\131\065\276\220\361\003\000\240\130\330\230\321\277\374  
\374\363\120\334\264\145\325\332\272\360\214\056\174\015\346\011  
\221\137\115\243\366\135\170\234\130\135\152\160\224\243\257\333  
\057\000\311\003\100\153\337\121\003\026\031\214\053\274\231\066  
\366\300\255\222\030\023\214\247\355\035\322\337\003\220\005\354  
\260\223\230\233\367\115\132\023\370\347\233\367\066\166\336\174  
\046\370\021\070\117\111\116\263\163\037\137\047\133\341\236\062

\036\366\300\230\033\331\040\054\134\226\215\206\311\013\105\327  
\222\255\212\275\352\127\242\243\126\266\040\074\354\262\307\071  
\176\260\200\376\275\121\053\052\264\303\162\151\303\371\107\056  
\156\377\234\207\355\334\165\313\020\210\340\264\316\056\016\123  
\035\013\350\156\036\102\114\320\276\071\170\165\311\024\336\047  
\221\163\252\354\152\200\360\360\027\226\142\117\276\004\313\342  
\247\345\135\017\223\105\313\131\110\046\023\336\335\261\365\012  
\332\026\261\250\035\217\176\130\033\267\325\011\336\210\153\316  
\204\076\250\276\122\142\312\322\241\241\307\313\074\026\340\166  
\126\060\077\346\017\153\006\167\376\144\235\132\152\163\174\356  
\336\041\351\232\111\227\067\266\204\177\242\221\076\105\373\327  
\132\006\305\207\065\334\272\110\114\206\001\010\107\066\266\070  
\120\225\021\231\163\321\067\111\012\372\102\117\057\020\124\323  
\101\220\372\310\334\273\021\334\015\314\175\174\233\334\016\221  
\161\206\115\270\362\025\232\053\070\027\021\241\362\236\250\154  
\234\343\316\256\342\346\113\213\362\212\006\073\007\167\002\021  
\356\203\352\235\146\206\312\360\142\251\325\127\203\244\025\361  
\105\024\376\032\165\177\245\017\334\122\164\131\165\012\370\373  
\125\101\251\134\215\061\104\335\315\224\116\063\321\033\101\252  
\333\327\241\074\360\305\110\155\105\101\065\265\171\203\346\371  
\115\361\126\070\327\277\100\042\373\040\200\343\034\302\131\106  
\007\143\002\141\000\073\233\120\273\103\303\260\351\012\232\270  
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\335\100\102\273\230\327\240\006\213\346\150\127\113\016\070\150  
\177\272

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

#

Trust for "ECRaizEstado"

# Issuer: CN=ECRaizEstado,O=SCEE,C=PT

# Serial Number:42:ea:5b:0a:51:11:26:7c:d8:27:74:b7:df:7f:71

# Subject: CN=ECRaizEstado,O=SCEE,C=PT

# Not Valid Before: Fri Jun 23 13:41:27 2006

# Not Valid After: Sun Jun 23 13:41:27 2030

# Fingerprint (MD5): c2:db:ab:8e:96:52:c5:ee:ae:f2:55:00:89:6d:55:95

# Fingerprint (SHA1): 39:13:85:3e:45:c4:39:a2:da:71:8c:df:b6:f3:e0:33:e0:4f:ee:71

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "ECRaizEstado"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\071\023\205\076\105\304\071\242\332\161\214\337\266\363\340\063

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\340\117\356\161
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\302\333\253\216\226\122\305\356\256\362\125\000\211\155\125\225
END
CKA_ISSUER MULTILINE_OCTAL
\060\063\061\013\060\011\006\003\125\004\006\023\002\120\124\061
\015\060\013\006\003\125\004\012\014\004\123\103\105\105\061\025
\060\023\006\003\125\004\003\014\014\105\103\122\141\151\172\105
\163\164\141\144\157
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
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\161
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "Configuration"
# Issuer: CN=Posta CA Root,CN=AIA,CN=Public Key
Services,CN=Services,CN=Configuration,DC=ca,DC=posta,DC=rs
# Serial Number:48:fc:7e:f5
# Subject: CN=Posta CA Root,CN=AIA,CN=Public Key
Services,CN=Services,CN=Configuration,DC=ca,DC=posta,DC=rs
# Not Valid Before: Mon Oct 20 12:22:08 2008
# Not Valid After: Fri Oct 20 12:52:08 2028
# Fingerprint (MD5): 18:02:b0:01:27:03:6a:19:1b:32:3b:83:de:9a:a9:85
# Fingerprint (SHA1): d6:bf:79:94:f4:2b:e5:fa:29:da:0b:d7:58:7b:59:1f:47:a4:4f:22
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE
CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Configuration"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\256\061\022\060\020\006\012\011\222\046\211\223\362\054
\144\001\031\026\002\162\163\061\025\060\023\006\012\011\222\046
\211\223\362\054\144\001\031\026\005\160\157\163\164\141\061\022
\060\020\006\012\011\222\046\211\223\362\054\144\001\031\026\002
\143\141\061\026\060\024\006\003\125\004\003\023\015\103\157\156
\146\151\147\165\162\141\164\151\157\156\061\021\060\017\006\003
\125\004\003\023\010\123\145\162\166\151\143\145\163\061\034\060
\032\006\003\125\004\003\023\023\120\165\142\154\151\143\040\113

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\145\171\040\123\145\162\166\151\143\145\163\061\014\060\012\006  
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END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

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\211\223\362\054\144\001\031\026\005\160\157\163\164\141\061\022  
\060\020\006\012\011\222\046\211\223\362\054\144\001\031\026\002  
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\145\171\040\123\145\162\166\151\143\145\163\061\014\060\012\006  
\003\125\004\003\023\003\101\111\101\061\026\060\024\006\003\125  
\004\003\023\015\120\157\163\164\141\040\103\101\040\122\157\157  
\164

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\004\110\374\176\365

END

CKA\_VALUE MULTILINE\_OCTAL

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\362\054\144\001\031\026\002\162\163\061\025\060\023\006\012\011  
\222\046\211\223\362\054\144\001\031\026\005\160\157\163\164\141  
\061\022\060\020\006\012\011\222\046\211\223\362\054\144\001\031  
\026\002\143\141\061\026\060\024\006\003\125\004\003\023\015\103  
\157\156\146\151\147\165\162\141\164\151\157\156\061\021\060\017  
\006\003\125\004\003\023\010\123\145\162\166\151\143\145\163\061  
\034\060\032\006\003\125\004\003\023\023\120\165\142\154\151\143  
\040\113\145\171\040\123\145\162\166\151\143\145\163\061\014\060  
\012\006\003\125\004\003\023\003\101\111\101\061\026\060\024\006  
\003\125\004\003\023\015\120\157\163\164\141\040\103\101\040\122  
\157\157\164\060\036\027\015\060\070\061\060\062\060\061\062\062  
\062\060\070\132\027\015\062\070\061\060\062\060\061\062\065\062  
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\223\362\054\144\001\031\026\002\162\163\061\025\060\023\006\012  
\011\222\046\211\223\362\054\144\001\031\026\005\160\157\163\164  
\141\061\022\060\020\006\012\011\222\046\211\223\362\054\144\001  
\031\026\002\143\141\061\026\060\024\006\003\125\004\003\023\015  
\103\157\156\146\151\147\165\162\141\164\151\157\156\061\021\060  
\017\006\003\125\004\003\023\010\123\145\162\166\151\143\145\163  
\061\034\060\032\006\003\125\004\003\023\023\120\165\142\154\151

\143\040\113\145\171\040\123\145\162\166\151\143\145\163\061\014  
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\153\164\162\157\156\163\153\151\040\163\145\162\164\151\146\151  
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\144\001\031\026\002\162\163\061\025\060\023\006\012\011\222\046  
\211\223\362\054\144\001\031\026\005\160\157\163\164\141\061\022  
\060\020\006\012\011\222\046\211\223\362\054\144\001\031\026\002  
\143\141\061\026\060\024\006\003\125\004\003\023\015\103\157\156  
\146\151\147\165\162\141\164\151\157\156\061\021\060\017\006\003  
\125\004\003\023\010\123\145\162\166\151\143\145\163\061\034\060  
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\145\171\040\123\145\162\166\151\143\145\163\061\014\060\012\006

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\060\201\340\240\201\335\240\201\332\206\201\243\154\144\141\160  
\072\057\057\154\144\141\160\056\143\141\056\160\157\163\164\141  
\056\162\163\057\143\156\075\120\157\163\164\141\045\062\060\103  
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\143\156\075\120\165\142\154\151\143\045\062\060\113\145\171\045  
\062\060\123\145\162\166\151\143\145\163\054\143\156\075\123\145  
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\165\162\141\164\151\157\156\054\144\143\075\143\141\054\144\143  
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\060\037\006\003\125\035\043\004\030\060\026\200\024\362\313\215  
\342\065\357\020\103\304\332\173\312\372\353\211\003\241\042\257  
\270\060\035\006\003\125\035\016\004\026\004\024\362\313\215\342  
\065\357\020\103\304\332\173\312\372\353\211\003\241\042\257\270  
\060\035\006\011\052\206\110\206\366\175\007\101\000\004\020\060  
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\001\001\000\160\106\241\310\344\027\005\146\017\235\342\103\061  
\110\035\222\220\031\304\205\001\205\026\156\370\222\316\173\256  
\122\026\304\227\215\012\050\175\325\313\154\343\325\345\016\062  
\117\310\150\055\064\010\075\163\250\223\102\051\063\106\014\104  
\147\361\320\232\234\151\001\345\221\361\015\311\151\074\063\113  
\116\031\223\143\063\005\051\041\241\330\377\076\124\253\236\366  
\241\172\002\327\334\377\245\076\124\170\371\323\301\312\022\225  
\371\211\236\024\342\362\241\104\262\313\351\055\165\065\314\226  
\125\273\070\013\210\046\332\326\254\357\323\122\242\013\113\072  
\123\332\113\042\123\314\312\052\044\232\142\252\304\062\232\176  
\334\314\301\262\154\315\217\331\264\300\317\365\002\300\214\053  
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\074\106\004\226\336\311\232\073\277\255\170\154\035\111\111\264  
\151\271\160\017\005\222\126\266\375\257\256\370\040\055\107\043  
\317\266\034\315\304\233\200\116\371\277\061\300\124\276\273\061  
\177\363\076

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "Configuration"

# Issuer: CN=Posta CA Root,CN=AIA,CN=Public Key

Services,CN=Services,CN=Configuration,DC=ca,DC=posta,DC=rs

# Serial Number:48:fc:7e:f5

# Subject: CN=Posta CA Root,CN=AIA,CN=Public Key

Services,CN=Services,CN=Configuration,DC=ca,DC=posta,DC=rs

# Not Valid Before: Mon Oct 20 12:22:08 2008

# Not Valid After: Fri Oct 20 12:52:08 2028

# Fingerprint (MD5): 18:02:b0:01:27:03:6a:19:1b:32:3b:83:de:9a:a9:85

# Fingerprint (SHA1): d6:bf:79:94:f4:2b:e5:fa:29:da:0b:d7:58:7b:59:1f:47:a4:4f:22

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL

UTF8 "Configuration"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\326\277\171\224\364\053\345\372\051\332\013\327\130\173\131\037  
\107\244\117\042

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\030\002\260\001\047\003\152\031\033\062\073\203\336\232\251\205  
END

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\256\061\022\060\020\006\012\011\222\046\211\223\362\054  
\144\001\031\026\002\162\163\061\025\060\023\006\012\011\222\046  
\211\223\362\054\144\001\031\026\005\160\157\163\164\141\061\022  
\060\020\006\012\011\222\046\211\223\362\054\144\001\031\026\002  
\143\141\061\026\060\024\006\003\125\004\003\023\015\103\157\156  
\146\151\147\165\162\141\164\151\157\156\061\021\060\017\006\003  
\125\004\003\023\010\123\145\162\166\151\143\145\163\061\034\060  
\032\006\003\125\004\003\023\023\120\165\142\154\151\143\040\113  
\145\171\040\123\145\162\166\151\143\145\163\061\014\060\012\006  
\003\125\004\003\023\003\101\111\101\061\026\060\024\006\003\125  
\004\003\023\015\120\157\163\164\141\040\103\101\040\122\157\157  
\164

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\004\110\374\176\365

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

```
# Microsoft Code Signing Only Certificate
# Certificate "StartCom Certification Authority"
# Issuer: CN=StartCom Certification Authority,OU=Secure Digital Certificate Signing,O=StartCom Ltd.,C=IL
# Serial Number: 1 (0x1)
# Subject: CN=StartCom Certification Authority,OU=Secure Digital Certificate Signing,O=StartCom Ltd.,C=IL
# Not Valid Before: Sun Sep 17 19:46:36 2006
# Not Valid After: Wed Sep 17 19:46:36 2036
# Fingerprint (MD5): 22:4d:8f:8a:fc:f7:35:c2:bb:57:34:90:7b:8b:22:16
# Fingerprint (SHA1): 3e:2b:f7:f2:03:1b:96:f3:8c:e6:c4:d8:a8:5d:3e:2d:58:47:6a:0f
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL
UTF8 "StartCom Certification Authority"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\175\061\013\060\011\006\003\125\004\006\023\002\111\114\061
\026\060\024\006\003\125\004\012\023\015\123\164\141\162\164\103
\157\155\040\114\164\144\056\061\053\060\051\006\003\125\004\013
\023\042\123\145\143\165\162\145\040\104\151\147\151\164\141\154
\040\103\145\162\164\151\146\151\143\141\164\145\040\123\151\147
\156\151\156\147\061\051\060\047\006\003\125\004\003\023\040\123
\164\141\162\164\103\157\155\040\103\145\162\164\151\146\151\143
\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\175\061\013\060\011\006\003\125\004\006\023\002\111\114\061
\026\060\024\006\003\125\004\012\023\015\123\164\141\162\164\103
\157\155\040\114\164\144\056\061\053\060\051\006\003\125\004\013
\023\042\123\145\143\165\162\145\040\104\151\147\151\164\141\154
\040\103\145\162\164\151\146\151\143\141\164\145\040\123\151\147
\156\151\156\147\061\051\060\047\006\003\125\004\003\023\040\123
\164\141\162\164\103\157\155\040\103\145\162\164\151\146\151\143
\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\001\001
END
CKA_VALUE MULTILINE_OCTAL
\060\202\007\311\060\202\005\261\240\003\002\001\002\002\001\001
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060
\175\061\013\060\011\006\003\125\004\006\023\002\111\114\061\026
\060\024\006\003\125\004\012\023\015\123\164\141\162\164\103\157
\155\040\114\164\144\056\061\053\060\051\006\003\125\004\013\023
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\151\156\147\061\051\060\047\006\003\125\004\003\023\040\123\164  
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\164\151\157\156\040\101\165\164\150\157\162\151\164\171\060\036  
\027\015\060\066\060\071\061\067\061\071\064\066\063\066\132\027  
\015\063\066\060\071\061\067\061\071\064\066\063\066\132\060\175  
\061\013\060\011\006\003\125\004\006\023\002\111\114\061\026\060  
\024\006\003\125\004\012\023\015\123\164\141\162\164\103\157\155  
\040\114\164\144\056\061\053\060\051\006\003\125\004\013\023\042  
\123\145\143\165\162\145\040\104\151\147\151\164\141\154\040\103  
\145\162\164\151\146\151\143\141\164\145\040\123\151\147\156\151  
\156\147\061\051\060\047\006\003\125\004\003\023\040\123\164\141  
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\151\157\156\040\101\165\164\150\157\162\151\164\171\060\202\002  
\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000  
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\326\301\066\040\042\044\136\316\351\167\362\103\012\242\006\144  
\244\314\216\066\370\070\346\043\360\156\155\261\074\335\162\243  
\205\034\241\323\075\264\063\053\323\057\257\376\352\260\101\131  
\147\266\304\006\175\012\236\164\205\326\171\114\200\067\172\337  
\071\005\122\131\367\364\033\106\103\244\322\205\205\322\303\161  
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\226\315\122\075\272\063\326\335\115\336\013\073\112\113\237\302  
\046\057\372\265\026\034\162\065\167\312\074\135\346\312\341\046  
\213\032\066\166\134\001\333\164\024\045\376\355\265\240\210\017  
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\146\014\032\110\327\156\102\343\077\336\041\076\173\341\015\160  
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\372\171\042\110\277\272\173\151\370\160\307\372\172\067\330\330  
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\206\367\015\001\001\005\005\000\003\202\002\001\000\026\154\231  
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\115\340\167\055\341\145\231\162\151\004\032\107\011\346\017\001
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\152\263\364\210\034\200\015\374\162\212\350\203\136
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "StartCom Certification Authority"

# Issuer: CN=StartCom Certification Authority,OU=Secure Digital Certificate Signing,O=StartCom Ltd.,C=IL

# Serial Number: 1 (0x1)

# Subject: CN=StartCom Certification Authority,OU=Secure Digital Certificate Signing,O=StartCom Ltd.,C=IL

# Not Valid Before: Sun Sep 17 19:46:36 2006

# Not Valid After: Wed Sep 17 19:46:36 2036

# Fingerprint (MD5): 22:4d:8f:8a:fc:f7:35:c2:bb:57:34:90:7b:8b:22:16

#

Fingerprint (SHA1): 3e:2b:f7:f2:03:1b:96:f3:8c:e6:c4:d8:a8:5d:3e:2d:58:47:6a:0f

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "StartCom Certification Authority"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\076\053\367\362\003\033\226\363\214\346\304\330\250\135\076\055
```

```
\130\107\152\017
```



```

END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\042\115\217\212\374\367\065\302\273\127\064\220\173\213\042\026
END
CKA_ISSUER MULTILINE_OCTAL
\060\175\061\013\060\011\006\003\125\004\006\023\002\111\114\061
\026\060\024\006\003\125\004\012\023\015\123\164\141\162\164\103
\157\155\040\114\164\144\056\061\053\060\051\006\003\125\004\013
\023\042\123\145\143\165\162\145\040\104\151\147\151\164\141\154
\040\103\145\162\164\151\146\151\143\141\164\145\040\123\151\147
\156\151\156\147\061\051\060\047\006\003\125\004\003\023\040\123
\164\141\162\164\103\157\155\040\103\145\162\164\151\146\151\143
\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\001\001
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "VeriSign Class 3 Public Primary Certification Authority - G4"
# Issuer: CN=VeriSign Class 3 Public Primary Certification Authority - G4,OU=(c) 2007 VeriSign\, Inc. - For
authorized use only,OU=VeriSign Trust Network,O=VeriSign\, Inc.,C=US
# Serial Number:2f:80:fe:23:8c:0e:22:0f:48:67:12:28:91:87:ac:b3
# Subject: CN=VeriSign Class 3 Public Primary Certification Authority - G4,OU=(c) 2007 VeriSign\, Inc. - For
authorized use only,OU=VeriSign Trust Network,O=VeriSign\, Inc.,C=US
# Not Valid Before: Mon Nov 05 00:00:00 2007
# Not Valid After: Mon Jan 18 23:59:59 2038
# Fingerprint (MD5): 3a:52:e1:e7:fd:6f:3a:e3:6f:f3:6f:99:1b:f9:22:41
#
Fingerprint (SHA1): 22:d5:d8:df:8f:02:31:d1:8d:f7:9d:b7:cf:8a:2d:64:c9:3f:6c:3a
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "VeriSign Class 3 Public Primary Certification Authority - G4"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\312\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\027\060\025\006\003\125\004\012\023\016\126\145\162\151\123
\151\147\156\054\040\111\156\143\056\061\037\060\035\006\003\125
\004\013\023\026\126\145\162\151\123\151\147\156\040\124\162\165
\163\164\040\116\145\164\167\157\162\153\061\072\060\070\006\003
\125\004\013\023\061\050\143\051\040\062\060\060\067\040\126\145

```

\162\151\123\151\147\156\054\040\111\156\143\056\040\055\040\106  
\157\162\040\141\165\164\150\157\162\151\172\145\144\040\165\163  
\145\040\157\156\154\171\061\105\060\103\006\003\125\004\003\023  
\074\126\145\162\151\123\151\147\156\040\103\154\141\163\163\040  
\063\040\120\165\142\154\151\143\040\120\162\151\155\141\162\171  
\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101  
\165\164\150\157\162\151\164\171\040\055\040\107\064

END

CKA\_ID

UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\312\061\013\060\011\006\003\125\004\006\023\002\125\123  
\061\027\060\025\006\003\125\004\012\023\016\126\145\162\151\123  
\151\147\156\054\040\111\156\143\056\061\037\060\035\006\003\125  
\004\013\023\026\126\145\162\151\123\151\147\156\040\124\162\165  
\163\164\040\116\145\164\167\157\162\153\061\072\060\070\006\003  
\125\004\013\023\061\050\143\051\040\062\060\060\067\040\126\145  
\162\151\123\151\147\156\054\040\111\156\143\056\040\055\040\106  
\157\162\040\141\165\164\150\157\162\151\172\145\144\040\165\163  
\145\040\157\156\154\171\061\105\060\103\006\003\125\004\003\023  
\074\126\145\162\151\123\151\147\156\040\103\154\141\163\163\040  
\063\040\120\165\142\154\151\143\040\120\162\151\155\141\162\171  
\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101  
\165\164\150\157\162\151\164\171\040\055\040\107\064

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\020\057\200\376\043\214\016\042\017\110\147\022\050\221\207  
\254\263

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\204\060\202\003\012\240\003\002\001\002\002\020\057  
\200\376\043\214\016\042\017\110\147\022\050\221\207\254\263\060  
\012\006\010\052\206\110\316\075\004\003\003\060\201\312\061\013  
\060\011\006\003\125\004\006\023\002\125\123\061\027\060\025\006  
\003\125\004\012\023\016\126\145\162\151\123\151\147\156\054\040  
\111\156\143\056\061\037\060\035\006\003\125\004\013\023\026\126  
\145\162\151\123\151\147\156\040\124\162\165\163\164\040\116\145  
\164\167\157\162\153\061\072\060\070\006\003\125\004\013\023\061  
\050\143\051\040\062\060\060\067\040\126\145\162\151\123\151\147  
\156\054\040\111\156\143\056\040\055\040\106\157\162\040\141\165  
\164\150\157\162\151\172\145\144\040\165\163\145\040\157\156\154  
\171\061\105\060\103\006\003\125\004\003\023\074\126\145\162\151  
\123\151\147\156\040\103\154\141\163\163\040\063\040\120\165\142  
\154\151\143\040\120\162\151\155\141\162\171\040\103\145\162\164  
\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162  
\151\164\171\040\055\040\107\064\060\036\027\015\060\067\061\061  
\060\065\060\060\060\060\060\060\132\027\015\063\070\060\061\061

\070\062\063\065\071\065\071\132\060\201\312\061\013\060\011\006  
\003\125\004\006\023\002\125\123\061\027\060\025\006\003\125\004  
\012\023\016\126\145\162\151\123\151\147\156\054\040\111\156\143  
\056\061\037\060\035\006\003\125\004\013\023\026\126\145\162\151  
\123\151\147\156\040\124\162\165\163\164\040\116\145\164\167\157  
\162\153\061\072\060\070\006\003\125\004\013\023\061\050\143\051  
\040\062\060\060\067\040\126\145\162\151\123\151\147\156\054\040  
\111\156\143\056\040\055\040\106\157\162\040\141\165\164\150\157  
\162\151\172\145\144\040\165\163\145\040\157\156\154\171\061\105  
\060\103\006\003\125\004\003\023\074\126\145\162\151\123\151\147  
\156\040\103\154\141\163\163\040\063\040\120\165\142\154\151\143  
\040\120\162\151\155\141\162\171\040\103\145\162\164\151\146\151  
\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171  
\040\055\040\107\064\060\166\060\020\006\007\052\206\110\316\075  
\002\001\006\005\053\201\004\000\042\003\142\000\004\247\126\172  
\174\122\332\144\233\016\055\134\330\136\254\222\075\376\001\346  
\031\112\075\024\003\113\372\140\047\040\331\203\211\151\372\124  
\306\232\030\136\125\052\144\336\006\366\215\112\073\255\020\074  
\145\075\220\210\004\211\340\060\141\263\256\135\001\247\173\336  
\174\262\276\312\145\141\000\206\256\332\217\173\320\211\255\115  
\035\131\232\101\261\274\107\200\334\236\142\303\371\243\201\262  
\060\201\257\060\017\006\003\125\035\023\001\001\377\004\005\060  
\003\001\001\377\060\016\006\003\125\035\017\001\001\377\004\004  
\003\002\001\006\060\155\006\010\053\006\001\005\005\007\001\014  
\004\141\060\137\241\135\240\133\060\131\060\127\060\125\026\011  
\151\155\141\147\145\057\147\151\146\060\041\060\037\060\007\006  
\005\053\016\003\002\032\004\024\217\345\323\032\206\254\215\216  
\153\303\317\200\152\324\110\030\054\173\031\056\060\045\026\043  
\150\164\164\160\072\057\057\154\157\147\157\056\166\145\162\151  
\163\151\147\156\056\143\157\155\057\166\163\154\157\147\157\056  
\147\151\146\060\035\006\003\125\035\016\004\026\004\024\263\026  
\221\375\356\246\156\344\265\056\111\217\207\170\201\200\354\345  
\261\265\060\012\006\010\052\206\110\316\075\004\003\003\003\150  
\000\060\145\002\060\146\041\014\030\046\140\132\070\173\126\102  
\340\247\374\066\204\121\221\040\054\166\115\103\075\304\035\204  
\043\320\254\326\174\065\006\316\315\151\275\220\015\333\154\110  
\102\035\016\252\102\002\061\000\234\075\110\071\043\071\130\032  
\025\022\131\152\236\357\325\131\262\035\122\054\231\161\315\307  
\051\337\033\052\141\173\161\321\336\363\300\345\015\072\112\252  
\055\247\330\206\052\335\056\020

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRUST\_AFTER

CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

```
# Trust for "VeriSign Class 3 Public Primary Certification Authority - G4"
# Issuer: CN=VeriSign Class 3 Public Primary Certification Authority - G4,OU=(c) 2007 VeriSign\, Inc. - For
authorized use only,OU=VeriSign Trust Network,O=VeriSign\, Inc.,C=US
# Serial Number:2f:80:fe:23:8c:0e:22:0f:48:67:12:28:91:87:ac:b3
# Subject: CN=VeriSign Class 3 Public Primary Certification Authority - G4,OU=(c) 2007 VeriSign\, Inc. - For
authorized use only,OU=VeriSign Trust Network,O=VeriSign\, Inc.,C=US
# Not Valid Before: Mon Nov 05 00:00:00 2007
# Not Valid After: Mon Jan 18 23:59:59 2038
# Fingerprint (MD5): 3a:52:e1:e7:fd:6f:3a:e3:6f:f3:6f:99:1b:f9:22:41
# Fingerprint (SHA1): 22:d5:d8:df:8f:02:31:d1:8d:f7:9d:b7:cf:8a:2d:64:c9:3f:6c:3a
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "VeriSign
Class 3 Public Primary Certification Authority - G4"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\042\325\330\337\217\002\061\321\215\367\235\267\317\212\055\144
\311\077\154\072
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\072\122\341\347\375\157\072\343\157\363\157\231\033\371\042\101
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\312\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\027\060\025\006\003\125\004\012\023\016\126\145\162\151\123
\151\147\156\054\040\111\156\143\056\061\037\060\035\006\003\125
\004\013\023\026\126\145\162\151\123\151\147\156\040\124\162\165
\163\164\040\116\145\164\167\157\162\153\061\072\060\070\006\003
\125\004\013\023\061\050\143\051\040\062\060\060\067\040\126\145
\162\151\123\151\147\156\054\040\111\156\143\056\040\055\040\106
\157\162\040\141\165\164\150\157\162\151\172\145\144\040\165\163
\145\040\157\156\154\171\061\105\060\103\006\003\125\004\003\023
\074\126\145\162\151\123\151\147\156\040\103\154\141\163\163\040
\063\040\120\165\142\154\151\143\040\120\162\151\155\141\162\171
\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101
\165\164\150\157\162\151\164\171\040\055\040\107\064
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\057\200\376\043\214\016\042\017\110\147\022\050\221\207
\254\263
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```

# Microsoft Code Signing Only Certificate
# Certificate "thawte Primary Root CA - G2"
# Issuer: CN=thawte Primary Root CA - G2,OU=(c) 2007 thawte\, Inc. - For authorized use only,O=thawte\,
Inc.,C=US
# Serial Number:35:fc:26:5c:d9:84:4f:c9:3d:26:3d:57:9b:ae:d7:56
# Subject: CN=thawte Primary Root CA - G2,OU=(c) 2007 thawte\, Inc. - For authorized use only,O=thawte\,
Inc.,C=US
# Not Valid Before: Mon Nov 05 00:00:00 2007
# Not Valid After: Mon Jan 18 23:59:59 2038
# Fingerprint (MD5): 74:9d:ea:60:24:c4:fd:22:53:3e:cc:3a:72:d9:29:4f
#
Fingerprint (SHA1): aa:db:bc:22:23:8f:c4:01:a1:27:bb:38:dd:f4:1d:db:08:9e:f0:12
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "thawte Primary Root CA - G2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\204\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\025\060\023\006\003\125\004\012\023\014\164\150\141\167\164
\145\054\040\111\156\143\056\061\070\060\066\006\003\125\004\013
\023\057\050\143\051\040\062\060\060\067\040\164\150\141\167\164
\145\054\040\111\156\143\056\040\055\040\106\157\162\040\141\165
\164\150\157\162\151\172\145\144\040\165\163\145\040\157\156\154
\171\061\044\060\042\006\003\125\004\003\023\033\164\150\141\167
\164\145\040\120\162\151\155\141\162\171\040\122\157\157\164\040
\103\101\040\055\040\107\062
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\204\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\025\060\023\006\003\125\004\012\023\014\164\150\141\167\164
\145\054\040\111\156\143\056\061\070\060\066\006\003\125\004\013
\023\057\050\143\051\040\062\060\060\067\040\164\150\141\167\164
\145\054\040\111\156\143\056\040\055\040\106\157\162\040\141\165
\164\150\157\162\151\172\145\144\040\165\163\145\040\157\156\154
\171\061\044\060\042\006\003\125\004\003\023\033\164\150\141\167
\164\145\040\120\162\151\155\141\162\171\040\122\157\157\164\040
\103\101\040\055\040\107\062
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\065\374\046\134\331\204\117\311\075\046\075\127\233\256
\327\126
END
CKA_VALUE MULTILINE_OCTAL
\060\202\002\210\060\202\002\015\240\003\002\001\002\002\020\065

```

\374\046\134\331\204\117\311\075\046\075\127\233\256\327\126\060  
\012\006\010\052\206\110\316\075\004\003\003\060\201\204\061\013  
\060\011\006\003\125\004\006\023\002\125\123\061\025\060\023\006  
\003\125\004\012\023\014\164\150\141\167\164\145\054\040\111\156  
\143\056\061\070\060\066\006\003\125\004\013\023\057\050\143\051  
\040\062\060\060\067\040\164\150\141\167\164\145\054\040\111\156  
\143\056\040\055\040\106\157\162\040\141\165\164\150\157\162\151  
\172\145\144\040\165\163\145\040\157\156\154\171\061\044\060\042  
\006\003\125\004\003\023\033\164\150\141\167\164\145\040\120\162  
\151\155\141\162\171\040\122\157\157\164\040\103\101\040\055\040  
\107\062\060\036\027\015\060\067\061\061\060\065\060\060\060\060  
\060\060\132\027\015\063\070\060\061\061\070\062\063\065\071\065  
\071\132\060\201\204\061\013\060\011\006\003\125\004\006\023\002  
\125\123\061\025\060\023\006\003\125\004\012\023\014\164\150\141  
\167\164\145\054\040\111\156\143\056\061\070\060\066\006\003\125  
\004\013\023\057\050\143\051\040\062\060\060\067\040\164\150\141  
\167\164\145\054\040\111\156\143\056\040\055\040\106\157\162\040  
\141\165\164\150\157\162\151\172\145\144\040\165\163\145\040\157  
\156\154\171\061\044\060\042\006\003\125\004\003\023\033\164\150  
\141\167\164\145\040\120\162\151\155\141\162\171\040\122\157\157  
\164\040\103\101\040\055\040\107\062\060\166\060\020\006\007\052  
\206\110\316\075\002\001\006\005\053\201\004\000\042\003\142\000  
\004\242\325\234\202\173\225\235\361\122\170\207\376\212\026\277  
\005\346\337\243\002\117\015\007\306\000\121\272\014\002\122\055  
\042\244\102\071\304\376\217\352\311\301\276\324\115\377\237\172  
\236\342\261\174\232\255\247\206\011\163\207\321\347\232\343\172  
\245\252\156\373\272\263\160\300\147\210\242\065\324\243\232\261  
\375\255\302\357\061\372\250\271\363\373\010\306\221\321\373\051  
\225\243\102\060\100\060\017\006\003\125\035\023\001\001\377\004  
\005\060\003\001\001\377\060\016\006\003\125\035\017\001\001\377  
\004\004\003\002\001\006\060\035\006\003\125\035\016\004\026\004  
\024\232\330\000\060\000\347\153\177\205\030\356\213\266\316\212  
\014\370\021\341\273\060\012\006\010\052\206\110\316\075\004\003  
\003\003\151\000\060\146\002\061\000\335\370\340\127\107\133\247  
\346\012\303\275\365\200\212\227\065\015\033\211\074\124\206\167  
\050\312\241\364\171\336\265\346\070\260\360\145\160\214\177\002  
\124\302\277\377\330\241\076\331\317\002\061\000\304\215\224\374  
\334\123\322\334\235\170\026\037\025\063\043\123\122\343\132\061  
\135\235\312\256\275\023\051\104\015\047\133\250\347\150\234\022  
\367\130\077\056\162\002\127\243\217\241\024\056

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "thawte Primary Root CA - G2"

```
# Issuer: CN=thawte Primary Root CA - G2,OU=(c) 2007 thawte\, Inc. - For authorized use only,O=thawte\,
Inc.,C=US
# Serial Number:35:fc:26:5c:d9:84:4f:c9:3d:26:3d:57:9b:ae:d7:56
# Subject: CN=thawte Primary Root CA - G2,OU=(c) 2007 thawte\, Inc. - For authorized use only,O=thawte\,
Inc.,C=US
# Not Valid Before: Mon Nov 05 00:00:00 2007
# Not Valid After: Mon Jan 18 23:59:59 2038
# Fingerprint (MD5): 74:9d:ea:60:24:c4:fd:22:53:3e:cc:3a:72:d9:29:4f
# Fingerprint (SHA1): aa:db:bc:22:23:8f:c4:01:a1:27:bb:38:dd:f4:1d:db:08:9e:f0:12
CKA_CLASS
CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "thawte Primary Root CA - G2"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\252\333\274\042\043\217\304\001\241\047\273\070\335\364\035\333
\010\236\360\022
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\164\235\352\140\044\304\375\042\123\076\314\072\162\331\051\117
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\204\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\025\060\023\006\003\125\004\012\023\014\164\150\141\167\164
\145\054\040\111\156\143\056\061\070\060\066\006\003\125\004\013
\023\057\050\143\051\040\062\060\060\067\040\164\150\141\167\164
\145\054\040\111\156\143\056\040\055\040\106\157\162\040\141\165
\164\150\157\162\151\172\145\144\040\165\163\145\040\157\156\154
\171\061\044\060\042\006\003\125\004\003\023\033\164\150\141\167
\164\145\040\120\162\151\155\141\162\171\040\122\157\157\164\040
\103\101\040\055\040\107\062
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\065\374\046\134\331\204\117\311\075\046\075\127\233\256
\327\126
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "GeoTrust Primary Certification Authority - G2"
# Issuer: CN=GeoTrust Primary Certification Authority - G2,OU=(c) 2007 GeoTrust Inc. - For authorized use
only,O=GeoTrust Inc.,C=US
# Serial Number:3c:b2:f4:48:0a:00:e2:fe:eb:24:3b:5e:60:3e:c3:6b
```

```
# Subject: CN=GeoTrust Primary Certification Authority - G2,OU=(c) 2007 GeoTrust Inc. - For authorized use
only,O=GeoTrust Inc.,C=US
# Not Valid Before: Mon Nov 05 00:00:00 2007
# Not Valid After: Mon Jan 18 23:59:59 2038
# Fingerprint (MD5): 01:5e:d8:6b:bd:6f:3d:8e:a1:31:f8:12:e0:98:73:6a
# Fingerprint (SHA1): 8d:17:84:d5:37:f3:03:7d:ec:70:fe:57:8b:51:9a:99:e6:10:d7:b0
CKA_CLASS
CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "GeoTrust Primary Certification Authority - G2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\230\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\026\060\024\006\003\125\004\012\023\015\107\145\157\124\162
\165\163\164\040\111\156\143\056\061\071\060\067\006\003\125\004
\013\023\060\050\143\051\040\062\060\060\067\040\107\145\157\124
\162\165\163\164\040\111\156\143\056\040\055\040\106\157\162\040
\141\165\164\150\157\162\151\172\145\144\040\165\163\145\040\157
\156\154\171\061\066\060\064\006\003\125\004\003\023\055\107\145
\157\124\162\165\163\164\040\120\162\151\155\141\162\171\040\103
\145\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164
\150\157\162\151\164\171\040\055\040\107\062
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\230\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\026\060\024\006\003\125\004\012\023\015\107\145\157\124\162
\165\163\164\040\111\156\143\056\061\071\060\067\006\003\125\004
\013\023\060\050\143\051\040\062\060\060\067\040\107\145\157\124
\162\165\163\164\040\111\156\143\056\040\055\040\106\157\162\040
\141\165\164\150\157\162\151\172\145\144\040\165\163\145\040\157
\156\154\171\061\066\060\064\006\003\125\004\003\023\055\107\145
\157\124\162\165\163\164\040\120\162\151\155\141\162\171\040\103
\145\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164
\150\157\162\151\164\171\040\055\040\107\062
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\074\262\364\110\012\000\342\376\353\044\073\136\140\076
\303\153
END
CKA_VALUE MULTILINE_OCTAL
\060\202\002\256\060\202\002\065\240\003\002\001\002\002\020\074
\262\364\110\012\000\342\376\353\044\073\136\140\076\303\153\060
\012\006\010\052\206\110\316\075\004\003\003\060\201\230\061\013
\060\011\006\003\125\004\006\023\002\125\123\061\026\060\024\006
```



\003\125\004\012\023\015\107\145\157\124\162\165\163\164\040\111  
\156\143\056\061\071\060\067\006\003\125\004\013\023\060\050\143  
\051\040\062\060\060\067\040\107\145\157\124\162\165\163\164\040  
\111\156\143\056\040\055\040\106\157\162\040\141\165\164\150\157  
\162\151\172\145\144\040\165\163\145\040\157\156\154\171\061\066  
\060\064\006\003\125\004\003\023\055\107\145\157\124\162\165\163  
\164\040\120\162\151\155\141\162\171\040\103\145\162\164\151\146  
\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164  
\171\040\055\040\107\062\060\036\027\015\060\067\061\061\060\065  
\060\060\060\060\060\060\132\027\015\063\070\060\061\061\070\062  
\063\065\071\065\071\132\060\201\230\061\013\060\011\006\003\125  
\004\006\023\002\125\123\061\026\060\024\006\003\125\004\012\023  
\015\107\145\157\124\162\165\163\164\040\111\156\143\056\061\071  
\060\067\006\003\125\004\013\023\060\050\143\051\040\062\060\060  
\067\040\107\145\157\124\162\165\163\164\040\111\156\143\056\040  
\055\040\106\157\162\040\141\165\164\150\157\162\151\172\145\144  
\040\165\163\145\040\157\156\154\171\061\066\060\064\006\003\125  
\004\003\023\055\107\145\157\124\162\165\163\164\040\120\162\151  
\155\141\162\171\040\103\145\162\164\151\146\151\143\141\164\151  
\157\156\040\101\165\164\150\157\162\151\164\171\040\055\040\107  
\062\060\166\060\020\006\007\052\206\110\316\075\002\001\006\005  
\053\201\004\000\042\003\142\000\004\025\261\350\375\003\025\103  
\345\254\353\207\067\021\142\357\322\203\066\122\175\105\127\013  
\112\215\173\124\073\072\156\137\025\002\300\120\246\317\045\057  
\175\312\110\270\307\120\143\034\052\041\010\174\232\066\330\013  
\376\321\046\305\130\061\060\050\045\363\135\135\243\270\266\245  
\264\222\355\154\054\237\353\335\103\211\242\074\113\110\221\035  
\120\354\046\337\326\140\056\275\041\243\102\060\100\060\017\006  
\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060\016  
\006\003\125\035\017\001\001\377\004\004\003\002\001\006\060\035  
\006\003\125\035\016\004\026\004\024\025\137\065\127\121\125\373  
\045\262\255\003\151\374\001\243\372\276\021\125\325\060\012\006  
\010\052\206\110\316\075\004\003\003\003\147\000\060\144\002\060  
\144\226\131\246\350\011\336\213\272\372\132\210\210\360\037\221  
\323\106\250\362\112\114\002\143\373\154\137\070\333\056\101\223  
\251\016\346\235\334\061\034\262\240\247\030\034\171\341\307\066  
\002\060\072\126\257\232\164\154\366\373\203\340\063\323\010\137  
\241\234\302\133\237\106\326\266\313\221\006\143\242\006\347\063  
\254\076\250\201\022\320\313\272\320\222\013\266\236\226\252\004  
\017\212

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "GeoTrust Primary Certification Authority - G2"

```
# Issuer: CN=GeoTrust Primary Certification Authority - G2,OU=(c) 2007 GeoTrust Inc. - For authorized use
only,O=GeoTrust Inc.,C=US
# Serial Number:3c:b2:f4:48:0a:00:e2:fe:eb:24:3b:5e:60:3e:c3:6b
#
Subject: CN=GeoTrust Primary Certification Authority - G2,OU=(c) 2007 GeoTrust Inc. - For authorized use
only,O=GeoTrust Inc.,C=US
# Not Valid Before: Mon Nov 05 00:00:00 2007
# Not Valid After: Mon Jan 18 23:59:59 2038
# Fingerprint (MD5): 01:5e:d8:6b:bd:6f:3d:8e:a1:31:f8:12:e0:98:73:6a
# Fingerprint (SHA1): 8d:17:84:d5:37:f3:03:7d:ec:70:fe:57:8b:51:9a:99:e6:10:d7:b0
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "GeoTrust Primary Certification Authority - G2"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\215\027\204\325\067\363\003\175\354\160\376\127\213\121\232\231
\346\020\327\260
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\001\136\330\153\275\157\075\216\241\061\370\022\340\230\163\152
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\230\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\026\060\024\006\003\125\004\012\023\015\107\145\157\124\162
\165\163\164\040\111\156\143\056\061\071\060\067\006\003\125\004
\013\023\060\050\143\051\040\062\060\060\067\040\107\145\157\124
\162\165\163\164\040\111\156\143\056\040\055\040\106\157\162\040
\141\165\164\150\157\162\151\172\145\144\040\165\163\145\040\157
\156\154\171\061\066\060\064\006\003\125\004\003\023\055\107\145
\157\124\162\165\163\164\040\120\162\151\155\141\162\171\040\103
\145\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164
\150\157\162\151\164\171\040\055\040\107\062
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\074\262\364\110\012\000\342\376\353\044\073\136\140\076
\303\153
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "VeriSign Universal Root Certification Authority"
# Issuer: CN=VeriSign Universal Root Certification Authority,OU=(c) 2008 VeriSign, Inc. - For authorized
```

```
use only,OU=VeriSign Trust Network,O=VeriSign\, Inc.,C=US
# Serial Number:40:1a:c4:64:21:b3:13:21:03:0e:bb:e4:12:1a:c5:1d
# Subject: CN=VeriSign Universal Root Certification Authority,OU=(c) 2008 VeriSign\, Inc. - For authorized use
only,OU=VeriSign Trust Network,O=VeriSign\, Inc.,C=US
# Not Valid Before: Wed Apr 02 00:00:00 2008
# Not Valid After: Tue Dec 01 23:59:59 2037
# Fingerprint (MD5): 8e:ad:b5:01:aa:4d:81:e4:8c:1d:d1:e1:14:00:95:19
# Fingerprint (SHA1): 36:79:ca:35:66:87:72:30:4d:30:a5:fb:87:3b:0f:a7:7b:b7:0d:54
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "VeriSign Universal Root Certification Authority"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\275\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\027\060\025\006\003\125\004\012\023\016\126\145\162\151\123
\151\147\156\054\040\111\156\143\056\061\037\060\035\006\003\125
\004\013\023\026\126\145\162\151\123\151\147\156\040\124\162\165
\163\164\040\116\145\164\167\157\162\153\061\072\060\070\006\003
\125\004\013\023\061\050\143\051\040\062\060\060\070\040\126\145
\162\151\123\151\147\156\054\040\111\156\143\056\040\055\040\106
\157\162\040\141\165\164\150\157\162\151\172\145\144\040\165\163
\145\040\157\156\154\171\061\070\060\066\006\003\125\004\003\023
\057\126\145\162\151\123\151\147\156\040\125\156\151\166\145\162
\163\141\154\040\122\157\157\164\040\103\145\162\164\151\146\151
\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\275\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\027\060\025\006\003\125\004\012\023\016\126\145\162\151\123
\151\147\156\054\040\111\156\143\056\061\037\060\035\006\003\125
\004\013\023\026\126\145\162\151\123\151\147\156\040\124\162\165
\163\164\040\116\145\164\167\157\162\153\061\072\060\070\006\003
\125\004\013\023\061\050\143\051\040\062\060\060\070\040\126\145
\162\151\123\151\147\156\054\040\111\156\143\056\040\055\040\106
\157\162\040\141\165\164\150\157\162\151\172\145\144\040\165\163
\145\040\157\156\154\171\061\070\060\066\006\003\125\004\003\023
\057\126\145\162\151\123\151\147\156\040\125\156\151\166\145\162
\163\141\154\040\122\157\157\164\040\103\145\162\164\151\146\151
\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\100\032\304\144\041\263\023\041\003\016\273\344\022\032
\305\035
```

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\004\271\060\202\003\241\240\003\002\001\002\002\020\100  
\032\304\144\041\263\023\041\003\016\273\344\022\032\305\035\060  
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\201  
\275\061\013\060\011\006\003\125\004\006\023\002\125\123\061\027  
\060\025\006\003\125\004\012\023\016\126\145\162\151\123\151\147  
\156\054\040\111\156\143\056\061\037\060\035\006\003\125\004\013  
\023\026\126\145\162\151\123\151\147\156\040\124\162\165\163\164  
\040\116\145\164\167\157\162\153\061\072\060\070\006\003\125\004  
\013\023\061\050\143\051\040\062\060\060\070\040\126\145\162\151  
\123\151\147\156\054\040\111\156\143\056\040\055\040\106\157\162  
\040\141\165\164\150\157\162\151\172\145\144\040\165\163\145\040  
\157\156\154\171\061\070\060\066\006\003\125\004\003\023\057\126  
\145\162\151\123\151\147\156\040\125\156\151\166\145\162\163\141  
\154\040\122\157\157\164\040\103\145\162\164\151\146\151\143\141  
\164\151\157\156\040\101\165\164\150\157\162\151\164\171\060\036  
\027\015\060\070\060\064\060\062\060\060\060\060\060\132\027  
\015\063\067\061\062\060\061\062\063\065\071\065\071\132\060\201  
\275\061\013\060\011\006\003\125\004\006\023\002\125\123\061\027  
\060\025\006\003\125\004\012\023\016\126\145\162\151\123\151\147  
\156\054\040\111\156\143\056\061\037\060\035\006\003\125\004\013  
\023\026\126\145\162\151\123\151\147\156\040\124\162\165\163\164  
\040\116\145\164\167\157\162\153\061\072\060\070\006\003\125\004  
\013\023\061\050\143\051\040\062\060\060\070\040\126\145\162\151  
\123\151\147\156\054\040\111\156\143\056\040\055\040\106\157\162  
\040\141\165\164\150\157\162\151\172\145\144\040\165\163\145\040  
\157\156\154\171\061\070\060\066\006\003\125\004\003\023\057\126  
\145\162\151\123\151\147\156\040\125\156\151\166\145\162\163\141  
\154\040\122\157\157\164\040\103\145\162\164\151\146\151\143\141  
\164\151\157\156\040\101\165\164\150\157\162\151\164\171\060\202  
\001\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005  
\000\003\202\001\017\000\060\202\001\012\002\202\001\001\000\307  
\141\067\136\261\001\064\333\142\327\025\233\377\130\132\214\043  
\043\326\140\216\221\327\220\230\203\172\346\130\031\070\214\305  
\366\345\144\205\264\242\161\373\355\275\271\332\315\115\000\264  
\310\055\163\245\307\151\161\225\037\071\074\262\104\007\234\350  
\016\372\115\112\304\041\337\051\141\217\062\042\141\202\305\207  
\037\156\214\174\137\026\040\121\104\321\160\117\127\352\343\034  
\343\314\171\356\130\330\016\302\263\105\223\300\054\347\232\027  
\053\173\000\067\172\101\063\170\341\063\342\363\020\032\177\207  
\054\276\366\365\367\102\342\345\277\207\142\211\137\000\113\337  
\305\335\344\165\104\062\101\072\036\161\156\151\313\013\165\106  
\010\321\312\322\053\225\320\317\373\271\100\153\144\214\127\115  
\374\023\021\171\204\355\136\124\366\064\237\010\001\363\020\045  
\006\027\112\332\361\035\172\146\153\230\140\146\244\331\357\322  
\056\202\361\360\357\011\352\104\311\025\152\342\003\156\063\323  
\254\237\125\000\307\366\010\152\224\271\137\334\340\063\361\204

\140\371\133\047\021\264\374\026\362\273\126\152\200\045\215\002  
\003\001\000\001\243\201\262\060\201\257\060\017\006\003\125\035  
\023\001\001\377\004\005\060\003\001\001\377\060\016\006\003\125  
\035\017\001\001\377\004\004\003\002\001\006\060\155\006\010\053  
\006\001\005\005\007\001\014\004\141\060\137\241\135\240\133\060  
\131\060\127\060\125\026\011\151\155\141\147\145\057\147\151\146  
\060\041\060\037\060\007\006\005\053\016\003\002\032\004\024\217  
\345\323\032\206\254\215\216\153\303\317\200\152\324\110\030\054  
\173\031\056\060\045\026\043\150\164\164\160\072\057\057\154\157  
\147\157\056\166\145\162\151\163\151\147\156\056\143\157\155\057  
\166\163\154\157\147\157\056\147\151\146\060\035\006\003\125\035  
\016\004\026\004\024\266\167\372\151\110\107\237\123\022\325\302  
\352\007\062\166\007\321\227\007\031\060\015\006\011\052\206\110  
\206\367\015\001\001\013\005\000\003\202\001\001\000\112\370\370  
\260\003\346\054\147\173\344\224\167\143\314\156\114\371\175\016  
\015\334\310\271\065\271\160\117\143\372\044\372\154\203\214\107  
\235\073\143\363\232\371\166\062\225\221\261\167\274\254\232\276  
\261\344\061\041\306\201\225\126\132\016\261\302\324\261\246\131  
\254\361\143\313\270\114\035\131\220\112\357\220\026\050\037\132  
\256\020\373\201\120\070\014\154\314\361\075\303\365\143\343\263  
\343\041\311\044\071\351\375\025\146\106\364\033\021\320\115\163  
\243\175\106\371\075\355\250\137\142\324\361\077\370\340\164\127  
\053\030\235\201\264\304\050\332\224\227\245\160\353\254\035\276  
\007\021\360\325\333\335\345\214\360\325\062\260\203\346\127\342  
\217\277\276\241\252\277\075\035\265\324\070\352\327\260\134\072  
\117\152\077\217\300\146\154\143\252\351\331\244\026\364\201\321  
\225\024\016\175\315\225\064\331\322\217\160\163\201\173\234\176  
\275\230\141\330\105\207\230\220\305\353\206\060\306\065\277\360  
\377\303\125\210\203\113\357\005\222\006\161\362\270\230\223\267  
\354\315\202\141\361\070\346\117\227\230\052\132\215

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "VeriSign Universal Root Certification Authority"

# Issuer: CN=VeriSign Universal Root Certification Authority,OU=(c) 2008 VeriSign\, Inc. - For authorized use only,OU=VeriSign Trust Network,O=VeriSign\, Inc.,C=US

# Serial Number:40:1a:c4:64:21:b3:13:21:03:0e:bb:e4:12:1a:c5:1d

# Subject: CN=VeriSign Universal Root Certification

Authority,OU=(c) 2008 VeriSign\, Inc. - For authorized use only,OU=VeriSign Trust Network,O=VeriSign\, Inc.,C=US

# Not Valid Before: Wed Apr 02 00:00:00 2008

# Not Valid After: Tue Dec 01 23:59:59 2037

# Fingerprint (MD5): 8e:ad:b5:01:aa:4d:81:e4:8c:1d:d1:e1:14:00:95:19

# Fingerprint (SHA1): 36:79:ca:35:66:87:72:30:4d:30:a5:fb:87:3b:0f:a7:7b:b7:0d:54

```

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "VeriSign Universal Root Certification Authority"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\066\171\312\065\146\207\162\060\115\060\245\373\207\073\017\247
\173\267\015\124
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\216\255\265\001\252\115\201\344\214\035\321\341\024\000\225\031
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\275\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\027\060\025\006\003\125\004\012\023\016\126\145\162\151\123
\151\147\156\054\040\111\156\143\056\061\037\060\035\006\003\125
\004\013\023\026\126\145\162\151\123\151\147\156\040\124\162\165
\163\164\040\116\145\164\167\157\162\153\061\072\060\070\006\003
\125\004\013\023\061\050\143\051\040\062\060\060\070\040\126\145
\162\151\123\151\147\156\054\040\111\156\143\056\040\055\040\106
\157\162\040\141\165\164\150\157\162\151\172\145\144\040\165\163
\145\040\157\156\154\171\061\070\060\066\006\003\125\004\003\023
\057\126\145\162\151\123\151\147\156\040\125\156\151\166\145\162
\163\141\154\040\122\157\157\164\040\103\145\162\164\151\146\151
\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\100\032\304\144\041\263\023\041\003\016\273\344\022\032
\305\035
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "thawte Primary
  Root CA - G3"
# Issuer: CN=thawte Primary Root CA - G3,OU=(c) 2008 thawte\, Inc. - For authorized use only,OU=Certification
  Services Division,O=thawte\, Inc.,C=US
# Serial Number:60:01:97:b7:46:a7:ea:b4:b4:9a:d6:4b:2f:f7:90:fb
# Subject: CN=thawte Primary Root CA - G3,OU=(c) 2008 thawte\, Inc. - For authorized use only,OU=Certification
  Services Division,O=thawte\, Inc.,C=US
# Not Valid Before: Wed Apr 02 00:00:00 2008
# Not Valid After: Tue Dec 01 23:59:59 2037
# Fingerprint (MD5): fb:1b:5d:43:8a:94:cd:44:c6:76:f2:43:4b:47:e7:31
# Fingerprint (SHA1): f1:8b:53:8d:1b:e9:03:b6:a6:f0:56:43:5b:17:15:89:ca:f3:6b:f2

```

```
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "thawte Primary Root CA - G3"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\256\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\025\060\023\006\003\125\004\012\023\014\164\150\141\167\164
\145\054\040\111\156\143\056\061\050\060\046\006\003\125\004\013
\023\037\103\145\162\164\151\146\151\143\141\164\151\157\156\040
\123\145\162\166\151\143\145\163\040\104\151\166\151\163\151\157
\156\061\070\060\066\006\003\125\004\013\023\057\050\143\051\040
\062\060\060\070\040\164\150\141\167\164\145\054\040\111\156\143
\056\040\055\040\106\157\162\040\141\165\164\150\157\162\151\172
\145\144\040\165\163\145\040\157\156\154\171\061\044\060\042\006
\003\125\004\003\023\033\164\150\141\167\164\145\040\120\162\151
\155\141\162\171\040\122\157\157\164\040\103\101\040\055\040\107
\063
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\256\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\025\060\023\006\003\125\004\012\023\014\164\150\141\167\164
\145\054\040\111\156\143\056\061\050\060\046\006\003\125\004\013
\023\037\103\145\162\164\151\146\151\143\141\164\151\157\156\040
\123\145\162\166\151\143\145\163\040\104\151\166\151\163\151\157
\156\061\070\060\066\006\003\125\004\013\023\057\050\143\051\040
\062\060\060\070\040\164\150\141\167\164\145\054\040\111\156\143
\056\040\055\040\106\157\162\040\141\165\164\150\157\162\151\172
\145\144\040\165\163\145\040\157\156\154\171\061\044\060\042\006
\003\125\004\003\023\033\164\150\141\167\164\145\040\120\162\151
\155\141\162\171\040\122\157\157\164\040\103\101\040\055\040\107
\063
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\140\001\227\267\106\247\352\264\264\232\326\113\057\367
\220\373
END
CKA_VALUE MULTILINE_OCTAL
\060\202\004\052\060\202\003\022\240\003\002\001\002\002\020\140
\001\227\267\106\247\352\264\264\232\326\113\057\367\220\373\060
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\201
\256\061\013\060\011\006\003\125\004\006\023\002\125\123\061\025
\060\023\006\003\125\004\012\023\014\164\150\141\167\164\145\054
\040\111\156\143\056\061\050\060\046\006\003\125\004\013\023\037
```

\103\145\162\164\151\146\151\143\141\164\151\157\156\040\123\145  
\162\166\151\143\145\163\040\104\151\166\151\163\151\157\156\061  
\070\060\066\006\003\125\004\013\023\057\050\143\051\040\062\060  
\060\070\040\164\150\141\167\164\145\054\040\111\156\143\056\040  
\055\040\106\157\162\040\141\165\164\150\157\162\151\172\145\144  
\040\165\163\145\040\157\156\154\171\061\044\060\042\006\003\125  
\004\003\023\033\164\150\141\167\164\145\040\120\162\151\155\141  
\162\171\040\122\157\157\164\040\103\101\040\055\040\107\063\060  
\036\027\015\060\070\060\064\060\062\060\060\060\060\060\132  
\027\015\063\067\061\062\060\061\062\063\065\071\065\071\132\060  
\201\256\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\025\060\023\006\003\125\004\012\023\014\164\150\141\167\164\145  
\054\040\111\156\143\056\061\050\060\046\006\003\125\004\013\023  
\037\103\145\162\164\151\146\151\143\141\164\151\157\156\040\123  
\145\162\166\151\143\145\163\040\104\151\166\151\163\151\157\156  
\061\070\060\066\006\003\125\004\013\023\057\050\143\051\040\062  
\060\060\070\040\164\150\141\167\164\145\054\040\111\156\143\056  
\040\055\040\106\157\162\040\141\165\164\150\157\162\151\172\145  
\144\040\165\163\145\040\157\156\154\171\061\044\060\042\006\003  
\125\004\003\023\033\164\150\141\167\164\145\040\120\162\151\155  
\141\162\171\040\122\157\157\164\040\103\101\040\055\040\107\063  
\060\202\001\042\060\015\006\011\052\206\110\206\367\015\001\001  
\001\005\000\003\202\001\017\000\060\202\001\012\002\202\001\001  
\000\262\277\047\054\373\333\330\133\335\170\173\033\236\167\146  
\201\313\076\274\174\256\363\246\047\232\064\243\150\061\161\070  
\063\142\344\363\161\146\171\261\251\145\243\245\213\325\217\140  
\055\077\102\314\252\153\062\300\043\313\054\101\335\344\337\374  
\141\234\342\163\262\042\225\021\103\030\137\304\266\037\127\154  
\012\005\130\042\310\066\114\072\174\245\321\317\206\257\210\247  
\104\002\023\164\161\163\012\102\131\002\370\033\024\153\102\337  
\157\137\272\153\202\242\235\133\347\112\275\036\001\162\333\113  
\164\350\073\177\177\175\037\004\264\046\233\340\264\132\254\107  
\075\125\270\327\260\046\122\050\001\061\100\146\330\331\044\275  
\366\052\330\354\041\111\134\233\366\172\351\177\125\065\176\226  
\153\215\223\223\047\313\222\273\352\254\100\300\237\302\370\200  
\317\135\364\132\334\316\164\206\246\076\154\013\123\312\275\222  
\316\031\006\162\346\014\134\070\151\307\004\326\274\154\316\133  
\366\367\150\234\334\045\025\110\210\241\351\251\370\230\234\340  
\363\325\061\050\141\021\154\147\226\215\071\231\313\302\105\044  
\071\002\003\001\000\001\243\102\060\100\060\017\006\003\125\035  
\023\001\001\377\004\005\060\003\001\001\377\060\016\006\003\125  
\035\017\001\001\377\004\004\003\002\001\006\060\035\006\003\125  
\035\016\004\026\004\024\255\154\252\224\140\234\355\344\377\372  
\076\012\164\053\143\003\367\266\131\277\060\015\006\011\052\206  
\110\206\367\015\001\001\013\005\000\003\202\001\001\000\032\100  
\330\225\145\254\011\222\211\306\071\364\020\345\251\016\146\123  
\135\170\336\372\044\221\273\347\104\121\337\306\026\064\012\357  
\152\104\121\352\053\007\212\003\172\303\353\077\012\054\122\026



```
\240\053\103\271\045\220\077\160\251\063\045\155\105\032\050\073
\047\317\252\303\051\102\033\337\073\114\300\063\064\133\101\210
\277\153\053\145\257\050\357\262\365\303\252\146\316\173\126\356
\267\310\313\147\301\311\234\032\030\270\304\303\111\003\361\140
\016\120\315\106\305\363\167\171\367\266\025\340\070\333\307\057
\050\240\014\077\167\046\164\331\045\022\332\061\332\032\036\334
\051\101\221\042\074\151\247\273\002\362\266\134\047\003\211\364
\006\352\233\344\162\202\343\241\011\301\351\000\031\323\076\324
\160\153\272\161\246\252\130\256\364\273\351\154\266\357\207\314
\233\273\377\071\346\126\141\323\012\247\304\134\114\140\173\005
\167\046\172\277\330\007\122\054\142\367\160\143\331\071\274\157
\034\302\171\334\166\051\257\316\305\054\144\004\136\210\066\156
\061\324\100\032\142\064\066\077\065\001\256\254\143\240
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft

Code Signing Only Certificate

# Trust for "thawte Primary Root CA - G3"

# Issuer: CN=thawte Primary Root CA - G3,OU=(c) 2008 thawte\, Inc. - For authorized use only,OU=Certification Services Division,O=thawte\, Inc.,C=US

# Serial Number:60:01:97:b7:46:a7:ea:b4:b4:9a:d6:4b:2f:f7:90:fb

# Subject: CN=thawte Primary Root CA - G3,OU=(c) 2008 thawte\, Inc. - For authorized use only,OU=Certification Services Division,O=thawte\, Inc.,C=US

# Not Valid Before: Wed Apr 02 00:00:00 2008

# Not Valid After: Tue Dec 01 23:59:59 2037

# Fingerprint (MD5): fb:1b:5d:43:8a:94:cd:44:c6:76:f2:43:4b:47:e7:31

# Fingerprint (SHA1): f1:8b:53:8d:1b:e9:03:b6:a6:f0:56:43:5b:17:15:89:ca:f3:6b:f2

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "thawte Primary Root CA - G3"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\361\213\123\215\033\351\003\266\246\360\126\103\133\027\025\211
\312\363\153\362
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\373\033\135\103\212\224\315\104\306\166\362\103\113\107\347\061
```

END

CKA\_ISSUER

MULTILINE\_OCTAL

```
\060\201\256\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\025\060\023\006\003\125\004\012\023\014\164\150\141\167\164
\145\054\040\111\156\143\056\061\050\060\046\006\003\125\004\013
```

```
\023\037\103\145\162\164\151\146\151\143\141\164\151\157\156\040
\123\145\162\166\151\143\145\163\040\104\151\166\151\163\151\157
\156\061\070\060\066\006\003\125\004\013\023\057\050\143\051\040
\062\060\060\070\040\164\150\141\167\164\145\054\040\111\156\143
\056\040\055\040\106\157\162\040\141\165\164\150\157\162\151\172
\145\144\040\165\163\145\040\157\156\154\171\061\044\060\042\006
\003\125\004\003\023\033\164\150\141\167\164\145\040\120\162\151
\155\141\162\171\040\122\157\157\164\040\103\101\040\055\040\107
\063
```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

```
\002\020\140\001\227\267\106\247\352\264\264\232\326\113\057\367
\220\373
```

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION

CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "GeoTrust Primary Certification Authority - G3"

# Issuer: CN=GeoTrust Primary Certification Authority - G3,OU=(c) 2008 GeoTrust Inc. - For authorized use only,O=GeoTrust Inc.,C=US

# Serial Number:15:ac:6e:94:19:b2:79:4b:41:f6:27:a9:c3:18:0f:1f

# Subject: CN=GeoTrust Primary Certification Authority - G3,OU=(c) 2008 GeoTrust Inc. - For authorized use only,O=GeoTrust Inc.,C=US

# Not Valid Before: Wed Apr 02 00:00:00 2008

# Not Valid After: Tue Dec 01 23:59:59 2037

# Fingerprint (MD5): b5:e8:34:36:c9:10:44:58:48:70:6d:2e:83:d4:b8:05

# Fingerprint (SHA1): 03:9e:ed:b8:0b:e7:a0:3c:69:53:89:3b:20:d2:d9:32:3a:4c:2a:fd

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "GeoTrust Primary

Certification Authority - G3"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

```
\060\201\230\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\026\060\024\006\003\125\004\012\023\015\107\145\157\124\162
\165\163\164\040\111\156\143\056\061\071\060\067\006\003\125\004
\013\023\060\050\143\051\040\062\060\060\070\040\107\145\157\124
\162\165\163\164\040\111\156\143\056\040\055\040\106\157\162\040
\141\165\164\150\157\162\151\172\145\144\040\165\163\145\040\157
\156\154\171\061\066\060\064\006\003\125\004\003\023\055\107\145
\157\124\162\165\163\164\040\120\162\151\155\141\162\171\040\103
\145\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164
```

\150\157\162\151\164\171\040\055\040\107\063

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\230\061\013\060\011\006\003\125\004\006\023\002\125\123  
\061\026\060\024\006\003\125\004\012\023\015\107\145\157\124\162  
\165\163\164\040\111\156\143\056\061\071\060\067\006\003\125\004  
\013\023\060\050\143\051\040\062\060\060\070\040\107\145\157\124  
\162\165\163\164\040\111\156\143\056\040\055\040\106\157\162\040  
\141\165\164\150\157\162\151\172\145\144\040\165\163\145\040\157  
\156\154\171\061\066\060\064\006\003\125\004\003\023\055\107\145  
\157\124\162\165\163\164\040\120\162\151\155\141\162\171\040\103  
\145\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164  
\150\157\162\151\164\171\040\055\040\107\063

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\020\025\254\156\224\031\262\171\113\101\366\047\251\303\030  
\017\037

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\376\060\202\002\346\240\003\002\001\002\002\020\025  
\254\156\224\031\262\171\113\101\366\047\251\303\030\017\037\060  
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\201  
\230\061\013\060\011\006\003\125\004\006\023\002\125\123\061\026  
\060\024\006\003\125\004\012\023\015\107\145\157\124\162\165\163  
\164\040\111\156\143\056\061\071\060\067\006\003\125\004\013\023  
\060\050\143\051\040\062\060\060\070\040\107\145\157\124\162\165  
\163\164\040\111\156\143\056\040\055\040\106\157\162\040\141\165  
\164\150\157\162\151\172\145\144\040\165\163\145\040\157\156\154  
\171\061\066\060\064\006\003\125\004\003\023\055\107\145\157\124  
\162\165\163\164\040\120\162\151\155\141\162\171\040\103\145\162  
\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157  
\162\151\164\171\040\055\040\107\063\060\036\027\015\060\070\060  
\064\060\062\060\060\060\060\060\060\132\027\015\063\067\061\062  
\060\061\062\063\065\071\065\071\132\060\201\230\061\013\060\011  
\006\003\125\004\006\023\002\125\123\061\026\060\024\006\003\125  
\004\012\023\015\107\145\157\124\162\165\163\164\040\111\156\143  
\056\061\071\060\067\006\003\125\004\013\023\060\050\143\051\040  
\062\060\060\070\040\107\145\157\124\162\165\163\164\040\111\156  
\143\056\040\055\040\106\157\162\040\141\165\164\150\157\162\151  
\172\145\144\040\165\163\145\040\157\156\154\171\061\066\060\064  
\006\003\125\004\003\023\055\107\145\157\124\162\165\163\164\040  
\120\162\151\155\141\162\171\040\103\145\162\164\151\146\151\143  
\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171\040  
\055\040\107\063\060\202\001\042\060\015\006\011\052\206\110\206  
\367\015\001\001\001\005\000\003\202\001\017\000\060\202\001\012  
\002\202\001\001\000\334\342\136\142\130\035\063\127\071\062\063

\372\353\313\207\214\247\324\112\335\006\210\352\144\216\061\230  
\245\070\220\036\230\317\056\143\053\360\106\274\104\262\211\241  
\300\050\014\111\160\041\225\237\144\300\246\223\022\002\145\046  
\206\306\245\211\360\372\327\204\240\160\257\117\032\227\077\006  
\104\325\311\353\162\020\175\344\061\050\373\034\141\346\050\007  
\104\163\222\042\151\247\003\210\154\235\143\310\122\332\230\047  
\347\010\114\160\076\264\311\022\301\305\147\203\135\063\363\003  
\021\354\152\320\123\342\321\272\066\140\224\200\273\141\143\154  
\133\027\176\337\100\224\036\253\015\302\041\050\160\210\377\326  
\046\154\154\140\004\045\116\125\176\175\357\277\224\110\336\267  
\035\335\160\215\005\137\210\245\233\362\302\356\352\321\100\101  
\155\142\070\035\126\006\305\003\107\121\040\031\374\173\020\013  
\016\142\256\166\125\277\137\167\276\076\111\001\123\075\230\045  
\003\166\044\132\035\264\333\211\352\171\345\266\263\073\077\272  
\114\050\101\177\006\254\152\216\301\320\366\005\035\175\346\102  
\206\343\245\325\107\002\003\001\000\001\243\102\060\100\060\017  
\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060  
\016\006\003\125\035\017\001\001\377\004\004\003\002\001\006\060  
\035\006\003\125\035\016\004\026\004\024\304\171\312\216\241\116  
\003\035\034\334\153\333\061\133\224\076\077\060\177\055\060\015  
\006\011\052\206\110\206\367\015\001\001\013\005\000\003\202\001  
\001\000\055\305\023\317\126\200\173\172\170\275\237\256\054\231  
\347\357\332\337\224\136\011\151\247\347\156\150\214\275\162\276  
\107\251\016\227\022\270\112\361\144\323\071\337\045\064\324\301  
\315\116\201\360\017\004\304\044\263\064\226\306\246\252\060\337  
\150\141\163\327\371\216\205\211\357\016\136\225\050\112\052\047  
\217\020\216\056\174\206\304\002\236\332\014\167\145\016\104\015  
\222\375\375\263\026\066\372\021\015\035\214\016\007\211\152\051  
\126\367\162\364\335\025\234\167\065\146\127\253\023\123\330\216  
\301\100\305\327\023\026\132\162\307\267\151\001\304\172\261\203  
\001\150\175\215\101\241\224\030\301\045\134\374\360\376\203\002  
\207\174\015\015\317\056\010\134\112\100\015\076\354\201\141\346  
\044\333\312\340\016\055\007\262\076\126\334\215\365\101\205\007  
\110\233\014\013\313\111\077\175\354\267\375\313\215\147\211\032  
\253\355\273\036\243\000\010\010\027\052\202\134\061\135\106\212  
\055\017\206\233\164\331\105\373\324\100\261\172\252\150\055\206  
\262\231\042\341\301\053\307\234\370\363\137\250\202\022\353\031  
\021\055

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "GeoTrust Primary Certification Authority - G3"

# Issuer: CN=GeoTrust Primary

```
Certification Authority - G3,OU=(c) 2008 GeoTrust Inc. - For authorized use only,O=GeoTrust Inc.,C=US
# Serial Number:15:ac:6e:94:19:b2:79:4b:41:f6:27:a9:c3:18:0f:1f
# Subject: CN=GeoTrust Primary Certification Authority - G3,OU=(c) 2008 GeoTrust Inc. - For authorized use
only,O=GeoTrust Inc.,C=US
# Not Valid Before: Wed Apr 02 00:00:00 2008
# Not Valid After: Tue Dec 01 23:59:59 2037
# Fingerprint (MD5): b5:e8:34:36:c9:10:44:58:48:70:6d:2e:83:d4:b8:05
# Fingerprint (SHA1): 03:9e:ed:b8:0b:e7:a0:3c:69:53:89:3b:20:d2:d9:32:3a:4c:2a:fd
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "GeoTrust Primary Certification Authority - G3"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\003\236\355\270\013\347\240\074\151\123\211\073\040\322\331\062
\072\114\052\375
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\265\350\064\066\311\020\104\130\110\160\155\056\203\324\270\005
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\230\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\026\060\024\006\003\125\004\012\023\015\107\145\157\124\162
\165\163\164\040\111\156\143\056\061\071\060\067\006\003\125\004
\013\023\060\050\143\051\040\062\060\060\070\040\107\145\157\124
\162\165\163\164\040\111\156\143\056\040\055\040\106\157\162\040
\141\165\164\150\157\162\151\172\145\144\040\165\163\145\040\157
\156\154\171\061\066\060\064\006\003\125\004\003\023\055\107\145
\157\124\162\165\163\164\040\120\162\151\155\141\162\171\040\103
\145\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164
\150\157\162\151\164\171\040\055\040\107\063
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\025\254\156\224\031\262\171\113\101\366\047\251\303\030
\017\037
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
#
Certificate "E-ME SSI (RCA)"
# Issuer: CN=E-ME SSI (RCA),OU=Sertifikācijas pakalpojumu dala,C=LV
# Serial Number:2e:ef:db:fb:d8:89:3d:8f:49:1c:93:72:fe:45:df:ed
# Subject: CN=E-ME SSI (RCA),OU=Sertifikācijas pakalpojumu dala,C=LV
```

```
# Not Valid Before: Tue May 19 08:45:56 2009
# Not Valid After: Wed May 19 08:48:15 2027
# Fingerprint (MD5): cb:bd:c3:68:2d:b3:cb:18:59:d3:29:52:e8:c6:64:89
# Fingerprint (SHA1): c9:32:1d:e6:b5:a8:26:66:cf:69:71:a1:8a:56:f2:d3:a8:67:56:02
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "E-ME SSI (RCA)"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\120\061\013\060\011\006\003\125\004\006\023\002\114\126\061
\050\060\046\006\003\125\004\013\023\037\123\145\162\164\151\146
\151\153\141\143\151\152\141\163\040\160\141\153\141\154\160\157
\152\165\155\165\040\144\141\154\141\061\027\060\025\006\003\125
\004\003\023\016\105\055\115\105\040\123\123\111\040\050\122\103
\101\051
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\120\061\013\060\011\006\003\125\004\006\023\002\114\126\061
\050\060\046\006\003\125\004\013\023\037\123\145\162\164\151\146
\151\153\141\143\151\152\141\163\040\160\141\153\141\154\160\157
\152\165\155\165\040\144\141\154\141\061\027\060\025\006\003\125
\004\003\023\016\105\055\115\105\040\123\123\111\040\050\122\103
\101\051
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\056\357\333\373\330\211\075\217\111\034\223\162\376\105
\337\355
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\340\060\202\003\310\240\003\002\001\002\002\020\056
\357\333\373\330\211\075\217\111\034\223\162\376\105\337\355\060
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\120
\061\013\060\011\006\003\125\004\006\023\002\114\126\061\050\060
\046\006\003\125\004\013\023\037\123\145\162\164\151\146\151\153
\141\143\151\152\141\163\040\160\141\153\141\154\160\157\152\165
\155\165\040\144\141\154\141\061\027\060\025\006\003\125\004\003
\023\016\105\055\115\105\040\123\123\111\040\050\122\103\101\051
\060\036\027\015\060\071\060\065\061\071\060\070\064\065\065\066
\132\027\015\062\067\060\065\061\071\060\070\064\070\061\065\132
\060\120\061\013\060\011\006\003\125\004\006\023\002\114\126\061
\050\060\046\006\003\125\004\013\023\037\123\145\162\164\151\146
\151\153\141\143\151\152\141\163\040\160\141\153\141\154\160\157
\152\165\155\165\040\144\141\154\141\061\027\060\025\006\003\125
\004\003\023\016\105\055\115\105\040\123\123\111\040\050\122\103
```

\101\051\060\202\002\042\060\015\006\011\052\206\110\206\367\015  
\001\001\001\005\000\003\202\002\017\000\060\202\002\012\002\202  
\002\001\000\304\004\153\000\303\260\340\056\073\350\123\005\005  
\010\276\310\204\047\125\326\035\212\022\342\027\042\132\154\377  
\263\335\266\231\303\312\301\352\371\330\045\265\337\072\235\235  
\077\122\305\351\362\254\277\211\164\212\124\256\116\317\156\362  
\136\256\332\275\022\007\231\225\317\144\253\376\231\221\144\131  
\214\311\276\104\152\061\233\230\352\272\352\321\041\016\050\013  
\071\233\343\326\212\246\367\002\272\077\075\331\131\364\171\231  
\336\323\044\233\213\160\033\052\204\326\345\011\017\046\046\044  
\130\217\045\136\363\305\235\164\211\245\066\305\345\122\262\353  
\350\206\223\107\156\247\051\207\244\176\334\264\243\313\062\126  
\367\105\200\332\134\307\057\240\247\327\357\365\374\265\250\315  
\204\225\142\370\251\053\043\073\155\323\267\222\310\352\301\274  
\024\115\350\153\234\026\172\323\354\007\373\007\045\020\117\024  
\207\173\222\066\316\126\202\145\113\023\046\006\330\243\243\246  
\337\302\172\373\173\065\005\242\023\075\076\166\274\034\127\203  
\003\121\307\064\336\132\365\074\275\066\045\234\026\017\115\316  
\350\015\032\313\135\103\242\024\157\272\174\140\324\002\205\166  
\305\153\052\270\105\261\134\167\107\021\255\240\045\251\146\221  
\214\121\027\155\141\125\012\031\077\233\002\377\304\365\326\322  
\263\351\045\123\341\004\075\217\042\320\242\145\345\256\247\264  
\340\035\221\152\302\206\222\367\072\135\023\247\172\114\102\337  
\132\263\112\210\104\054\357\107\272\251\257\326\317\142\163\212  
\006\042\026\054\302\354\037\006\250\323\107\120\131\062\022\345  
\271\235\142\065\236\312\136\012\264\235\043\210\302\323\117\054  
\054\311\223\350\176\270\011\354\246\331\335\143\341\311\250\152  
\150\334\204\121\254\132\022\347\073\246\265\007\012\261\252\116  
\263\264\242\127\337\067\154\026\116\253\231\062\172\360\234\043  
\045\213\312\232\250\214\340\070\041\264\316\367\154\141\310\342  
\014\022\131\006\201\046\066\132\017\065\163\324\026\105\375\336  
\225\336\326\113\134\237\163\331\276\031\275\347\277\344\125\152  
\310\153\104\367\307\270\063\210\171\031\015\006\144\350\257\013  
\241\165\014\122\145\272\012\043\225\161\367\143\374\176\345\214  
\217\314\321\002\003\001\000\001\243\201\265\060\201\262\060\016  
\006\003\125\035\017\001\001\377\004\004\003\002\001\006\060\030  
\006\010\053\006\001\005\005\007\001\003\004\014\060\012\060\010  
\006\006\004\000\216\106\001\001\060\017\006\003\125\035\023\001  
\001\377\004\005\060\003\001\001\377\060\035\006\003\125\035\016  
\004\026\004\024\073\046\003\272\317\343\131\106\102\120\255\024  
\234\277\003\073\357\326\076\061\060\020\006\011\053\006\001\004  
\001\202\067\025\001\004\003\002\001\000\060\104\006\003\125\035  
\040\004\075\060\073\060\071\006\013\053\006\001\004\001\201\372  
\075\001\001\001\060\052\060\050\006\010\053\006\001\005\005\007  
\002\001\026\034\150\164\164\160\072\057\057\167\167\167\056\145  
\155\145\056\154\166\057\162\145\160\157\163\151\164\157\162\171  
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\003  
\202\002\001\000\205\346\246\224\344\331\106\137\235\277\223\273

\371\153\166\144\050\256\277\074\105\052\212\223\171\154\323\113  
\210\206\040\153\042\046\070\075\034\023\252\353\141\227\154\056  
\076\127\234\154\103\242\336\155\100\304\061\362\155\272\106\026  
\263\055\306\273\246\334\345\057\261\330\301\325\221\036\021\177  
\373\137\241\334\035\141\370\155\233\141\360\342\077\053\161\325  
\015\313\336\337\145\077\240\157\225\233\172\313\333\065\067\051  
\135\136\235\271\124\261\254\140\022\345\143\331\315\257\122\033  
\005\226\023\174\332\044\165\001\255\324\236\245\313\301\022\105  
\117\127\257\043\277\051\274\352\216\255\170\370\207\043\350\110  
\313\100\250\276\135\063\326\354\306\006\103\302\147\052\350\343  
\205\056\140\236\104\057\053\117\061\261\007\235\225\041\325\052  
\222\257\200\221\323\307\051\275\315\361\025\014\237\001\356\370  
\055\073\244\007\160\111\171\044\355\274\241\323\226\121\202\237  
\302\310\274\336\043\232\307\120\053\232\266\170\122\252\316\225  
\366\140\073\242\231\371\046\146\364\107\054\101\045\274\101\372  
\326\213\177\275\137\202\174\323\105\205\264\114\330\354\263\027  
\357\104\072\365\050\145\357\365\236\161\314\041\336\350\326\121  
\034\020\373\100\374\111\345\134\204\027\257\252\031\136\242\355  
\116\036\242\373\312\107\034\034\144\076\024\221\242\071\031\064  
\210\177\221\313\073\235\031\160\352\050\373\374\120\017\314\275  
\075\136\002\003\153\171\065\104\101\166\356\266\055\164\204\341  
\202\161\323\045\260\323\303\231\104\253\077\342\014\245\356\275  
\246\374\244\021\000\356\234\275\067\321\326\142\304\060\024\055  
\020\012\227\212\210\365\045\074\226\276\106\100\032\212\300\205  
\166\304\240\111\340\111\245\347\031\265\011\363\314\115\355\026  
\136\232\324\323\310\151\320\330\212\067\205\153\116\344\252\007  
\222\134\324\161\161\201\110\323\170\365\126\140\376\314\002\324  
\000\223\037\114\222\100\227\276\162\123\171\056\046\122\276\246  
\243\164\261\224\331\024\143\072\156\133\321\074\222\047\122\220  
\062\132\222\322\017\116\133\013\006\072\142\345\326\047\014\001  
\366\045\002\270\213\020\051\102\251\367\151\312\334\353\012\222  
\113\050\061\206

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "E-ME SSI (RCA)"

# Issuer: CN=E-ME SSI (RCA),OU=Sertifikācijas pakalpojumu dala,C=LV

# Serial Number:2e:ef:db:fb:d8:89:3d:8f:49:1c:93:72:fe:45:df:ed

#

Subject: CN=E-ME SSI (RCA),OU=Sertifikācijas pakalpojumu dala,C=LV

# Not Valid Before: Tue May 19 08:45:56 2009

# Not Valid After: Wed May 19 08:48:15 2027

# Fingerprint (MD5): cb:bd:c3:68:2d:b3:cb:18:59:d3:29:52:e8:c6:64:89

# Fingerprint (SHA1): c9:32:1d:e6:b5:a8:26:66:cf:69:71:a1:8a:56:f2:d3:a8:67:56:02



```

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "E-ME SSI (RCA)"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\311\062\035\346\265\250\046\146\317\151\161\241\212\126\362\323
\250\147\126\002
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\313\275\303\150\055\263\313\030\131\323\051\122\350\306\144\211
END
CKA_ISSUER MULTILINE_OCTAL
\060\120\061\013\060\011\006\003\125\004\006\023\002\114\126\061
\050\060\046\006\003\125\004\013\023\037\123\145\162\164\151\146
\151\153\141\143\151\152\141\163\040\160\141\153\141\154\160\157
\152\165\155\165\040\144\141\154\141\061\027\060\025\006\003\125
\004\003\023\016\105\055\115\105\040\123\123\111\040\050\122\103
\101\051
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\056\357\333\373\330\211\075\217\111\034\223\162\376\105
\337\355
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

```

```

# Microsoft Code Signing Only Certificate
# Certificate "ACEDICOM Root"
# Issuer: C=ES,O=EDICOM,OU=PKI,CN=ACEDICOM Root
# Serial Number:61:8d:c7:86:3b:01:82:05
# Subject: C=ES,O=EDICOM,OU=PKI,CN=ACEDICOM Root
# Not Valid Before: Fri Apr 18 16:24:22 2008
# Not Valid After: Thu Apr 13 16:24:22 2028
# Fingerprint (MD5): 42:81:a0:e2:1c:e3:55:10:de:55:89:42:65:96:22:e6
# Fingerprint (SHA1): e0:b4:32:2e:b2:f6:a5:68:b6:54:53:84:48:18:4a:50:36:87:43:84

```

```

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE
CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "ACEDICOM Root"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\104\061\026\060\024\006\003\125\004\003\014\015\101\103\105

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\104\111\103\117\115\040\122\157\157\164\061\014\060\012\006\003  
\125\004\013\014\003\120\113\111\061\017\060\015\006\003\125\004  
\012\014\006\105\104\111\103\117\115\061\013\060\011\006\003\125  
\004\006\023\002\105\123

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\104\061\026\060\024\006\003\125\004\003\014\015\101\103\105  
\104\111\103\117\115\040\122\157\157\164\061\014\060\012\006\003  
\125\004\013\014\003\120\113\111\061\017\060\015\006\003\125\004  
\012\014\006\105\104\111\103\117\115\061\013\060\011\006\003\125  
\004\006\023\002\105\123

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\010\141\215\307\206\073\001\202\005

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\265\060\202\003\235\240\003\002\001\002\002\010\141  
\215\307\206\073\001\202\005\060\015\006\011\052\206\110\206\367  
\015\001\001\005\000\060\104\061\026\060\024\006\003\125\004  
\003\014\015\101\103\105\104\111\103\117\115\040\122\157\157\164  
\061\014\060\012\006\003\125\004\013\014\003\120\113\111\061\017  
\060\015\006\003\125\004\012\014\006\105\104\111\103\117\115\061  
\013\060\011\006\003\125\004\006\023\002\105\123\060\036\027\015  
\060\070\060\064\061\070\061\066\062\064\062\062\132\027\015\062  
\070\060\064\061\063\061\066\062\064\062\062\132\060\104\061\026  
\060\024\006\003\125\004\003\014\015\101\103\105\104\111\103\117  
\115\040\122\157\157\164\061\014\060\012\006\003\125\004\013\014  
\003\120\113\111\061\017\060\015\006\003\125\004\012\014\006\105  
\104\111\103\117\115\061\013\060\011\006\003\125\004\006\023\002  
\105\123\060\202\002\042\060\015\006\011\052\206\110\206\367\015  
\001\001\001\005\000\003\202\002\017\000\060\202\002\012\002\202  
\002\001\000\377\222\225\341\150\006\166\264\054\310\130\110\312  
\375\200\124\051\125\143\044\377\220\145\233\020\165\173\303\152  
\333\142\002\001\362\030\206\265\174\132\070\261\344\130\271\373  
\323\330\055\237\275\062\067\277\054\025\155\276\265\364\041\322  
\023\221\331\007\255\001\005\326\363\275\167\316\137\102\201\012  
\371\152\343\203\000\250\053\056\125\023\143\201\312\107\034\173  
\134\026\127\172\033\203\140\004\072\076\145\303\315\001\336\336  
\244\326\014\272\216\336\331\004\356\027\126\042\233\217\143\375  
\115\026\013\267\173\167\214\371\045\265\321\155\231\022\056\117  
\032\270\346\352\004\222\256\075\021\271\121\102\075\207\260\061  
\205\257\171\132\234\376\347\116\136\222\117\103\374\253\072\255  
\245\022\046\146\271\342\014\327\230\316\324\130\245\225\100\012  
\267\104\235\023\164\053\302\245\353\042\025\230\020\330\213\305  
\004\237\035\217\140\345\006\033\233\317\271\171\240\075\242\043  
\077\102\077\153\372\034\003\173\060\215\316\154\300\277\346\033  
\137\277\147\270\204\031\325\025\357\173\313\220\066\061\142\311

\274\002\253\106\137\233\376\032\150\224\064\075\220\216\255\366  
\344\035\011\177\112\210\070\077\276\147\375\064\226\365\035\274  
\060\164\313\070\356\325\154\253\324\374\364\000\267\000\133\205  
\062\026\166\063\351\330\243\231\235\005\000\252\026\346\363\201  
\175\157\175\252\206\155\255\025\164\323\304\242\161\252\364\024  
\175\347\062\270\037\274\325\361\116\275\157\027\002\071\327\016  
\225\102\072\307\000\076\351\046\143\021\352\013\321\112\377\030  
\235\262\327\173\057\072\331\226\373\350\036\222\256\023\125\310  
\331\047\366\334\110\033\260\044\301\205\343\167\235\232\244\363  
\014\021\035\015\310\264\024\356\265\202\127\011\277\040\130\177  
\057\042\043\330\160\313\171\154\311\113\362\251\052\310\374\207  
\053\327\032\120\370\047\350\057\103\343\072\275\330\127\161\375  
\316\246\122\133\371\335\115\355\345\366\157\211\355\273\223\234  
\166\041\165\360\222\114\051\367\057\234\001\056\376\120\106\236  
\144\014\024\263\007\133\305\302\163\154\361\007\134\105\044\024  
\065\256\203\361\152\115\211\172\372\263\330\055\146\360\066\207  
\365\053\123\002\003\001\000\001\243\201\252\060\201\247\060\017  
\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060  
\037\006\003\125\035\043\004\030\060\026\200\024\246\263\341\053  
\053\111\266\327\163\241\252\224\365\001\347\163\145\114\254\120  
\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001\206  
\060\035\006\003\125\035\016\004\026\004\024\246\263\341\053\053  
\111\266\327\163\241\252\224\365\001\347\163\145\114\254\120\060  
\104\006\003\125\035\040\004\075\060\073\060\071\006\004\125\035  
\040\000\060\061\060\057\006\010\053\006\001\005\005\007\002\001  
\026\043\150\164\164\160\072\057\057\141\143\145\144\151\143\157  
\155\056\145\144\151\143\157\155\147\162\157\165\160\056\143\157  
\155\057\144\157\143\060\015\006\011\052\206\110\206\367\015\001  
\001\005\005\000\003\202\002\001\000\316\054\013\122\121\142\046  
\175\014\047\203\217\305\366\332\240\150\173\117\222\136\352\244  
\163\062\021\123\104\262\104\313\235\354\017\171\102\263\020\246  
\307\015\235\313\266\372\077\072\174\352\277\210\123\033\074\367  
\202\372\005\065\063\341\065\250\127\300\347\375\215\117\077\223  
\062\117\170\146\003\167\007\130\351\225\310\176\076\320\171\000  
\214\362\033\121\063\233\274\224\351\072\173\156\122\055\062\236  
\043\244\105\373\266\056\023\260\213\030\261\335\316\325\035\247  
\102\177\125\276\373\133\273\107\324\374\044\315\004\256\226\005  
\025\326\254\316\060\363\312\013\305\272\342\042\340\246\255\042  
\344\002\356\164\021\177\114\377\170\035\065\332\346\002\064\353  
\030\022\141\167\006\011\026\143\352\030\255\242\207\037\362\307  
\200\011\011\165\116\020\250\217\075\206\270\165\021\300\044\142  
\212\226\173\112\105\351\354\131\305\276\153\203\346\341\350\254  
\265\060\036\376\005\007\200\371\341\043\015\120\217\005\230\377  
\054\137\350\073\266\255\317\201\265\041\207\312\010\052\043\047  
\060\040\053\317\355\224\133\254\262\172\322\307\050\241\212\013  
\233\115\112\054\155\205\077\011\162\074\147\342\331\334\007\272  
\353\145\173\132\001\143\326\220\133\117\027\146\075\177\013\031  
\243\223\143\020\122\052\237\024\026\130\342\334\245\364\241\026

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\213\016\221\213\201\312\233\131\372\330\153\221\007\145\125\137
\122\037\257\072\373\220\335\151\245\133\234\155\016\054\266\372
\316\254\245\174\062\112\147\100\334\060\064\043\335\327\004\043
\146\360\374\125\200\247\373\146\031\202\065\147\142\160\071\136
\157\307\352\220\100\104\010\036\270\262\326\333\356\131\247\015
\030\171\064\274\124\030\136\123\312\064\121\355\105\012\346\216
\307\202\066\076\247\070\143\251\060\054\027\020\140\222\237\125
\207\022\131\020\302\017\147\151\021\314\116\036\176\112\232\255
\257\100\250\165\254\126\220\164\270\240\234\245\171\157\334\351
\032\310\151\005\351\272\372\003\263\174\344\340\116\302\316\235
\350\266\106\015\156\176\127\072\147\224\302\313\037\234\167\112
\147\116\151\206\103\223\070\373\266\333\117\203\221\324\140\176
\113\076\053\070\007\125\230\136\244
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust

for "ACEDICOM Root"

# Issuer: C=ES,O=EDICOM,OU=PKI,CN=ACEDICOM Root

# Serial Number:61:8d:c7:86:3b:01:82:05

# Subject: C=ES,O=EDICOM,OU=PKI,CN=ACEDICOM Root

# Not Valid Before: Fri Apr 18 16:24:22 2008

# Not Valid After: Thu Apr 13 16:24:22 2028

# Fingerprint (MD5): 42:81:a0:e2:1c:e3:55:10:de:55:89:42:65:96:22:e6

# Fingerprint (SHA1): e0:b4:32:2e:b2:f6:a5:68:b6:54:53:84:48:18:4a:50:36:87:43:84

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "ACEDICOM Root"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\340\264\062\056\262\366\245\150\266\124\123\204\110\030\112\120
\066\207\103\204
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\102\201\240\342\034\343\125\020\336\125\211\102\145\226\042\346
```

END

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\104\061\026\060\024\006\003\125\004\003\014\015\101\103\105
\104\111\103\117\115\040\122\157\157\164\061\014\060\012\006\003
\125\004\013\014\003\120\113\111\061\017\060\015\006\003\125\004
\012\014\006\105\104\111\103\117\115\061\013\060\011\006\003\125
\004\006\023\002\105\123
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END

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CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\010\141\215\307\206\073\001\202\005
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "Autoridad Certificadora Raiz de la Secretaria de Economia"
# Issuer: 1.2.840.113549.1.9.1=acrse@economia.gob.mx,O=Secretaria de Economia,OU=Direccion General de
Normatividad Mercantil,CN=Autoridad Certificadora Raiz de la Secretaria de Economia,STREET=Insurgentes Sur
1940,2.5.4.17=01030,C=MX,ST=Distrito Federal,L=Alvaro Obregon
# Serial Number: 1 (0x1)
# Subject: 1.2.840.113549.1.9.1=acrse@economia.gob.mx,O=Secretaria de Economia,OU=Direccion General de
Normatividad Mercantil,CN=Autoridad Certificadora Raiz de la Secretaria de Economia,STREET=Insurgentes
Sur 1940,2.5.4.17=01030,C=MX,ST=Distrito Federal,L=Alvaro Obregon
# Not Valid Before: Sun May 08 00:00:00 2005
# Not Valid After: Thu May 08 00:00:00 2025
# Fingerprint (MD5): 07:61:92:04:7e:a6:b9:cd:5e:6b:00:7a:e3:bf:1d:04
# Fingerprint (SHA1): 34:d4:99:42:6f:9f:c2:bb:27:b0:75:ba:b6:82:aa:e5:ef:fc:ba:74
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Autoridad Certificadora Raiz de la Secretaria de Economia"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\202\001\061\061\027\060\025\006\003\125\004\007\023\016\101
\154\166\141\162\157\040\117\142\162\145\147\157\156\061\031\060
\027\006\003\125\004\010\023\020\104\151\163\164\162\151\164\157
\040\106\145\144\145\162\141\154\061\013\060\011\006\003\125\004
\006\023\002\115\130\061\016\060\014\006\003\125\004\021\023\005
\060\061\060\063\060\061\035\060\033\006\003\125\004\011\023\024
\111\156\163\165\162\147\145\156\164\145\163\040\123\165\162\040
\061\071\064\060\061\102\060\100\006\003\125\004\003\023\071\101
\165\164\157\162\151\144\141\144\040\103\145\162\164\151\146\151
\143\141\144\157\162\141\040\122\141\151\172\040\144\145\040\154
\141\040\123\145\143\162\145\164\141\162\151\141\040\144\145\040
\105\143\157\156\157\155\151\141\061\064\060\062\006\003\125\004
\013\023\053\104\151\162\145\143\143\151\157\156\040\107\145\156
\145\162\141\154\040\144\145\040\116\157\162\155\141\164\151\166
\151\144\141\144\040\115\145\162\143\141\156\164\151\154\061\037
\060\035\006\003\125\004\012\023\026\123\145\143\162\145\164\141
\162\151\141\040\144\145\040\105\143\157\156\157\155\151\141\061
\044\060\042\006\011\052\206\110\206\367\015\001\011\001\026\025
\141\143\162\163\145\100\145\143\157\156\157\155\151\141\056\147
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\157\142\056\155\170

END

CKA\_ID

UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

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\027\006\003\125\004\010\023\020\104\151\163\164\162\151\164\157  
\040\106\145\144\145\162\141\154\061\013\060\011\006\003\125\004  
\006\023\002\115\130\061\016\060\014\006\003\125\004\021\023\005  
\060\061\060\063\060\061\035\060\033\006\003\125\004\011\023\024  
\111\156\163\165\162\147\145\156\164\145\163\040\123\165\162\040  
\061\071\064\060\061\102\060\100\006\003\125\004\003\023\071\101  
\165\164\157\162\151\144\141\144\040\103\145\162\164\151\146\151  
\143\141\144\157\162\141\040\122\141\151\172\040\144\145\040\154  
\141\040\123\145\143\162\145\164\141\162\151\141\040\144\145\040  
\105\143\157\156\157\155\151\141\061\064\060\062\006\003\125\004  
\013\023\053\104\151\162\145\143\143\151\157\156\040\107\145\156  
\145\162\141\154\040\144\145\040\116\157\162\155\141\164\151\166  
\151\144\141\144\040\115\145\162\143\141\156\164\151\154\061\037  
\060\035\006\003\125\004\012\023\026\123\145\143\162\145\164\141  
\162\151\141\040\144\145\040\105\143\157\156\157\155\151\141\061  
\044\060\042\006\011\052\206\110\206\367\015\001\011\001\026\025  
\141\143\162\163\145\100\145\143\157\156\157\155\151\141\056\147  
\157\142\056\155\170

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\001\001

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\224\060\202\004\174\240\003\002\001\002\002\001\001  
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060  
\202\001\061\061\027\060\025\006\003\125\004\007\023\016\101\154  
\166\141\162\157\040\117\142\162\145\147\157\156\061\031\060\027  
\006\003\125\004\010\023\020\104\151\163\164\162\151\164\157\040  
\106\145\144\145\162\141\154\061\013\060\011\006\003\125\004\006  
\023\002\115\130\061\016\060\014\006\003\125\004\021\023\005\060  
\061\060\063\060\061\035\060\033\006\003\125\004\011\023\024\111  
\156\163\165\162\147\145\156\164\145\163\040\123\165\162\040\061  
\071\064\060\061\102\060\100\006\003\125\004\003\023\071\101\165  
\164\157\162\151\144\141\144\040\103\145\162\164\151\146\151\143  
\141\144\157\162\141\040\122\141\151\172\040\144\145\040\154\141  
\040\123\145\143\162\145\164\141\162\151\141\040\144\145\040\105  
\143\157\156\157\155\151\141\061\064\060\062\006\003\125\004\013  
\023\053\104\151\162\145\143\143\151\157\156\040\107\145\156\145  
\162\141\154\040\144\145\040\116\157\162\155\141\164\151\166\151  
\144\141\144\040\115\145\162\143\141\156\164\151\154\061\037\060

\035\006\003\125\004\012\023\026\123\145\143\162\145\164\141\162  
\151\141\040\144\145\040\105\143\157\156\157\155\151\141\061\044  
\060\042\006\011\052\206\110\206\367\015\001\011\001\026\025\141  
\143\162\163\145\100\145\143\157\156\157\155\151\141\056\147\157  
\142\056\155\170\060\036\027\015\060\065\060\065\060\070\060\060  
\060\060\060\060\132\027\015\062\065\060\065\060\070\060\060\060  
\060\060\060\132\060\202\001\061\061\027\060\025\006\003\125\004  
\007\023\016\101\154\166\141\162\157\040\117\142\162\145\147\157  
\156\061\031\060\027\006\003\125\004\010\023\020\104\151\163\164  
\162\151\164\157\040\106\145\144\145\162\141\154\061\013\060\011  
\006\003\125\004\006\023\002\115\130\061\016\060\014\006\003\125  
\004\021\023\005\060\061\060\063\060\061\035\060\033\006\003\125  
\004\011\023\024\111\156\163\165\162\147\145\156\164\145\163\040  
\123\165\162\040\061\071\064\060\061\102\060\100\006\003\125\004  
\003\023\071\101\165\164\157\162\151\144\141\144\040\103\145\162  
\164\151\146\151\143\141\144\157\162\141\040\122\141\151\172\040  
\144\145\040\154\141\040\123\145\143\162\145\164\141\162\151\141  
\040\144\145\040\105\143\157\156\157\155\151\141\061\064\060\062  
\006\003\125\004\013\023\053\104\151\162\145\143\143\151\157\156  
\040\107\145\156\145\162\141\154\040\144\145\040\116\157\162\155  
\141\164\151\166\151\144\141\144\040\115\145\162\143\141\156\164  
\151\154\061\037\060\035\006\003\125\004\012\023\026\123\145\143  
\162\145\164\141\162\151\141\040\144\145\040\105\143\157\156\157  
\155\151\141\061\044\060\042\006\011\052\206\110\206\367\015\001  
\011\001\026\025\141\143\162\163\145\100\145\143\157\156\157\155  
\151\141\056\147\157\142\056\155\170\060\202\001\042\060\015\006  
\011\052\206\110\206\367\015\001\001\001\005\000\003\202\001\017  
\000\060\202\001\012\002\202\001\001\000\301\144\240\364\347\122  
\160\262\352\223\023\364\065\072\037\352\072\034\305\033\213\130  
\341\226\326\002\101\136\216\205\100\377\101\146\100\123\374\230  
\265\321\062\062\227\147\100\200\235\356\040\077\016\124\373\102  
\007\373\167\032\231\330\206\364\034\052\210\045\363\351\104\243  
\116\376\007\276\261\310\357\074\215\207\340\036\312\111\020\073  
\050\357\044\121\241\374\210\027\112\347\034\310\124\147\143\350  
\152\061\346\103\154\366\100\021\206\304\126\356\275\311\035\246  
\106\074\036\106\302\202\215\056\251\350\356\166\012\103\340\162  
\115\214\364\305\006\372\054\001\000\063\140\316\070\160\064\153  
\027\032\353\172\144\141\247\223\244\145\152\327\043\307\166\172  
\224\121\013\354\236\250\317\073\242\120\062\034\102\275\143\341  
\207\313\271\205\110\016\300\325\130\266\366\316\113\362\007\317  
\343\004\325\037\302\326\243\156\243\273\266\267\156\304\361\242  
\037\026\274\266\055\260\357\364\132\233\051\215\274\341\374\007  
\133\036\011\063\202\170\314\100\155\161\263\143\023\057\323\114  
\066\254\071\117\306\301\260\266\365\205\002\003\001\000\001\243  
\201\262\060\201\257\060\063\006\003\125\035\037\004\054\060\052  
\060\050\240\046\240\044\206\042\150\164\164\160\072\057\057\141  
\143\056\145\143\157\156\157\155\151\141\056\147\157\142\056\155  
\170\057\154\141\163\164\056\143\162\154\060\107\006\003\125\035

\040\004\100\060\076\060\074\006\010\140\203\144\145\012\202\074  
\001\060\060\060\056\006\010\053\006\001\005\005\007\002\001\026  
\042\150\164\164\160\072\057\057\141\143\056\145\143\157\156\157  
\155\151\141\056\147\157\142\056\155\170\057\143\160\163\056\150  
\164\155\154\060\017\006\003\125\035\023\001\001\377\004\005\060  
\003\001\001\377\060\013\006\003\125\035\017\004\004\003\002\001  
\006\060\021\006\011\140\206\110\001\206\370\102\001\001\004\004  
\003\002\000\007\060\015\006\011\052\206\110\206\367\015\001\001  
\005\005\000\003\202\001\001\000\114\052\170\123\004\226\163\140  
\253\065\254\300\304\343\347\310\160\245\051\057\207\030\345\250  
\202\336\007\325\010\364\317\236\075\236\374\112\054\026\174\237  
\242\235\145\020\314\301\033\233\152\147\332\262\263\035\377\315  
\144\172\070\143\255\110\375\363\162\341\372\237\273\127\335\277  
\314\302\124\330\225\074\146\327\153\006\272\257\251\340\155\010  
\357\244\266\220\075\014\156\040\027\247\226\247\174\150\112\234  
\230\304\007\157\301\002\142\221\070\233\235\343\212\171\123\235  
\237\044\166\045\366\255\050\126\006\252\357\007\254\272\366\154  
\344\045\061\175\210\200\072\170\106\370\171\341\070\340\023\347  
\141\051\107\363\313\024\000\323\332\342\335\355\163\337\113\362  
\143\344\046\330\165\320\115\103\024\220\026\224\107\001\377\241  
\131\113\344\166\233\131\003\336\326\027\366\173\327\134\370\351  
\343\157\310\116\340\107\046\261\342\234\174\112\061\345\144\021  
\340\260\137\332\221\066\110\037\372\011\212\145\150\365\016\302  
\237\357\270\152\317\167\376\022\355\066\332\021\066\255\031\152  
\302\324\216\122\327\150\357\061

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "Autoridad Certificadora Raiz de la Secretaria de Economia"

# Issuer: 1.2.840.113549.1.9.1=acrse@economia.gob.mx,O=Secretaria de Economia,OU=Direccion General de  
Normatividad Mercantil,CN=Autoridad Certificadora Raiz de la Secretaria de Economia,STREET=Insurgentes Sur  
1940,2.5.4.17=01030,C=MX,ST=Distrito Federal,L=Alvaro Obregon

# Serial Number: 1 (0x1)

# Subject: 1.2.840.113549.1.9.1=acrse@economia.gob.mx,O=Secretaria de Economia,OU=Direccion General de  
Normatividad Mercantil,CN=Autoridad Certificadora Raiz de la Secretaria de Economia,STREET=Insurgentes Sur  
1940,2.5.4.17=01030,C=MX,ST=Distrito Federal,L=Alvaro Obregon

# Not Valid Before: Sun May 08 00:00:00 2005

# Not Valid After: Thu May 08 00:00:00 2025

# Fingerprint

(MD5): 07:61:92:04:7e:a6:b9:cd:5e:6b:00:7a:e3:bf:1d:04

# Fingerprint (SHA1): 34:d4:99:42:6f:9f:c2:bb:27:b0:75:ba:b6:82:aa:e5:ef:fc:ba:74

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE



```

CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Autoridad Certificadora Raiz de la Secretaria de Economia"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\064\324\231\102\157\237\302\273\047\260\165\272\266\202\252\345
\357\374\272\164
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\007\141\222\004\176\246\271\315\136\153\000\172\343\277\035\004
END
CKA_ISSUER MULTILINE_OCTAL
\060\202\001\061\061\027\060\025\006\003\125\004\007\023\016\101
\154\166\141\162\157\040\117\142\162\145\147\157\156\061\031\060
\027\006\003\125\004\010\023\020\104\151\163\164\162\151\164\157
\040\106\145\144\145\162\141\154\061\013\060\011\006\003\125\004
\006\023\002\115\130\061\016\060\014\006\003\125\004\021\023\005
\060\061\060\063\060\061\035\060\033\006\003\125\004\011\023\024
\111\156\163\165\162\147\145\156\164\145\163\040\123\165\162\040
\061\071\064\060\061\102\060\100\006\003\125\004\003\023\071\101
\165\164\157\162\151\144\141\144\040\103\145\162\164\151\146\151
\143\141\144\157\162\141\040\122\141\151\172\040\144\145\040\154
\141\040\123\145\143\162\145\164\141\162\151\141\040\144\145\040
\105\143\157\156\157\155\151\141\061\064\060\062\006\003\125\004
\013\023\053\104\151\162\145\143\143\151\157\156\040\107\145\156
\145\162\141\154\040\144\145\040\116\157\162\155\141\164\151\166
\151\144\141\144\040\115\145\162\143\141\156\164\151\154\061\037
\060\035\006\003\125\004\012\023\026\123\145\143\162\145\164\141
\162\151\141\040\144\145\040\105\143\157\156\157\155\151\141\061
\044\060\042\006\011\052\206\110\206\367\015\001\011\001\026\025
\141\143\162\163\145\100\145\143\157\156\157\155\151\141\056\147
\157\142\056\155\170
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\001\001
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING
CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

```

```

# Microsoft Code Signing Only Certificate
# Certificate "Correo Uruguayo - Root CA"
# Issuer: CN=Correo Uruguayo - Root CA,OU=SERVICIOS ELECTRONICOS,O=ADMINISTRACION
NACIONAL DE CORREOS,C=UY
# Serial Number:ca:22:79:08:23:2a:f0:f5:82:b8:85:d3:63:dd:f1
# Subject: CN=Correo Uruguayo - Root CA,OU=SERVICIOS ELECTRONICOS,O=ADMINISTRACION
NACIONAL DE CORREOS,C=UY

```

```
# Not Valid Before: Mon Jul 14 16:52:15 2008
# Not Valid After: Tue Dec 31 02:59:59 2030
# Fingerprint (MD5): 24:6d:ab:d2:f2:ea:4a:66:ae:5b:bc:ae:50:ad:6e:56
# Fingerprint (SHA1): f9:dd:19:26:6b:20:43:f1:fe:4b:3d:cb:01:90:af:f1:1f:31:a6:9d
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Correo Uruguayo - Root CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\177\061\013\060\011\006\003\125\004\006\023\002\125\131\061
\053\060\051\006\003\125\004\012\014\042\101\104\115\111\116\111
\123\124\122\101\103\111\117\116\040\116\101\103\111\117\116\101
\114\040\104\105\040\103\117\122\122\105\117\123\061\037\060\035
\006\003\125\004\013\014\026\123\105\122\126\111\103\111\117\123
\040\105\114\105\103\124\122\117\116\111\103\117\123\061\042\060
\040\006\003\125\004\003\014\031\103\157\162\162\145\157\040\125
\162\165\147\165\141\171\157\040\055\040\122\157\157\164\040\103
\101
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\177\061\013\060\011\006\003\125\004\006\023\002\125\131\061
\053\060\051\006\003\125\004\012\014\042\101\104\115\111\116\111
\123\124\122\101\103\111\117\116\040\116\101\103\111\117\116\101
\114\040\104\105\040\103\117\122\122\105\117\123\061\037\060\035
\006\003\125\004\013\014\026\123\105\122\126\111\103\111\117\123
\040\105\114\105\103\124\122\117\116\111\103\117\123\061\042\060
\040\006\003\125\004\003\014\031\103\157\162\162\145\157\040\125
\162\165\147\165\141\171\157\040\055\040\122\157\157\164\040\103
\101
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\000\312\042\171\010\043\052\360\365\202\270\205\323\143
\335\361
END
CKA_VALUE MULTILINE_OCTAL
\060\202\006\032\060\202\004\002\240\003\002\001\002\002\020\000
\312\042\171\010\043\052\360\365\202\270\205\323\143\335\361\060
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\177
\061\013\060\011\006\003\125\004\006\023\002\125\131\061\053\060
\051\006\003\125\004\012\014\042\101\104\115\111\116\111\123\124
\122\101\103\111\117\116\040\116\101\103\111\117\116\101\114\040
\104\105\040\103\117\122\122\105\117\123\061\037\060\035\006\003
\125\004\013\014\026\123\105\122\126\111\103\111\117\123\040\105
```

\114\105\103\124\122\117\116\111\103\117\123\061\042\060\040\006  
\003\125\004\003\014\031\103\157\162\162\145\157\040\125\162\165  
\147\165\141\171\157\040\055\040\122\157\157\164\040\103\101\060  
\036\027\015\060\070\060\067\061\064\061\066\065\062\061\065\132  
\027\015\063\060\061\062\063\061\060\062\065\071\065\071\132\060  
\177\061\013\060\011\006\003\125\004\006\023\002\125\131\061\053  
\060\051\006\003\125\004\012\014\042\101\104\115\111\116\111\123  
\124\122\101\103\111\117\116\040\116\101\103\111\117\116\101\114  
\040\104\105\040\103\117\122\122\105\117\123\061\037\060\035\006  
\003\125\004\013\014\026\123\105\122\126\111\103\111\117\123\040  
\105\114\105\103\124\122\117\116\111\103\117\123\061\042\060\040  
\006\003\125\004\003\014\031\103\157\162\162\145\157\040\125\162  
\165\147\165\141\171\157\040\055\040\122\157\157\164\040\103\101  
\060\202\002\042\060\015\006\011\052\206\110\206\367\015\001\001  
\001\005\000\003\202\002\017\000\060\202\002\012\002\202\002\001  
\000\261\075\322\247\045\160\227\203\170\016\327\062\311\146\016  
\170\043\344\052\033\354\303\357\123\205\203\273\312\317\176\352  
\123\231\155\047\125\310\321\070\041\100\156\111\115\303\075\366  
\011\053\006\031\103\251\230\311\001\116\364\252\200\060\007\125  
\363\365\267\175\231\267\163\205\325\034\145\126\154\015\062\233  
\010\016\064\141\052\100\011\204\067\303\146\355\015\114\234\014  
\170\100\072\354\355\253\314\244\204\362\165\061\225\100\250\252  
\273\223\265\167\230\154\362\310\340\041\132\043\344\102\247\223  
\310\250\035\070\316\244\032\100\100\277\074\223\220\233\137\326  
\224\301\042\133\106\327\305\000\025\325\217\306\367\336\013\257  
\156\213\005\217\133\200\225\016\243\275\223\314\220\362\175\343  
\110\176\262\315\007\075\033\355\024\220\164\363\335\064\037\174  
\344\003\131\361\055\315\340\243\240\073\041\056\134\256\254\010  
\006\120\025\061\065\356\137\371\037\015\064\245\200\156\142\162  
\117\343\041\272\070\100\135\137\333\150\052\134\064\306\010\073  
\366\174\056\250\215\304\267\246\255\331\233\277\031\101\016\110  
\071\011\146\156\015\064\001\305\273\007\021\043\244\332\376\140  
\226\050\107\334\217\147\233\023\257\175\171\016\170\315\300\214  
\057\273\041\054\374\164\026\036\336\300\062\235\372\170\072\206  
\272\076\311\170\012\000\321\344\340\311\022\342\133\334\353\273  
\200\232\062\065\253\360\060\303\016\110\204\057\215\010\012\366  
\054\214\115\062\200\105\125\010\333\315\015\250\277\010\172\270  
\347\150\135\232\224\211\225\274\374\232\216\270\177\072\330\154  
\325\364\030\254\151\342\244\301\013\263\037\243\202\237\363\212  
\074\205\100\070\011\372\302\005\076\341\234\211\372\303\005\154  
\010\217\135\121\364\177\273\304\363\154\001\275\075\117\304\031  
\213\071\331\312\314\351\171\210\004\125\253\155\270\332\026\105  
\145\071\025\005\030\373\013\054\163\001\355\224\122\345\175\014  
\001\073\011\240\115\361\075\010\201\146\064\066\027\104\360\147  
\363\133\362\005\266\041\230\130\331\364\241\067\331\157\346\357  
\126\304\373\277\126\142\002\254\060\060\266\002\326\322\026\374  
\116\352\207\103\232\150\135\210\243\221\106\050\053\277\071\025  
\025\002\003\001\000\001\243\201\221\060\201\216\060\017\006\003

\125\035\023\001\001\377\004\005\060\003\001\001\377\060\016\006  
\003\125\035\017\001\001\377\004\004\003\002\001\006\060\035\006  
\003\125\035\016\004\026\004\024\175\273\151\353\210\141\341\100  
\317\107\043\144\000\206\242\146\153\334\204\225\060\114\006\003  
\125\035\040\004\105\060\103\060\101\006\004\125\035\040\000\060  
\071\060\067\006\010\053\006\001\005\005\007\002\001\026\053\150  
\164\164\160\072\057\057\167\167\167\056\143\157\162\162\145\157  
\056\143\157\155\056\165\171\057\143\157\162\162\145\157\143\145  
\162\164\057\143\160\163\056\160\144\146\060\015\006\011\052\206  
\110\206\367\015\001\001\005\005\000\003\202\002\001\000\126\337  
\023\211\276\142\267\016\201\041\163\244\324\067\312\355\267\057  
\225\164\327\211\370\113\107\201\356\147\355\270\051\337\041\240  
\374\124\147\147\310\127\054\133\241\012\165\170\041\041\312\240  
\250\337\153\234\331\066\002\215\270\001\301\157\216\173\154\311  
\244\262\305\106\251\312\114\002\201\372\243\173\235\075\110\346  
\312\100\146\322\104\235\166\340\125\271\246\234\247\321\103\330  
\365\240\264\235\370\367\345\246\246\102\363\002\062\131\106\162  
\053\024\354\136\145\325\121\201\170\316\252\057\215\226\211\171  
\152\373\017\310\133\317\264\256\220\266\137\343\174\142\154\267  
\246\377\220\201\265\230\221\163\022\060\257\307\350\201\002\150  
\163\051\273\130\165\075\267\326\103\325\256\115\362\102\271\360  
\337\332\061\000\023\332\341\263\266\006\213\133\375\311\230\270  
\242\023\321\272\217\301\212\032\236\017\377\202\276\004\202\345  
\053\223\076\036\265\242\014\033\306\032\260\163\211\166\203\274  
\216\073\273\027\155\024\303\213\276\175\025\046\265\251\234\027  
\172\120\172\055\353\351\231\224\256\230\020\275\356\052\135\135  
\326\216\064\133\254\036\207\140\153\230\307\207\217\323\234\262  
\150\005\111\007\371\251\061\146\234\376\277\247\131\350\054\360  
\066\324\362\250\031\202\300\236\247\071\371\261\230\064\243\037  
\372\315\311\031\055\170\336\267\375\142\360\223\243\376\000\133  
\326\012\344\363\176\174\227\050\341\005\354\005\064\105\023\377  
\051\023\141\212\047\117\333\270\322\222\041\047\265\210\167\147  
\250\176\317\044\074\207\010\004\063\163\217\013\266\206\370\317  
\357\262\246\044\036\013\221\221\000\120\026\062\022\330\011\045  
\332\143\116\335\333\055\327\347\004\153\343\143\037\251\376\251  
\001\143\304\312\114\024\150\203\274\005\254\131\026\373\156\241  
\007\157\273\113\276\155\230\110\166\045\173\112\021\226\124\010  
\254\251\363\067\253\203\303\321\315\201\230\300\345\100\065\270  
\237\221\347\157\346\113\040\026\212\123\173\254\072\321\230\065  
\124\320\324\277\256\176\232\113\036\351\165\243\045\260\073\347  
\145\277\117\225\364\035\275\304\272\311\115\201\121\302\077\132  
\331\022\364\041\033\326\225\352\075\220\376\251\223\342

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

```

# Microsoft Code Signing Only Certificate
# Trust for "Correo Uruguayo - Root CA"
# Issuer: CN=Correo Uruguayo - Root CA,OU=SERVICIOS ELECTRONICOS,O=ADMINISTRACION
NACIONAL DE CORREOS,C=UY
# Serial Number:ca:22:79:08:23:2a:f0:f5:82:b8:85:d3:63:dd:f1
# Subject: CN=Correo Uruguayo
- Root CA,OU=SERVICIOS ELECTRONICOS,O=ADMINISTRACION NACIONAL DE CORREOS,C=UY
# Not Valid Before: Mon Jul 14 16:52:15 2008
# Not Valid After: Tue Dec 31 02:59:59 2030
# Fingerprint (MD5): 24:6d:ab:d2:f2:ea:4a:66:ae:5b:bc:ae:50:ad:6e:56
# Fingerprint (SHA1): f9:dd:19:26:6b:20:43:f1:fe:4b:3d:cb:01:90:af:f1:1f:31:a6:9d
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Correo Uruguayo - Root CA"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\371\335\031\046\153\040\103\361\376\113\075\313\001\220\257\361
\037\061\246\235
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\044\155\253\322\362\352\112\146\256\133\274\256\120\255\156\126
END
CKA_ISSUER MULTILINE_OCTAL
\060\177\061\013\060\011\006\003\125\004\006\023\002\125\131\061
\053\060\051\006\003\125\004\012\014\042\101\104\115\111\116\111
\123\124\122\101\103\111\117\116\040\116\101\103\111\117\116\101
\114\040\104\105\040\103\117\122\122\105\117\123\061\037\060\035
\006\003\125\004\013\014\026\123\105\122\126\111\103\111\117\123
\040\105\114\105\103\124\122\117\116\111\103\117\123\061\042\060
\040\006\003\125\004\003\014\031\103\157\162\162\145\157\040\125
\162\165\147\165\141\171\157\040\055\040\122\157\157\164\040\103
\101
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\000\312\042\171\010\043\052\360\365\202\270\205\323\143
\335\361
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "CNNIC ROOT"
# Issuer: CN=CNNIC ROOT,O=CNNIC,C=CN
# Serial Number:49:33:00:01

```

```
# Subject: CN=CNNIC ROOT,O=CNNIC,C=CN
# Not Valid Before: Mon Apr 16 07:09:14 2007
# Not Valid After: Fri Apr 16 07:09:14 2027
# Fingerprint (MD5): 21:bc:82:ab:49:c4:13:3b:4b:b2:2b:5c:6b:90:9c:19
# Fingerprint (SHA1): 8b:af:4c:9b:1d:f0:2a:92:f7:da:12:8e:b9:1b:ac:f4:98:60:4b:6f
CKA_CLASS
CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "CNNIC ROOT"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\062\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\016\060\014\006\003\125\004\012\023\005\103\116\116\111\103\061
\023\060\021\006\003\125\004\003\023\012\103\116\116\111\103\040
\122\117\117\124
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\062\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\016\060\014\006\003\125\004\012\023\005\103\116\116\111\103\061
\023\060\021\006\003\125\004\003\023\012\103\116\116\111\103\040
\122\117\117\124
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\004\111\063\000\001
END
CKA_VALUE MULTILINE_OCTAL
\060\202\003\125\060\202\002\075\240\003\002\001\002\002\004\111
\063\000\001\060\015\006\011\052\206\110\206\367\015\001\001\005
\005\000\060\062\061\013\060\011\006\003\125\004\006\023\002\103
\116\061\016\060\014\006\003\125\004\012\023\005\103\116\116\111
\103\061\023\060\021\006\003\125\004\003\023\012\103\116\116\111
\103\040\122\117\117\124\060\036\027\015\060\067\060\064\061\066
\060\067\060\071\061\064\132\027\015\062\067\060\064\061\066\060
\067\060\071\061\064\132\060\062\061\013\060\011\006\003\125\004
\006\023\002\103\116\061\016\060\014\006\003\125\004\012\023\005
\103\116\116\111\103\061\023\060\021\006\003\125\004\003\023\012
\103\116\116\111\103\040\122\117\117\124\060\202\001\042\060\015
\006\011\052\206\110\206\367\015\001\001\001\005\000\003\202\001
\017\000\060\202\001\012\002\202\001\001\000\323\065\367\077\163
\167\255\350\133\163\027\302\321\157\355\125\274\156\352\350\244
\171\262\154\303\243\357\341\237\261\073\110\205\365\232\134\041
\042\020\054\305\202\316\332\343\232\156\067\341\207\054\334\271
\014\132\272\210\125\337\375\252\333\037\061\352\001\361\337\071
\001\301\023\375\110\122\041\304\125\337\332\330\263\124\166\272
\164\261\267\175\327\300\350\366\131\305\115\310\275\255\037\024
```

\332\337\130\104\045\062\031\052\307\176\176\216\256\070\260\060  
\173\107\162\011\061\360\060\333\303\033\166\051\273\151\166\116  
\127\371\033\144\242\223\126\267\157\231\156\333\012\004\234\021  
\343\200\037\313\143\224\020\012\251\341\144\202\061\371\214\047  
\355\246\231\000\366\160\223\030\370\241\064\206\243\335\172\302  
\030\171\366\172\145\065\317\220\353\275\063\223\237\123\253\163  
\073\346\233\064\040\057\035\357\251\035\143\032\240\200\333\003  
\057\371\046\032\206\322\215\273\251\276\122\072\207\147\110\015  
\277\264\240\330\046\276\043\137\163\067\177\046\346\222\004\243  
\177\317\040\247\267\363\072\312\313\231\313\002\003\001\000\001  
\243\163\060\161\060\021\006\011\140\206\110\001\206\370\102\001  
\001\004\004\003\002\000\007\060\037\006\003\125\035\043\004\030  
\060\026\200\024\145\362\061\255\052\367\367\335\122\226\012\307  
\002\301\016\357\246\325\073\021\060\017\006\003\125\035\023\001  
\001\377\004\005\060\003\001\001\377\060\013\006\003\125\035\017  
\004\004\003\002\001\376\060\035\006\003\125\035\016\004\026\004  
\024\145\362\061\255\052\367\367\335\122\226\012\307\002\301\016  
\357\246\325\073\021\060\015\006\011\052\206\110\206\367\015\001  
\001\005\005\000\003\202\001\001\000\113\065\356\314\344\256\277  
\303\156\255\237\225\073\113\077\133\036\337\127\051\242\131\312  
\070\342\271\032\377\236\346\156\062\335\036\256\352\065\267\365  
\223\221\116\332\102\341\303\027\140\120\362\321\134\046\271\202  
\267\352\155\344\234\204\347\003\171\027\257\230\075\224\333\307  
\272\000\347\270\277\001\127\301\167\105\062\014\073\361\264\034  
\010\260\375\121\240\241\335\232\035\023\066\232\155\267\307\074  
\271\341\305\331\027\372\203\325\075\025\240\074\273\036\013\342  
\310\220\077\250\206\014\374\371\213\136\205\313\117\133\113\142  
\021\107\305\105\174\005\057\101\261\236\020\151\033\231\226\340  
\125\171\373\116\206\231\270\224\332\206\070\152\223\243\347\313  
\156\345\337\352\041\125\211\234\175\175\177\230\365\000\211\356  
\343\204\300\134\226\265\305\106\352\106\340\205\125\266\033\311  
\022\326\301\315\315\200\363\002\001\074\310\151\313\105\110\143  
\330\224\320\354\205\016\073\116\021\145\364\202\214\246\075\256  
\056\042\224\011\310\134\352\074\201\135\026\052\003\227\026\125  
\011\333\212\101\202\236\146\233\021

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "CNNIC ROOT"

# Issuer: CN=CNNIC ROOT,O=CNNIC,C=CN

# Serial Number:49:33:00:01

# Subject: CN=CNNIC ROOT,O=CNNIC,C=CN

# Not Valid Before: Mon Apr 16 07:09:14 2007

# Not Valid After: Fri Apr 16 07:09:14 2027

```
# Fingerprint (MD5): 21:bc:82:ab:49:c4:13:3b:4b:b2:2b:5c:6b:90:9c:19
# Fingerprint (SHA1): 8b:af:4c:9b:1d:f0:2a:92:f7:da:12:8e:b9:1b:ac:f4:98:60:4b:6f
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL
  UTF8 "CNNIC ROOT"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\213\257\114\233\035\360\052\222\367\332\022\216\271\033\254\364
\230\140\113\157
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\041\274\202\253\111\304\023\073\113\262\053\134\153\220\234\031
END
CKA_ISSUER MULTILINE_OCTAL
\060\062\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\016\060\014\006\003\125\004\012\023\005\103\116\116\111\103\061
\023\060\021\006\003\125\004\003\023\012\103\116\116\111\103\040
\122\117\117\124
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\004\111\063\000\001
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
# Microsoft Code Signing Only Certificate
# Certificate "Common Policy"
# Issuer: CN=Common Policy,OU=FBCA,O=U.S. Government,C=us
# Serial Number:29:36:47:aa:e3:8a:ac:86:4a:23:56:f2:ca:b7:61:af
# Subject: CN=Common Policy,OU=FBCA,O=U.S.
  Government,C=us
# Not Valid Before: Mon Oct 15 15:58:00 2007
# Not Valid After: Fri Oct 15 16:08:00 2027
# Fingerprint (MD5): f0:58:c5:03:82:67:17:ab:8f:da:03:10:27:8e:19:c2
# Fingerprint (SHA1): cb:44:a0:97:85:7c:45:fa:18:7e:d9:52:08:6c:b9:84:1f:2d:51:b5
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Common Policy"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\116\061\013\060\011\006\003\125\004\006\023\002\165\163\061
\030\060\026\006\003\125\004\012\023\017\125\056\123\056\040\107
```



\157\166\145\162\156\155\145\156\164\061\015\060\013\006\003\125  
\004\013\023\004\106\102\103\101\061\026\060\024\006\003\125\004  
\003\023\015\103\157\155\155\157\156\040\120\157\154\151\143\171  
END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\116\061\013\060\011\006\003\125\004\006\023\002\165\163\061  
\030\060\026\006\003\125\004\012\023\017\125\056\123\056\040\107  
\157\166\145\162\156\155\145\156\164\061\015\060\013\006\003\125  
\004\013\023\004\106\102\103\101\061\026\060\024\006\003\125\004  
\003\023\015\103\157\155\155\157\156\040\120\157\154\151\143\171  
END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\020\051\066\107\252\343\212\254\206\112\043\126\362\312\267  
\141\257

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\241\060\202\002\211\240\003\002\001\002\002\020\051  
\066\107\252\343\212\254\206\112\043\126\362\312\267\141\257\060  
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\116  
\061\013\060\011\006\003\125\004\006\023\002\165\163\061\030\060  
\026\006\003\125\004\012\023\017\125\056\123\056\040\107\157\166  
\145\162\156\155\145\156\164\061\015\060\013\006\003\125\004\013  
\023\004\106\102\103\101\061\026\060\024\006\003\125\004\003\023  
\015\103\157\155\155\157\156\040\120\157\154\151\143\171\060\036  
\027\015\060\067\061\060\061\065\061\065\065\070\060\060\132\027  
\015\062\067\061\060\061\065\061\066\060\070\060\060\132\060\116  
\061\013\060\011\006\003\125\004\006\023\002\165\163\061\030\060  
\026\006\003\125\004\012\023\017\125\056\123\056\040\107\157\166  
\145\162\156\155\145\156\164\061\015\060\013\006\003\125\004\013  
\023\004\106\102\103\101\061\026\060\024\006\003\125\004\003\023  
\015\103\157\155\155\157\156\040\120\157\154\151\143\171\060\202  
\001\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005  
\000\003\202\001\017\000\060\202\001\012\002\202\001\001\000\227  
\215\275\063\047\344\255\133\373\170\275\057\107\107\156\307\170  
\351\223\234\244\336\311\034\375\057\033\071\070\254\107\027\300  
\176\167\051\000\073\003\037\150\017\315\115\245\356\167\270\054  
\142\153\061\366\372\162\011\175\060\051\006\174\347\174\243\075  
\204\030\212\035\256\054\222\250\037\350\136\117\215\216\353\077  
\032\370\234\012\147\235\260\147\115\360\056\320\060\336\303\224  
\260\240\317\056\012\064\177\124\011\323\066\275\244\111\127\122  
\163\351\235\376\344\110\171\106\033\133\215\062\344\245\110\144  
\363\042\015\222\235\010\025\277\140\074\203\367\107\042\045\042  
\255\051\161\267\167\357\027\311\242\266\224\136\310\060\220\244  
\024\110\134\126\127\013\101\114\005\324\052\114\077\256\022\233  
\131\021\165\160\007\042\151\055\054\323\061\314\222\176\314\315  
\244\176\224\107\252\234\011\010\366\113\257\122\350\152\100\221

\305\125\275\100\261\310\155\127\206\225\027\346\037\163\276\107  
\056\076\213\114\027\271\271\045\034\245\122\027\066\010\131\300  
\102\276\012\053\264\126\121\074\033\125\311\214\220\167\353\002  
\003\001\000\001\243\173\060\171\060\016\006\003\125\035\017\001  
\001\377\004\004\003\002\001\006\060\017\006\003\125\035\023\001  
\001\377\004\005\060\003\001\001\377\060\035\006\003\125\035\016  
\004\026\004\024\057\130\227\330\251\005\230\245\126\037\373\331  
\253\165\357\002\074\066\064\307\060\022\006\011\053\006\001\004  
\001\202\067\025\001\004\005\002\003\001\000\001\060\043\006\011  
\053\006\001\004\001\202\067\025\002\004\026\004\024\166\267\140  
\226\335\024\126\051\254\165\205\323\160\143\301\274\107\206\034  
\213\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000  
\003\202\001\001\000\140\256\363\110\026\100\162\246\010\210\311  
\274\107\054\044\113\135\240\221\163\355\145\170\220\360\147\220  
\172\245\277\012\255\266\052\371\231\147\337\203\305\167\037\064  
\011\070\371\176\236\101\340\110\140\376\342\252\135\207\210\352  
\210\375\134\105\262\311\152\332\175\244\255\261\117\277\034\015  
\237\036\232\300\325\024\163\070\053\212\170\100\156\060\367\142  
\341\315\231\374\121\151\147\154\021\335\270\020\243\150\336\046  
\245\126\375\066\154\067\230\154\373\356\174\074\154\153\160\077  
\367\110\067\011\217\013\102\201\255\106\106\270\013\203\006\364  
\033\070\240\177\117\315\013\357\203\211\207\227\034\212\060\147  
\334\375\124\241\003\176\001\313\205\114\261\013\051\303\276\354  
\174\341\077\017\011\122\074\057\247\232\110\376\067\351\021\006  
\130\341\066\101\212\304\266\277\216\335\316\112\263\274\032\300  
\315\372\032\231\322\161\233\372\317\274\362\304\124\243\210\065  
\166\314\033\054\106\157\014\264\321\303\141\166\222\164\021\352  
\113\200\215\034\211\021\213\354\133\377\027\311\110\374\347\340  
\006\021\342\204\136

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "Common Policy"

# Issuer: CN=Common Policy,OU=FBCA,O=U.S. Government,C=us

# Serial Number:29:36:47:aa:e3:8a:ac:86:4a:23:56:f2:ca:b7:61:af

# Subject: CN=Common Policy,OU=FBCA,O=U.S. Government,C=us

# Not Valid Before: Mon Oct 15 15:58:00 2007

# Not Valid After: Fri Oct 15 16:08:00 2027

# Fingerprint (MD5): f0:58:c5:03:82:67:17:ab:8f:da:03:10:27:8e:19:c2

# Fingerprint (SHA1): cb:44:a0:97:85:7c:45:fa:18:7e:d9:52:08:6c:b9:84:1f:2d:51:b5

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

```

CKA_LABEL UTF8 "Common Policy"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\313\104\240\227\205\174\105\372\030\176\331\122\010\154\271\204
\037\055\121\265
END
CKA_CERT_MD5_HASH
MULTILINE_OCTAL
\360\130\305\003\202\147\027\253\217\332\003\020\047\216\031\302
END
CKA_ISSUER MULTILINE_OCTAL
\060\116\061\013\060\011\006\003\125\004\006\023\002\165\163\061
\030\060\026\006\003\125\004\012\023\017\125\056\123\056\040\107
\157\166\145\162\156\155\145\156\164\061\015\060\013\006\003\125
\004\013\023\004\106\102\103\101\061\026\060\024\006\003\125\004
\003\023\015\103\157\155\155\157\156\040\120\157\154\151\143\171
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\051\066\107\252\343\212\254\206\112\043\126\362\312\267
\141\257
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "Staat der Nederlanden Root CA - G2"
# Issuer: CN=Staat der Nederlanden Root CA - G2,O=Staat
  der Nederlanden,C=NL
# Serial Number:98:96:8c
# Subject: CN=Staat der Nederlanden Root CA - G2,O=Staat der Nederlanden,C=NL
# Not Valid Before: Wed Mar 26 11:18:17 2008
# Not Valid After: Wed Mar 25 11:03:10 2020
# Fingerprint (MD5): 7c:a5:0f:f8:5b:9a:7d:6d:30:ae:54:5a:e3:42:a2:8a
# Fingerprint (SHA1): 59:af:82:79:91:86:c7:b4:75:07:cb:cf:03:57:46:eb:04:dd:b7:16
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Staat der Nederlanden Root CA - G2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\132\061\013\060\011\006\003\125\004\006\023\002\116\114\061
\036\060\034\006\003\125\004\012\014\025\123\164\141\141\164\040
\144\145\162\040\116\145\144\145\162\154\141\156\144\145\156\061
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CKA\_ID

UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

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END

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CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "Staat der Nederlanden Root CA - G2"

# Issuer: CN=Staat der Nederlanden Root CA - G2,O=Staat der Nederlanden,C=NL

# Serial Number:98:96:8c

# Subject: CN=Staat der Nederlanden Root CA - G2,O=Staat der Nederlanden,C=NL

# Not Valid Before: Wed Mar 26 11:18:17

2008

# Not Valid After: Wed Mar 25 11:03:10 2020

# Fingerprint (MD5): 7c:a5:0f:f8:5b:9a:7d:6d:30:ae:54:5a:e3:42:a2:8a

# Fingerprint (SHA1): 59:af:82:79:91:86:c7:b4:75:07:cb:cf:03:57:46:eb:04:dd:b7:16

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Staat der Nederlanden Root CA - G2"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

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END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

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END

CKA\_ISSUER MULTILINE\_OCTAL

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END

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CKA_SERIAL_NUMBER
MULTILINE_OCTAL
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CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "NetLock Platina (Class Platinum) Ftanúsítvány"
# Issuer: CN=NetLock Platina (Class Platinum) Ftanúsítvány,OU=Tanúsítványkiadók (Certification
Services),O=NetLock Kft.,L=Budapest,C=HU
# Serial Number:49:41:2d:ec:00:10
# Subject: CN=NetLock Platina (Class Platinum) Ftanúsítvány,OU=Tanúsítványkiadók (Certification
Services),O=NetLock Kft.,L=Budapest,C=HU
# Not Valid Before: Thu Dec 11 15:12:44 2008
# Not Valid After: Wed Dec 06 15:12:44 2028
# Fingerprint (MD5): d5:97:88:da:64:16:e7:1d:66:4a:a6:ea:37:fc:7a:dc
# Fingerprint (SHA1): ec:93:de:08:3c:93:d9:33:a9:86:b3:d5:cd:e2:5a:cb:2f:ee:cf:8e
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN
CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "NetLock Platina (Class Platinum) Ftanúsítvány"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
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\061\021\060\017\006\003\125\004\007\014\010\102\165\144\141\160
\145\163\164\061\025\060\023\006\003\125\004\012\014\014\116\145
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CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

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END

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\244\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000  
\003\202\002\001\000\151\204\102\300\343\136\023\141\227\040\111  
\361\364\026\205\245\237\244\021\010\045\304\143\206\217\360\113  
\257\263\051\365\007\127\032\142\307\033\105\156\257\135\026\267  
\301\320\144\203\073\227\365\103\266\105\220\361\146\052\203\044  
\052\377\210\351\172\013\371\302\133\172\257\143\367\011\170\206  
\110\131\064\136\233\152\020\116\361\156\225\211\066\112\150\320  
\157\233\340\176\117\267\065\017\343\171\261\005\257\047\174\252  
\211\012\103\336\372\014\357\331\127\057\050\161\315\151\153\122  
\102\311\212\060\105\131\241\314\372\131\112\217\367\326\335\104  
\245\263\056\133\021\030\342\262\265\347\021\123\070\376\202\114  
\323\163\276\145\222\032\072\250\322\322\252\274\324\276\155\066  
\122\377\153\324\322\265\033\067\363\027\102\361\056\247\325\220  
\154\164\235\164\365\372\137\042\033\323\334\165\250\265\377\362  
\032\321\274\053\000\134\074\305\270\206\010\124\111\242\234\043  
\373\357\246\215\160\364\102\122\115\033\040\000\201\370\240\270  
\364\164\043\234\276\364\271\016\354\036\152\330\145\112\025\165  
\361\167\133\156\330\261\346\017\264\226\270\035\372\206\310\222  
\156\213\351\175\337\242\016\325\361\361\174\256\112\343\146\277  
\135\374\133\357\110\262\236\151\307\175\220\240\125\266\224\160

```
\201\271\012\275\211\165\123\354\204\251\003\245\337\121\231\010
\320\164\014\002\326\163\162\006\173\213\273\135\252\116\374\147
\147\330\216\020\003\031\055\067\072\324\167\251\072\034\235\300
\171\173\154\051\167\062\115\112\213\060\210\302\347\066\316\150
\243\232\230\206\371\211\025\236\277\252\121\175\361\120\106\124
\017\002\056\134\237\343\336\127\063\025\376\030\222\141\250\322
\051\005\135\145\104\036\233\343\357\373\334\005\337\025\253\246
\330\013\244\163\262\114\072\340\236\324\263\152\345\072\016\012
\360\116\317\170\201\037\276\251\230\157\261\107\121\175\102\063
\066\263\246\251\002\122\005\164\176\052\154\324\252\222\126\260
\076\073\043\130\261\215\065\247\023\217\147\036\161\025\246\263
\265\003\206\270\040\146\300\110\157\271\254\324\112\003\125\262
\067\337\004\335\042\014\123\206\052\112\052\241\301\070\076\074
\345\074\337\165\227
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "NetLock Platina (Class Platinum) Ftanúsítvány"

# Issuer: CN=NetLock Platina (Class Platinum) Ftanúsítvány,OU=Tanúsítványkiadók (Certification Services),O=NetLock Kft.,L=Budapest,C=HU

# Serial Number:49:41:2d:ec:00:10

# Subject: CN=NetLock Platina (Class Platinum) Ftanúsítvány,OU=Tanúsítványkiadók (Certification Services),O=NetLock Kft.,L=Budapest,C=HU

# Not Valid Before: Thu Dec 11 15:12:44 2008

# Not Valid After: Wed Dec 06 15:12:44 2028

# Fingerprint (MD5): d5:97:88:da:64:16:e7:1d:66:4a:a6:ea:37:fc:7a:dc

# Fingerprint (SHA1): ec:93:de:08:3c:93:d9:33:a9:86:b3:d5:cd:e2:5a:cb:2f:ee:cf:8e

CKA\_CLASS

CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "NetLock Platina (Class Platinum) Ftanúsítvány"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\354\223\336\010\074\223\331\063\251\206\263\325\315\342\132\313
\057\356\317\216
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\325\227\210\332\144\026\347\035\146\112\246\352\067\374\172\334
```

END

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\201\255\061\013\060\011\006\003\125\004\006\023\002\110\125
\061\021\060\017\006\003\125\004\007\014\010\102\165\144\141\160
\145\163\164\061\025\060\023\006\003\125\004\012\014\014\116\145
```

```
\164\114\157\143\153\040\113\146\164\056\061\067\060\065\006\003
\125\004\013\014\056\124\141\156\303\272\163\303\255\164\166\303
\241\156\171\153\151\141\144\303\263\153\040\050\103\145\162\164
\151\146\151\143\141\164\151\157\156\040\123\145\162\166\151\143
\145\163\051\061\073\060\071\006\003\125\004\003\014\062\116\145
\164\114\157\143\153\040\120\154\141\164\151\156\141\040\050\103
\154\141\163\163\040\120\154\141\164\151\156\165\155\051\040\106
\305\221\164\141\156\303\272\163\303\255\164\166\303\241\156\171
```

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

```
\002\006\111\101\055\354\000\020
```

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "AC Raíz Certicámara S.A."

# Issuer: CN=AC Raíz Certicámara S.A.,O=Sociedad Cameral de Certificación Digital - Certicámara S.A.,C=CO

# Serial Number:07:7e:52:93:7b:e0:15:e3:57:f0:69:8c:cb:ec:0c

# Subject: CN=AC Raíz Certicámara S.A.,O=Sociedad Cameral de Certificación Digital - Certicámara S.A.,C=CO

# Not Valid Before: Mon Nov 27 20:46:29 2006

# Not Valid After: Tue Apr 02 21:42:02 2030

# Fingerprint (MD5): 93:2a:3e:f6:fd:23:69:0d:71:20:d4:2b:47:99:2b:a6

# Fingerprint (SHA1): cb:a1:c5:f8:b0:e3:5e:b8:b9:45:12:d3:f9:34:a2:e9:06:10:d3:36

CKA\_CLASS

CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "AC Raíz Certicámara S.A."

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

```
\060\173\061\013\060\011\006\003\125\004\006\023\002\103\117\061
\107\060\105\006\003\125\004\012\014\076\123\157\143\151\145\144
\141\144\040\103\141\155\145\162\141\154\040\144\145\040\103\145
\162\164\151\146\151\143\141\143\151\303\263\156\040\104\151\147
\151\164\141\154\040\055\040\103\145\162\164\151\143\303\241\155
\141\162\141\040\123\056\101\056\061\043\060\041\006\003\125\004
\003\014\032\101\103\040\122\141\303\255\172\040\103\145\162\164
\151\143\303\241\155\141\162\141\040\123\056\101\056
```

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\173\061\013\060\011\006\003\125\004\006\023\002\103\117\061
\107\060\105\006\003\125\004\012\014\076\123\157\143\151\145\144
```

\141\144\040\103\141\155\145\162\141\154\040\144\145\040\103\145  
\162\164\151\146\151\143\141\143\151\303\263\156\040\104\151\147  
\151\164\141\154\040\055\040\103\145\162\164\151\143\303\241\155  
\141\162\141\040\123\056\101\056\061\043\060\041\006\003\125\004  
\003\014\032\101\103\040\122\141\303\255\172\040\103\145\162\164  
\151\143\303\241\155\141\162\141\040\123\056\101\056

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\017\007\176\122\223\173\340\025\343\127\360\151\214\313\354  
\014

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\006\146\060\202\004\116\240\003\002\001\002\002\017\007  
\176\122\223\173\340\025\343\127\360\151\214\313\354\014\060\015  
\006\011\052\206\110\206\367\015\001\001\005\005\000\060\173\061  
\013\060\011\006\003\125\004\006\023\002\103\117\061\107\060\105  
\006\003\125\004\012\014\076\123\157\143\151\145\144\141\144\040  
\103\141\155\145\162\141\154\040\144\145\040\103\145\162\164\151  
\146\151\143\141\143\151\303\263\156\040\104\151\147\151\164\141  
\154\040\055\040\103\145\162\164\151\143\303\241\155\141\162\141  
\040\123\056\101\056\061\043\060\041\006\003\125\004\003\014\032  
\101\103\040\122\141\303\255\172\040\103\145\162\164\151\143\303  
\241\155\141\162\141\040\123\056\101\056\060\036\027\015\060\066  
\061\061\062\067\062\060\064\066\062\071\132\027\015\063\060\060  
\064\060\062\062\061\064\062\060\062\132\060\173\061\013\060\011  
\006\003\125\004\006\023\002\103\117\061\107\060\105\006\003\125  
\004\012\014\076\123\157\143\151\145\144\141\144\040\103\141\155  
\145\162\141\154\040\144\145\040\103\145\162\164\151\146\151\143  
\141\143\151\303\263\156\040\104\151\147\151\164\141\154\040\055  
\040\103\145\162\164\151\143\303\241\155\141\162\141\040\123\056  
\101\056\061\043\060\041\006\003\125\004\003\014\032\101\103\040  
\122\141\303\255\172\040\103\145\162\164\151\143\303\241\155\141  
\162\141\040\123\056\101\056\060\202\002\042\060\015\006\011\052  
\206\110\206\367\015\001\001\001\005\000\003\202\002\017\000\060  
\202\002\012\002\202\002\001\000\253\153\211\243\123\314\110\043  
\010\373\303\317\121\226\010\056\270\010\172\155\074\220\027\206  
\251\351\355\056\023\064\107\262\320\160\334\311\074\320\215\312  
\356\113\027\253\320\205\260\247\043\004\313\250\242\374\345\165  
\333\100\312\142\211\217\120\236\001\075\046\133\030\204\034\313  
\174\067\267\175\354\323\177\163\031\260\152\262\330\210\212\055  
\105\164\250\367\263\270\300\324\332\315\042\211\164\115\132\025  
\071\163\030\164\117\265\353\231\247\301\036\210\264\302\223\220  
\143\227\363\247\247\022\262\011\042\007\063\331\221\315\016\234  
\037\016\040\307\356\273\063\215\217\302\322\130\247\137\375\145  
\067\342\210\302\330\217\206\165\136\371\055\247\207\063\362\170  
\067\057\213\274\035\206\067\071\261\224\362\330\274\112\234\203  
\030\132\006\374\363\324\324\272\214\025\011\045\360\371\266\215

\004\176\027\022\063\153\127\110\114\117\333\046\036\353\314\220  
\347\213\371\150\174\160\017\243\052\320\072\070\337\067\227\342  
\133\336\200\141\323\200\330\221\203\102\132\114\004\211\150\021  
\074\254\137\150\200\101\314\140\102\316\015\132\052\014\017\233  
\060\300\246\360\206\333\253\111\327\227\155\110\213\371\003\300  
\122\147\233\022\367\302\362\056\230\145\102\331\326\232\343\320  
\031\061\014\255\207\325\127\002\172\060\350\206\046\373\217\043  
\212\124\207\344\277\074\356\353\303\165\110\137\036\071\157\201  
\142\154\305\055\304\027\124\031\267\067\215\234\067\221\310\366  
\013\325\352\143\157\203\254\070\302\363\077\336\232\373\341\043  
\141\360\310\046\313\066\310\241\363\060\217\244\243\242\241\335  
\123\263\336\360\232\062\037\203\221\171\060\301\251\037\123\233  
\123\242\025\123\077\335\235\263\020\073\110\175\211\017\374\355  
\003\365\373\045\144\165\016\027\031\015\217\000\026\147\171\172  
\100\374\055\131\007\331\220\372\232\255\075\334\200\212\346\134  
\065\242\147\114\021\153\261\370\200\144\000\055\157\042\141\305  
\254\113\046\345\132\020\202\233\244\203\173\064\367\236\211\221  
\040\227\216\267\102\307\146\303\320\351\244\326\365\040\215\304  
\303\225\254\104\012\235\133\163\074\046\075\057\112\276\247\311  
\247\020\036\373\237\120\151\363\002\003\001\000\001\243\201\346  
\060\201\343\060\017\006\003\125\035\023\001\001\377\004\005\060  
\003\001\001\377\060\016\006\003\125\035\017\001\001\377\004\004  
\003\002\001\006\060\035\006\003\125\035\016\004\026\004\024\321  
\011\320\351\327\316\171\164\124\371\072\060\263\364\155\054\003  
\003\033\150\060\201\240\006\003\125\035\040\004\201\230\060\201  
\225\060\201\222\006\004\125\035\040\000\060\201\211\060\053\006  
\010\053\006\001\005\005\007\002\001\026\037\150\164\164\160\072  
\057\057\167\167\167\056\143\145\162\164\151\143\141\155\141\162  
\141\056\143\157\155\057\144\160\143\057\060\132\006\010\053\006  
\001\005\005\007\002\002\060\116\032\114\114\151\155\151\164\141  
\143\151\157\156\145\163\040\144\145\040\147\141\162\141\156\164  
\355\141\163\040\144\145\040\145\163\164\145\040\143\145\162\164  
\151\146\151\143\141\144\157\040\163\145\040\160\165\145\144\145  
\156\040\145\156\143\157\156\164\162\141\162\040\145\156\040\154  
\141\040\104\120\103\056\060\015\006\011\052\206\110\206\367\015  
\001\001\005\005\000\003\202\002\001\000\134\224\265\270\105\221  
\115\216\141\037\003\050\017\123\174\346\244\131\251\263\212\172  
\305\260\377\010\174\054\243\161\034\041\023\147\241\225\022\100  
\065\203\203\217\164\333\063\134\360\111\166\012\201\122\335\111  
\324\232\062\063\357\233\247\313\165\345\172\313\227\022\220\134  
\272\173\305\233\337\273\071\043\310\377\230\316\012\115\042\001  
\110\007\176\212\300\325\040\102\224\104\357\277\167\242\211\147  
\110\033\100\003\005\241\211\354\317\142\343\075\045\166\146\277  
\046\267\273\042\276\157\377\071\127\164\272\172\311\001\225\301  
\225\121\350\253\054\370\261\206\040\351\077\313\065\133\322\027  
\351\052\376\203\023\027\100\356\210\142\145\133\325\073\140\351  
\173\074\270\311\325\177\066\002\045\252\150\302\061\025\267\060  
\145\353\177\035\110\171\261\317\071\342\102\200\026\323\365\223

```
\043\374\114\227\311\132\067\154\174\042\330\112\315\322\216\066
\203\071\221\220\020\310\361\311\065\176\077\270\323\201\306\040
\144\032\266\120\302\041\244\170\334\320\057\073\144\223\164\360
\226\220\361\357\373\011\132\064\100\226\360\066\022\301\243\164
\214\223\176\101\336\167\213\354\206\331\322\017\077\055\321\314
\100\242\211\146\110\036\040\263\234\043\131\163\251\104\163\274
\044\171\220\126\067\263\306\051\176\243\017\361\051\071\357\176
\134\050\062\160\065\254\332\270\310\165\146\374\233\114\071\107
\216\033\157\233\115\002\124\042\063\357\141\272\236\051\204\357
\116\113\063\107\166\227\152\313\176\137\375\025\246\236\102\103
\133\146\132\212\210\015\367\026\271\077\121\145\053\146\152\213
\321\070\122\242\326\106\021\372\374\232\034\164\236\217\227\013
\002\117\144\306\365\150\323\113\055\377\244\067\036\213\077\277
\104\276\141\106\241\204\075\010\047\114\201\040\167\211\010\352
\147\100\136\154\010\121\137\064\132\214\226\150\315\327\367\211
\302\034\323\062\000\257\122\313\323\140\133\052\072\107\176\153
\060\063\241\142\051\177\112\271\341\055\347\024\043\016\016\030
\107\341\171\374\025\125\320\261\374\045\161\143\165\063\034\043
\053\257\134\331\355\107\167\140\016\073\017\036\322\300\334\144
\005\211\374\170\326\134\054\046\103\251
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "AC Raíz Certicámara S.A."

# Issuer: CN=AC Raíz Certicámara S.A.,O=Sociedad Cameral de Certificación Digital - Certicámara S.A.,C=CO

# Serial Number:07:7e:52:93:7b:e0:15:e3:57:f0:69:8c:cb:ec:0c

# Subject: CN=AC Raíz Certicámara S.A.,O=Sociedad Cameral de Certificación Digital - Certicámara S.A.,C=CO

# Not Valid Before: Mon Nov 27 20:46:29 2006

# Not Valid After: Tue Apr 02 21:42:02 2030

# Fingerprint (MD5): 93:2a:3e:f6:fd:23:69:0d:71:20:d4:2b:47:99:2b:a6

# Fingerprint (SHA1): cb:a1:c5:f8:b0:e3:5e:b8:b9:45:12:d3:f9:34:a2:e9:06:10:d3:36

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL

CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "AC Raíz Certicámara S.A."

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\313\241\305\370\260\343\136\270\271\105\022\323\371\064\242\351
\006\020\323\066
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\223\052\076\366\375\043\151\015\161\040\324\053\107\231\053\246
```

END

```

CKA_ISSUER MULTILINE_OCTAL
\060\173\061\013\060\011\006\003\125\004\006\023\002\103\117\061
\107\060\105\006\003\125\004\012\014\076\123\157\143\151\145\144
\141\144\040\103\141\155\145\162\141\154\040\144\145\040\103\145
\162\164\151\146\151\143\141\143\151\303\263\156\040\104\151\147
\151\164\141\154\040\055\040\103\145\162\164\151\143\303\241\155
\141\162\141\040\123\056\101\056\061\043\060\041\006\003\125\004
\003\014\032\101\103\040\122\141\303\255\172\040\103\145\162\164
\151\143\303\241\155\141\162\141\040\123\056\101\056
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\017\007\176\122\223\173\340\025\343\127\360\151\214\313\354
\014
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION
CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "Cisco Root CA 2048"
# Issuer: CN=Cisco Root CA 2048,O=Cisco Systems
# Serial Number:5f:f8:7b:28:2b:54:dc:8d:42:a3:15:b5:68:c9:ad:ff
# Subject: CN=Cisco Root CA 2048,O=Cisco Systems
# Not Valid Before: Fri May 14 20:17:12 2004
# Not Valid After: Mon May 14 20:25:42 2029
# Fingerprint (MD5): be:39:5a:be:07:8a:b1:12:17:25:cc:1d:46:34:3c:b2
# Fingerprint (SHA1): de:99:0c:ed:99:e0:43:1f:60:ed:c3:93:7e:7c:d5:bf:0e:d9:e5:fa
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Cisco Root CA 2048"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\065\061\026\060\024\006\003\125\004\012\023\015\103\151\163
\143\157\040\123\171\163\164\145\155\163\061\033\060\031\006\003
\125\004\003\023\022\103\151\163\143\157\040\122\157\157\164\040
\103\101\040\062\060\064\070
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\065\061\026\060\024\006\003\125\004\012\023\015\103\151\163
\143\157\040\123\171\163\164\145\155\163\061\033\060\031\006\003
\125\004\003\023\022\103\151\163\143\157\040\122\157\157\164\040
\103\101\040\062\060\064\070

```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\137\370\173\050\053\124\334\215\102\243\025\265\150\311  
\255\377

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\103\060\202\002\053\240\003\002\001\002\002\020\137  
\370\173\050\053\124\334\215\102\243\025\265\150\311\255\377\060  
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\065  
\061\026\060\024\006\003\125\004\012\023\015\103\151\163\143\157  
\040\123\171\163\164\145\155\163\061\033\060\031\006\003\125\004  
\003\023\022\103\151\163\143\157\040\122\157\157\164\040\103\101  
\040\062\060\064\070\060\036\027\015\060\064\060\065\061\064\062  
\060\061\067\061\062\132\027\015\062\071\060\065\061\064\062\060  
\062\065\064\062\132\060\065\061\026\060\024\006\003\125\004\012  
\023\015\103\151\163\143\157\040\123\171\163\164\145\155\163\061  
\033\060\031\006\003\125\004\003\023\022\103\151\163\143\157\040  
\122\157\157\164\040\103\101\040\062\060\064\070\060\202\001\040  
\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003  
\202\001\015\000\060\202\001\010\002\202\001\001\000\260\232\271  
\253\247\257\012\167\247\342\161\266\264\146\142\224\170\210\107  
\306\142\125\204\100\062\277\300\253\056\245\034\161\326\274\156  
\173\250\252\272\156\322\025\210\110\105\235\242\374\203\320\314  
\271\214\340\046\150\160\112\170\337\041\027\236\364\141\005\311  
\025\310\317\026\332\065\141\211\224\103\250\204\250\061\230\170  
\233\271\116\157\054\123\022\154\315\035\255\053\044\273\061\304  
\053\377\203\104\157\266\075\044\167\011\352\277\052\250\037\152  
\126\366\040\017\021\124\227\201\165\247\045\316\131\152\202\145  
\357\267\352\347\342\215\165\213\156\362\335\117\246\136\142\234  
\317\020\012\144\320\116\155\316\053\314\133\365\140\245\047\107  
\215\151\364\177\316\033\160\336\160\033\040\326\156\315\246\001  
\250\074\022\322\251\077\240\153\136\273\216\040\213\172\221\343  
\265\150\356\240\347\304\001\164\250\123\013\053\112\232\017\145  
\022\016\202\115\216\143\375\357\353\233\032\333\123\246\023\140  
\257\302\175\327\307\154\027\045\324\163\373\107\144\120\201\200  
\224\114\341\277\256\113\034\337\222\355\056\005\337\002\001\003  
\243\121\060\117\060\013\006\003\125\035\017\004\004\003\002\001  
\206\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001  
\001\377\060\035\006\003\125\035\016\004\026\004\024\047\363\310  
\025\036\156\232\002\011\026\255\053\240\211\140\137\332\173\057  
\252\060\020\006\011\053\006\001\004\001\202\067\025\001\004\003  
\002\001\000\060\015\006\011\052\206\110\206\367\015\001\001\005  
\005\000\003\202\001\001\000\235\235\204\204\243\101\251\174\167  
\014\267\123\312\116\104\120\142\357\124\174\323\165\027\034\350  
\340\306\110\113\266\376\114\072\031\201\126\260\126\356\031\226  
\142\252\132\243\144\301\366\116\124\063\306\167\376\305\034\272  
\345\135\045\312\365\360\223\232\203\021\056\346\313\370\164\105  
\376\347\005\270\253\347\337\313\113\341\067\204\332\271\213\227



```
\160\036\360\342\213\327\260\330\016\235\261\151\326\052\221\173
\251\111\117\176\346\216\225\330\203\047\074\325\150\111\016\324
\235\366\056\353\247\276\353\060\244\254\037\104\374\225\253\063
\006\373\175\140\012\336\264\212\143\260\234\251\362\244\271\123
\001\207\320\150\244\047\177\253\377\351\372\311\100\070\210\147
\264\071\306\204\157\127\311\123\333\272\216\356\300\103\262\370
\011\203\156\377\146\317\076\357\027\263\130\030\045\011\064\136
\343\313\326\024\266\354\362\222\157\164\344\057\201\052\325\222
\221\340\340\227\074\062\150\005\205\113\321\367\127\342\122\035
\223\032\124\237\005\160\300\112\161\140\036\103\013\140\036\376
\243\316\201\031\341\013\065
```

END

CKA\_NSS\_Mozilla\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER

CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "Cisco Root CA 2048"

# Issuer: CN=Cisco Root CA 2048,O=Cisco Systems

# Serial Number:5f:f8:7b:28:2b:54:dc:8d:42:a3:15:b5:68:c9:ad:ff

# Subject: CN=Cisco Root CA 2048,O=Cisco Systems

# Not Valid Before: Fri May 14 20:17:12 2004

# Not Valid After: Mon May 14 20:25:42 2029

# Fingerprint (MD5): be:39:5a:be:07:8a:b1:12:17:25:cc:1d:46:34:3c:b2

# Fingerprint (SHA1): de:99:0c:ed:99:e0:43:1f:60:ed:c3:93:7e:7c:d5:bf:0e:d9:e5:fa

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Cisco Root CA 2048"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\336\231\014\355\231\340\103\037\140\355\303\223\176\174\325\277
\016\331\345\372
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\276\071\132\276\007\212\261\022\027\045\314\035\106\064\074\262
```

END

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\065\061\026\060\024\006\003\125\004\012\023\015\103\151\163
\143\157\040\123\171\163\164\145\155\163\061\033\060\031\006\003
\125\004\003\023\022\103\151\163\143\157\040\122\157\157\164\040
\103\101\040\062\060\064\070
```

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

```
\002\020\137\370\173\050\053\124\334\215\102\243\025\265\150\311
```

```
\255\377
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
# Microsoft Code Signing Only Certificate
# Certificate "CA Disig"
# Issuer: CN=CA Disig,O=Disig a.s.,L=Bratislava,C=SK
# Serial Number: 1 (0x1)
# Subject: CN=CA Disig,O=Disig a.s.,L=Bratislava,C=SK
# Not Valid Before: Wed Mar 22 01:39:34 2006
# Not Valid After: Tue Mar 22 01:39:34 2016
# Fingerprint (MD5): 3f:45:96:39:e2:50:87:f7:bb:fe:98:0c:3c:20:98:e6
# Fingerprint (SHA1): 2a:c8:d5:8b:57:ce:bf:2f:49:af:f2:fc:76:8f:51:14:62:90:7a:41
```

```
CKA_CLASS
CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "CA Disig"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\112\061\013\060\011\006\003\125\004\006\023\002\123\113\061
\023\060\021\006\003\125\004\007\023\012\102\162\141\164\151\163
\154\141\166\141\061\023\060\021\006\003\125\004\012\023\012\104
\151\163\151\147\040\141\056\163\056\061\021\060\017\006\003\125
\004\003\023\010\103\101\040\104\151\163\151\147
```

```
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\112\061\013\060\011\006\003\125\004\006\023\002\123\113\061
\023\060\021\006\003\125\004\007\023\012\102\162\141\164\151\163
\154\141\166\141\061\023\060\021\006\003\125\004\012\023\012\104
\151\163\151\147\040\141\056\163\056\061\021\060\017\006\003\125
\004\003\023\010\103\101\040\104\151\163\151\147
```

```
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\001
END
CKA_VALUE MULTILINE_OCTAL
\060\202\004\017\060\202\002\367\240\003\002\001\002\002\001\001
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060
\112\061\013\060\011\006\003\125\004\006\023\002\123\113\061\023
\060\021\006\003\125\004\007\023\012\102\162\141\164\151\163\154
\141\166\141\061\023\060\021\006\003\125\004\012\023\012\104\151
\163\151\147\040\141\056\163\056\061\021\060\017\006\003\125\004
```

\003\023\010\103\101\040\104\151\163\151\147\060\036\027\015\060  
\066\060\063\062\062\060\061\063\071\063\064\132\027\015\061\066  
\060\063\062\062\060\061\063\071\063\064\132\060\112\061\013\060  
\011\006\003\125\004\006\023\002\123\113\061\023\060\021\006\003  
\125\004\007\023\012\102\162\141\164\151\163\154\141\166\141\061  
\023\060\021\006\003\125\004\012\023\012\104\151\163\151\147\040  
\141\056\163\056\061\021\060\017\006\003\125\004\003\023\010\103  
\101\040\104\151\163\151\147\060\202\001\042\060\015\006\011\052  
\206\110\206\367\015\001\001\001\005\000\003\202\001\017\000\060  
\202\001\012\002\202\001\001\000\222\366\061\301\175\210\375\231  
\001\251\330\173\362\161\165\361\061\306\363\165\146\372\121\050  
\106\204\227\170\064\274\154\374\274\105\131\210\046\030\112\304  
\067\037\241\112\104\275\343\161\004\365\104\027\342\077\374\110  
\130\157\134\236\172\011\272\121\067\042\043\146\103\041\260\074  
\144\242\370\152\025\016\077\353\121\341\124\251\335\006\231\327  
\232\074\124\213\071\003\077\017\305\316\306\353\203\162\002\250  
\037\161\363\055\370\165\010\333\142\114\350\372\316\371\347\152  
\037\266\153\065\202\272\342\217\026\222\175\005\014\154\106\003  
\135\300\355\151\277\072\301\212\240\350\216\331\271\105\050\207  
\010\354\264\312\025\276\202\335\265\104\213\055\255\206\014\150  
\142\155\205\126\362\254\024\143\072\306\321\231\254\064\170\126  
\113\317\266\255\077\214\212\327\004\345\343\170\114\365\206\252  
\365\217\372\075\154\161\243\055\312\147\353\150\173\156\063\251  
\014\202\050\250\114\152\041\100\025\040\014\046\133\203\302\251  
\026\025\300\044\202\135\053\026\255\312\143\366\164\000\260\337  
\103\304\020\140\126\147\143\105\002\003\001\000\001\243\201\377  
\060\201\374\060\017\006\003\125\035\023\001\001\377\004\005\060  
\003\001\001\377\060\035\006\003\125\035\016\004\026\004\024\215  
\262\111\150\235\162\010\045\271\300\047\365\120\223\126\110\106  
\161\371\217\060\016\006\003\125\035\017\001\001\377\004\004\003  
\002\001\006\060\066\006\003\125\035\021\004\057\060\055\201\023  
\143\141\157\160\145\162\141\164\157\162\100\144\151\163\151\147  
\056\163\153\206\026\150\164\164\160\072\057\057\167\167\167\056  
\144\151\163\151\147\056\163\153\057\143\141\060\146\006\003\125  
\035\037\004\137\060\135\060\055\240\053\240\051\206\047\150\164  
\164\160\072\057\057\167\167\167\056\144\151\163\151\147\056\163  
\153\057\143\141\057\143\162\154\057\143\141\137\144\151\163\151  
\147\056\143\162\154\060\054\240\052\240\050\206\046\150\164\164  
\160\072\057\057\143\141\056\144\151\163\151\147\056\163\153\057  
\143\141\057\143\162\154\057\143\141\137\144\151\163\151\147\056  
\143\162\154\060\032\006\003\125\035\040\004\023\060\021\060\017  
\006\015\053\201\036\221\223\346\012\000\000\000\001\001\001\060  
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\003\202  
\001\001\000\135\064\164\141\114\257\073\330\377\237\155\130\066  
\034\075\013\201\015\022\053\106\020\200\375\347\074\047\320\172  
\310\251\266\176\164\060\063\243\072\212\173\164\300\171\171\102  
\223\155\377\261\051\024\202\253\041\214\057\027\371\077\046\057  
\365\131\306\357\200\006\267\232\111\051\354\316\176\161\074\152

```
\020\101\300\366\323\232\262\174\132\221\234\300\254\133\310\115
\136\367\341\123\377\103\167\374\236\113\147\154\327\363\203\321
\240\340\177\045\337\270\230\013\232\062\070\154\060\240\363\377
\010\025\063\367\120\112\173\076\243\076\040\251\334\057\126\200
\012\355\101\120\260\311\364\354\262\343\046\104\000\016\157\236
\006\274\042\226\123\160\145\304\120\012\106\153\244\057\047\201
\022\047\023\137\020\241\166\316\212\173\067\352\303\071\141\003
\225\230\072\347\154\210\045\010\374\171\150\015\207\175\142\370
\264\137\373\305\330\114\275\130\274\077\103\133\324\036\001\115
\074\143\276\043\357\214\315\132\120\270\150\124\371\012\231\063
\021\000\341\236\302\106\167\202\365\131\006\214\041\114\207\011
\315\345\250
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "CA Disig"

# Issuer: CN=CA Disig,O=Disig a.s.,L=Bratislava,C=SK

# Serial Number: 1 (0x1)

# Subject: CN=CA Disig,O=Disig a.s.,L=Bratislava,C=SK

# Not Valid Before: Wed Mar 22 01:39:34 2006

# Not Valid After: Tue Mar 22 01:39:34 2016

# Fingerprint (MD5): 3f:45:96:39:e2:50:87:f7:bb:fe:98:0c:3c:20:98:e6

# Fingerprint (SHA1): 2a:c8:d5:8b:57:ce:bf:2f:49:af:f2:fc:76:8f:51:14:62:90:7a:41

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "CA Disig"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\052\310\325\213\127\316\277\057\111\257\362\374\166\217\121\024
\142\220\172\101
```

END

CKA\_CERT\_MD5\_HASH

MULTILINE\_OCTAL

```
\077\105\226\071\342\120\207\367\273\376\230\014\074\040\230\346
```

END

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\112\061\013\060\011\006\003\125\004\006\023\002\123\113\061
\023\060\021\006\003\125\004\007\023\012\102\162\141\164\151\163
\154\141\166\141\061\023\060\021\006\003\125\004\012\023\012\104
\151\163\151\147\040\141\056\163\056\061\021\060\017\006\003\125
\004\003\023\010\103\101\040\104\151\163\151\147
```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

```
\002\001\001
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
# Microsoft Code Signing Only Certificate
# Certificate "UCA Global Root"
# Issuer: CN=UCA Global Root,O=UniTrust,C=CN
# Serial Number: 8 (0x8)
# Subject: CN=UCA Global Root,O=UniTrust,C=CN
# Not Valid Before: Tue
Jan 01 00:00:00 2008
# Not Valid After: Thu Dec 31 00:00:00 2037
# Fingerprint (MD5): c1:d9:51:c0:84:b8:6a:75:e8:2f:d7:d6:5f:7e:ac:46
# Fingerprint (SHA1): 0b:97:2c:9e:a6:e7:cc:58:d9:3b:20:bf:71:ec:41:2e:72:09:fa:bf
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "UCA Global Root"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\072\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\021\060\017\006\003\125\004\012\023\010\125\156\151\124\162\165
\163\164\061\030\060\026\006\003\125\004\003\023\017\125\103\101
\040\107\154\157\142\141\154\040\122\157\157\164
```

```
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\072\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\021\060\017\006\003\125\004\012\023\010\125\156\151\124\162\165
\163\164\061\030\060\026\006\003\125\004\003\023\017\125\103\101
\040\107\154\157\142\141\154\040\122\157\157\164
```

```
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
```

```
\002\001\010
```

```
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\222\060\202\003\172\240\003\002\001\002\002\001\010
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060
\072\061\013\060\011\006\003\125\004\006\023\002\103\116\061\021
\060\017\006\003\125\004\012\023\010\125\156\151\124\162\165\163
\164\061\030\060\026\006\003\125\004\003\023\017\125\103\101\040
\107\154\157\142\141\154\040\122\157\157\164\060\036\027\015\060
\070\060\061\060\061\060\060\060\060\060\060\132\027\015\063\067
```

\061\062\063\061\060\060\060\060\060\060\060\132\060\072\061\013\060  
\011\006\003\125\004\006\023\002\103\116\061\021\060\017\006\003  
\125\004\012\023\010\125\156\151\124\162\165\163\164\061\030\060  
\026\006\003\125\004\003\023\017\125\103\101\040\107\154\157\142  
\141\154\040\122\157\157\164\060\202\002\042\060\015\006\011\052  
\206\110\206\367\015\001\001\001\005\000\003\202\002\017\000\060  
\202\002\012\002\202\002\001\000\332\263\345\006\120\077\366\163  
\367\304\062\277\106\245\045\142\063\207\260\150\376\247\337\210  
\003\143\175\002\226\375\353\207\311\356\342\010\273\235\273\273  
\344\101\217\307\060\211\017\155\044\300\004\154\024\224\201\115  
\240\015\164\146\363\360\205\257\370\144\031\336\271\351\201\223  
\320\050\205\231\107\102\112\054\074\070\047\112\314\377\371\154  
\031\327\265\363\357\233\256\133\064\006\327\217\242\023\006\234  
\212\204\102\325\263\243\220\150\155\201\220\356\115\204\354\114  
\160\116\055\336\044\071\316\031\000\103\223\170\371\010\206\035  
\103\321\364\162\274\005\300\147\372\300\121\322\311\205\007\044  
\256\071\036\172\315\101\322\066\253\141\352\053\253\360\040\125  
\231\074\155\055\034\056\056\165\226\330\162\227\340\014\312\151  
\163\356\165\053\025\011\340\216\155\273\332\023\377\106\250\350  
\000\014\254\007\057\035\271\272\271\321\240\367\231\236\164\134  
\031\005\146\061\317\076\052\122\376\157\237\363\271\275\371\301  
\201\365\067\332\056\114\201\045\135\366\331\224\232\323\065\213  
\040\050\067\137\121\353\175\142\307\251\223\321\371\320\064\313  
\251\047\046\054\050\220\222\073\125\143\267\027\016\124\163\253  
\257\174\354\072\253\160\063\254\041\373\042\046\263\206\254\043  
\251\327\177\155\313\010\040\362\257\100\365\377\104\107\161\335  
\047\335\023\050\241\352\166\071\371\020\240\240\115\100\244\047  
\262\131\025\053\154\055\044\267\044\143\170\367\103\030\172\017  
\115\021\343\350\254\207\102\215\347\130\161\244\253\156\242\300  
\227\174\273\343\023\113\312\333\273\153\010\371\151\264\004\162  
\325\303\106\271\167\352\377\272\373\351\360\072\014\065\366\217  
\017\256\006\204\026\335\224\125\324\357\312\047\267\003\074\305  
\034\046\052\365\074\250\245\225\233\206\361\212\211\147\370\307  
\014\146\261\355\101\277\202\246\000\150\072\042\064\356\036\353  
\345\157\211\164\117\152\252\152\250\127\147\122\324\040\141\301  
\316\123\313\375\044\177\137\046\337\241\010\151\226\240\236\376  
\111\103\342\323\352\332\304\361\210\061\041\156\034\341\315\363  
\165\016\040\104\026\314\175\163\164\065\105\054\073\201\324\040  
\354\266\011\214\076\110\262\111\002\003\001\000\001\243\201\242  
\060\201\237\060\013\006\003\125\035\017\004\004\003\002\001\006  
\060\014\006\003\125\035\023\004\005\060\003\001\001\377\060\143  
\006\003\125\035\045\004\134\060\132\006\010\053\006\001\005\005  
\007\003\001\006\010\053\006\001\005\005\007\003\002\006\010\053  
\006\001\005\005\007\003\003\006\010\053\006\001\005\005\007\003  
\004\006\010\053\006\001\005\005\007\003\005\006\010\053\006\001  
\005\005\007\003\006\006\010\053\006\001\005\005\007\003\007\006  
\010\053\006\001\005\005\007\003\010\006\010\053\006\001\005\005  
\007\003\011\060\035\006\003\125\035\016\004\026\004\024\331\303

\323\370\200\222\147\314\135\322\072\242\327\161\242\264\304\070  
\200\055\060\015\006\011\052\206\110\206\367\015\001\001\005\005  
\000\003\202\002\001\000\320\210\171\312\010\252\367\013\064\240  
\116\011\302\351\176\065\110\211\160\204\043\057\121\303\053\057  
\136\333\123\153\133\165\010\052\124\272\062\016\325\306\161\205  
\261\227\111\200\366\204\320\360\272\267\161\224\310\171\153\246  
\305\104\350\102\242\255\045\055\127\057\346\326\061\051\372\031  
\211\124\051\176\267\176\107\066\151\055\156\062\274\324\165\332  
\102\163\270\116\345\203\100\163\262\135\337\324\104\163\246\142  
\013\333\252\156\005\214\310\177\106\117\071\205\220\235\274\033  
\124\051\254\245\327\376\345\130\126\127\155\054\231\241\111\041  
\325\141\306\214\141\341\165\044\301\001\335\055\033\066\303\057  
\022\314\013\326\170\213\165\200\351\101\271\210\261\312\074\251  
\026\306\116\025\343\162\066\366\324\240\101\205\257\212\145\160  
\115\265\104\020\120\354\355\337\155\346\331\306\300\022\361\113  
\072\057\163\351\074\251\356\033\252\057\065\245\233\237\115\305  
\064\204\137\046\024\151\263\043\261\211\162\024\370\351\115\121  
\042\003\377\112\206\304\034\350\173\171\012\333\107\045\201\176  
\374\064\204\254\131\270\130\103\344\075\103\011\124\164\302\320  
\375\331\357\156\131\367\162\140\231\166\157\365\047\247\273\203  
\244\112\201\354\051\201\364\167\113\341\102\022\125\324\206\052  
\022\266\360\125\233\001\056\335\366\250\343\031\303\316\107\057  
\300\170\141\030\132\307\145\374\235\106\133\127\334\174\016\273  
\226\203\020\174\125\030\011\004\256\321\367\213\052\076\240\346  
\120\326\060\066\327\347\213\070\123\354\111\104\340\317\244\337  
\361\123\173\213\132\266\366\021\220\113\326\165\363\376\002\363  
\051\257\360\043\162\175\024\355\251\135\337\172\201\236\233\222  
\042\374\036\370\001\105\101\227\307\153\001\141\276\063\150\362  
\240\145\204\146\274\340\052\244\150\323\161\354\307\010\336\243  
\303\311\066\112\064\361\027\342\200\257\040\041\223\224\036\346  
\025\323\124\142\361\265\070\057\343\314\271\147\004\251\272\345  
\356\371\020\156\313\056\176\023\257\222\024\376\363\047\163\173  
\070\374\163\155\271\271\210\366\156\214\013\365\374\377\011\016  
\263\055\136\173\165\343\222\044\342\346\341\130\076\113\050\003  
\165\153\030\233\107\014

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER

CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "UCA Global Root"

# Issuer: CN=UCA Global Root,O=UniTrust,C=CN

# Serial Number: 8 (0x8)

# Subject: CN=UCA Global Root,O=UniTrust,C=CN

# Not Valid Before: Tue Jan 01 00:00:00 2008

```
# Not Valid After: Thu Dec 31 00:00:00 2037
# Fingerprint (MD5): c1:d9:51:c0:84:b8:6a:75:e8:2f:d7:d6:5f:7e:ac:46
# Fingerprint (SHA1): 0b:97:2c:9e:a6:e7:cc:58:d9:3b:20:bf:71:ec:41:2e:72:09:fa:bf
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "UCA Global Root"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\013\227\054\236\246\347\314\130\331\073\040\277\161\354\101\056
\162\011\372\277
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\301\331\121\300\204\270\152\165\350\057\327\326\137\176\254\106
END
CKA_ISSUER MULTILINE_OCTAL
\060\072\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\021\060\017\006\003\125\004\012\023\010\125\156\151\124\162\165
\163\164\061\030\060\026\006\003\125\004\003\023\017\125\103\101
\040\107\154\157\142\141\154\040\122\157\157\164
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\001\010
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
# Microsoft Code Signing Only Certificate
# Certificate "UCA Root"
# Issuer: CN=UCA Root,O=UniTrust,C=CN
# Serial Number: 9 (0x9)
# Subject: CN=UCA Root,O=UniTrust,C=CN
# Not Valid Before: Thu Jan 01 00:00:00 2004
# Not Valid After: Mon Dec 31 00:00:00 2029
# Fingerprint (MD5): 8f:91:e7:ee:e3:fc:da:86:ca:fc:dc:70:ed:b7:b7:0c
# Fingerprint (SHA1): 82:50:be:d5:a2:14:43:3a:66:37:7c:bc:10:ef:83:f6:69:da:3a:67
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "UCA Root"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE
CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\063\061\013\060\011\006\003\125\004\006\023\002\103\116\061
```



\021\060\017\006\003\125\004\012\023\010\125\156\151\124\162\165  
\163\164\061\021\060\017\006\003\125\004\003\023\010\125\103\101  
\040\122\157\157\164

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\063\061\013\060\011\006\003\125\004\006\023\002\103\116\061  
\021\060\017\006\003\125\004\012\023\010\125\156\151\124\162\165  
\163\164\061\021\060\017\006\003\125\004\003\023\010\125\103\101  
\040\122\157\157\164

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\001\011

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\204\060\202\002\154\240\003\002\001\002\002\001\011  
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060  
\063\061\013\060\011\006\003\125\004\006\023\002\103\116\061\021  
\060\017\006\003\125\004\012\023\010\125\156\151\124\162\165\163  
\164\061\021\060\017\006\003\125\004\003\023\010\125\103\101\040  
\122\157\157\164\060\036\027\015\060\064\060\061\060\061\060\060  
\060\060\060\060\132\027\015\062\071\061\062\063\061\060\060\060  
\060\060\060\132\060\063\061\013\060\011\006\003\125\004\006\023  
\002\103\116\061\021\060\017\006\003\125\004\012\023\010\125\156  
\151\124\162\165\163\164\061\021\060\017\006\003\125\004\003\023  
\010\125\103\101\040\122\157\157\164\060\202\001\042\060\015\006  
\011\052\206\110\206\367\015\001\001\001\005\000\003\202\001\017  
\000\060\202\001\012\002\202\001\001\000\263\135\007\312\206\046  
\175\153\342\373\070\011\016\314\202\302\152\032\000\242\025\137  
\326\351\324\001\267\126\003\001\131\217\365\070\151\044\166\302  
\136\053\305\366\053\277\257\373\101\375\017\132\374\253\327\203  
\160\115\060\230\321\236\262\166\273\222\326\273\351\020\050\151  
\050\066\104\350\361\054\327\130\174\044\326\177\002\072\360\201  
\153\141\140\077\364\063\336\155\345\352\050\122\117\374\251\035  
\143\174\013\272\352\256\304\150\106\344\336\217\301\247\262\266  
\130\132\155\035\054\331\214\072\267\210\313\205\324\367\350\003  
\136\375\262\115\120\350\326\037\377\256\002\077\213\117\226\041  
\074\233\327\045\311\035\077\373\230\261\131\344\360\251\073\257  
\263\315\205\054\342\140\106\314\157\216\240\353\360\064\305\361  
\102\030\140\256\022\355\106\165\034\345\330\251\226\132\276\336  
\132\326\170\147\226\133\223\167\120\362\156\033\336\226\121\112  
\246\326\113\103\165\041\146\215\167\354\002\204\166\134\104\020  
\266\035\141\154\344\243\040\175\267\215\272\017\221\165\307\215  
\337\274\002\140\250\051\250\275\075\103\002\003\001\000\001\243  
\201\242\060\201\237\060\013\006\003\125\035\017\004\004\003\002  
\001\006\060\014\006\003\125\035\023\004\005\060\003\001\001\377  
\060\143\006\003\125\035\045\004\134\060\132\006\010\053\006\001  
\005\005\007\003\001\006\010\053\006\001\005\005\007\003\002\006

\010\053\006\001\005\005\007\003\003\006\010\053\006\001\005\005  
\007\003\004\006\010\053\006\001\005\005\007\003\005\006\010\053  
\006\001\005\005\007\003\006\006\010\053\006\001\005\005\007\003  
\007\006\010\053\006\001\005\005\007\003\010\006\010\053\006\001  
\005\005\007\003\011\060\035\006\003\125\035\016\004\026\004\024  
\333\037\065\363\153\114\377\102\061\144\233\315\273\132\036\035  
\110\020\267\356\060\015\006\011\052\206\110\206\367\015\001\001  
\005\005\000\003\202\001\001\000\070\154\267\210\361\255\372\130  
\067\164\321\350\160\336\234\047\131\313\344\025\327\240\303\140  
\327\210\200\004\305\060\114\075\324\032\353\006\136\131\107\346  
\274\146\313\340\010\374\350\065\354\142\175\312\300\332\301\170  
\257\345\106\157\373\211\202\043\217\366\327\123\146\125\240\336  
\045\022\073\161\066\026\125\022\166\373\075\370\124\133\061\272  
\000\006\370\175\125\345\247\166\203\252\134\112\227\246\052\050  
\337\275\306\154\013\043\225\216\063\177\036\136\100\037\023\124  
\054\234\345\265\016\335\027\050\256\153\001\323\122\051\365\042  
\037\220\071\364\334\142\150\360\074\206\107\354\270\005\105\273  
\267\014\226\224\306\147\313\043\161\320\216\164\042\326\101\353  
\003\250\266\352\276\304\001\022\265\263\135\100\166\006\040\324  
\144\270\051\106\006\212\316\037\223\232\020\356\373\252\132\264  
\334\057\325\053\313\366\327\005\204\230\005\221\013\204\367\075  
\372\326\371\172\372\054\025\352\066\202\103\267\267\270\343\363  
\161\001\355\103\103\242\005\105\303\050\005\007\065\343\001\245  
\070\036\200\324\327\303\331\336

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "UCA Root"

# Issuer: CN=UCA Root,O=UniTrust,C=CN

# Serial Number: 9 (0x9)

# Subject: CN=UCA Root,O=UniTrust,C=CN

# Not Valid Before: Thu Jan 01 00:00:00 2004

# Not Valid After: Mon Dec 31 00:00:00 2029

# Fingerprint (MD5): 8f:91:e7:ee:e3:fc:da:86:ca:fc:dc:70:ed:b7:b7:0c

# Fingerprint (SHA1): 82:50:be:d5:a2:14:43:3a:66:37:7c:bc:10:ef:83:f6:69:da:3a:67

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "UCA Root"

CKA\_CERT\_SHA1\_HASH

MULTILINE\_OCTAL

\202\120\276\325\242\024\103\072\146\067\174\274\020\357\203\366

\151\332\072\147

```

END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\217\221\347\356\343\374\332\206\312\374\334\160\355\267\267\014
END
CKA_ISSUER MULTILINE_OCTAL
\060\063\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\021\060\017\006\003\125\004\012\023\010\125\156\151\124\162\165
\163\164\061\021\060\017\006\003\125\004\003\023\010\125\103\101
\040\122\157\157\164
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\011
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "Starfield Services Root Certificate Authority"
# Issuer: CN=Starfield Services Root Certificate
Authority,OU=http://certificates.starfieldtech.com/repository/,O=Starfield Technologies\,
Inc.,L=Scottsdale,ST=Arizona,C=US
#
Serial Number: 0 (0x0)
# Subject: CN=Starfield Services Root Certificate
Authority,OU=http://certificates.starfieldtech.com/repository/,O=Starfield Technologies\,
Inc.,L=Scottsdale,ST=Arizona,C=US
# Not Valid Before: Mon Jun 02 00:00:00 2008
# Not Valid After: Mon Dec 31 23:59:59 2029
# Fingerprint (MD5): cf:8f:3b:62:a3:ca:ca:71:1b:a3:e1:cb:48:57:35:1f
# Fingerprint (SHA1): 5d:00:38:60:f0:02:ed:82:9d:ea:a4:18:68:f7:88:18:6d:62:12:7f
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Starfield Services Root Certificate Authority"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\317\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\020\060\016\006\003\125\004\010\023\007\101\162\151\172\157
\156\141\061\023\060\021\006\003\125\004\007\023\012\123\143\157
\164\164\163\144\141\154\145\061\045\060\043\006\003\125\004\012
\023\034\123\164\141\162\146\151\145\154\144\040\124\145\143\150
\156\157\154\157\147\151\145\163\054\040\111\156\143\056\061\072
\060\070\006\003\125\004\013\023\061\150\164\164\160\072\057\057
\143\145\162\164\151\146\151\143\141\164\145\163\056\163\164\141
\162\146\151\145\154\144\164\145\143\150\056\143\157\155\057\162

```

\145\160\157\163\151\164\157\162\171\057\061\066\060\064\006\003  
\125\004\003\023\055\123\164\141\162\146\151\145\154\144\040\123  
\145\162\166\151\143\145\163\040\122\157\157\164\040\103\145\162  
\164\151\146\151\143\141\164\145\040\101\165\164\150\157\162\151  
\164\171

END

CKA\_ID

UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\317\061\013\060\011\006\003\125\004\006\023\002\125\123  
\061\020\060\016\006\003\125\004\010\023\007\101\162\151\172\157  
\156\141\061\023\060\021\006\003\125\004\007\023\012\123\143\157  
\164\164\163\144\141\154\145\061\045\060\043\006\003\125\004\012  
\023\034\123\164\141\162\146\151\145\154\144\040\124\145\143\150  
\156\157\154\157\147\151\145\163\054\040\111\156\143\056\061\072  
\060\070\006\003\125\004\013\023\061\150\164\164\160\072\057\057  
\143\145\162\164\151\146\151\143\141\164\145\163\056\163\164\141  
\162\146\151\145\154\144\164\145\143\150\056\143\157\155\057\162  
\145\160\157\163\151\164\157\162\171\057\061\066\060\064\006\003  
\125\004\003\023\055\123\164\141\162\146\151\145\154\144\040\123  
\145\162\166\151\143\145\163\040\122\157\157\164\040\103\145\162  
\164\151\146\151\143\141\164\145\040\101\165\164\150\157\162\151  
\164\171

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\001\000

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\004\176\060\202\003\146\240\003\002\001\002\002\001\000  
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\201\317\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\020\060\016\006\003\125\004\010\023\007\101\162\151\172\157\156  
\141\061\023\060\021\006\003\125\004\007\023\012\123\143\157\164  
\164\163\144\141\154\145\061\045\060\043\006\003\125\004\012\023  
\034\123\164\141\162\146\151\145\154\144\040\124\145\143\150\156  
\157\154\157\147\151\145\163\054\040\111\156\143\056\061\072\060  
\070\006\003\125\004\013\023\061\150\164\164\160\072\057\057\143  
\145\162\164\151\146\151\143\141\164\145\163\056\163\164\141\162  
\146\151\145\154\144\164\145\143\150\056\143\157\155\057\162\145  
\160\157\163\151\164\157\162\171\057\061\066\060\064\006\003\125  
\004\003\023\055\123\164\141\162\146\151\145\154\144\040\123\145  
\162\166\151\143\145\163\040\122\157\157\164\040\103\145\162\164  
\151\146\151\143\141\164\145\040\101\165\164\150\157\162\151\164  
\171\060\036\027\015\060\070\060\066\060\062\060\060\060\060  
\060\132\027\015\062\071\061\062\063\061\062\063\065\071\065\071  
\132\060\201\317\061\013\060\011\006\003\125\004\006\023\002\125  
\123\061\020\060\016\006\003\125\004\010\023\007\101\162\151\172

\157\156\141\061\023\060\021\006\003\125\004\007\023\012\123\143  
\157\164\164\163\144\141\154\145\061\045\060\043\006\003\125\004  
\012\023\034\123\164\141\162\146\151\145\154\144\040\124\145\143  
\150\156\157\154\157\147\151\145\163\054\040\111\156\143\056\061  
\072\060\070\006\003\125\004\013\023\061\150\164\164\160\072\057  
\057\143\145\162\164\151\146\151\143\141\164\145\163\056\163\164  
\141\162\146\151\145\154\144\164\145\143\150\056\143\157\155\057  
\162\145\160\157\163\151\164\157\162\171\057\061\066\060\064\006  
\003\125\004\003\023\055\123\164\141\162\146\151\145\154\144\040  
\123\145\162\166\151\143\145\163\040\122\157\157\164\040\103\145  
\162\164\151\146\151\143\141\164\145\040\101\165\164\150\157\162  
\151\164\171\060\202\001\042\060\015\006\011\052\206\110\206\367  
\015\001\001\001\005\000\003\202\001\017\000\060\202\001\012\002  
\202\001\001\000\362\314\126\052\115\346\026\067\132\227\352\155  
\065\070\321\020\233\333\270\334\251\004\011\225\063\056\011\305  
\000\173\032\170\102\217\310\364\005\216\376\322\150\203\036\116  
\231\315\027\333\107\076\120\363\211\322\347\334\230\373\005\370  
\252\326\143\364\124\115\301\161\003\260\037\033\166\263\032\064  
\060\163\361\050\062\140\203\375\264\234\327\266\322\042\067\174  
\031\252\073\336\023\020\151\156\134\006\323\157\243\362\146\132  
\166\102\110\257\200\321\124\131\075\324\271\324\333\355\271\253  
\071\231\364\356\142\253\341\170\162\173\330\070\215\100\266\314  
\334\022\000\160\103\205\151\330\030\343\312\127\162\237\264\337  
\077\374\042\250\102\122\365\167\133\231\360\126\055\046\160\026  
\066\022\302\047\236\127\246\174\320\043\361\171\334\243\223\130  
\050\070\075\237\255\066\103\356\067\373\370\371\103\255\310\126  
\362\224\022\136\102\353\163\270\023\015\313\246\325\206\271\252  
\050\152\124\003\241\077\017\051\353\011\000\350\077\136\242\177  
\027\075\241\053\370\276\320\165\035\244\204\343\253\027\145\006  
\122\000\257\261\002\003\001\000\001\243\143\060\141\060\017\006  
\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060\016  
\006\003\125\035\017\001\001\377\004\004\003\002\001\006\060\035  
\006\003\125\035\016\004\026\004\024\264\306\177\032\103\314\233  
\165\135\057\304\113\362\213\230\020\351\361\121\020\060\037\006  
\003\125\035\043\004\030\060\026\200\024\264\306\177\032\103\314  
\233\165\135\057\304\113\362\213\230\020\351\361\121\020\060\015  
\006\011\052\206\110\206\367\015\001\001\005\005\000\003\202\001  
\001\000\254\200\273\304\045\005\013\130\244\344\176\051\176\257  
\274\073\354\055\300\104\056\371\221\340\322\073\062\047\220\055  
\366\200\011\134\302\253\145\044\332\070\020\106\304\111\322\375  
\232\253\050\110\167\210\306\351\157\321\107\221\325\065\117\024  
\011\250\133\100\007\035\174\161\126\313\211\102\324\277\141\300  
\042\367\056\337\253\363\162\103\213\100\350\224\353\260\046\332  
\321\023\323\253\320\066\055\056\072\225\263\167\056\025\071\030  
\014\151\272\252\200\355\361\123\116\063\233\150\004\342\240\060  
\056\327\321\135\324\246\146\235\204\346\347\273\074\211\273\066  
\235\374\027\251\075\125\053\212\373\233\304\114\204\377\337\322  
\276\151\033\164\260\250\366\352\260\234\262\051\164\201\114\150

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\072\232\177\163\045\071\365\023\340\146\221\151\324\127\113\267
\356\255\105\340\054\303\210\323\276\224\111\211\037\377\160\325
\133\155\071\023\260\035\313\230\346\147\143\015\143\366\373\303
\327\141\162\203\210\077\160\176\123\311\236\211\124\326\117\177
\175\161\271\256\361\140\213\167\140\354\370\277\372\152\243\234
\001\042
```

END

CKA\_NSS\_Mozilla\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "Starfield Services Root Certificate Authority"

# Issuer: CN=Starfield Services Root Certificate

Authority,OU=http://certificates.starfieldtech.com/repository/,O=Starfield Technologies\, Inc.,L=Scottsdale,ST=Arizona,C=US

# Serial Number: 0 (0x0)

# Subject: CN=Starfield Services Root Certificate

Authority,OU=http://certificates.starfieldtech.com/repository/,O=Starfield Technologies\, Inc.,L=Scottsdale,ST=Arizona,C=US

# Not Valid Before: Mon Jun 02 00:00:00 2008

# Not Valid After: Mon Dec 31 23:59:59 2029

# Fingerprint (MD5): cf:8f:3b:62:a3:ca:ca:71:1b:a3:e1:cb:48:57:35:1f

#

Fingerprint (SHA1): 5d:00:38:60:f0:02:ed:82:9d:ea:a4:18:68:f7:88:18:6d:62:12:7f

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Starfield Services Root Certificate Authority"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\135\000\070\140\360\002\355\202\235\352\244\030\150\367\210\030
\155\142\022\177
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\317\217\073\142\243\312\312\161\033\243\341\313\110\127\065\037
```

END

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\201\317\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\020\060\016\006\003\125\004\010\023\007\101\162\151\172\157
\156\141\061\023\060\021\006\003\125\004\007\023\012\123\143\157
\164\164\163\144\141\154\145\061\045\060\043\006\003\125\004\012
\023\034\123\164\141\162\146\151\145\154\144\040\124\145\143\150
\156\157\154\157\147\151\145\163\054\040\111\156\143\056\061\072
\060\070\006\003\125\004\013\023\061\150\164\164\160\072\057\057
\143\145\162\164\151\146\151\143\141\164\145\163\056\163\164\141
\162\146\151\145\154\144\164\145\143\150\056\143\157\155\057\162
```

```
\145\160\157\163\151\164\157\162\171\057\061\066\060\064\006\003
\125\004\003\023\055\123\164\141\162\146\151\145\154\144\040\123
\145\162\166\151\143\145\163\040\122\157\157\164\040\103\145\162
\164\151\146\151\143\141\164\145\040\101\165\164\150\157\162\151
\164\171
```

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

```
\002\001\000
```

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "I.CA - Qualified root certificate"

# Issuer: O=První certifikační autorita, a.s.,CN=I.CA - Qualified root certificate,C=CZ

# Serial Number:9d:2a:60

# Subject: O=První certifikační autorita, a.s.,CN=I.CA - Qualified root certificate,C=CZ

# Not Valid Before: Tue Apr

```
01 00:00:00 2008
```

# Not Valid After: Sun Apr 01 00:00:00 2018

# Fingerprint (MD5): 48:d1:1e:62:78:01:c2:6e:43:69:a4:2c:ee:13:0a:b5

# Fingerprint (SHA1): 64:90:2a:d7:27:7a:f3:e3:2c:d8:cc:1d:c7:9d:e1:fd:7f:80:69:ea

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "I.CA - Qualified root certificate"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

```
\060\150\061\013\060\011\006\003\125\004\006\023\002\103\132\061
\052\060\050\006\003\125\004\003\014\041\111\056\103\101\040\055
\040\121\165\141\154\151\146\151\145\144\040\162\157\157\164\040
\143\145\162\164\151\146\151\143\141\164\145\061\055\060\053\006
\003\125\004\012\014\044\120\162\166\156\303\255\040\143\145\162
\164\151\146\151\153\141\304\215\156\303\255\040\141\165\164\157
\162\151\164\141\054\040\141\056\163\056
```

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

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\052\060\050\006\003\125\004\003\014\041\111\056\103\101\040\055
\040\121\165\141\154\151\146\151\145\144\040\162\157\157\164\040
\143\145\162\164\151\146\151\143\141\164\145\061\055\060\053\006
\003\125\004\012\014\044\120\162\166\156\303\255\040\143\145\162
\164\151\146\151\153\141\304\215\156\303\255\040\141\165\164\157
```

\162\151\164\141\054\040\141\056\163\056  
END  
CKA\_SERIAL\_NUMBER  
MULTILINE\_OCTAL  
\002\004\000\235\052\140  
END  
CKA\_VALUE MULTILINE\_OCTAL  
\060\202\004\071\060\202\003\041\240\003\002\001\002\002\004\000  
\235\052\140\060\015\006\011\052\206\110\206\367\015\001\001\005  
\005\000\060\150\061\013\060\011\006\003\125\004\006\023\002\103  
\132\061\052\060\050\006\003\125\004\003\014\041\111\056\103\101  
\040\055\040\121\165\141\154\151\146\151\145\144\040\162\157\157  
\164\040\143\145\162\164\151\146\151\143\141\164\145\061\055\060  
\053\006\003\125\004\012\014\044\120\162\166\156\303\255\040\143  
\145\162\164\151\146\151\153\141\304\215\156\303\255\040\141\165  
\164\157\162\151\164\141\054\040\141\056\163\056\060\036\027\015  
\060\070\060\064\060\061\060\060\060\060\060\060\132\027\015\061  
\070\060\064\060\061\060\060\060\060\060\060\132\060\150\061\013  
\060\011\006\003\125\004\006\023\002\103\132\061\052\060\050\006  
\003\125\004\003\014\041\111\056\103\101\040\055\040\121\165\141  
\154\151\146\151\145\144\040\162\157\157\164\040\143\145\162\164  
\151\146\151\143\141\164\145\061\055\060\053\006\003\125\004\012  
\014\044\120\162\166\156\303\255\040\143\145\162\164\151\146\151  
\153\141\304\215\156\303\255\040\141\165\164\157\162\151\164\141  
\054\040\141\056\163\056\060\202\001\042\060\015\006\011\052\206  
\110\206\367\015\001\001\001\005\000\003\202\001\017\000\060\202  
\001\012\002\202\001\001\000\253\010\210\244\360\164\362\237\370  
\333\326\167\215\060\031\076\246\305\307\212\305\275\335\346\002  
\256\216\075\120\165\270\257\175\066\253\376\365\355\010\147\264  
\000\212\230\301\003\143\210\121\362\033\066\211\164\132\055\310  
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\037\111\375\154\070\155\152\254\270\105\237\274\024\327\146\324  
\041\343\047\012\215\165\340\132\057\012\113\264\347\176\163\243  
\052\275\160\361\221\206\010\217\277\220\204\034\207\251\365\231  
\045\045\224\301\343\156\007\301\113\007\133\124\374\064\313\106  
\067\234\305\241\040\316\246\254\207\251\203\074\070\117\300\100  
\363\351\377\233\327\071\166\344\023\043\165\265\377\241\102\256  
\134\206\117\305\116\103\266\231\013\122\123\040\250\263\302\114  
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\045\356\032\373\223\236\255\143\361\114\342\166\061\136\067\357  
\374\320\251\066\344\371\021\351\172\374\120\347\101\043\003\064  
\270\175\272\016\317\335\123\002\003\001\000\001\243\201\352\060  
\201\347\060\017\006\003\125\035\023\001\001\377\004\005\060\003  
\001\001\377\060\016\006\003\125\035\017\001\001\377\004\004\003  
\002\001\006\060\201\244\006\003\125\035\040\004\201\234\060\201  
\231\060\201\226\006\014\053\006\001\004\001\201\270\110\001\004  
\000\001\060\201\205\060\201\202\006\010\053\006\001\005\005\007



\002\002\060\166\032\164\124\145\156\164\157\040\143\145\162\164  
\151\146\151\153\141\164\040\152\145\040\166\171\144\141\156\040  
\152\141\153\157\040\153\166\141\154\151\146\151\153\157\166\141  
\156\171\040\163\171\163\164\145\155\157\166\171\040\143\145\162  
\164\151\146\151\153\141\164\040\166\040\163\157\165\154\141\144  
\165\040\163\145\040\172\141\153\157\156\145\155\040\062\062\067  
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\156\145\155\040\172\156\145\156\151\056\060\035\006\003\125\035  
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\326\117\334\214\321\172\360\126\131\060\015\006\011\052\206\110  
\206\367\015\001\001\005\005\000\003\202\001\001\000\162\365\274  
\006\215\322\054\226\362\202\333\130\173\107\360\100\144\345\056  
\033\357\372\340\372\323\361\162\110\001\104\362\210\364\336\230  
\201\123\204\347\175\116\107\347\061\067\126\256\263\301\060\157  
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\135\367\105\027\102\272\102\055\233\222\373\156\224\263\160\107  
\040\010\235\123\360\260\255\275\251\204\132\335\007\052\014\315  
\053\155\141\050\337\073\222\050\354\121\201\177\121\174\216\056  
\177\235\351\274\301\064\075\213\255\201\255\361\036\164\146\103  
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\377\127\143\261\326\217\264\075\206\022\152\317\102\060\264\223  
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\172\112\070\241\362\110\221\246\036\313\043\262\070\235\360\056  
\111\242\311\210\126\145\145\216\072\147\105\214\214\013\342\252  
\261\113\007\377\261\037\272\024\317\162\372\247\170

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER

CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "I.CA - Qualified root certificate"

# Issuer: O=První certifikační autorita, a.s.,CN=I.CA - Qualified root certificate,C=CZ

# Serial Number:9d:2a:60

# Subject: O=První certifikační autorita, a.s.,CN=I.CA - Qualified root certificate,C=CZ

# Not Valid Before: Tue Apr 01 00:00:00 2008

# Not Valid After: Sun Apr 01 00:00:00 2018

# Fingerprint (MD5): 48:d1:1e:62:78:01:c2:6e:43:69:a4:2c:ee:13:0a:b5

# Fingerprint (SHA1): 64:90:2a:d7:27:7a:f3:e3:2c:d8:cc:1d:c7:9d:e1:fd:7f:80:69:ea

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "I.CA - Qualified root certificate"

```

CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\144\220\052\327\047\172\363\343\054\330\314\035\307\235\341\375
\177\200\151\352
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\110\321\036\142\170\001\302\156\103\151\244\054\356\023\012\265
END
CKA_ISSUER MULTILINE_OCTAL
\060\150\061\013\060\011\006\003\125\004\006\023\002\103\132\061
\052\060\050\006\003\125\004\003\014\041\111\056\103\101\040\055
\040\121\165\141\154\151\146\151\145\144\040\162\157\157\164\040
\143\145\162\164\151\146\151\143\141\164\145\061\055\060\053\006
\003\125\004\012\014\044\120\162\166\156\303\255\040\143\145\162
\164\151\146\151\153\141\304\215\156\303\255\040\141\165\164\157
\162\151\164\141\054\040\141\056\163\056
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\004\000\235\052\140
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "I.CA - Standard root certificate"
# Issuer: O=Prvni certifikacni autorita a.s.,CN=I.CA - Standard root certificate,C=CZ
# Serial Number:13:d6:20
# Subject: O=Prvni certifikacni autorita a.s.,CN=I.CA - Standard root certificate,C=CZ
#
Not Valid Before: Tue Apr 01 00:00:00 2008
# Not Valid After: Sun Apr 01 00:00:00 2018
# Fingerprint (MD5): 04:68:e9:24:7e:41:ce:d7:6c:44:16:30:70:3d:dd:b9
# Fingerprint (SHA1): ab:16:dd:14:4e:cd:c0:fc:4b:aa:b6:2e:cf:04:08:89:6f:de:52:b7
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "I.CA - Standard root certificate"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\143\061\013\060\011\006\003\125\004\006\023\002\103\132\061
\051\060\047\006\003\125\004\003\023\040\111\056\103\101\040\055
\040\123\164\141\156\144\141\162\144\040\162\157\157\164\040\143
\145\162\164\151\146\151\143\141\164\145\061\051\060\047\006\003
\125\004\012\023\040\120\162\166\156\151\040\143\145\162\164\151
\146\151\153\141\143\156\151\040\141\165\164\157\162\151\164\141

```

\040\141\056\163\056

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\143\061\013\060\011\006\003\125\004\006\023\002\103\132\061  
\051\060\047\006\003\125\004\003\023\040\111\056\103\101\040\055  
\040\123\164\141\156\144\141\162\144\040\162\157\157\164\040\143  
\145\162\164\151\146\151\143\141\164\145\061\051\060\047\006\003  
\125\004\012\023\040\120\162\166\156\151\040\143\145\162\164\151  
\146\151\153\141\143\156\151\040\141\165\164\157\162\151\164\141  
\040\141\056\163\056

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\003\023\326\040

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\004\056\060\202\003\026\240\003\002\001\002\002\003\023  
\326\040\060\015\006\011\052\206\110\206\367\015\001\001\005\005  
\000\060\143\061\013\060\011\006\003\125\004\006\023\002\103\132  
\061\051\060\047\006\003\125\004\003\023\040\111\056\103\101\040  
\055\040\123\164\141\156\144\141\162\144\040\162\157\157\164\040  
\143\145\162\164\151\146\151\143\141\164\145\061\051\060\047\006  
\003\125\004\012\023\040\120\162\166\156\151\040\143\145\162\164  
\151\146\151\153\141\143\156\151\040\141\165\164\157\162\151\164  
\141\040\141\056\163\056\060\036\027\015\060\070\060\064\060\061  
\060\060\060\060\060\060\132\027\015\061\070\060\064\060\061\060  
\060\060\060\060\060\132\060\143\061\013\060\011\006\003\125\004  
\006\023\002\103\132\061\051\060\047\006\003\125\004\003\023\040  
\111\056\103\101\040\055\040\123\164\141\156\144\141\162\144\040  
\162\157\157\164\040\143\145\162\164\151\146\151\143\141\164\145  
\061\051\060\047\006\003\125\004\012\023\040\120\162\166\156\151  
\040\143\145\162\164\151\146\151\153\141\143\156\151\040\141\165  
\164\157\162\151\164\141\040\141\056\163\056\060\202\001\042\060  
\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003\202  
\001\017\000\060\202\001\012\002\202\001\001\000\321\055\025\304  
\071\114\152\241\304\345\363\053\264\375\251\026\351\270\121\217  
\067\221\331\247\323\227\220\266\160\151\207\365\257\131\322\142  
\101\130\325\363\225\215\002\025\372\146\234\301\041\024\330\037  
\255\372\052\154\164\126\241\142\341\361\260\255\270\376\322\243  
\340\221\241\265\256\123\255\215\244\015\017\131\140\227\052\374  
\243\056\163\065\043\163\314\250\246\241\024\155\277\211\303\204  
\070\363\144\131\314\061\363\340\371\047\140\012\074\101\005\157  
\132\122\360\217\156\122\156\354\136\210\157\340\100\214\041\107  
\127\042\351\070\156\346\372\363\044\264\256\257\057\163\077\200  
\325\062\217\214\331\204\031\330\140\316\333\151\215\076\257\002  
\257\256\336\257\120\365\317\346\263\141\030\304\340\335\360\116  
\112\146\015\172\163\040\267\344\324\223\206\107\141\330\117\312

\072\216\253\302\077\306\042\027\243\135\235\040\306\305\016\044  
\151\310\246\175\146\006\315\106\346\063\341\103\164\223\365\203  
\142\322\260\105\042\001\244\166\275\353\121\223\130\154\372\032  
\241\237\165\200\332\330\000\342\361\210\115\077\002\003\001\000  
\001\243\201\352\060\201\347\060\017\006\003\125\035\023\001\001  
\377\004\005\060\003\001\001\377\060\016\006\003\125\035\017\001  
\001\377\004\004\003\002\001\006\060\035\006\003\125\035\016\004  
\026\004\024\353\067\244\276\271\157\140\027\373\323\377\055\140  
\341\004\036\257\317\306\323\060\201\244\006\003\125\035\040\004  
\201\234\060\201\231\060\201\226\006\014\053\006\001\004\001\201  
\270\110\001\001\000\001\060\201\205\060\201\202\006\010\053\006  
\001\005\005\007\002\002\060\166\032\164\124\145\156\164\157\040  
\143\145\162\164\151\146\151\153\141\164\040\152\145\040\166\171  
\144\141\156\040\152\141\153\157\040\153\166\141\154\151\146\151  
\153\157\166\141\156\171\040\163\171\163\164\145\155\157\166\171  
\040\143\145\162\164\151\146\151\153\141\164\040\166\040\163\157  
\165\154\141\144\165\040\163\145\040\172\141\153\157\156\145\155  
\040\062\062\067\057\062\060\060\060\040\123\142\056\040\166\040  
\160\154\141\164\156\145\155\040\172\156\145\156\151\056\060\015  
\006\011\052\206\110\206\367\015\001\001\005\005\000\003\202\001  
\001\000\027\042\130\252\057\030\125\002\241\114\066\111\067\113  
\233\163\272\256\143\066\016\213\053\204\105\067\314\372\340\147  
\367\240\163\152\147\150\126\274\141\250\064\232\050\272\146\054  
\141\233\213\034\370\004\160\214\206\343\101\357\224\171\015\335  
\064\207\004\356\265\236\061\153\071\364\176\130\345\362\260\004  
\115\251\127\045\111\340\013\325\344\354\175\016\076\073\001\340  
\214\374\122\220\223\346\362\260\253\365\061\167\314\321\311\103  
\202\253\017\056\264\371\230\256\076\343\104\364\244\003\151\125  
\332\134\216\333\301\271\254\344\230\325\166\025\106\241\056\132  
\014\042\140\240\302\353\160\177\161\003\260\150\323\061\144\315  
\352\313\113\125\211\202\076\134\146\313\032\010\230\107\302\336  
\331\056\070\114\005\375\055\214\372\343\042\045\271\222\375\326  
\262\055\312\242\064\234\337\111\357\325\204\001\054\222\377\005  
\101\012\147\306\102\153\236\313\330\237\220\274\015\017\020\175  
\307\146\275\352\163\007\340\030\352\121\201\264\105\100\074\017  
\241\042\067\025\001\205\251\056\174\016\137\135\316\152\223\276  
\331\276

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only

Certificate

# Trust for "I.CA - Standard root certificate"

# Issuer: O=Prvni certifikacni autorita a.s.,CN=I.CA - Standard root certificate,C=CZ

# Serial Number:13:d6:20

```
# Subject: O=Prvni certifikacni autorita a.s.,CN=I.CA - Standard root certificate,C=CZ
# Not Valid Before: Tue Apr 01 00:00:00 2008
# Not Valid After: Sun Apr 01 00:00:00 2018
# Fingerprint (MD5): 04:68:e9:24:7e:41:ce:d7:6c:44:16:30:70:3d:dd:b9
# Fingerprint (SHA1): ab:16:dd:14:4e:cd:c0:fc:4b:aa:b6:2e:cf:04:08:89:6f:de:52:b7
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "I.CA - Standard root certificate"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\253\026\335\024\116\315\300\374\113\252\266\056\317\004\010\211
\157\336\122\267
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\004\150\351\044\176\101\316\327\154\104\026\060\160\075\335\271
END
CKA_ISSUER MULTILINE_OCTAL
\060\143\061\013\060\011\006\003\125\004\006\023\002\103\132\061
\051\060\047\006\003\125\004\003\023\040\111\056\103\101\040\055
\040\123\164\141\156\144\141\162\144\040\162\157\157\164\040\143
\145\162\164\151\146\151\143\141\164\145\061\051\060\047\006\003
\125\004\012\023\040\120\162\166\156\151\040\143\145\162\164\151
\146\151\153\141\143\156\151\040\141\165\164\157\162\151\164\141
\040\141\056\163\056
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\003\023\326\040
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
# Microsoft Code Signing Only Certificate
# Certificate "e-Guven Kok Elektronik Sertifika Hizmet Saglayicisi"
# Issuer: CN=e-Guven Kok Elektronik Sertifika Hizmet Saglayicisi,O=Elektronik Bilgi Guvenligi A.S.,C=TR
# Serial Number:44:99:8d:3c:c0:03:27:bd:9c:76:95:b9:ea:db:ac:b5
# Subject: CN=e-Guven Kok Elektronik Sertifika Hizmet Saglayicisi,O=Elektronik Bilgi Guvenligi
A.S.,C=TR
# Not Valid Before: Thu Jan 04 11:32:48 2007
# Not Valid After: Wed Jan 04 11:32:48 2017
# Fingerprint (MD5): 3d:41:29:cb:1e:aa:11:74:cd:5d:b0:62:af:b0:43:5b
# Fingerprint (SHA1): dd:e1:d2:a9:01:80:2e:1d:87:5e:84:b3:80:7e:4b:b1:fd:99:41:34
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "e-Guven Kok Elektronik Sertifika Hizmet Saglayicisi"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\165\061\013\060\011\006\003\125\004\006\023\002\124\122\061
\050\060\046\006\003\125\004\012\023\037\105\154\145\153\164\162
\157\156\151\153\040\102\151\154\147\151\040\107\165\166\145\156
\154\151\147\151\040\101\056\123\056\061\074\060\072\006\003\125
\004\003\023\063\145\055\107\165\166\145\156\040\113\157\153\040
\105\154\145\153\164\162\157\156\151\153\040\123\145\162\164\151
\146\151\153\141\040\110\151\172\155\145\164\040\123\141\147\154
\141\171\151\143\151\163\151
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\165\061\013\060\011\006\003\125\004\006\023\002\124\122\061
\050\060\046\006\003\125\004\012\023\037\105\154\145\153\164\162
\157\156\151\153\040\102\151\154\147\151\040\107\165\166\145\156
\154\151\147\151\040\101\056\123\056\061\074\060\072\006\003\125
\004\003\023\063\145\055\107\165\166\145\156\040\113\157\153\040
\105\154\145\153\164\162\157\156\151\153\040\123\145\162\164\151
\146\151\153\141\040\110\151\172\155\145\164\040\123\141\147\154
\141\171\151\143\151\163\151
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\104\231\215\074\300\003\047\275\234\166\225\271\352\333
\254\265
END
CKA_VALUE MULTILINE_OCTAL
\060\202\003\266\060\202\002\236\240\003\002\001\002\002\020\104
\231\215\074\300\003\047\275\234\166\225\271\352\333\254\265\060
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\165
\061\013\060\011\006\003\125\004\006\023\002\124\122\061\050\060
\046\006\003\125\004\012\023\037\105\154\145\153\164\162\157\156
\151\153\040\102\151\154\147\151\040\107\165\166\145\156\154\151
\147\151\040\101\056\123\056\061\074\060\072\006\003\125\004\003
\023\063\145\055\107\165\166\145\156\040\113\157\153\040\105\154
\145\153\164\162\157\156\151\153\040\123\145\162\164\151\146\151
\153\141\040\110\151\172\155\145\164\040\123\141\147\154\141\171
\151\143\151\163\151\060\036\027\015\060\067\060\061\060\064\061
\061\063\062\064\070\132\027\015\061\067\060\061\060\064\061\061
\063\062\064\070\132\060\165\061\013\060\011\006\003\125\004\006
\023\002\124\122\061\050\060\046\006\003\125\004\012\023\037\105
\154\145\153\164\162\157\156\151\153\040\102\151\154\147\151\040
\107\165\166\145\156\154\151\147\151\040\101\056\123\056\061\074
\060\072\006\003\125\004\003\023\063\145\055\107\165\166\145\156
\040\113\157\153\040\105\154\145\153\164\162\157\156\151\153\040
```

\123\145\162\164\151\146\151\153\141\040\110\151\172\155\145\164  
\040\123\141\147\154\141\171\151\143\151\163\151\060\202\001\042  
\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003  
\202\001\017\000\060\202\001\012\002\202\001\001\000\303\022\040  
\236\260\136\000\145\215\116\106\273\200\134\351\054\006\227\325  
\363\162\311\160\271\347\113\145\200\301\113\276\176\074\327\124  
\061\224\336\325\022\272\123\026\002\352\130\143\357\133\330\363  
\355\052\032\252\161\110\243\334\020\055\137\137\353\134\113\234  
\226\010\102\045\050\021\314\212\132\142\001\120\325\353\011\123  
\057\370\303\217\376\263\374\375\235\242\343\137\175\276\355\013  
\340\140\353\151\354\063\355\330\215\373\022\111\203\000\311\213  
\227\214\073\163\052\062\263\022\367\271\115\362\364\115\155\307  
\346\326\046\067\010\362\331\375\153\134\243\345\110\134\130\274  
\102\276\003\132\201\272\034\065\014\000\323\365\043\176\161\060  
\010\046\070\334\045\021\107\055\363\272\043\020\245\277\274\002  
\367\103\136\307\376\260\067\120\231\173\017\223\316\346\103\054  
\303\176\015\362\034\103\146\140\313\141\061\107\207\243\117\256  
\275\126\154\114\274\274\370\005\312\144\364\351\064\241\054\265  
\163\341\302\076\350\310\311\064\045\010\134\363\355\246\307\224  
\237\255\210\103\045\327\341\071\140\376\254\071\131\002\003\001  
\000\001\243\102\060\100\060\016\006\003\125\035\017\001\001\377  
\004\004\003\002\001\006\060\017\006\003\125\035\023\001\001\377  
\004\005\060\003\001\001\377\060\035\006\003\125\035\016\004\026  
\004\024\237\356\104\263\224\325\372\221\117\056\331\125\232\004  
\126\333\055\304\333\245\060\015\006\011\052\206\110\206\367\015  
\001\001\005\005\000\003\202\001\001\000\177\137\271\123\133\143  
\075\165\062\347\372\304\164\032\313\106\337\106\151\034\122\317  
\252\117\302\150\353\377\200\251\121\350\075\142\167\211\075\012  
\165\071\361\156\135\027\207\157\150\005\301\224\154\331\135\337  
\332\262\131\313\245\020\212\312\314\071\315\237\353\116\336\122  
\377\014\360\364\222\251\362\154\123\253\233\322\107\240\037\164  
\367\233\232\361\057\025\237\172\144\060\030\007\074\052\017\147  
\312\374\017\211\141\235\145\245\074\345\274\023\133\010\333\343  
\377\355\273\006\273\152\006\261\172\117\145\306\202\375\036\234  
\213\265\015\356\110\273\270\275\252\010\264\373\243\174\313\237  
\315\220\166\134\206\226\170\127\012\146\371\130\032\235\375\227  
\051\140\336\021\246\220\034\031\034\356\001\226\042\064\064\056  
\221\371\267\304\047\321\173\346\277\373\200\104\132\026\345\353  
\340\324\012\070\274\344\221\343\325\353\134\301\254\337\033\152  
\174\236\345\165\322\266\227\207\333\314\207\053\103\072\204\010  
\257\253\074\333\367\074\146\061\206\260\235\123\171\355\370\043  
\336\102\343\055\202\361\017\345\372\227

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

```
# Microsoft Code Signing Only Certificate
# Trust for "e-Guven Kok Elektronik Sertifika Hizmet Saglayicisi"
# Issuer: CN=e-Guven Kok Elektronik Sertifika Hizmet Saglayicisi,O=Elektronik Bilgi Guvenligi A.S.,C=TR
# Serial Number:44:99:8d:3c:c0:03:27:bd:9c:76:95:b9:ea:db:ac:b5
# Subject: CN=e-Guven
    Kok Elektronik Sertifika Hizmet Saglayicisi,O=Elektronik Bilgi Guvenligi A.S.,C=TR
# Not Valid Before: Thu Jan 04 11:32:48 2007
# Not Valid After: Wed Jan 04 11:32:48 2017
# Fingerprint (MD5): 3d:41:29:cb:1e:aa:11:74:cd:5d:b0:62:af:b0:43:5b
# Fingerprint (SHA1): dd:e1:d2:a9:01:80:2e:1d:87:5e:84:b3:80:7e:4b:b1:fd:99:41:34
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "e-Guven Kok Elektronik Sertifika Hizmet Saglayicisi"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\335\341\322\251\001\200\056\035\207\136\204\263\200\176\113\261
\375\231\101\064
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\075\101\051\313\036\252\021\164\315\135\260\142\257\260\103\133
END
CKA_ISSUER MULTILINE_OCTAL
\060\165\061\013\060\011\006\003\125\004\006\023\002\124\122\061
\050\060\046\006\003\125\004\012\023\037\105\154\145\153\164\162
\157\156\151\153\040\102\151\154\147\151\040\107\165\166\145\156
\154\151\147\151\040\101\056\123\056\061\074\060\072\006\003\125
\004\003\023\063\145\055\107\165\166\145\156\040\113\157\153\040
\105\154\145\153\164\162\157\156\151\153\040\123\145\162\164\151
\146\151\153\141\040\110\151\172\155\145\164\040\123\141\147\154
\141\171\151\143\151\163\151
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\104\231\215\074\300\003\047\275\234\166\225\271\352\333
\254\265
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
# Microsoft Code Signing Only Certificate
# Certificate "Japanese Government"
# Issuer: OU=ApplicationCA,O=Japanese Government,C=JP
# Serial Number: 49 (0x31)
# Subject: OU=ApplicationCA,O=Japanese Government,C=JP
# Not Valid Before: Wed Dec 12 15:00:00 2007
```



```
# Not Valid After: Tue Dec 12 15:00:00 2017
# Fingerprint (MD5): 7e:23:4e:5b:a7:a5:b4:25:e9:00:07:74:11:62:ae:d6
# Fingerprint (SHA1): 7f:8a:b0:cf:d0:51:87:6a:66:f3:36:0f:47:c8:8d:8c:d3:35:fc:74
CKA_CLASS
CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Japanese Government"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\103\061\013\060\011\006\003\125\004\006\023\002\112\120\061
\034\060\032\006\003\125\004\012\023\023\112\141\160\141\156\145
\163\145\040\107\157\166\145\162\156\155\145\156\164\061\026\060
\024\006\003\125\004\013\023\015\101\160\160\154\151\143\141\164
\151\157\156\103\101
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\103\061\013\060\011\006\003\125\004\006\023\002\112\120\061
\034\060\032\006\003\125\004\012\023\023\112\141\160\141\156\145
\163\145\040\107\157\166\145\162\156\155\145\156\164\061\026\060
\024\006\003\125\004\013\023\015\101\160\160\154\151\143\141\164
\151\157\156\103\101
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\061
END
CKA_VALUE MULTILINE_OCTAL
\060\202\003\240\060\202\002\210\240\003\002\001\002\002\001\061
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060
\103\061\013\060\011\006\003\125\004\006\023\002\112\120\061\034
\060\032\006\003\125\004\012\023\023\112\141\160\141\156\145\163
\145\040\107\157\166\145\162\156\155\145\156\164\061\026\060\024
\006\003\125\004\013\023\015\101\160\160\154\151\143\141\164\151
\157\156\103\101\060\036\027\015\060\067\061\062\061\062\061\065
\060\060\060\060\132\027\015\061\067\061\062\061\062\061\065\060
\060\060\060\132\060\103\061\013\060\011\006\003\125\004\006\023
\002\112\120\061\034\060\032\006\003\125\004\012\023\023\112\141
\160\141\156\145\163\145\040\107\157\166\145\162\156\155\145\156
\164\061\026\060\024\006\003\125\004\013\023\015\101\160\160\154
\151\143\141\164\151\157\156\103\101\060\202\001\042\060\015\006
\011\052\206\110\206\367\015\001\001\001\005\000\003\202\001\017
\000\060\202\001\012\002\202\001\001\000\247\155\340\164\116\207
\217\245\006\336\150\242\333\206\231\113\144\015\161\360\012\005
\233\216\252\341\314\056\322\152\073\301\172\264\227\141\215\212
\276\306\232\234\006\264\206\121\344\067\016\164\170\176\137\212
\177\224\244\327\107\010\375\120\132\126\344\150\254\050\163\240
```

\173\351\177\030\222\100\117\055\235\365\256\104\110\163\066\006  
\236\144\054\073\064\043\333\134\046\344\161\171\217\324\156\171  
\042\271\223\301\312\315\301\126\355\210\152\327\240\071\041\004  
\127\054\242\365\274\107\101\117\136\064\042\225\265\037\051\155  
\136\112\363\115\162\276\101\126\040\207\374\351\120\107\327\060  
\024\356\134\214\125\272\131\215\207\374\043\336\223\320\004\214  
\375\357\155\275\320\172\311\245\072\152\162\063\306\112\015\005  
\027\052\055\173\261\247\330\326\360\276\364\077\352\016\050\155  
\101\141\043\166\170\303\270\145\244\363\132\256\314\302\252\331  
\347\130\336\266\176\235\205\156\237\052\012\157\237\003\051\060  
\227\050\035\274\267\317\124\051\116\121\061\371\047\266\050\046  
\376\242\143\346\101\026\360\063\230\107\002\003\001\000\001\243  
\201\236\060\201\233\060\035\006\003\125\035\016\004\026\004\024  
\124\132\313\046\077\161\314\224\106\015\226\123\352\153\110\320  
\223\376\102\165\060\016\006\003\125\035\017\001\001\377\004\004  
\003\002\001\006\060\131\006\003\125\035\021\004\122\060\120\244  
\116\060\114\061\013\060\011\006\003\125\004\006\023\002\112\120  
\061\030\060\026\006\003\125\004\012\014\017\346\227\245\346\234  
\254\345\233\275\346\224\277\345\272\234\061\043\060\041\006\003  
\125\004\013\014\032\343\202\242\343\203\227\343\203\252\343\202  
\261\343\203\274\343\202\267\343\203\247\343\203\263\103\101\060  
\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377  
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\003  
\202\001\001\000\071\152\104\166\167\070\072\354\243\147\106\017  
\371\213\006\250\373\152\220\061\316\176\354\332\321\211\174\172  
\353\056\014\275\231\062\347\260\044\326\303\377\365\262\210\011  
\207\054\343\124\341\243\246\262\010\013\300\205\250\310\322\234  
\161\366\035\237\140\374\070\063\023\341\236\334\013\137\332\026  
\120\051\173\057\160\221\017\231\272\064\064\215\225\164\305\176  
\170\251\146\135\275\312\041\167\102\020\254\146\046\075\336\221  
\253\375\025\360\157\355\154\137\020\370\363\026\366\003\212\217  
\247\022\021\014\313\375\077\171\301\234\375\142\356\243\317\124  
\014\321\053\137\027\076\343\076\277\300\053\076\011\233\376\210  
\246\176\264\222\027\374\043\224\201\275\156\247\305\214\302\353  
\021\105\333\370\101\311\226\166\352\160\137\171\022\153\344\243  
\007\132\005\357\047\111\317\041\237\212\114\011\160\146\251\046  
\301\053\021\116\063\322\016\374\326\154\322\016\062\144\150\377  
\255\005\170\137\003\035\250\343\220\254\044\340\017\100\247\113  
\256\213\050\267\202\312\030\007\346\267\133\164\351\040\031\177  
\262\033\211\124

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "Japanese Government"

```

#
Issuer: OU=ApplicationCA,O=Japanese Government,C=JP
# Serial Number: 49 (0x31)
# Subject: OU=ApplicationCA,O=Japanese Government,C=JP
# Not Valid Before: Wed Dec 12 15:00:00 2007
# Not Valid After: Tue Dec 12 15:00:00 2017
# Fingerprint (MD5): 7e:23:4e:5b:a7:a5:b4:25:e9:00:07:74:11:62:ae:d6
# Fingerprint (SHA1): 7f:8a:b0:cf:d0:51:87:6a:66:f3:36:0f:47:c8:8d:8c:d3:35:fc:74
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Japanese Government"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\177\212\260\317\320\121\207\152\146\363\066\017\107\310\215\214
\323\065\374\164
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\176\043\116\133\247\245\264\045\351\000\007\164\021\142\256\326
END
CKA_ISSUER MULTILINE_OCTAL
\060\103\061\013\060\011\006\003\125\004\006\023\002\112\120\061
\034\060\032\006\003\125\004\012\023\023\112\141\160\141\156\145
\163\145\040\107\157\166\145\162\156\155\145\156\164\061\026\060
\024\006\003\125\004\013\023\015\101\160\160\154\151\143\141\164
\151\157\156\103\101
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\001\061
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "AdminCA-CD-T01"
# Issuer: CN=AdminCA-CD-T01,OU=Certification Authorities,OU=Services,O=admin,C=CH
# Serial Number: 1 (0x1)
# Subject: CN=AdminCA-CD-T01,OU=Certification Authorities,OU=Services,O=admin,C=CH
# Not Valid Before: Wed Jan 25 13:36:19 2006
# Not Valid After: Mon Jan 25 12:36:19 2016
# Fingerprint (MD5): 5b:9e:fd:3b:60:35:ea:68:8e:52:fe:13:19:14:4a:a3
# Fingerprint (SHA1): 6b:81:44:6a:5c:dd:f4:74:a0:f8:00:ff:be:69:fd:0d:b6:28:75:16
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE

```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8
"AdminCA-CD-T01"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\155\061\013\060\011\006\003\125\004\006\023\002\103\110\061
\016\060\014\006\003\125\004\012\023\005\141\144\155\151\156\061
\021\060\017\006\003\125\004\013\023\010\123\145\162\166\151\143
\145\163\061\042\060\040\006\003\125\004\013\023\031\103\145\162
\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157
\162\151\164\151\145\163\061\027\060\025\006\003\125\004\003\023
\016\101\144\155\151\156\103\101\055\103\104\055\124\060\061
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\155\061\013\060\011\006\003\125\004\006\023\002\103\110\061
\016\060\014\006\003\125\004\012\023\005\141\144\155\151\156\061
\021\060\017\006\003\125\004\013\023\010\123\145\162\166\151\143
\145\163\061\042\060\040\006\003\125\004\013\023\031\103\145\162
\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157
\162\151\164\151\145\163\061\027\060\025\006\003\125\004\003\023
\016\101\144\155\151\156\103\101\055\103\104\055\124\060\061
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\001\001
END
CKA_VALUE MULTILINE_OCTAL
\060\202\004\115\060\202\003\065\240\003\002\001\002\002\001\001
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060
\155\061\013\060\011\006\003\125\004\006\023\002\103\110\061\016
\060\014\006\003\125\004\012\023\005\141\144\155\151\156\061\021
\060\017\006\003\125\004\013\023\010\123\145\162\166\151\143\145
\163\061\042\060\040\006\003\125\004\013\023\031\103\145\162\164
\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162
\151\164\151\145\163\061\027\060\025\006\003\125\004\003\023\016
\101\144\155\151\156\103\101\055\103\104\055\124\060\061\060\036
\027\015\060\066\060\061\062\065\061\063\063\066\061\071\132\027
\015\061\066\060\061\062\065\061\062\063\066\061\071\132\060\155
\061\013\060\011\006\003\125\004\006\023\002\103\110\061\016\060
\014\006\003\125\004\012\023\005\141\144\155\151\156\061\021\060
\017\006\003\125\004\013\023\010\123\145\162\166\151\143\145\163
\061\042\060\040\006\003\125\004\013\023\031\103\145\162\164\151
\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151
\164\151\145\163\061\027\060\025\006\003\125\004\003\023\016\101
\144\155\151\156\103\101\055\103\104\055\124\060\061\060\202\001
\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000
\003\202\001\017\000\060\202\001\012\002\202\001\001\000\322\064
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\045\061\231\251\054\070\125\370\143\121\365\060\050\110\331\136  
\046\004\001\343\020\027\044\102\320\177\237\362\110\307\350\024  
\016\014\232\062\252\141\164\044\007\243\006\076\344\012\301\037  
\127\105\024\217\177\255\157\251\277\030\076\307\143\106\150\051  
\157\041\301\161\107\171\267\103\174\105\176\260\105\225\047\074  
\305\276\154\040\250\331\132\200\123\205\305\156\171\134\332\001  
\312\151\251\264\301\324\355\154\024\327\022\113\364\211\342\007  
\177\020\237\027\025\352\112\304\253\353\102\044\027\375\277\305  
\272\300\201\137\320\017\234\207\223\242\036\361\367\200\125\154  
\042\345\113\132\026\253\156\340\270\205\022\035\220\063\054\154  
\073\054\365\071\313\312\316\103\066\203\316\367\267\050\204\356  
\074\314\201\223\376\133\015\355\211\271\066\027\337\236\351\227  
\242\007\176\323\054\351\225\266\370\051\232\274\054\341\370\210  
\254\123\127\021\204\226\005\132\324\115\271\374\325\116\073\311  
\154\316\201\376\137\020\163\364\355\264\125\345\003\202\314\051  
\275\366\243\142\232\306\313\350\041\273\235\076\374\011\002\003  
\001\000\001\243\201\367\060\201\364\060\022\006\003\125\035\023  
\001\001\377\004\010\060\006\001\001\377\002\001\000\060\201\256  
\006\003\125\035\040\004\201\246\060\201\243\060\201\240\006\010  
\140\205\164\001\021\003\025\001\060\201\223\060\110\006\010\053  
\006\001\005\005\007\002\002\060\074\032\072\124\150\151\163\040  
\151\163\040\164\150\145\040\101\144\155\151\156\103\101\055\103  
\104\055\124\060\061\040\103\145\162\164\151\146\151\143\141\164  
\145\040\120\162\141\143\164\151\143\145\040\123\164\141\164\145  
\155\145\156\164\056\060\107\006\010\053\006\001\005\005\007\002  
\001\026\073\150\164\164\160\072\057\057\167\167\167\056\160\153  
\151\056\141\144\155\151\156\056\143\150\057\160\157\154\151\143  
\171\057\103\120\123\137\062\137\061\066\137\067\065\066\137\061  
\137\061\067\137\063\137\062\061\137\061\056\160\144\146\060\016  
\006\003\125\035\017\001\001\377\004\004\003\002\001\006\060\035  
\006\003\125\035\016\004\026\004\024\052\304\151\012\241\306\125  
\306\003\156\160\316\206\201\263\244\017\252\031\333\060\015\006  
\011\052\206\110\206\367\015\001\001\005\005\000\003\202\001\001  
\000\237\176\172\155\273\254\214\216\140\224\145\321\103\120\321  
\277\155\152\101\375\022\342\315\306\037\046\146\355\312\235\072  
\101\145\170\316\364\002\260\123\372\103\217\344\331\273\256\124  
\200\027\045\140\022\111\201\164\350\073\263\333\145\134\051\124  
\311\346\105\236\236\224\021\204\124\162\050\317\067\300\365\125  
\243\121\053\243\310\120\346\351\014\024\023\320\057\244\001\374  
\106\367\076\057\333\324\364\113\024\370\262\000\035\013\374\120  
\027\053\371\360\132\175\154\371\373\243\013\212\300\247\062\010  
\175\127\113\050\277\006\236\027\024\102\345\054\346\242\200\026  
\116\377\017\235\074\034\370\025\302\122\165\230\324\370\026\211  
\320\115\347\050\010\307\225\050\116\346\213\201\111\231\332\047  
\075\351\372\171\060\331\154\250\337\253\072\033\020\212\321\166  
\344\110\376\071\212\170\210\033\201\146\303\006\144\242\166\005  
\312\224\047\264\166\361\332\202\373\265\104\020\143\103\303\243  
\306\306\004\307\017\313\361\266\217\347\134\212\246\121\226\311

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\337\200\314\265\321\040\263\103\323\024\307\335\261\120\155\225
\172
END
CKA_NSS_MOZILLA_CA_POLICY
CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Trust for "AdminCA-CD-T01"
# Issuer: CN=AdminCA-CD-T01,OU=Certification Authorities,OU=Services,O=admin,C=CH
# Serial Number: 1 (0x1)
# Subject: CN=AdminCA-CD-T01,OU=Certification Authorities,OU=Services,O=admin,C=CH
#
Not Valid Before: Wed Jan 25 13:36:19 2006
# Not Valid After: Mon Jan 25 12:36:19 2016
# Fingerprint (MD5): 5b:9e:fd:3b:60:35:ea:68:8e:52:fe:13:19:14:4a:a3
# Fingerprint (SHA1): 6b:81:44:6a:5c:dd:f4:74:a0:f8:00:ff:be:69:fd:0d:b6:28:75:16
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "AdminCA-CD-T01"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\153\201\104\152\134\335\364\164\240\370\000\377\276\151\375\015
\266\050\165\026
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\133\236\375\073\140\065\352\150\216\122\376\023\031\024\112\243
END
CKA_ISSUER MULTILINE_OCTAL
\060\155\061\013\060\011\006\003\125\004\006\023\002\103\110\061
\016\060\014\006\003\125\004\012\023\005\141\144\155\151\156\061
\021\060\017\006\003\125\004\013\023\010\123\145\162\166\151\143
\145\163\061\042\060\040\006\003\125\004\013\023\031\103\145\162
\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157
\162\151\164\151\145\163\061\027\060\025\006\003\125\004\003\023
\016\101\144\155\151\156\103\101\055\103\104\055\124\060\061
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\001\001
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```

# Microsoft Code Signing Only Certificate
# Certificate "Admin-Root-CA"
# Issuer: CN=Admin-Root-CA,OU=Certification Authorities,OU=Services,O=admin,C=ch
# Serial Number:3b:f3:81:d0
# Subject: CN=Admin-Root-CA,OU=Certification Authorities,OU=Services,O=admin,C=ch
# Not Valid Before: Thu Nov 15 08:51:07 2001
# Not Valid After: Wed Nov 10 07:51:07 2021
# Fingerprint (MD5): f3:7e:3a:13:dc:74:63:06:74:1a:3c:38:32:8c:fb:a9
# Fingerprint (SHA1): 25:3f:77:5b:0e:77:97:ab:64:5f:15:91:55:97:c3:9e:26:36:31:d1
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE
CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Admin-Root-CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\154\061\013\060\011\006\003\125\004\006\023\002\143\150\061
\016\060\014\006\003\125\004\012\023\005\141\144\155\151\156\061
\021\060\017\006\003\125\004\013\023\010\123\145\162\166\151\143
\145\163\061\042\060\040\006\003\125\004\013\023\031\103\145\162
\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157
\162\151\164\151\145\163\061\026\060\024\006\003\125\004\003\023
\015\101\144\155\151\156\055\122\157\157\164\055\103\101
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\154\061\013\060\011\006\003\125\004\006\023\002\143\150\061
\016\060\014\006\003\125\004\012\023\005\141\144\155\151\156\061
\021\060\017\006\003\125\004\013\023\010\123\145\162\166\151\143
\145\163\061\042\060\040\006\003\125\004\013\023\031\103\145\162
\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157
\162\151\164\151\145\163\061\026\060\024\006\003\125\004\003\023
\015\101\144\155\151\156\055\122\157\157\164\055\103\101
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\004\073\363\201\320
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\125\060\202\004\075\240\003\002\001\002\002\004\073
\363\201\320\060\015\006\011\052\206\110\206\367\015\001\001\005
\005\000\060\154\061\013\060\011\006\003\125\004\006\023\002\143
\150\061\016\060\014\006\003\125\004\012\023\005\141\144\155\151
\156\061\021\060\017\006\003\125\004\013\023\010\123\145\162\166
\151\143\145\163\061\042\060\040\006\003\125\004\013\023\031\103
\145\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164
\150\157\162\151\164\151\145\163\061\026\060\024\006\003\125\004

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\003\023\015\101\144\155\151\156\055\122\157\157\164\055\103\101  
\060\036\027\015\060\061\061\061\061\065\060\070\065\061\060\067  
\132\027\015\062\061\061\061\061\060\060\067\065\061\060\067\132  
\060\154\061\013\060\011\006\003\125\004\006\023\002\143\150\061  
\016\060\014\006\003\125\004\012\023\005\141\144\155\151\156\061  
\021\060\017\006\003\125\004\013\023\010\123\145\162\166\151\143  
\145\163\061\042\060\040\006\003\125\004\013\023\031\103\145\162  
\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157  
\162\151\164\151\145\163\061\026\060\024\006\003\125\004\003\023  
\015\101\144\155\151\156\055\122\157\157\164\055\103\101\060\202  
\001\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005  
\000\003\202\001\017\000\060\202\001\012\002\202\001\001\000\313  
\340\257\104\024\042\376\152\027\111\362\135\235\317\134\002\142  
\013\200\271\132\277\250\125\063\173\243\022\044\136\114\157\073  
\101\211\116\203\075\237\263\225\046\064\246\314\022\364\314\235  
\207\136\075\014\015\027\057\205\046\076\052\046\131\163\241\250  
\274\073\353\345\106\270\363\131\173\040\261\136\100\001\155\272  
\147\263\153\353\357\305\342\371\065\335\014\152\006\266\232\050  
\232\160\263\100\051\166\300\161\106\021\153\103\257\345\126\101  
\373\346\034\071\203\115\267\366\242\261\146\311\250\015\262\360  
\167\276\066\301\040\047\062\271\314\327\132\312\366\027\101\066  
\115\373\273\125\201\143\234\223\136\203\153\177\270\025\167\162  
\174\175\115\011\153\131\225\346\355\060\253\104\106\331\025\001  
\245\133\211\145\266\340\050\331\050\010\225\176\010\043\262\042  
\350\337\045\114\074\150\367\156\347\113\307\220\375\204\101\046  
\276\134\203\072\327\043\171\267\032\370\007\031\202\132\151\130  
\305\377\210\162\053\307\276\370\323\055\063\167\247\026\022\250  
\213\041\306\102\256\172\144\257\362\263\300\355\167\344\151\002  
\003\001\000\001\243\202\001\375\060\202\001\371\060\017\006\003  
\125\035\023\001\001\377\004\005\060\003\001\001\377\060\201\231  
\006\003\125\035\040\004\201\221\060\201\216\060\201\213\006\010  
\140\205\164\001\021\003\001\000\060\177\060\053\006\010\053\006  
\001\005\005\007\002\002\060\037\032\035\124\150\151\163\040\151  
\163\040\164\150\145\040\101\144\155\151\156\055\122\157\157\164  
\055\103\101\040\103\120\123\060\120\006\010\053\006\001\005\005  
\007\002\001\026\104\150\164\164\160\072\057\057\167\167\167\056  
\151\156\146\157\162\155\141\164\151\153\056\141\144\155\151\156  
\056\143\150\057\120\113\111\057\154\151\156\153\163\057\103\120  
\123\137\062\137\061\066\137\067\065\066\137\061\137\061\067\137  
\063\137\061\137\060\056\160\144\146\060\177\006\003\125\035\037  
\004\170\060\166\060\164\240\162\240\160\244\156\060\154\061\026  
\060\024\006\003\125\004\003\023\015\101\144\155\151\156\055\122  
\157\157\164\055\103\101\061\042\060\040\006\003\125\004\013\023  
\031\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101  
\165\164\150\157\162\151\164\151\145\163\061\021\060\017\006\003  
\125\004\013\023\010\123\145\162\166\151\143\145\163\061\016\060  
\014\006\003\125\004\012\023\005\141\144\155\151\156\061\013\060  
\011\006\003\125\004\006\023\002\143\150\060\035\006\003\125\035



\016\004\026\004\024\202\237\372\043\163\040\361\227\213\262\114  
\115\276\102\305\177\146\315\144\350\060\201\231\006\003\125\035  
\043\004\201\221\060\201\216\200\024\202\237\372\043\163\040\361  
\227\213\262\114\115\276\102\305\177\146\315\144\350\241\160\244  
\156\060\154\061\013\060\011\006\003\125\004\006\023\002\143\150  
\061\016\060\014\006\003\125\004\012\023\005\141\144\155\151\156  
\061\021\060\017\006\003\125\004\013\023\010\123\145\162\166\151  
\143\145\163\061\042\060\040\006\003\125\004\013\023\031\103\145  
\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150  
\157\162\151\164\151\145\163\061\026\060\024\006\003\125\004\003  
\023\015\101\144\155\151\156\055\122\157\157\164\055\103\101\202  
\004\073\363\201\320\060\016\006\003\125\035\017\001\001\377\004  
\004\003\002\001\006\060\015\006\011\052\206\110\206\367\015\001  
\001\005\005\000\003\202\001\001\000\170\117\172\134\046\021\247  
\056\256\232\103\312\134\065\202\106\176\310\066\217\172\146\265  
\251\062\010\034\014\344\156\241\361\310\301\324\344\200\347\214  
\275\143\261\014\337\362\271\076\302\013\161\100\151\106\243\154  
\364\133\017\015\041\104\307\052\053\075\032\013\300\240\301\314  
\210\312\034\077\254\122\266\366\147\315\114\155\304\276\043\375  
\101\053\004\156\167\245\026\170\351\233\134\043\317\201\032\006  
\041\143\152\334\051\121\262\072\371\233\367\135\261\055\365\004  
\027\006\177\234\350\067\205\055\356\061\274\056\001\370\304\353  
\153\216\064\305\071\071\366\224\230\273\037\016\036\021\057\250  
\214\007\012\110\242\214\152\231\205\064\267\052\141\205\170\032  
\051\151\037\235\045\120\121\004\312\027\303\071\070\007\161\347  
\321\230\233\325\321\030\025\226\274\342\363\311\147\053\361\011  
\262\316\234\364\103\046\001\372\127\153\220\251\261\276\350\065  
\325\151\377\360\071\025\116\274\137\360\317\073\364\276\043\077  
\105\146\304\264\226\135\276\217\015\336\307\155\011\102\363\211  
\371\361\077\365\164\117\337\270\145

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "Admin-Root-CA"

# Issuer: CN=Admin-Root-CA,OU=Certification

Authorities,OU=Services,O=admin,C=ch

# Serial Number:3b:f3:81:d0

# Subject: CN=Admin-Root-CA,OU=Certification Authorities,OU=Services,O=admin,C=ch

# Not Valid Before: Thu Nov 15 08:51:07 2001

# Not Valid After: Wed Nov 10 07:51:07 2021

# Fingerprint (MD5): f3:7e:3a:13:dc:74:63:06:74:1a:3c:38:32:8c:fb:a9

# Fingerprint (SHA1): 25:3f:77:5b:0e:77:97:ab:64:5f:15:91:55:97:c3:9e:26:36:31:d1

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

```

CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Admin-Root-CA"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\045\077\167\133\016\167\227\253\144\137\025\221\125\227\303\236
\046\066\061\321
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\363\176\072\023\334\164\143\006\164\032\074\070\062\214\373\251
END
CKA_ISSUER MULTILINE_OCTAL
\060\154\061\013\060\011\006\003\125\004\006\023\002\143\150\061
\016\060\014\006\003\125\004\012\023\005\141\144\155\151\156\061
\021\060\017\006\003\125\004\013\023\010\123\145\162\166\151\143
\145\163\061\042\060\040\006\003\125\004\013\023\031\103\145\162
\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157
\162\151\164\151\145\163\061\026\060\024\006\003\125\004\003\023
\015\101\144\155\151\156\055\122\157\157\164\055\103\101
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\004\073\363\201\320
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "TÜBTAK UEKAE Kök Sertifika Hizmet Salaycs - Sürüm 3"
# Issuer: CN=TÜBTAK UEKAE Kök Sertifika Hizmet Salaycs - Sürüm 3,OU=Kamu Sertifikasyon
Merkezi,OU=Ulusal Elektronik ve Kriptoloji Aratırma Enstitüsü - UEKAE,O=Türkiye Bilimsel ve Teknolojik
Aratırma Kurumu - TÜBTAK,L=Gebze - Kocaeli,C=TR
# Serial Number: 17 (0x11)
# Subject: CN=TÜBTAK UEKAE Kök Sertifika Hizmet Salaycs - Sürüm 3,OU=Kamu
Sertifikasyon Merkezi,OU=Ulusal Elektronik ve Kriptoloji Aratırma Enstitüsü - UEKAE,O=Türkiye Bilimsel ve
Teknolojik Aratırma Kurumu - TÜBTAK,L=Gebze - Kocaeli,C=TR
# Not Valid Before: Fri Aug 24 11:37:07 2007
# Not Valid After: Mon Aug 21 11:37:07 2017
# Fingerprint (MD5): ed:41:f5:8c:50:c5:2b:9c:73:e6:ee:6c:eb:c2:a8:26
# Fingerprint (SHA1): 1b:4b:39:61:26:27:6b:64:91:a2:68:6d:d7:02:43:21:2d:1f:1d:96
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "TÜBTAK UEKAE Kök Sertifika Hizmet Salaycs - Sürüm 3"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL

```

\060\202\001\053\061\013\060\011\006\003\125\004\006\023\002\124  
\122\061\030\060\026\006\003\125\004\007\014\017\107\145\142\172  
\145\040\055\040\113\157\143\141\145\154\151\061\107\060\105\006  
\003\125\004\012\014\076\124\303\274\162\153\151\171\145\040\102  
\151\154\151\155\163\145\154\040\166\145\040\124\145\153\156\157  
\154\157\152\151\153\040\101\162\141\305\237\164\304\261\162\155  
\141\040\113\165\162\165\155\165\040\055\040\124\303\234\102\304  
\260\124\101\113\061\110\060\106\006\003\125\004\013\014\077\125  
\154\165\163\141\154\040\105\154\145\153\164\162\157\156\151\153  
\040\166\145\040\113\162\151\160\164\157\154\157\152\151\040\101  
\162\141\305\237\164\304\261\162\155\141\040\105\156\163\164\151  
\164\303\274\163\303\274\040\055\040\125\105\113\101\105\061\043  
\060\041\006\003\125\004\013\014\032\113\141\155\165\040\123\145  
\162\164\151\146\151\153\141\163\171\157\156\040\115\145\162\153  
\145\172\151\061\112\060\110\006\003\125\004\003\014\101\124\303  
\234\102\304\260\124\101\113\040\125\105\113\101\105\040\113\303  
\266\153\040\123\145\162\164\151\146\151\153\141\040\110\151\172  
\155\145\164\040\123\141\304\237\154\141\171\304\261\143\304\261  
\163\304\261\040\055\040\123\303\274\162\303\274\155\040\063

END

CKA\_ID

UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\202\001\053\061\013\060\011\006\003\125\004\006\023\002\124  
\122\061\030\060\026\006\003\125\004\007\014\017\107\145\142\172  
\145\040\055\040\113\157\143\141\145\154\151\061\107\060\105\006  
\003\125\004\012\014\076\124\303\274\162\153\151\171\145\040\102  
\151\154\151\155\163\145\154\040\166\145\040\124\145\153\156\157  
\154\157\152\151\153\040\101\162\141\305\237\164\304\261\162\155  
\141\040\113\165\162\165\155\165\040\055\040\124\303\234\102\304  
\260\124\101\113\061\110\060\106\006\003\125\004\013\014\077\125  
\154\165\163\141\154\040\105\154\145\153\164\162\157\156\151\153  
\040\166\145\040\113\162\151\160\164\157\154\157\152\151\040\101  
\162\141\305\237\164\304\261\162\155\141\040\105\156\163\164\151  
\164\303\274\163\303\274\040\055\040\125\105\113\101\105\061\043  
\060\041\006\003\125\004\013\014\032\113\141\155\165\040\123\145  
\162\164\151\146\151\153\141\163\171\157\156\040\115\145\162\153  
\145\172\151\061\112\060\110\006\003\125\004\003\014\101\124\303  
\234\102\304\260\124\101\113\040\125\105\113\101\105\040\113\303  
\266\153\040\123\145\162\164\151\146\151\153\141\040\110\151\172  
\155\145\164\040\123\141\304\237\154\141\171\304\261\143\304\261  
\163\304\261\040\055\040\123\303\274\162\303\274\155\040\063

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\001\021

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\027\060\202\003\377\240\003\002\001\002\002\001\021  
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060  
\202\001\053\061\013\060\011\006\003\125\004\006\023\002\124\122  
\061\030\060\026\006\003\125\004\007\014\017\107\145\142\172\145  
\040\055\040\113\157\143\141\145\154\151\061\107\060\105\006\003  
\125\004\012\014\076\124\303\274\162\153\151\171\145\040\102\151  
\154\151\155\163\145\154\040\166\145\040\124\145\153\156\157\154  
\157\152\151\153\040\101\162\141\305\237\164\304\261\162\155\141  
\040\113\165\162\165\155\165\040\055\040\124\303\234\102\304\260  
\124\101\113\061\110\060\106\006\003\125\004\013\014\077\125\154  
\165\163\141\154\040\105\154\145\153\164\162\157\156\151\153\040  
\166\145\040\113\162\151\160\164\157\154\157\152\151\040\101\162  
\141\305\237\164\304\261\162\155\141\040\105\156\163\164\151\164  
\303\274\163\303\274\040\055\040\125\105\113\101\105\061\043\060  
\041\006\003\125\004\013\014\032\113\141\155\165\040\123\145\162  
\164\151\146\151\153\141\163\171\157\156\040\115\145\162\153\145  
\172\151\061\112\060\110\006\003\125\004\003\014\101\124\303\234  
\102\304\260\124\101\113\040\125\105\113\101\105\040\113\303\266  
\153\040\123\145\162\164\151\146\151\153\141\040\110\151\172\155  
\145\164\040\123\141\304\237\154\141\171\304\261\143\304\261\163  
\304\261\040\055\040\123\303\274\162\303\274\155\040\063\060\036  
\027\015\060\067\060\070\062\064\061\061\063\067\060\067\132\027  
\015\061\067\060\070\062\061\061\061\063\067\060\067\132\060\202  
\001\053\061\013\060\011\006\003\125\004\006\023\002\124\122\061  
\030\060\026\006\003\125\004\007\014\017\107\145\142\172\145\040  
\055\040\113\157\143\141\145\154\151\061\107\060\105\006\003\125  
\004\012\014\076\124\303\274\162\153\151\171\145\040\102\151\154  
\151\155\163\145\154\040\166\145\040\124\145\153\156\157\154\157  
\152\151\153\040\101\162\141\305\237\164\304\261\162\155\141\040  
\113\165\162\165\155\165\040\055\040\124\303\234\102\304\260\124  
\101\113\061\110\060\106\006\003\125\004\013\014\077\125\154\165  
\163\141\154\040\105\154\145\153\164\162\157\156\151\153\040\166  
\145\040\113\162\151\160\164\157\154\157\152\151\040\101\162\141  
\305\237\164\304\261\162\155\141\040\105\156\163\164\151\164\303  
\274\163\303\274\040\055\040\125\105\113\101\105\061\043\060\041  
\006\003\125\004\013\014\032\113\141\155\165\040\123\145\162\164  
\151\146\151\153\141\163\171\157\156\040\115\145\162\153\145\172  
\151\061\112\060\110\006\003\125\004\003\014\101\124\303\234\102  
\304\260\124\101\113\040\125\105\113\101\105\040\113\303\266\153  
\040\123\145\162\164\151\146\151\153\141\040\110\151\172\155\145  
\164\040\123\141\304\237\154\141\171\304\261\143\304\261\163\304  
\261\040\055\040\123\303\274\162\303\274\155\040\063\060\202\001  
\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000  
\003\202\001\017\000\060\202\001\012\002\202\001\001\000\212\155  
\113\377\020\210\072\303\366\176\224\350\352\040\144\160\256\041  
\201\276\072\173\074\333\361\035\122\177\131\372\363\042\114\225  
\240\220\274\110\116\021\253\373\267\265\215\172\203\050\214\046  
\106\330\116\225\100\207\141\237\305\236\155\201\207\127\154\212

\073\264\146\352\314\100\374\343\252\154\262\313\001\333\062\277  
\322\353\205\317\241\015\125\303\133\070\127\160\270\165\306\171  
\321\024\060\355\033\130\133\153\357\065\362\241\041\116\305\316  
\174\231\137\154\271\270\042\223\120\247\315\114\160\152\276\152  
\005\177\023\234\053\036\352\376\107\316\004\245\157\254\223\056  
\174\053\237\236\171\023\221\350\352\236\312\070\165\216\142\260  
\225\223\052\345\337\351\136\227\156\040\137\137\204\172\104\071  
\031\100\034\272\125\053\373\060\262\201\357\204\343\334\354\230  
\070\071\003\205\010\251\124\003\005\051\360\311\217\213\352\013  
\206\145\031\021\323\351\011\043\336\150\223\003\311\066\034\041  
\156\316\214\146\361\231\060\330\327\263\303\035\370\201\056\250  
\275\202\013\146\376\202\313\341\340\032\202\303\100\201\002\003  
\001\000\001\243\102\060\100\060\035\006\003\125\035\016\004\026  
\004\024\275\210\207\311\217\366\244\012\013\252\353\305\376\221  
\043\235\253\112\212\062\060\016\006\003\125\035\017\001\001\377  
\004\004\003\002\001\006\060\017\006\003\125\035\023\001\001\377  
\004\005\060\003\001\001\377\060\015\006\011\052\206\110\206\367  
\015\001\001\005\005\000\003\202\001\001\000\035\174\372\111\217  
\064\351\267\046\222\026\232\005\164\347\113\320\155\071\154\303  
\046\366\316\270\061\274\304\337\274\052\370\067\221\030\334\004  
\310\144\231\053\030\155\200\003\131\311\256\370\130\320\076\355  
\303\043\237\151\074\206\070\034\236\357\332\047\170\321\204\067  
\161\212\074\113\071\317\176\105\006\326\055\330\212\115\170\022  
\326\255\302\323\313\322\320\101\363\046\066\112\233\225\154\014  
\356\345\321\103\047\146\301\210\367\172\263\040\154\352\260\151  
\053\307\040\350\014\003\304\101\005\231\342\077\344\153\370\240  
\206\201\307\204\306\037\325\113\201\022\262\026\041\054\023\241  
\200\262\136\014\112\023\236\040\330\142\100\253\220\352\144\112  
\057\254\015\001\022\171\105\250\057\207\031\150\310\342\205\307  
\060\262\165\371\070\077\262\300\223\264\153\342\003\104\316\147  
\240\337\211\326\255\214\166\243\023\303\224\141\053\153\331\154  
\301\007\012\042\007\205\154\205\044\106\251\276\077\213\170\204  
\202\176\044\014\235\375\201\067\343\045\250\355\066\116\225\054  
\311\234\220\332\354\251\102\074\255\266\002

END

CKA\_NSS MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "TÜBTAK UEKAE Kök Sertifika Hizmet Salaycs - Sürüm 3"

# Issuer: CN=TÜBTAK UEKAE Kök Sertifika Hizmet Salaycs - Sürüm 3,OU=Kamu Sertifikasyon

Merkezi,OU=Ulusal Elektronik ve Kriptoloji Aratırma

Enstitüsü - UEKAE,O=Türkiye Bilimsel ve Teknolojik Aratırma Kurumu - TÜBTAK,L=Gebze - Kocaeli,C=TR

# Serial Number: 17 (0x11)

# Subject: CN=TÜBTAK UEKAE Kök Sertifika Hizmet Salaycs - Sürüm 3,OU=Kamu Sertifikasyon

Merkezi,OU=Ulusal Elektronik ve Kriptoloji Aratırma Enstitüsü - UEKAE,O=Türkiye Bilimsel ve Teknolojik

```
Aratma Kurumu - TÜBTAK,L=Gebze - Kocaeli,C=TR
# Not Valid Before: Fri Aug 24 11:37:07 2007
# Not Valid After: Mon Aug 21 11:37:07 2017
# Fingerprint (MD5): ed:41:f5:8c:50:c5:2b:9c:73:e6:ee:6c:eb:c2:a8:26
# Fingerprint (SHA1): 1b:4b:39:61:26:27:6b:64:91:a2:68:6d:d7:02:43:21:2d:1f:1d:96
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "TÜBTAK UEKAE Kök Sertifika Hizmet Salaycs - Sürüm 3"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\033\113\071\141\046\047\153\144\221\242\150\155\327\002\103\041
\055\037\035\226
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\355\101\365\214\120\305\053\234\163\346\356\154\353\302\250\046
END
CKA_ISSUER
MULTILINE_OCTAL
\060\202\001\053\061\013\060\011\006\003\125\004\006\023\002\124
\122\061\030\060\026\006\003\125\004\007\014\017\107\145\142\172
\145\040\055\040\113\157\143\141\145\154\151\061\107\060\105\006
\003\125\004\012\014\076\124\303\274\162\153\151\171\145\040\102
\151\154\151\155\163\145\154\040\166\145\040\124\145\153\156\157
\154\157\152\151\153\040\101\162\141\305\237\164\304\261\162\155
\141\040\113\165\162\165\155\165\040\055\040\124\303\234\102\304
\260\124\101\113\061\110\060\106\006\003\125\004\013\014\077\125
\154\165\163\141\154\040\105\154\145\153\164\162\157\156\151\153
\040\166\145\040\113\162\151\160\164\157\154\157\152\151\040\101
\162\141\305\237\164\304\261\162\155\141\040\105\156\163\164\151
\164\303\274\163\303\274\040\055\040\125\105\113\101\105\061\043
\060\041\006\003\125\004\013\014\032\113\141\155\165\040\123\145
\162\164\151\146\151\153\141\163\171\157\156\040\115\145\162\153
\145\172\151\061\112\060\110\006\003\125\004\003\014\101\124\303
\234\102\304\260\124\101\113\040\125\105\113\101\105\040\113\303
\266\153\040\123\145\162\164\151\146\151\153\141\040\110\151\172
\155\145\164\040\123\141\304\237\154\141\171\304\261\143\304\261
\163\304\261\040\055\040\123\303\274\162\303\274\155\040\063
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\001\021
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
# Microsoft Code Signing Only Certificate
# Certificate "Halcom CA FO"
# Issuer: CN=Halcom CA FO,O=Halcom,C=SI
# Serial Number: 113253 (0x1ba65)
# Subject: CN=Halcom CA FO,O=Halcom,C=SI
# Not Valid Before: Sun Jun 05 10:33:31 2005
# Not Valid After: Fri Jun 05 10:33:31 2020
# Fingerprint (MD5): 0b:09:2c:1c:d7:21:86:6f:94:37:6f:e6:a7:f3:22:4d
# Fingerprint (SHA1): 04:09:56:5b:77:da:58:2e:64:95:ac:00:60:a7:23:54:e6:4b:01:92
CKA_CLASS
CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Halcom CA FO"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\065\061\013\060\011\006\003\125\004\006\023\002\123\111\061
\017\060\015\006\003\125\004\012\023\006\110\141\154\143\157\155
\061\025\060\023\006\003\125\004\003\023\014\110\141\154\143\157
\155\040\103\101\040\106\117
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\065\061\013\060\011\006\003\125\004\006\023\002\123\111\061
\017\060\015\006\003\125\004\012\023\006\110\141\154\143\157\155
\061\025\060\023\006\003\125\004\003\023\014\110\141\154\143\157
\155\040\103\101\040\106\117
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\003\001\272\145
END
CKA_VALUE MULTILINE_OCTAL
\060\202\003\032\060\202\002\002\240\003\002\001\002\002\003\001
\272\145\060\015\006\011\052\206\110\206\367\015\001\001\005\005
\000\060\065\061\013\060\011\006\003\125\004\006\023\002\123\111
\061\017\060\015\006\003\125\004\012\023\006\110\141\154\143\157
\155\061\025\060\023\006\003\125\004\003\023\014\110\141\154\143
\157\155\040\103\101\040\106\117\060\036\027\015\060\065\060\066
\060\065\061\060\063\063\063\061\132\027\015\062\060\060\066\060
\065\061\060\063\063\063\061\132\060\065\061\013\060\011\006\003
\125\004\006\023\002\123\111\061\017\060\015\006\003\125\004\012
\023\006\110\141\154\143\157\155\061\025\060\023\006\003\125\004
\003\023\014\110\141\154\143\157\155\040\103\101\040\106\117\060
\202\001\042\060\015\006\011\052\206\110\206\367\015\001\001\001
\005\000\003\202\001\017\000\060\202\001\012\002\202\001\001\000
\274\243\046\001\226\345\235\254\032\002\002\071\174\254\334\006
\114\067\112\256\007\110\165\350\047\034\244\061\375\012\247\043
```

\135\174\077\016\372\360\214\221\157\125\064\204\003\164\314\003  
\065\170\315\161\301\107\033\273\352\041\156\270\007\336\041\222  
\252\254\271\336\067\242\037\364\232\034\033\310\356\020\203\326  
\123\103\310\335\351\363\220\106\071\162\012\116\374\022\051\111  
\201\130\046\072\161\023\014\173\123\217\337\146\162\074\027\334  
\336\341\171\112\237\351\140\076\155\065\344\115\121\321\034\300  
\032\060\134\006\077\163\103\310\315\066\364\036\302\207\214\117  
\110\237\332\165\127\052\114\257\215\124\074\104\137\230\074\120  
\332\320\030\006\174\140\156\322\204\377\147\205\220\075\136\306  
\353\330\172\243\265\155\014\276\165\270\251\332\126\161\066\132  
\356\353\111\123\076\342\031\166\174\102\253\241\220\361\367\057  
\270\272\112\101\264\053\244\056\141\066\347\326\332\177\365\237  
\215\270\113\133\204\065\120\305\275\005\252\252\302\014\164\101  
\143\127\031\216\377\341\106\346\173\005\044\376\231\335\061\275  
\002\003\001\000\001\243\063\060\061\060\017\006\003\125\035\023  
\001\001\377\004\005\060\003\001\001\377\060\021\006\003\125\035  
\016\004\012\004\010\110\040\034\142\015\130\122\045\060\013\006  
\003\125\035\017\004\004\003\002\001\006\060\015\006\011\052\206  
\110\206\367\015\001\001\005\005\000\003\202\001\001\000\133\165  
\365\346\060\106\130\212\367\017\321\117\013\001\130\004\271\144  
\344\060\015\076\166\331\153\023\255\034\156\311\114\360\154\346  
\102\021\375\353\203\357\120\330\273\124\235\264\221\212\132\265  
\204\017\214\106\315\074\202\250\245\036\040\234\320\365\101\006  
\312\001\053\230\260\352\051\120\037\342\164\173\131\202\312\012  
\345\156\116\256\260\067\355\076\314\272\062\331\077\013\150\054  
\262\323\074\334\070\305\021\326\033\063\356\271\242\152\104\223  
\033\120\352\141\033\171\127\121\126\236\062\320\063\170\264\317  
\107\052\373\367\315\361\347\155\340\272\144\373\025\233\276\312  
\261\362\107\001\177\340\114\267\245\101\254\036\331\032\154\221  
\341\320\250\112\303\136\170\053\172\200\300\117\315\045\137\120  
\047\306\274\130\165\234\035\265\232\135\225\163\363\204\146\323  
\315\155\035\315\340\132\316\040\070\357\222\163\170\136\002\326  
\215\371\164\324\267\211\330\214\373\173\325\213\161\325\031\027  
\046\330\044\111\074\125\274\202\207\332\143\273\071\327\216\221  
\317\064\160\134\163\117\320\120\107\132\373\345\132\121

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "Halcom CA FO"

# Issuer: CN=Halcom CA FO,O=Halcom,C=SI

# Serial Number: 113253 (0x1ba65)

# Subject: CN=Halcom CA FO,O=Halcom,C=SI

# Not Valid Before: Sun Jun 05 10:33:31 2005

# Not Valid After: Fri Jun 05 10:33:31 2020



```

# Fingerprint (MD5): 0b:09:2c:1c:d7:21:86:6f:94:37:6f:e6:a7:f3:22:4d
# Fingerprint (SHA1): 04:09:56:5b:77:da:58:2e:64:95:ac:00:60:a7:23:54:e6:4b:01:92
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Halcom CA FO"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\004\011\126\133\167\332\130\056\144\225\254\000\140\247\043\124
\346\113\001\222
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\013\011\054\034\327\041\206\157\224\067\157\346\247\363\042\115
END
CKA_ISSUER
MULTILINE_OCTAL
\060\065\061\013\060\011\006\003\125\004\006\023\002\123\111\061
\017\060\015\006\003\125\004\012\023\006\110\141\154\143\157\155
\061\025\060\023\006\003\125\004\003\023\014\110\141\154\143\157
\155\040\103\101\040\106\117
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\003\001\272\145
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

```

```

# Microsoft Code Signing Only Certificate
# Certificate "Halcom CA PO 2"
# Issuer: CN=Halcom CA PO 2,O=Halcom,C=SI
# Serial Number: 79074 (0x134e2)
# Subject: CN=Halcom CA PO 2,O=Halcom,C=SI
# Not Valid Before: Sat Feb 07 18:33:31 2004
# Not Valid After: Thu Feb 07 18:33:31 2019
# Fingerprint (MD5): 1d:64:96:af:2d:82:1a:30:0b:a0:62:0d:76:bc:53:aa
# Fingerprint (SHA1): 7f:bb:6a:cd:7e:0a:b4:38:da:af:6f:d5:02:10:d0:07:c6:c0:82:9c
CKA_CLASS
CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Halcom CA PO 2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\067\061\013\060\011\006\003\125\004\006\023\002\123\111\061
\017\060\015\006\003\125\004\012\023\006\110\141\154\143\157\155

```

\061\027\060\025\006\003\125\004\003\023\016\110\141\154\143\157  
\155\040\103\101\040\120\117\040\062

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\067\061\013\060\011\006\003\125\004\006\023\002\123\111\061  
\017\060\015\006\003\125\004\012\023\006\110\141\154\143\157\155  
\061\027\060\025\006\003\125\004\003\023\016\110\141\154\143\157  
\155\040\103\101\040\120\117\040\062

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\003\001\064\342

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\002\031\060\202\001\202\240\003\002\001\002\002\003\001  
\064\342\060\015\006\011\052\206\110\206\367\015\001\001\005\005  
\000\060\067\061\013\060\011\006\003\125\004\006\023\002\123\111  
\061\017\060\015\006\003\125\004\012\023\006\110\141\154\143\157  
\155\061\027\060\025\006\003\125\004\003\023\016\110\141\154\143  
\157\155\040\103\101\040\120\117\040\062\060\036\027\015\060\064  
\060\062\060\067\061\070\063\063\063\061\132\027\015\061\071\060  
\062\060\067\061\070\063\063\063\061\132\060\067\061\013\060\011  
\006\003\125\004\006\023\002\123\111\061\017\060\015\006\003\125  
\004\012\023\006\110\141\154\143\157\155\061\027\060\025\006\003  
\125\004\003\023\016\110\141\154\143\157\155\040\103\101\040\120  
\117\040\062\060\201\237\060\015\006\011\052\206\110\206\367\015  
\001\001\001\005\000\003\201\215\000\060\201\211\002\201\201\000  
\224\027\362\111\067\060\062\011\010\074\276\365\067\267\164\154  
\020\073\313\042\161\007\006\271\306\354\332\110\363\237\047\155  
\144\215\125\336\171\107\120\373\150\316\171\001\276\247\033\366  
\141\255\175\061\013\123\040\255\061\361\133\316\043\372\377\314  
\022\002\132\000\234\374\315\153\022\122\350\254\324\063\073\163  
\046\020\161\220\100\277\003\210\337\274\137\041\015\214\326\212  
\223\037\347\256\025\124\306\114\344\231\141\222\340\367\215\162  
\307\334\142\023\063\243\076\111\051\373\204\277\160\072\221\041  
\002\003\001\000\001\243\063\060\061\060\017\006\003\125\035\023  
\001\001\377\004\005\060\003\001\001\377\060\021\006\003\125\035  
\016\004\012\004\010\110\257\127\146\277\322\300\002\060\013\006  
\003\125\035\017\004\004\003\002\001\006\060\015\006\011\052\206  
\110\206\367\015\001\001\005\005\000\003\201\201\000\220\026\127  
\166\270\171\316\374\304\321\067\000\242\315\377\070\007\021\163  
\023\005\111\355\337\301\305\316\306\100\330\367\002\226\015\267  
\157\021\204\070\146\373\161\367\020\001\147\174\135\175\044\332  
\366\144\073\010\200\110\246\116\275\104\342\260\007\062\217\174  
\206\067\106\157\300\203\003\223\265\364\363\022\174\243\350\313  
\342\072\043\170\372\150\157\376\130\312\014\247\127\121\055\142  
\220\371\344\250\334\365\312\337\016\207\121\156\067\165\046\016  
\327\176\170\212\003\242\225\031\266\136\221\001\126

```

END
CKA_NSS_MOZILLA_CA_POLICY
CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Trust for "Halcom CA PO 2"
# Issuer: CN=Halcom CA PO 2,O=Halcom,C=SI
# Serial Number: 79074 (0x134e2)
# Subject: CN=Halcom CA PO 2,O=Halcom,C=SI
# Not Valid Before: Sat Feb 07 18:33:31 2004
# Not Valid After: Thu Feb 07 18:33:31 2019
# Fingerprint (MD5): 1d:64:96:af:2d:82:1a:30:0b:a0:62:0d:76:bc:53:aa
# Fingerprint (SHA1): 7f:bb:6a:cd:7e:0a:b4:38:da:af:6f:d5:02:10:d0:07:c6:c0:82:9c
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Halcom CA PO 2"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\177\273\152\315\176\012\264\070\332\257\157\325\002\020\320\007
\306\300\202\234
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\035\144\226\257\055\202\032\060\013\240\142\015\166\274\123\252
END
CKA_ISSUER
MULTILINE_OCTAL
\060\067\061\013\060\011\006\003\125\004\006\023\002\123\111\061
\017\060\015\006\003\125\004\012\023\006\110\141\154\143\157\155
\061\027\060\025\006\003\125\004\003\023\016\110\141\154\143\157
\155\040\103\101\040\120\117\040\062
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\003\001\064\342
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "ACNLB"
# Issuer: O=ACNLB,C=SI
# Serial Number:3e:c3:86:8e
# Subject: O=ACNLB,C=SI
# Not Valid Before: Thu May 15 11:52:45 2003

```

```
# Not Valid After: Mon May 15 12:22:45 2023
# Fingerprint (MD5): ba:92:64:42:16:1f:cb:a1:16:48:1a:f6:40:5c:59:87
# Fingerprint (SHA1): 04:56:f2:3d:1e:9c:43:ae:cb:0d:80:7f:1c:06:47:55:1a:05:f4:56
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE
CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "ACNLB"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\035\061\013\060\011\006\003\125\004\006\023\002\123\111\061
\016\060\014\006\003\125\004\012\023\005\101\103\116\114\102
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\035\061\013\060\011\006\003\125\004\006\023\002\123\111\061
\016\060\014\006\003\125\004\012\023\005\101\103\116\114\102
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\004\076\303\206\216
END
CKA_VALUE MULTILINE_OCTAL
\060\202\003\267\060\202\002\237\240\003\002\001\002\002\004\076
\303\206\216\060\015\006\011\052\206\110\206\367\015\001\001\005
\005\000\060\035\061\013\060\011\006\003\125\004\006\023\002\123
\111\061\016\060\014\006\003\125\004\012\023\005\101\103\116\114
\102\060\036\027\015\060\063\060\065\061\065\061\061\065\062\064
\065\132\027\015\062\063\060\065\061\065\061\062\062\062\064\065
\132\060\035\061\013\060\011\006\003\125\004\006\023\002\123\111
\061\016\060\014\006\003\125\004\012\023\005\101\103\116\114\102
\060\202\001\042\060\015\006\011\052\206\110\206\367\015\001\001
\001\005\000\003\202\001\017\000\060\202\001\012\002\202\001\001
\000\277\166\165\075\014\174\100\072\146\137\115\214\373\335\074
\056\376\175\224\144\355\112\324\111\110\241\356\221\161\262\171
\310\216\053\037\252\360\062\264\050\262\243\302\165\117\244\351
\246\032\366\242\146\141\043\047\141\054\156\027\220\013\372\336
\036\161\122\002\051\004\231\171\254\300\260\300\146\230\230\021
\067\144\020\317\234\274\073\102\034\051\134\125\220\366\172\042
\116\126\257\067\150\277\164\072\154\074\306\230\314\140\041\277
\342\010\047\344\331\053\274\343\204\225\327\324\044\140\374\176
\055\057\235\041\353\235\221\306\273\244\321\353\311\022\255\243
\350\310\265\177\125\113\353\231\002\124\304\201\034\014\256\071
\344\152\172\005\330\116\160\240\372\003\167\263\256\330\270\024
\222\373\101\167\023\065\152\267\242\312\210\113\255\055\121\274
\166\232\154\273\100\275\347\044\114\042\246\346\375\116\010\173
\235\013\020\326\022\322\246\306\241\144\062\364\001\163\226\201
\342\110\260\301\050\143\075\073\347\147\254\156\305\024\365\027
```

\023\242\234\037\053\127\360\025\047\165\135\335\261\064\326\223  
\021\002\003\001\000\001\243\201\376\060\201\373\060\021\006\011  
\140\206\110\001\206\370\102\001\001\004\004\003\002\000\007\060  
\077\006\003\125\035\037\004\070\060\066\060\064\240\062\240\060  
\244\056\060\054\061\013\060\011\006\003\125\004\006\023\002\123  
\111\061\016\060\014\006\003\125\004\012\023\005\101\103\116\114  
\102\061\015\060\013\006\003\125\004\003\023\004\103\122\114\061  
\060\053\006\003\125\035\020\004\044\060\042\200\017\062\060\060  
\063\060\065\061\065\061\061\065\062\064\065\132\201\017\062\060  
\062\063\060\065\061\065\061\062\062\062\064\065\132\060\013\006  
\003\125\035\017\004\004\003\002\001\006\060\037\006\003\125\035  
\043\004\030\060\026\200\024\314\273\273\206\326\157\370\276\264  
\107\042\167\263\266\255\327\001\131\226\115\060\035\006\003\125  
\035\016\004\026\004\024\314\273\273\206\326\157\370\276\264\107  
\042\167\263\266\255\327\001\131\226\115\060\014\006\003\125\035  
\023\004\005\060\003\001\001\377\060\035\006\011\052\206\110\206  
\366\175\007\101\000\004\020\060\016\033\010\126\066\056\060\072  
\064\056\060\003\002\004\220\060\015\006\011\052\206\110\206\367  
\015\001\001\005\005\000\003\202\001\001\000\021\147\313\313\232  
\153\040\041\335\157\151\203\325\077\015\272\223\025\227\116\160  
\166\046\134\350\236\044\347\067\376\074\120\364\324\371\052\057  
\014\023\241\135\004\274\320\260\351\302\003\027\205\005\141\075  
\300\247\252\166\114\303\270\072\203\251\206\317\003\371\167\016  
\053\262\075\166\033\145\321\152\161\140\161\333\273\270\172\216  
\362\371\041\203\370\127\114\250\307\335\145\306\356\357\157\263  
\266\231\273\264\303\320\253\137\262\240\176\335\164\041\054\303  
\132\353\215\241\312\330\360\310\027\355\166\272\204\143\156\133  
\271\265\312\155\327\374\064\071\200\057\272\117\337\215\330\374  
\030\304\074\212\065\057\167\202\226\255\040\222\030\262\347\066  
\364\256\062\164\270\107\321\330\017\330\054\313\152\302\000\165  
\371\054\370\102\016\313\376\163\223\251\217\341\307\256\041\067  
\363\312\271\014\264\347\211\176\161\034\126\064\040\303\361\064  
\271\125\113\323\123\122\361\007\055\053\076\133\031\100\237\020  
\355\323\051\063\305\257\017\020\126\207\332\073\310\261\355\070  
\331\031\373\113\360\120\055\244\315\324\130

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "ACNLB"

# Issuer: O=ACNLB,C=SI

# Serial Number:3e:c3:86:8e

# Subject: O=ACNLB,C=SI

# Not Valid Before: Thu May 15 11:52:45 2003

# Not Valid After: Mon May 15 12:22:45 2023

```
# Fingerprint (MD5): ba:92:64:42:16:1f:cb:a1:16:48:1a:f6:40:5c:59:87
# Fingerprint (SHA1): 04:56:f2:3d:1e:9c:43:ae:cb:0d:80:7f:1c:06:47:55:1a:05:f4:56
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL
CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "ACNLB"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\004\126\362\075\036\234\103\256\313\015\200\177\034\006\107\125
\032\005\364\126
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\272\222\144\102\026\037\313\241\026\110\032\366\100\134\131\207
END
CKA_ISSUER MULTILINE_OCTAL
\060\035\061\013\060\011\006\003\125\004\006\023\002\123\111\061
\016\060\014\006\003\125\004\012\023\005\101\103\116\114\102
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\004\076\303\206\216
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
# Microsoft Code Signing Only Certificate
# Certificate "state-institutions"
# Issuer: OU=sigen-ca,O=state-institutions,C=si
# Serial Number:3b:3c:f9:c9
# Subject: OU=sigen-ca,O=state-institutions,C=si
# Not Valid Before: Fri Jun 29 21:27:46
2001
# Not Valid After: Tue Jun 29 21:57:46 2021
# Fingerprint (MD5): 49:ef:a6:a1:f0:de:8e:a7:6a:ee:5b:7d:1e:5f:c4:46
# Fingerprint (SHA1): 3e:42:a1:87:06:bd:0c:9c:cf:59:47:50:d2:e4:d6:ab:00:48:fd:c4
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "state-institutions"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\075\061\013\060\011\006\003\125\004\006\023\002\163\151\061
\033\060\031\006\003\125\004\012\023\022\163\164\141\164\145\055
\151\156\163\164\151\164\165\164\151\157\156\163\061\021\060\017
\006\003\125\004\013\023\010\163\151\147\145\156\055\143\141
```

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\075\061\013\060\011\006\003\125\004\006\023\002\163\151\061  
\033\060\031\006\003\125\004\012\023\022\163\164\141\164\145\055  
\151\156\163\164\151\164\165\164\151\157\156\163\061\021\060\017  
\006\003\125\004\013\023\010\163\151\147\145\156\055\143\141

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\004\073\074\371\311

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\004\031\060\202\003\001\240\003\002\001\002\002\004\073  
\074\371\311\060\015\006\011\052\206\110\206\367\015\001\001\005  
\005\000\060\075\061\013\060\011\006\003\125\004\006\023\002\163  
\151\061\033\060\031\006\003\125\004\012\023\022\163\164\141\164  
\145\055\151\156\163\164\151\164\165\164\151\157\156\163\061\021  
\060\017\006\003\125\004\013\023\010\163\151\147\145\156\055\143  
\141\060\036\027\015\060\061\060\066\062\071\062\061\062\067\064  
\066\132\027\015\062\061\060\066\062\071\062\061\065\067\064\066  
\132\060\075\061\013\060\011\006\003\125\004\006\023\002\163\151  
\061\033\060\031\006\003\125\004\012\023\022\163\164\141\164\145  
\055\151\156\163\164\151\164\165\164\151\157\156\163\061\021\060  
\017\006\003\125\004\013\023\010\163\151\147\145\156\055\143\141  
\060\202\001\042\060\015\006\011\052\206\110\206\367\015\001\001  
\001\005\000\003\202\001\017\000\060\202\001\012\002\202\001\001  
\000\260\345\145\262\300\254\144\226\362\210\033\263\355\236\344  
\002\306\117\053\210\316\056\212\121\200\165\257\020\133\362\313  
\070\146\233\242\016\155\064\107\226\245\222\021\257\366\065\107  
\242\167\042\014\316\026\210\142\252\323\111\156\030\274\056\104  
\330\276\306\236\302\032\031\254\101\216\374\060\007\002\362\306  
\152\324\133\043\000\357\101\064\330\244\163\143\337\042\222\063  
\204\001\245\215\363\203\134\372\270\324\172\065\337\354\370\155  
\017\340\114\355\255\234\072\175\206\326\245\010\224\276\175\172  
\021\037\376\205\077\124\132\210\143\207\234\245\261\247\116\315  
\267\104\163\257\317\212\111\153\037\343\315\327\111\115\132\053  
\027\346\134\166\263\273\162\271\157\047\322\233\211\025\210\337  
\020\137\166\041\001\152\307\025\061\012\321\234\130\370\050\026  
\005\155\331\116\331\241\327\007\040\313\113\046\211\115\222\262  
\247\272\226\350\343\130\217\042\234\001\226\132\304\367\061\115  
\013\111\265\341\170\141\342\124\030\006\273\236\124\064\176\014  
\076\353\356\265\200\037\335\026\204\035\150\070\146\147\163\370  
\221\002\003\001\000\001\243\202\001\037\060\202\001\033\060\021  
\006\011\140\206\110\001\206\370\102\001\001\004\004\003\002\000  
\007\060\137\006\003\125\035\037\004\130\060\126\060\124\240\122  
\240\120\244\116\060\114\061\013\060\011\006\003\125\004\006\023  
\002\163\151\061\033\060\031\006\003\125\004\012\023\022\163\164

\141\164\145\055\151\156\163\164\151\164\165\164\151\157\156\163  
\061\021\060\017\006\003\125\004\013\023\010\163\151\147\145\156  
\055\143\141\061\015\060\013\006\003\125\004\003\023\004\103\122  
\114\061\060\053\006\003\125\035\020\004\044\060\042\200\017\062  
\060\060\061\060\066\062\071\062\061\062\067\064\066\132\201\017  
\062\060\062\061\060\066\062\071\062\061\065\067\064\066\132\060  
\013\006\003\125\035\017\004\004\003\002\001\006\060\037\006\003  
\125\035\043\004\030\060\026\200\024\161\173\212\006\037\061\005  
\125\253\140\022\167\107\040\036\003\210\030\354\211\060\035\006  
\003\125\035\016\004\026\004\024\161\173\212\006\037\061\005\125  
\253\140\022\167\107\040\036\003\210\030\354\211\060\014\006\003  
\125\035\023\004\005\060\003\001\001\377\060\035\006\011\052\206  
\110\206\366\175\007\101\000\004\020\060\016\033\010\126\065\056  
\060\072\064\056\060\003\002\004\220\060\015\006\011\052\206\110  
\206\367\015\001\001\005\005\000\003\202\001\001\000\000\272\143  
\064\363\030\030\356\256\176\215\222\307\065\365\302\023\324\326  
\000\252\041\062\026\326\320\133\372\051\260\215\372\027\167\222  
\371\245\266\366\371\207\077\006\017\040\356\142\075\064\367\251  
\057\307\251\073\320\047\210\114\254\335\311\251\345\132\130\205  
\327\022\065\075\334\260\202\133\162\364\273\163\267\373\376\070  
\041\230\004\200\262\210\142\017\036\254\072\026\251\346\263\012  
\366\025\020\105\003\243\227\342\315\254\020\334\371\000\036\277  
\163\154\103\354\167\042\026\006\057\226\203\211\173\260\270\123  
\104\101\010\334\200\037\005\333\031\011\166\207\276\065\235\116  
\041\113\264\223\301\150\072\235\137\066\376\241\256\060\054\113  
\336\170\044\072\130\326\026\103\357\235\231\070\213\052\230\376  
\060\321\302\352\326\257\045\325\245\166\013\271\357\100\071\056  
\366\353\337\062\136\035\175\207\265\104\314\002\071\322\046\225  
\162\330\157\205\103\250\217\016\243\106\316\327\316\350\271\126  
\251\370\211\027\022\037\103\111\006\172\062\347\077\276\157\171  
\276\326\063\327\114\074\050\374\022\361\166\166\030

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "state-institutions"

# Issuer: OU=sigen-ca,O=state-institutions,C=si

# Serial Number:3b:3c:f9:c9

# Subject: OU=sigen-ca,O=state-institutions,C=si

# Not Valid Before: Fri Jun 29 21:27:46 2001

# Not Valid After: Tue Jun 29 21:57:46 2021

# Fingerprint (MD5): 49:ef:a6:a1:f0:de:8e:a7:6a:ee:5b:7d:1e:5f:c4:46

# Fingerprint (SHA1): 3e:42:a1:87:06:bd:0c:9c:cf:59:47:50:d2:e4:d6:ab:00:48:fd:c4

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN



```

CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "state-institutions"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\076\102\241\207\006\275\014\234\317\131\107\120\322\344\326\253
\000\110\375\304
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\111\357\246\241\360\336\216\247\152\356\133\175\036\137\304\106
END
CKA_ISSUER MULTILINE_OCTAL
\060\075\061\013\060\011\006\003\125\004\006\023\002\163\151\061
\033\060\031\006\003\125\004\012\023\022\163\164\141\164\145\055
\151\156\163\164\151\164\165\164\151\157\156\163\061\021\060\017
\006\003\125\004\013\023\010\163\151\147\145\156\055\143\141
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\004\073\074\371\311
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "SECOM Trust
  Systems CO.,LTD."
# Issuer: OU=Security Communication EV RootCA1,O=SECOM Trust Systems CO.,LTD.,C=JP
# Serial Number: 0 (0x0)
# Subject: OU=Security Communication EV RootCA1,O=SECOM Trust Systems CO.,LTD.,C=JP
# Not Valid Before: Wed Jun 06 02:12:32 2007
# Not Valid After: Sat Jun 06 02:12:32 2037
# Fingerprint (MD5): 22:2d:a6:01:ea:7c:0a:f7:f0:6c:56:43:3f:77:76:d3
# Fingerprint (SHA1): fe:b8:c4:32:dc:f9:76:9a:ce:ae:3d:d8:90:8f:fd:28:86:65:64:7d
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "SECOM Trust Systems CO.,LTD."
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\140\061\013\060\011\006\003\125\004\006\023\002\112\120\061
\045\060\043\006\003\125\004\012\023\034\123\105\103\117\115\040
\124\162\165\163\164\040\123\171\163\164\145\155\163\040\103\117
\056\054\114\124\104\056\061\052\060\050\006\003\125\004\013\023
\041\123\145\143\165\162\151\164\171\040\103\157\155\155\165\156
\151\143\141\164\151\157\156\040\105\126\040\122\157\157\164\103

```

```
\101\061
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\140\061\013\060\011\006\003\125\004\006\023\002\112\120\061
\045\060\043\006\003\125\004\012\023\034\123\105\103\117\115\040
\124\162\165\163\164\040\123\171\163\164\145\155\163\040\103\117
\056\054\114\124\104\056\061\052\060\050\006\003\125\004\013\023
\041\123\145\143\165\162\151\164\171\040\103\157\155\155\165\156
\151\143\141\164\151\157\156\040\105\126\040\122\157\157\164\103
\101\061
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\000
END
CKA_VALUE MULTILINE_OCTAL
\060\202\003\175\060\202\002\145\240\003\002\001\002\002\001\000
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060
\140\061\013\060\011\006\003\125\004\006\023\002\112\120\061\045
\060\043\006\003\125\004\012\023\034\123\105\103\117\115\040\124
\162\165\163\164\040\123\171\163\164\145\155\163\040\103\117\056
\054\114\124\104\056\061\052\060\050\006\003\125\004\013\023\041
\123\145\143\165\162\151\164\171\040\103\157\155\155\165\156\151
\143\141\164\151\157\156\040\105\126\040\122\157\157\164\103\101
\061\060\036\027\015\060\067\060\066\060\066\060\062\061\062\063
\062\132\027\015\063\067\060\066\060\066\060\062\061\062\063\062
\132\060\140\061\013\060\011\006\003\125\004\006\023\002\112\120
\061\045\060\043\006\003\125\004\012\023\034\123\105\103\117\115
\040\124\162\165\163\164\040\123\171\163\164\145\155\163\040\103
\117\056\054\114\124\104\056\061\052\060\050\006\003\125\004\013
\023\041\123\145\143\165\162\151\164\171\040\103\157\155\155\165
\156\151\143\141\164\151\157\156\040\105\126\040\122\157\157\164
\103\101\061\060\202\001\042\060\015\006\011\052\206\110\206\367
\015\001\001\001\005\000\003\202\001\017\000\060\202\001\012\002
\202\001\001\000\274\177\354\127\233\044\340\376\234\272\102\171
\251\210\212\372\200\340\365\007\051\103\352\216\012\064\066\215
\034\372\247\265\071\170\377\227\165\367\057\344\252\153\004\204
\104\312\246\342\150\216\375\125\120\142\017\244\161\016\316\007
\070\055\102\205\120\255\074\226\157\213\325\242\016\317\336\111
\211\075\326\144\056\070\345\036\154\265\127\212\236\357\110\016
\315\172\151\026\207\104\265\220\344\006\235\256\241\004\227\130
\171\357\040\112\202\153\214\042\277\354\037\017\351\204\161\355
\361\016\344\270\030\023\314\126\066\135\321\232\036\121\153\071
\156\140\166\210\064\013\363\263\321\260\235\312\141\342\144\035
\301\106\007\270\143\335\036\063\145\263\216\011\125\122\075\265
\275\377\007\353\255\141\125\030\054\251\151\230\112\252\100\305
\063\024\145\164\000\371\221\336\257\003\110\305\100\124\334\017
```

\204\220\150\040\305\222\226\334\056\345\002\105\252\300\137\124  
\370\155\352\111\317\135\154\113\257\357\232\302\126\134\306\065  
\126\102\152\060\137\302\253\366\342\075\077\263\311\021\217\061  
\114\327\237\111\002\003\001\000\001\243\102\060\100\060\035\006  
\003\125\035\016\004\026\004\024\065\112\365\115\257\077\327\202  
\070\254\253\161\145\027\165\214\235\125\223\346\060\016\006\003  
\125\035\017\001\001\377\004\004\003\002\001\006\060\017\006\003  
\125\035\023\001\001\377\004\005\060\003\001\001\377\060\015\006  
\011\052\206\110\206\367\015\001\001\005\005\000\003\202\001\001  
\000\250\207\351\354\370\100\147\135\303\301\146\307\100\113\227  
\374\207\023\220\132\304\357\240\312\137\213\267\247\267\361\326  
\265\144\267\212\263\270\033\314\332\373\254\146\210\101\316\350  
\374\344\333\036\210\246\355\047\120\033\002\060\044\106\171\376  
\004\207\160\227\100\163\321\300\301\127\031\232\151\245\047\231  
\253\235\142\204\366\121\301\054\311\043\025\330\050\267\253\045  
\023\265\106\341\206\002\377\046\214\304\210\222\035\126\376\031  
\147\362\125\344\200\243\153\234\253\167\341\121\161\015\040\333  
\020\232\333\275\166\171\007\167\231\050\255\232\136\332\261\117  
\104\054\065\216\245\226\307\375\203\360\130\306\171\326\230\174  
\250\215\376\206\076\007\026\222\341\173\347\035\354\063\166\176  
\102\056\112\205\371\221\211\150\204\003\201\245\233\232\276\343  
\067\305\124\253\126\073\030\055\101\244\014\370\102\333\231\240  
\340\162\157\273\135\341\026\117\123\012\144\371\116\364\277\116  
\124\275\170\154\210\352\277\234\023\044\302\160\151\242\177\017  
\310\074\255\010\311\260\230\100\243\052\347\210\203\355\167\217  
\164

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "SECOM Trust Systems CO.,LTD."

# Issuer: OU=Security Communication EV RootCA1,O=SECOM Trust Systems CO.,LTD.,C=JP

# Serial Number: 0 (0x0)

# Subject: OU=Security Communication EV RootCA1,O=SECOM Trust Systems CO.,LTD.,C=JP

# Not Valid Before: Wed Jun 06 02:12:32 2007

# Not Valid After: Sat Jun 06 02:12:32 2037

# Fingerprint (MD5): 22:2d:a6:01:ea:7c:0a:f7:f0:6c:56:43:3f:77:76:d3

# Fingerprint (SHA1): fe:b8:c4:32:dc:f9:76:9a:ce:ae:3d:d8:90:8f:fd:28:86:65:64:7d

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL

CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "SECOM Trust Systems CO.,LTD."

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\376\270\304\062\334\371\166\232\316\256\075\330\220\217\375\050  
\206\145\144\175

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\042\055\246\001\352\174\012\367\360\154\126\103\077\167\166\323

END

CKA\_ISSUER MULTILINE\_OCTAL

\060\140\061\013\060\011\006\003\125\004\006\023\002\112\120\061  
\045\060\043\006\003\125\004\012\023\034\123\105\103\117\115\040  
\124\162\165\163\164\040\123\171\163\164\145\155\163\040\103\117  
\056\054\114\124\104\056\061\052\060\050\006\003\125\004\013\023  
\041\123\145\143\165\162\151\164\171\040\103\157\155\155\165\156  
\151\143\141\164\151\157\156\040\105\126\040\122\157\157\164\103  
\101\061

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\001\000

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED

CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "D-TRUST Root Class 2 CA 2007"

# Issuer: CN=D-TRUST Root Class 2 CA 2007,O=D-Trust GmbH,C=DE

# Serial Number: 200341 (0x30e95)

# Subject: CN=D-TRUST Root Class 2 CA 2007,O=D-Trust GmbH,C=DE

# Not Valid Before: Wed May 16 05:20:47 2007

# Not Valid After: Mon May 16 05:20:47 2022

# Fingerprint (MD5): 2c:c2:b0:d5:d6:22:c5:2e:90:1e:f4:63:3f:0f:bb:32

# Fingerprint (SHA1): 4a:05:8f:df:d7:61:db:21:b0:c2:ee:48:57:9b:e2:7f:42:a4:da:1c

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "D-TRUST Root Class 2 CA 2007"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\113\061\013\060\011\006\003\125\004\006\023\002\104\105\061  
\025\060\023\006\003\125\004\012\014\014\104\055\124\162\165\163  
\164\040\107\155\142\110\061\045\060\043\006\003\125\004\003\014  
\034\104\055\124\122\125\123\124\040\122\157\157\164\040\103\154  
\141\163\163\040\062\040\103\101\040\062\060\060\067

END

CKA\_ID

UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\113\061\013\060\011\006\003\125\004\006\023\002\104\105\061  
\025\060\023\006\003\125\004\012\014\014\104\055\124\162\165\163  
\164\040\107\155\142\110\061\045\060\043\006\003\125\004\003\014  
\034\104\055\124\122\125\123\124\040\122\157\157\164\040\103\154  
\141\163\163\040\062\040\103\101\040\062\060\060\067

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\003\003\016\225

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\004\225\060\202\003\175\240\003\002\001\002\002\003\003  
\016\225\060\015\006\011\052\206\110\206\367\015\001\001\005\005  
\000\060\113\061\013\060\011\006\003\125\004\006\023\002\104\105  
\061\025\060\023\006\003\125\004\012\014\014\104\055\124\162\165  
\163\164\040\107\155\142\110\061\045\060\043\006\003\125\004\003  
\014\034\104\055\124\122\125\123\124\040\122\157\157\164\040\103  
\154\141\163\163\040\062\040\103\101\040\062\060\060\067\060\036  
\027\015\060\067\060\065\061\066\060\065\062\060\064\067\132\027  
\015\062\062\060\065\061\066\060\065\062\060\064\067\132\060\113  
\061\013\060\011\006\003\125\004\006\023\002\104\105\061\025\060  
\023\006\003\125\004\012\014\014\104\055\124\162\165\163\164\040  
\107\155\142\110\061\045\060\043\006\003\125\004\003\014\034\104  
\055\124\122\125\123\124\040\122\157\157\164\040\103\154\141\163  
\163\040\062\040\103\101\040\062\060\060\067\060\202\001\042\060  
\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003\202  
\001\017\000\060\202\001\012\002\202\001\001\000\263\315\344\204  
\025\111\370\344\326\316\204\263\232\255\366\060\165\220\015\204  
\353\356\332\263\172\165\052\342\073\244\352\060\054\353\075\167  
\215\201\204\150\112\246\244\150\334\220\163\141\064\145\007\035  
\043\245\014\346\277\323\335\063\135\332\062\355\246\015\123\246  
\164\152\134\031\131\246\114\265\057\171\001\136\236\177\112\372  
\272\311\047\176\324\377\315\000\131\040\353\006\314\263\104\317  
\326\205\351\355\073\014\154\301\352\214\134\340\271\251\002\360  
\023\000\047\223\234\120\376\315\023\117\155\033\152\252\335\017  
\377\106\045\031\334\341\136\120\254\032\177\016\313\332\356\040  
\374\303\364\234\112\170\065\156\356\061\307\105\026\162\205\322  
\202\040\333\122\105\174\074\277\131\127\371\207\164\126\230\133  
\035\120\216\314\057\263\263\077\213\356\354\067\111\001\210\357  
\330\041\014\223\323\366\156\211\117\272\027\313\104\201\267\173  
\247\043\273\164\012\323\330\352\067\105\047\377\334\360\236\103  
\343\272\173\212\033\232\175\351\206\240\376\057\321\326\366\207  
\127\252\362\051\224\207\163\025\372\152\116\255\002\003\001\000  
\001\243\202\001\200\060\202\001\174\060\017\006\003\125\035\023  
\001\001\377\004\005\060\003\001\001\377\060\035\006\003\125\035  
\016\004\026\004\024\221\060\253\366\363\306\104\267\353\335\050  
\274\017\024\237\122\135\142\177\002\060\071\006\010\053\006\001

\005\005\007\001\001\004\055\060\053\060\051\006\010\053\006\001  
\005\005\007\060\001\206\035\150\164\164\160\072\057\057\165\163  
\145\162\163\056\157\143\163\160\056\144\055\164\162\165\163\164  
\056\156\145\164\060\063\006\003\125\035\021\004\054\060\052\201  
\020\151\156\146\157\100\144\055\164\162\165\163\164\056\156\145  
\164\206\026\150\164\164\160\072\057\057\167\167\167\056\144\055  
\164\162\165\163\164\056\156\145\164\060\016\006\003\125\035\017  
\001\001\377\004\004\003\002\001\006\060\201\311\006\003\125\035  
\037\004\201\301\060\201\276\060\201\273\240\201\270\240\201\265  
\206\166\154\144\141\160\072\057\057\144\151\162\145\143\164\157  
\162\171\056\144\055\164\162\165\163\164\056\156\145\164\057\103  
\116\075\104\055\124\122\125\123\124\045\062\060\122\157\157\164  
\045\062\060\103\154\141\163\163\045\062\060\062\045\062\060\103  
\101\045\062\060\062\060\060\067\054\117\075\104\055\124\162\165  
\163\164\045\062\060\107\155\142\110\054\103\075\104\105\077\143  
\145\162\164\151\146\151\143\141\164\145\162\145\166\157\143\141  
\164\151\157\156\154\151\163\164\206\073\150\164\164\160\072\057  
\057\167\167\167\056\144\055\164\162\165\163\164\056\156\145\164  
\057\143\162\154\057\144\055\164\162\165\163\164\137\162\157\157  
\164\137\143\154\141\163\163\137\062\137\143\141\137\062\060\060  
\067\056\143\162\154\060\015\006\011\052\206\110\206\367\015\001  
\001\005\005\000\003\202\001\001\000\133\213\362\103\343\005\056  
\144\037\325\222\251\121\153\144\374\016\106\314\007\231\342\267  
\374\223\051\040\334\374\057\140\344\254\175\045\062\355\020\341  
\017\157\333\362\274\116\356\101\311\263\324\007\110\172\012\257  
\244\266\377\121\060\355\313\322\234\353\177\120\356\113\342\142  
\247\064\302\040\366\363\366\365\066\300\313\221\020\353\355\056  
\215\364\007\032\041\014\065\167\364\174\055\215\111\245\327\013  
\104\150\325\322\342\345\014\170\070\023\312\261\114\122\252\052  
\345\325\257\134\005\071\235\055\255\276\043\126\325\057\125\363  
\336\235\253\202\066\240\115\267\131\221\107\356\336\203\245\352  
\073\136\047\005\200\013\155\054\120\364\001\067\325\243\167\027  
\354\376\335\204\364\305\370\120\222\320\113\306\056\243\213\100  
\344\303\067\243\167\275\316\054\125\342\254\337\135\144\000\272  
\276\247\152\061\006\374\231\153\120\025\045\235\251\166\232\247  
\115\052\232\002\143\353\160\347\376\021\046\320\030\305\246\037  
\012\103\223\362\030\331\365\071\171\270\007\135\214\037\346\077  
\363\305\313\041\146\061\173\173\317

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "D-TRUST Root Class 2 CA 2007"

# Issuer: CN=D-TRUST Root Class 2 CA 2007,O=D-Trust GmbH,C=DE

# Serial Number: 200341 (0x30e95)

```
# Subject: CN=D-TRUST Root Class 2 CA 2007,O=D-Trust GmbH,C=DE
# Not Valid Before: Wed May 16 05:20:47 2007
# Not Valid After: Mon May 16 05:20:47 2022
# Fingerprint (MD5): 2c:c2:b0:d5:d6:22:c5:2e:90:1e:f4:63:3f:0f:bb:32
# Fingerprint (SHA1): 4a:05:8f:df:d7:61:db:21:b0:c2:ee:48:57:9b:e2:7f:42:a4:da:1c
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN
CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "D-TRUST Root Class 2 CA 2007"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\112\005\217\337\327\141\333\041\260\302\356\110\127\233\342\177
\102\244\332\034
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\054\302\260\325\326\042\305\056\220\036\364\143\077\017\273\062
END
CKA_ISSUER MULTILINE_OCTAL
\060\113\061\013\060\011\006\003\125\004\006\023\002\104\105\061
\025\060\023\006\003\125\004\012\014\014\104\055\124\162\165\163
\164\040\107\155\142\110\061\045\060\043\006\003\125\004\003\014
\034\104\055\124\122\125\123\124\040\122\157\157\164\040\103\154
\141\163\163\040\062\040\103\101\040\062\060\060\067
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\003\003\016\225
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
# Microsoft
Code Signing Only Certificate
# Certificate "D-TRUST Root Class 3 CA 2007"
# Issuer: CN=D-TRUST Root Class 3 CA 2007,O=D-Trust GmbH,C=DE
# Serial Number: 200342 (0x30e96)
# Subject: CN=D-TRUST Root Class 3 CA 2007,O=D-Trust GmbH,C=DE
# Not Valid Before: Wed May 16 05:20:47 2007
# Not Valid After: Mon May 16 05:20:47 2022
# Fingerprint (MD5): 1e:24:0e:a0:f8:76:d7:85:a3:f5:f8:a1:49:3d:2e:ba
# Fingerprint (SHA1): fd:1e:d1:e2:02:1b:0b:9f:73:e8:eb:75:ce:23:43:6b:bc:c7:46:eb
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "D-TRUST Root Class 3 CA 2007"
```

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

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\164\040\107\155\142\110\061\045\060\043\006\003\125\004\003\014  
\034\104\055\124\122\125\123\124\040\122\157\157\164\040\103\154  
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END

CKA\_ID

UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

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\164\040\107\155\142\110\061\045\060\043\006\003\125\004\003\014  
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CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

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\015\062\062\060\065\061\066\060\065\062\060\064\067\132\060\113  
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\107\155\142\110\061\045\060\043\006\003\125\004\003\014\034\104  
\055\124\122\125\123\124\040\122\157\157\164\040\103\154\141\163  
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\347\064\145\256\225\202\141\147\046\163\055\335\173\347\225\113  
\016\041\252\222\256\114\374\306\263\251\345\231\203\062\071\360  
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\177\042\377\111\275\166\163\014\077\230\255\052\262\372\347\305  
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CKA_NSS_MOZILLA_CA_POLICY
CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Trust for "D-TRUST Root Class 3 CA 2007"
# Issuer: CN=D-TRUST Root Class 3 CA 2007,O=D-Trust GmbH,C=DE
# Serial Number: 200342 (0x30e96)
# Subject: CN=D-TRUST Root Class 3 CA 2007,O=D-Trust GmbH,C=DE
# Not Valid Before: Wed May 16 05:20:47 2007
# Not Valid After: Mon May 16 05:20:47 2022
# Fingerprint (MD5): 1e:24:0e:a0:f8:76:d7:85:a3:f5:f8:a1:49:3d:2e:ba
# Fingerprint (SHA1): fd:1e:d1:e2:02:1b:0b:9f:73:e8:eb:75:ce:23:43:6b:bc:c7:46:eb
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE
CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "D-TRUST Root Class 3 CA 2007"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\375\036\321\342\002\033\013\237\163\350\353\165\316\043\103\153
\274\307\106\353
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\036\044\016\240\370\166\327\205\243\365\370\241\111\075\056\272
END
CKA_ISSUER MULTILINE_OCTAL
\060\113\061\013\060\011\006\003\125\004\006\023\002\104\105\061
\025\060\023\006\003\125\004\012\014\014\104\055\124\162\165\163
\164\040\107\155\142\110\061\045\060\043\006\003\125\004\003\014
\034\104\055\124\122\125\123\124\040\122\157\157\164\040\103\154
\141\163\163\040\063\040\103\101\040\062\060\060\067
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\003\003\016\226
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "SSC Root CA A"
#
# Issuer: CN=SSC Root CA A,OU=Certification Authority,O=Skaitmeninio sertifikavimo centras,C=LT
# Serial Number:66:07:a3:d2:9d:29:56:18:0e:e1:5e:59:98:b1:84:55
# Subject: CN=SSC Root CA A,OU=Certification Authority,O=Skaitmeninio sertifikavimo centras,C=LT

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# Not Valid Before: Wed Dec 27 12:18:52 2006
# Not Valid After: Mon Dec 28 12:05:04 2026
# Fingerprint (MD5): 46:8c:21:0e:ab:92:21:46:59:db:a6:db:00:61:de:26
# Fingerprint (SHA1): 5a:5a:4d:af:78:61:26:7c:4b:1f:1e:67:58:6b:ae:6e:d4:fe:b9:3f
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "SSC Root CA A"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\164\061\013\060\011\006\003\125\004\006\023\002\114\124\061
\053\060\051\006\003\125\004\012\023\042\123\153\141\151\164\155
\145\156\151\156\151\157\040\163\145\162\164\151\146\151\153\141
\166\151\155\157\040\143\145\156\164\162\141\163\061\040\060\036
\006\003\125\004\013\023\027\103\145\162\164\151\146\151\143\141
\164\151\157\156\040\101\165\164\150\157\162\151\164\171\061\026
\060\024\006\003\125\004\003\023\015\123\123\103\040\122\157\157
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END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
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\145\156\151\156\151\157\040\163\145\162\164\151\146\151\153\141
\166\151\155\157\040\143\145\156\164\162\141\163\061\040\060\036
\006\003\125\004\013\023\027\103\145\162\164\151\146\151\143\141
\164\151\157\156\040\101\165\164\150\157\162\151\164\171\061\026
\060\024\006\003\125\004\003\023\015\123\123\103\040\122\157\157
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END
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\204\125
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\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\164
\061\013\060\011\006\003\125\004\006\023\002\114\124\061\053\060
\051\006\003\125\004\012\023\042\123\153\141\151\164\155\145\156
\151\156\151\157\040\163\145\162\164\151\146\151\153\141\166\151
\155\157\040\143\145\156\164\162\141\163\061\040\060\036\006\003
\125\004\013\023\027\103\145\162\164\151\146\151\143\141\164\151
\157\156\040\101\165\164\150\157\162\151\164\171\061\026\060\024
\006\003\125\004\003\023\015\123\123\103\040\122\157\157\164\040
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\373\327\331\015\340\372\253\020\336\152\201\254\205\167\055\254  
\172\143\173\106\341\067\332\127\156\255\145\374\041\004\231\205  
\001\317\043\072\062\305\355\132\233\325\241\202\004\167\021\105  
\216\244\104\175\302\313\313\247\017\350\022\272\362\156\272\217  
\063\060\033\335\051\370\360\102\243\156\102\245\156\372\126\245  
\251\120\203\321\005\146\026\213\055\373\346\222\321\346\154\013  
\325\132\051\155\053\317\171\327\331\332\117\360\150\266

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "SSC Root CA A"

```
# Issuer: CN=SSC Root CA A,OU=Certification Authority,O=Skaitmeninio sertifikavimo centras,C=LT
# Serial Number:66:07:a3:d2:9d:29:56:18:0e:e1:5e:59:98:b1:84:55
# Subject: CN=SSC Root CA A,OU=Certification Authority,O=Skaitmeninio sertifikavimo centras,C=LT
# Not Valid Before: Wed Dec 27 12:18:52 2006
# Not Valid After: Mon Dec 28 12:05:04 2026
# Fingerprint (MD5): 46:8c:21:0e:ab:92:21:46:59:db:a6:db:00:61:de:26
# Fingerprint (SHA1): 5a:5a:4d:af:78:61:26:7c:4b:1f:1e:67:58:6b:ae:6e:d4:fe:b9:3f
CKA_CLASS
CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "SSC Root CA A"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\132\132\115\257\170\141\046\174\113\037\036\147\130\153\256\156
\324\376\271\077
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\106\214\041\016\253\222\041\106\131\333\246\333\000\141\336\046
END
CKA_ISSUER MULTILINE_OCTAL
\060\164\061\013\060\011\006\003\125\004\006\023\002\114\124\061
\053\060\051\006\003\125\004\012\023\042\123\153\141\151\164\155
\145\156\151\156\151\157\040\163\145\162\164\151\146\151\153\141
\166\151\155\157\040\143\145\156\164\162\141\163\061\040\060\036
\006\003\125\004\013\023\027\103\145\162\164\151\146\151\143\141
\164\151\157\156\040\101\165\164\150\157\162\151\164\171\061\026
\060\024\006\003\125\004\003\023\015\123\123\103\040\122\157\157
\164\040\103\101\040\101
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\146\007\243\322\235\051\126\030\016\341\136\131\230\261
\204\125
END
CKA_TRUST_SERVER_AUTH
CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
# Microsoft Code Signing Only Certificate
# Certificate "SSC Root CA B"
# Issuer: CN=SSC Root CA B,OU=Certification Authority,O=Skaitmeninio sertifikavimo centras,C=LT
# Serial Number:be:92:83:18:f3:55:8a:78:a3:67:59:1c:69:24:09:3f
# Subject: CN=SSC Root CA B,OU=Certification Authority,O=Skaitmeninio sertifikavimo centras,C=LT
# Not Valid Before: Wed Dec 27 12:22:50 2006
# Not Valid After: Fri Dec 25 12:08:26 2026
# Fingerprint (MD5): da:26:b6:e6:c7:c2:f7:b7:9e:46:59:b3:57:77:18:65
```

# Fingerprint (SHA1): 3e:84:d3:bc:c5:44:c0:f6:fa:19:43:5c:85:1f:3f:2f:cb:a8:e8:14

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "SSC Root CA B"

CKA\_CERTIFICATE\_TYPE

CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\164\061\013\060\011\006\003\125\004\006\023\002\114\124\061  
\053\060\051\006\003\125\004\012\023\042\123\153\141\151\164\155  
\145\156\151\156\151\157\040\163\145\162\164\151\146\151\153\141  
\166\151\155\157\040\143\145\156\164\162\141\163\061\040\060\036  
\006\003\125\004\013\023\027\103\145\162\164\151\146\151\143\141  
\164\151\157\156\040\101\165\164\150\157\162\151\164\171\061\026  
\060\024\006\003\125\004\003\023\015\123\123\103\040\122\157\157  
\164\040\103\101\040\102

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\164\061\013\060\011\006\003\125\004\006\023\002\114\124\061  
\053\060\051\006\003\125\004\012\023\042\123\153\141\151\164\155  
\145\156\151\156\151\157\040\163\145\162\164\151\146\151\153\141  
\166\151\155\157\040\143\145\156\164\162\141\163\061\040\060\036  
\006\003\125\004\013\023\027\103\145\162\164\151\146\151\143\141  
\164\151\157\156\040\101\165\164\150\157\162\151\164\171\061\026  
\060\024\006\003\125\004\003\023\015\123\123\103\040\122\157\157  
\164\040\103\101\040\102

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\021\000\276\222\203\030\363\125\212\170\243\147\131\034\151  
\044\011\077

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\006\053\060\202\004\023\240\003\002\001\002\002\021\000  
\276\222\203\030\363\125\212\170\243\147\131\034\151\044\011\077  
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060  
\164\061\013\060\011\006\003\125\004\006\023\002\114\124\061\053  
\060\051\006\003\125\004\012\023\042\123\153\141\151\164\155\145  
\156\151\156\151\157\040\163\145\162\164\151\146\151\153\141\166  
\151\155\157\040\143\145\156\164\162\141\163\061\040\060\036\006  
\003\125\004\013\023\027\103\145\162\164\151\146\151\143\141\164  
\151\157\156\040\101\165\164\150\157\162\151\164\171\061\026\060  
\024\006\003\125\004\003\023\015\123\123\103\040\122\157\157\164  
\040\103\101\040\102\060\036\027\015\060\066\061\062\062\067\061  
\062\062\062\065\060\132\027\015\062\066\061\062\062\065\061\062  
\060\070\062\066\132\060\164\061\013\060\011\006\003\125\004\006

\023\002\114\124\061\053\060\051\006\003\125\004\012\023\042\123  
\153\141\151\164\155\145\156\151\156\151\157\040\163\145\162\164  
\151\146\151\153\141\166\151\155\157\040\143\145\156\164\162\141  
\163\061\040\060\036\006\003\125\004\013\023\027\103\145\162\164  
\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162  
\151\164\171\061\026\060\024\006\003\125\004\003\023\015\123\123  
\103\040\122\157\157\164\040\103\101\040\102\060\202\002\042\060  
\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003\202  
\002\017\000\060\202\002\012\002\202\002\001\000\301\363\125\365  
\107\121\116\125\027\145\215\260\262\101\050\241\112\321\237\113  
\366\163\377\076\322\311\115\131\077\344\267\307\237\006\135\330  
\074\243\210\204\340\163\135\375\005\352\307\216\327\244\004\152  
\353\237\275\103\375\024\222\106\270\305\272\252\355\140\354\354  
\312\220\215\012\162\251\101\233\324\235\274\260\154\242\021\037  
\144\313\347\035\324\105\147\016\011\153\345\170\354\361\077\004  
\124\363\232\231\307\131\321\322\171\247\244\032\260\174\111\374  
\034\207\124\136\170\006\325\335\035\314\205\240\102\170\325\320  
\260\212\352\350\361\241\236\126\357\323\301\175\207\254\347\332  
\150\117\031\326\157\340\223\255\111\134\163\024\301\106\152\235  
\367\130\100\331\127\130\116\154\067\364\162\043\004\370\333\112  
\260\336\361\101\226\022\100\241\025\213\147\270\136\170\126\313  
\177\344\276\300\111\150\221\270\107\010\223\201\301\265\033\061  
\006\323\200\173\321\105\241\317\014\075\141\363\222\370\361\260  
\025\016\370\056\060\133\000\243\111\367\155\376\356\334\277\210  
\317\360\175\127\076\257\300\321\212\353\174\322\155\061\125\372  
\204\215\163\152\332\160\200\304\364\302\317\220\216\060\232\341  
\306\065\162\001\010\346\077\346\146\000\243\362\370\222\035\274  
\122\354\217\366\334\367\012\357\274\020\207\371\204\030\214\136  
\037\003\270\377\065\057\001\152\345\360\133\142\174\343\263\177  
\063\252\224\327\116\121\201\265\350\127\170\217\042\226\251\014  
\211\124\076\266\356\331\163\137\144\364\104\341\361\152\030\377  
\122\226\304\034\277\211\227\244\303\247\312\176\030\156\026\334  
\023\214\273\325\265\045\011\206\257\366\057\105\224\052\060\301  
\024\224\065\366\135\312\045\225\234\261\130\211\270\265\140\205  
\311\306\276\024\031\243\076\371\126\205\253\312\154\326\231\171  
\242\112\024\157\303\072\330\347\146\121\012\351\034\376\314\151  
\346\064\154\364\201\333\175\242\021\370\114\304\207\005\026\075  
\353\227\164\077\156\354\234\271\266\047\214\044\337\055\263\257  
\335\023\141\166\217\377\362\114\340\010\031\060\062\044\062\134  
\066\200\027\356\206\311\337\057\121\342\126\256\203\222\360\263  
\275\330\207\072\054\236\304\334\151\231\371\313\002\003\001\000  
\001\243\201\267\060\201\264\060\017\006\003\125\035\023\001\001  
\377\004\005\060\003\001\001\377\060\075\006\003\125\035\040\004  
\066\060\064\060\062\006\013\053\006\001\004\001\201\257\145\001  
\002\000\060\043\060\041\006\010\053\006\001\005\005\007\002\001  
\026\025\150\164\164\160\072\057\057\167\167\167\056\163\163\143  
\056\154\164\057\143\160\163\060\063\006\003\125\035\037\004\054  
\060\052\060\050\240\046\240\044\206\042\150\164\164\160\072\057



\057\143\162\154\056\163\163\143\056\154\164\057\162\157\157\164  
\055\142\057\143\141\143\162\154\056\143\162\154\060\016\006\003  
\125\035\017\001\001\377\004\004\003\002\001\006\060\035\006\003  
\125\035\016\004\026\004\024\234\003\360\250\322\230\162\150\256  
\362\355\340\117\342\205\016\262\045\116\317\060\015\006\011\052  
\206\110\206\367\015\001\001\005\005\000\003\202\002\001\000\254  
\134\274\057\374\256\001\044\246\020\076\254\250\341\247\047\231  
\215\312\210\301\035\075\221\366\242\176\245\361\230\101\377\252  
\141\370\011\276\315\032\045\141\164\264\303\257\102\132\011\017  
\221\001\276\110\225\364\312\167\136\013\203\316\204\235\317\100  
\375\200\054\275\343\146\065\012\270\261\372\140\332\345\330\124  
\265\113\227\272\242\032\303\040\151\215\264\106\163\134\252\277  
\275\173\377\032\060\064\130\100\371\053\140\013\171\104\371\367  
\242\226\013\153\122\173\360\053\113\073\322\213\240\153\223\075  
\311\127\143\212\153\314\120\023\217\167\250\121\276\032\114\055  
\114\135\014\220\133\216\363\357\120\040\155\201\346\121\111\253  
\304\347\327\135\010\053\121\374\075\106\022\347\321\245\166\305  
\123\044\005\311\252\323\216\130\305\363\212\164\222\062\355\360  
\057\335\253\255\351\322\065\217\164\043\343\231\000\342\213\060  
\344\303\102\256\360\273\351\342\010\033\112\160\055\175\370\322  
\232\047\221\102\160\165\172\010\176\276\057\034\177\067\075\250  
\213\334\106\162\365\350\157\066\150\372\156\215\040\235\324\365  
\007\161\277\275\047\102\271\163\050\326\354\111\264\005\205\117  
\150\110\366\253\224\337\016\243\106\024\140\302\061\040\073\353  
\056\133\336\325\241\054\155\345\122\372\201\137\227\210\311\143  
\275\001\354\343\315\153\012\065\302\311\070\343\016\363\130\033  
\175\332\220\155\267\365\310\130\126\235\256\001\337\221\235\255  
\125\202\003\014\021\164\004\221\206\307\174\223\214\363\047\373  
\305\044\127\156\213\331\033\230\235\210\061\360\257\167\270\015  
\264\314\317\366\012\157\022\233\354\011\053\123\211\354\104\340  
\241\151\213\250\164\206\164\030\122\340\322\277\240\241\145\041  
\271\010\203\172\363\244\365\370\136\067\045\107\231\246\135\327  
\042\132\333\223\147\027\333\020\343\214\321\022\221\107\212\225  
\245\107\241\003\370\113\056\041\305\220\142\260\177\047\243\333  
\025\177\070\177\154\177\116\005\305\003\264\055\337\105\137\165  
\054\035\361\137\246\265\366\027\071\101\351\370\145\302\036\130  
\021\312\174\216\342\265\272\222\017\147\267\217\353\231\324\061  
\373\162\173\132\230\137\222\224\307\004\352\060\366\273\032

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "SSC Root CA B"

# Issuer: CN=SSC Root CA B,OU=Certification Authority,O=Skaitmeninio sertifikavimo centras,C=LT

# Serial Number:be:92:83:18:f3:55:8a:78:a3:67:59:1c:69:24:09:3f

```

#
Subject: CN=SSC Root CA B,OU=Certification Authority,O=Skaitmeninio sertifikavimo centras,C=LT
# Not Valid Before: Wed Dec 27 12:22:50 2006
# Not Valid After: Fri Dec 25 12:08:26 2026
# Fingerprint (MD5): da:26:b6:e6:c7:c2:f7:b7:9e:46:59:b3:57:77:18:65
# Fingerprint (SHA1): 3e:84:d3:bc:c5:44:c0:f6:fa:19:43:5c:85:1f:3f:2f:cb:a8:e8:14
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "SSC Root CA B"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\076\204\323\274\305\104\300\366\372\031\103\134\205\037\077\057
\313\250\350\024
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\332\046\266\346\307\302\367\267\236\106\131\263\127\167\030\145
END
CKA_ISSUER MULTILINE_OCTAL
\060\164\061\013\060\011\006\003\125\004\006\023\002\114\124\061
\053\060\051\006\003\125\004\012\023\042\123\153\141\151\164\155
\145\156\151\156\151\157\040\163\145\162\164\151\146\151\153\141
\166\151\155\157\040\143\145\156\164\162\141\163\061\040\060\036
\006\003\125\004\013\023\027\103\145\162\164\151\146\151\143\141
\164\151\157\156\040\101\165\164\150\157\162\151\164\171\061\026
\060\024\006\003\125\004\003\023\015\123\123\103\040\122\157\157
\164\040\103\101\040\102
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\021\000\276\222\203\030\363\125\212\170\243\147\131\034\151
\044\011\077
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "SSC Root CA C"
# Issuer: CN=SSC Root CA C,OU=Certification Authority,O=Skaitmeninio sertifikavimo centras,C=LT
# Serial Number:34:b9:12:9f:ac:c7:92:55:42:5c:de:57:ff:e3:c0:05
# Subject: CN=SSC Root CA C,OU=Certification Authority,O=Skaitmeninio sertifikavimo centras,C=LT
# Not Valid Before: Wed Dec 27 12:26:30 2006
# Not Valid After: Tue Dec
22 12:11:30 2026
# Fingerprint (MD5): 3c:4c:25:cc:0a:19:ca:ee:6a:eb:55:16:00:86:72:5f
# Fingerprint (SHA1): 23:e8:33:23:3e:7d:0c:c9:2b:7c:42:79:ac:19:c2:f4:74:d6:04:ca

```

```
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "SSC Root CA C"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\164\061\013\060\011\006\003\125\004\006\023\002\114\124\061
\053\060\051\006\003\125\004\012\023\042\123\153\141\151\164\155
\145\156\151\156\151\157\040\163\145\162\164\151\146\151\153\141
\166\151\155\157\040\143\145\156\164\162\141\163\061\040\060\036
\006\003\125\004\013\023\027\103\145\162\164\151\146\151\143\141
\164\151\157\156\040\101\165\164\150\157\162\151\164\171\061\026
\060\024\006\003\125\004\003\023\015\123\123\103\040\122\157\157
\164\040\103\101\040\103
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\164\061\013\060\011\006\003\125\004\006\023\002\114\124\061
\053\060\051\006\003\125\004\012\023\042\123\153\141\151\164\155
\145\156\151\156\151\157\040\163\145\162\164\151\146\151\153\141
\166\151\155\157\040\143\145\156\164\162\141\163\061\040\060\036
\006\003\125\004\013\023\027\103\145\162\164\151\146\151\143\141
\164\151\157\156\040\101\165\164\150\157\162\151\164\171\061\026
\060\024\006\003\125\004\003\023\015\123\123\103\040\122\157\157
\164\040\103\101\040\103
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\064\271\022\237\254\307\222\125\102\134\336\127\377\343
\300\005
END
CKA_VALUE MULTILINE_OCTAL
\060\202\006\052\060\202\004\022\240\003\002\001\002\002\020\064
\271\022\237\254\307\222\125\102\134\336\127\377\343\300\005\060
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\164
\061\013\060\011\006\003\125\004\006\023\002\114\124\061\053\060
\051\006\003\125\004\012\023\042\123\153\141\151\164\155\145\156
\151\156\151\157\040\163\145\162\164\151\146\151\153\141\166\151
\155\157\040\143\145\156\164\162\141\163\061\040\060\036\006\003
\125\004\013\023\027\103\145\162\164\151\146\151\143\141\164\151
\157\156\040\101\165\164\150\157\162\151\164\171\061\026\060\024
\006\003\125\004\003\023\015\123\123\103\040\122\157\157\164\040
\103\101\040\103\060\036\027\015\060\066\061\062\062\067\061\062
\062\066\063\060\132\027\015\062\066\061\062\062\062\061\062\061
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\045\156\303\374\177\126\071\141\321\216\302\046\172\347\170\002  
\012\131\335\125\043\260\370\065\247\342\253\363\253\057\327\265  
\213\012\052\162\124\053\155\171\274\362\331\351\103\371\317\361  
\216\146\022\367\227\131\052\331\327\224\334\370\224\263\105\243  
\257\026\055\263\200\312\075\316\350\246\307\012\224\164\374\067  
\232\351\077\014\067\026\040\103\311\107\160\273\214\205\374\230  
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\363\163\310\146\043\304\056\103\020\107\340\212\151\127\356\057  
\362\000\122\260\060\222\252\326\324\025\305\127\313\140\172\364  
\016\215\376\036\011\143\164\217\340\376\276\120\331\001\071\126  
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\124\061\076\307\261\074\076\337\343\117\375\335\233\044\151\174  
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\351\154\242\052\220\324\206\375\315\015\377\340\005\212\130\141  
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\027\136\333\252\021\344\067\014\044\377\040\147\321\045\333\232  
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\137\211\027\245\227\231\121\225\151\333\304\361\217\364\157\060  
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\065\361\233\266\303\331\314\073\120\174\162\350\317\136\300\230  
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END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "SSC Root CA C"

# Issuer: CN=SSC Root CA C,OU=Certification Authority,O=Skaitmeninio sertifikavimo centras,C=LT

# Serial Number:34:b9:12:9f:ac:c7:92:55:42:5c:de:57:ff:e3:c0:05

# Subject: CN=SSC Root CA C,OU=Certification Authority,O=Skaitmeninio sertifikavimo centras,C=LT

# Not Valid Before: Wed Dec 27 12:26:30 2006

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# Not Valid After: Tue Dec 22 12:11:30 2026
# Fingerprint (MD5): 3c:4c:25:cc:0a:19:ca:ee:6a:eb:55:16:00:86:72:5f
# Fingerprint (SHA1): 23:e8:33:23:3e:7d:0c:c9:2b:7c:42:79:ac:19:c2:f4:74:d6:04:ca
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "SSC Root CA C"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\043\350\063\043\076\175\014\311\053\174\102\171\254\031\302\364
\164\326\004\312
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\074\114\045\314\012\031\312\356\152\353\125\026\000\206\162\137
END
CKA_ISSUER
MULTILINE_OCTAL
\060\164\061\013\060\011\006\003\125\004\006\023\002\114\124\061
\053\060\051\006\003\125\004\012\023\042\123\153\141\151\164\155
\145\156\151\156\151\157\040\163\145\162\164\151\146\151\153\141
\166\151\155\157\040\143\145\156\164\162\141\163\061\040\060\036
\006\003\125\004\013\023\027\103\145\162\164\151\146\151\143\141
\164\151\157\156\040\101\165\164\150\157\162\151\164\171\061\026
\060\024\006\003\125\004\003\023\015\123\123\103\040\122\157\157
\164\040\103\101\040\103
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CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\064\271\022\237\254\307\222\125\102\134\336\127\377\343
\300\005
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

# Microsoft Code Signing Only Certificate

# Certificate "Autoridad de Certificacion  
de la Abogacia"

# Issuer: CN=Autoridad de Certificacion de la Abogacia,O=Consejo General de la Abogacia NIF:Q-2863006I,C=ES

# Serial Number:90:8b:32:4f:c1:90:1a:ce:b4:c3:38:09:cd:cf:e4

# Subject: CN=Autoridad de Certificacion de la Abogacia,O=Consejo General de la Abogacia NIF:Q-2863006I,C=ES

# Not Valid Before: Mon Jun 13 22:00:00 2005

# Not Valid After: Thu Jun 13 22:00:00 2030

# Fingerprint (MD5): 15:ee:9f:5a:a0:85:28:df:6b:dd:34:a3:a0:56:d8:30

# Fingerprint (SHA1): 7f:8a:77:83:6b:dc:6d:06:8f:8b:07:37:fc:c5:72:54:13:06:8c:a4

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

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CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Autoridad de Certificacion de la Abogacia"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\171\061\013\060\011\006\003\125\004\006\023\002\105\123\061
\066\060\064\006\003\125\004\012\023\055\103\157\156\163\145\152
\157\040\107\145\156\145\162\141\154\040\144\145\040\154\141\040
\101\142\157\147\141\143\151\141\040\116\111\106\072\121\055\062
\070\066\063\060\060\066\111\061\062\060\060\006\003\125\004\003
\023\051\101\165\164\157\162\151\144\141\144\040\144\145\040\103
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END

CKA\_ID

UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

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\157\040\107\145\156\145\162\141\154\040\144\145\040\154\141\040
\101\142\157\147\141\143\151\141\040\116\111\106\072\121\055\062
\070\066\063\060\060\066\111\061\062\060\060\006\003\125\004\003
\023\051\101\165\164\157\162\151\144\141\144\040\144\145\040\103
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END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

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END

CKA\_VALUE MULTILINE\_OCTAL

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\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\171
\061\013\060\011\006\003\125\004\006\023\002\105\123\061\066\060
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\107\145\156\145\162\141\154\040\144\145\040\154\141\040\101\142
\157\147\141\143\151\141\040\116\111\106\072\121\055\062\070\066
\063\060\060\066\111\061\062\060\060\006\003\125\004\003\023\051
\101\165\164\157\162\151\144\141\144\040\144\145\040\103\145\162
\164\151\146\151\143\141\143\151\157\156\040\144\145\040\154\141
\040\101\142\157\147\141\143\151\141\060\036\027\015\060\065\060
\066\061\063\062\062\060\060\060\060\132\027\015\063\060\060\066
\061\063\062\062\060\060\060\060\132\060\171\061\013\060\011\006
\003\125\004\006\023\002\105\123\061\066\060\064\006\003\125\004
\012\023\055\103\157\156\163\145\152\157\040\107\145\156\145\162
\141\154\040\144\145\040\154\141\040\101\142\157\147\141\143\151
\141\040\116\111\106\072\121\055\062\070\066\063\060\060\066\111
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\061\062\060\060\006\003\125\004\003\023\051\101\165\164\157\162  
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\014\100\232\102\170\005\135\201\353\142\034\344\117\024\012\075
\013\076\037\351\364\315\175\356\105\273\274\336\135\363\230\227
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\332\027\352\241\222\275\067\351\016\273\273\221\325\045\366\140
\135\205\041\120\133\377\124\135\365\113\073\264\303\051\021\130
\002\366\045\344\341\202\202\273\242\215\347\221\044\136\100\221
\236\107\007\214\063\127\324\142\061\121\166\165\205\103\157\011
\253\021\245\045\051\271\330\377\137\245\367\077\353\145\073\035
\357\206\345\026\042\325\036\312\062\151\175\176\005\327\060\047
END
```

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER

CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "Autoridad de Certificacion de la Abogacia"

# Issuer: CN=Autoridad de Certificacion de la Abogacia,O=Consejo General de la Abogacia NIF:Q-2863006I,C=ES

# Serial Number:90:8b:32:4f:c1:90:1a:ce:b4:c3:38:09:cd:cf:e4

# Subject: CN=Autoridad de Certificacion de la Abogacia,O=Consejo General de la Abogacia NIF:Q-2863006I,C=ES

# Not Valid Before: Mon Jun 13 22:00:00 2005

# Not Valid After: Thu Jun 13 22:00:00 2030

# Fingerprint (MD5): 15:ee:9f:5a:a0:85:28:df:6b:dd:34:a3:a0:56:d8:30

# Fingerprint (SHA1): 7f:8a:77:83:6b:dc:6d:06:8f:8b:07:37:fc:c5:72:54:13:06:8c:a4

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Autoridad de Certificacion de la Abogacia"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\177\212\167\203\153\334\155\006\217\213\007\067\374\305\162\124
\023\006\214\244
```

END

CKA\_CERT\_MD5\_HASH

MULTILINE\_OCTAL

```
\025\356\237\132\240\205\050\337\153\335\064\243\240\126\330\060
END
```

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\171\061\013\060\011\006\003\125\004\006\023\002\105\123\061
\066\060\064\006\003\125\004\012\023\055\103\157\156\163\145\152
\157\040\107\145\156\145\162\141\154\040\144\145\040\154\141\040
\101\142\157\147\141\143\151\141\040\116\111\106\072\121\055\062
\070\066\063\060\060\066\111\061\062\060\060\006\003\125\004\003
\023\051\101\165\164\157\162\151\144\141\144\040\144\145\040\103
```

\145\162\164\151\146\151\143\141\143\151\157\156\040\144\145\040

\154\141\040\101\142\157\147\141\143\151\141

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\000\220\213\062\117\301\220\032\316\264\303\070\011\315

\317\344

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code

Signing Only Certificate

# Certificate "Root CA Generalitat Valenciana"

# Issuer: CN=Root CA Generalitat Valenciana,OU=PKIGVA,O=Generalitat Valenciana,C=ES

# Serial Number:3b:45:e5:68

# Subject: CN=Root CA Generalitat Valenciana,OU=PKIGVA,O=Generalitat Valenciana,C=ES

# Not Valid Before: Fri Jul 06 16:22:47 2001

# Not Valid After: Thu Jul 01 15:22:47 2021

# Fingerprint (MD5): 2c:8c:17:5e:b1:54:ab:93:17:b5:36:5a:db:d1:c6:f2

# Fingerprint (SHA1): a0:73:e5:c5:bd:43:61:0d:86:4c:21:13:0a:85:58:57:cc:9c:ea:46

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Root CA Generalitat Valenciana"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\150\061\013\060\011\006\003\125\004\006\023\002\105\123\061

\037\060\035\006\003\125\004\012\023\026\107\145\156\145\162\141

\154\151\164\141\164\040\126\141\154\145\156\143\151\141\156\141

\061\017\060\015\006\003\125\004\013\023\006\120\113\111\107\126

\101\061\047\060\045\006\003\125\004\003\023\036\122\157\157\164

\040\103\101\040\107\145\156\145\162\141\154\151\164\141\164\040

\126\141\154\145\156\143\151\141\156\141

END

CKA\_ID

UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\150\061\013\060\011\006\003\125\004\006\023\002\105\123\061

\037\060\035\006\003\125\004\012\023\026\107\145\156\145\162\141

\154\151\164\141\164\040\126\141\154\145\156\143\151\141\156\141

\061\017\060\015\006\003\125\004\013\023\006\120\113\111\107\126

\101\061\047\060\045\006\003\125\004\003\023\036\122\157\157\164

\040\103\101\040\107\145\156\145\162\141\154\151\164\141\164\040

\126\141\154\145\156\143\151\141\156\141

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\004\073\105\345\150

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\006\213\060\202\005\163\240\003\002\001\002\002\004\073  
\105\345\150\060\015\006\011\052\206\110\206\367\015\001\001\005  
\005\000\060\150\061\013\060\011\006\003\125\004\006\023\002\105  
\123\061\037\060\035\006\003\125\004\012\023\026\107\145\156\145  
\162\141\154\151\164\141\164\040\126\141\154\145\156\143\151\141  
\156\141\061\017\060\015\006\003\125\004\013\023\006\120\113\111  
\107\126\101\061\047\060\045\006\003\125\004\003\023\036\122\157  
\157\164\040\103\101\040\107\145\156\145\162\141\154\151\164\141  
\164\040\126\141\154\145\156\143\151\141\156\141\060\036\027\015  
\060\061\060\067\060\066\061\066\062\062\064\067\132\027\015\062  
\061\060\067\060\061\061\065\062\062\064\067\132\060\150\061\013  
\060\011\006\003\125\004\006\023\002\105\123\061\037\060\035\006  
\003\125\004\012\023\026\107\145\156\145\162\141\154\151\164\141  
\164\040\126\141\154\145\156\143\151\141\156\141\061\017\060\015  
\006\003\125\004\013\023\006\120\113\111\107\126\101\061\047\060  
\045\006\003\125\004\003\023\036\122\157\157\164\040\103\101\040  
\107\145\156\145\162\141\154\151\164\141\164\040\126\141\154\145  
\156\143\151\141\156\141\060\202\001\042\060\015\006\011\052\206  
\110\206\367\015\001\001\001\005\000\003\202\001\017\000\060\202  
\001\012\002\202\001\001\000\306\052\253\127\021\067\057\042\212  
\312\003\164\035\312\355\055\242\013\274\063\122\100\046\107\276  
\132\151\246\073\162\066\027\114\350\337\270\273\057\166\341\100  
\106\164\145\002\220\122\010\264\377\250\214\301\340\307\211\126  
\020\071\063\357\150\264\137\137\332\155\043\241\211\136\042\243  
\112\006\360\047\360\127\271\370\351\116\062\167\012\077\101\144  
\363\353\145\356\166\376\124\252\175\035\040\256\363\327\164\302  
\012\137\365\010\050\122\010\314\125\135\322\017\333\232\201\245  
\273\241\263\301\224\315\124\340\062\165\061\221\032\142\262\336  
\165\342\317\117\211\331\221\220\017\101\033\264\132\112\167\275  
\147\203\340\223\347\136\247\014\347\201\323\364\122\254\123\262  
\003\307\104\046\373\171\345\313\064\140\120\020\173\033\333\153  
\327\107\253\137\174\150\312\156\235\101\003\020\356\153\231\173  
\136\045\250\302\253\344\300\363\134\234\343\276\316\061\114\144  
\036\136\200\242\365\203\176\014\326\312\214\125\216\276\340\276  
\111\007\017\243\044\101\172\130\035\204\352\130\022\310\341\267  
\355\357\223\336\224\010\061\002\003\001\000\001\243\202\003\073  
\060\202\003\067\060\062\006\010\053\006\001\005\005\007\001\001  
\004\046\060\044\060\042\006\010\053\006\001\005\005\007\060\001  
\206\026\150\164\164\160\072\057\057\157\143\163\160\056\160\153  
\151\056\147\166\141\056\145\163\060\022\006\003\125\035\023\001  
\001\377\004\010\060\006\001\001\377\002\001\002\060\202\002\064  
\006\003\125\035\040\004\202\002\053\060\202\002\047\060\202\002  
\043\006\012\053\006\001\004\001\277\125\002\001\000\060\202\002  
\023\060\202\001\350\006\010\053\006\001\005\005\007\002\002\060

\202\001\332\036\202\001\326\000\101\000\165\000\164\000\157\000  
\162\000\151\000\144\000\141\000\144\000\040\000\144\000\145\000  
\040\000\103\000\145\000\162\000\164\000\151\000\146\000\151\000  
\143\000\141\000\143\000\151\000\363\000\156\000\040\000\122\000  
\141\000\355\000\172\000\040\000\144\000\145\000\040\000\154\000  
\141\000\040\000\107\000\145\000\156\000\145\000\162\000\141\000  
\154\000\151\000\164\000\141\000\164\000\040\000\126\000\141\000  
\154\000\145\000\156\000\143\000\151\000\141\000\156\000\141\000  
\056\000\015\000\012\000\114\000\141\000\040\000\104\000\145\000  
\143\000\154\000\141\000\162\000\141\000\143\000\151\000\363\000  
\156\000\040\000\144\000\145\000\040\000\120\000\162\000\341\000  
\143\000\164\000\151\000\143\000\141\000\163\000\040\000\144\000  
\145\000\040\000\103\000\145\000\162\000\164\000\151\000\146\000  
\151\000\143\000\141\000\143\000\151\000\363\000\156\000\040\000  
\161\000\165\000\145\000\040\000\162\000\151\000\147\000\145\000  
\040\000\145\000\154\000\040\000\146\000\165\000\156\000\143\000  
\151\000\157\000\156\000\141\000\155\000\151\000\145\000\156\000  
\164\000\157\000\040\000\144\000\145\000\040\000\154\000\141\000  
\040\000\160\000\162\000\145\000\163\000\145\000\156\000\164\000  
\145\000\040\000\101\000\165\000\164\000\157\000\162\000\151\000  
\144\000\141\000\144\000\040\000\144\000\145\000\040\000\103\000  
\145\000\162\000\164\000\151\000\146\000\151\000\143\000\141\000  
\143\000\151\000\363\000\156\000\040\000\163\000\145\000\040\000  
\145\000\156\000\143\000\165\000\145\000\156\000\164\000\162\000  
\141\000\040\000\145\000\156\000\040\000\154\000\141\000\040\000  
\144\000\151\000\162\000\145\000\143\000\143\000\151\000\363\000  
\156\000\040\000\167\000\145\000\142\000\040\000\150\000\164\000  
\164\000\160\000\072\000\057\000\057\000\167\000\167\000\167\000  
\056\000\160\000\153\000\151\000\056\000\147\000\166\000\141\000  
\056\000\145\000\163\000\057\000\143\000\160\000\163\060\045\006  
\010\053\006\001\005\005\007\002\001\026\031\150\164\164\160\072  
\057\057\167\167\167\056\160\153\151\056\147\166\141\056\145\163  
\057\143\160\163\060\035\006\003\125\035\016\004\026\004\024\173  
\065\323\100\322\034\170\031\146\357\164\020\050\334\076\117\262  
\170\004\374\060\201\225\006\003\125\035\043\004\201\215\060\201  
\212\200\024\173\065\323\100\322\034\170\031\146\357\164\020\050  
\334\076\117\262\170\004\374\241\154\244\152\060\150\061\013\060  
\011\006\003\125\004\006\023\002\105\123\061\037\060\035\006\003  
\125\004\012\023\026\107\145\156\145\162\141\154\151\164\141\164  
\040\126\141\154\145\156\143\151\141\156\141\061\017\060\015\006  
\003\125\004\013\023\006\120\113\111\107\126\101\061\047\060\045  
\006\003\125\004\003\023\036\122\157\157\164\040\103\101\040\107  
\145\156\145\162\141\154\151\164\141\164\040\126\141\154\145\156  
\143\151\141\156\141\202\004\073\105\345\150\060\015\006\011\052  
\206\110\206\367\015\001\001\005\005\000\003\202\001\001\000\044  
\141\116\365\265\310\102\002\052\263\134\165\255\305\155\312\347  
\224\077\245\150\225\210\301\124\300\020\151\242\022\057\030\077  
\045\120\250\174\112\352\306\011\331\364\165\306\100\332\257\120

```
\235\075\245\026\273\155\061\306\307\163\012\110\376\040\162\355
\157\314\350\203\141\026\106\220\001\225\113\175\216\232\122\011
\057\366\157\034\344\241\161\317\214\052\132\027\163\203\107\115
\017\066\373\004\115\111\121\342\024\311\144\141\373\324\024\340
\364\236\267\064\217\012\046\275\227\134\364\171\072\112\060\031
\314\255\117\240\230\212\264\061\227\052\342\163\155\176\170\270
\370\210\211\117\261\042\221\144\113\365\120\336\003\333\345\305
\166\347\023\146\165\176\145\373\001\237\223\207\210\235\371\106
\127\174\115\140\257\230\163\023\043\244\040\221\201\372\320\141
\146\270\175\321\257\326\157\036\154\075\351\021\375\251\371\202
\042\206\231\063\161\132\352\031\127\075\221\315\251\300\243\156
\007\023\246\311\355\370\150\243\236\303\132\162\011\207\050\321
\304\163\304\163\030\137\120\165\026\061\237\267\350\174\303
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "Root CA Generalitat Valenciana"

# Issuer: CN=Root CA Generalitat Valenciana,OU=PKIGVA,O=Generalitat Valenciana,C=ES

# Serial Number:3b:45:e5:68

# Subject: CN=Root CA Generalitat Valenciana,OU=PKIGVA,O=Generalitat  
Valenciana,C=ES

# Not Valid Before: Fri Jul 06 16:22:47 2001

# Not Valid After: Thu Jul 01 15:22:47 2021

# Fingerprint (MD5): 2c:8c:17:5e:b1:54:ab:93:17:b5:36:5a:db:d1:c6:f2

# Fingerprint (SHA1): a0:73:e5:c5:bd:43:61:0d:86:4c:21:13:0a:85:58:57:cc:9c:ea:46

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Root CA Generalitat Valenciana"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\240\163\345\305\275\103\141\015\206\114\041\023\012\205\130\127
\314\234\352\106
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\054\214\027\136\261\124\253\223\027\265\066\132\333\321\306\362
```

END

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\150\061\013\060\011\006\003\125\004\006\023\002\105\123\061
\037\060\035\006\003\125\004\012\023\026\107\145\156\145\162\141
\154\151\164\141\164\040\126\141\154\145\156\143\151\141\156\141
\061\017\060\015\006\003\125\004\013\023\006\120\113\111\107\126
\101\061\047\060\045\006\003\125\004\003\023\036\122\157\157\164
\040\103\101\040\107\145\156\145\162\141\154\151\164\141\164\040
```

\126\141\154\145\156\143\151\141\156\141

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\004\073\105\345\150

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "EBG Elektronik Sertifika Hizmet Salaycs"

# Issuer: C=TR,O=EBG Biliim Teknolojileri ve Hizmetleri A.,CN=EBG Elektronik Sertifika Hizmet Salaycs

# Serial Number:4c:af:73:42:1c:8e:74:02

# Subject: C=TR,O=EBG Biliim Teknolojileri ve Hizmetleri A.,CN=EBG Elektronik Sertifika Hizmet Salaycs

# Not Valid Before: Thu Aug 17 00:21:09 2006

# Not Valid After: Sun Aug 14 00:31:09 2016

# Fingerprint (MD5): 2c:20:26:9d:cb:1a:4a:00:85:b5:b7:5a:ae:c2:01:37

# Fingerprint (SHA1): 8c:96:ba:eb:dd:2b:07:07:48:ee:30:32:66:a0:f3:98:6e:7c:ae:58

CKA\_CLASS

CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "EBG Elektronik Sertifika Hizmet Salaycs"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\201\200\061\070\060\066\006\003\125\004\003\014\057\105\102

\107\040\105\154\145\153\164\162\157\156\151\153\040\123\145\162

\164\151\146\151\153\141\040\110\151\172\155\145\164\040\123\141

\304\237\154\141\171\304\261\143\304\261\163\304\261\061\067\060

\065\006\003\125\004\012\014\056\105\102\107\040\102\151\154\151

\305\237\151\155\040\124\145\153\156\157\154\157\152\151\154\145

\162\151\040\166\145\040\110\151\172\155\145\164\154\145\162\151

\040\101\056\305\236\056\061\013\060\011\006\003\125\004\006\023

\002\124\122

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\200\061\070\060\066\006\003\125\004\003\014\057\105\102

\107\040\105\154\145\153\164\162\157\156\151\153\040\123\145\162

\164\151\146\151\153\141\040\110\151\172\155\145\164\040\123\141

\304\237\154\141\171\304\261\143\304\261\163\304\261\061\067\060

\065\006\003\125\004\012\014\056\105\102\107\040\102\151\154\151

\305\237\151\155\040\124\145\153\156\157\154\157\152\151\154\145

\162\151\040\166\145\040\110\151\172\155\145\164\154\145\162\151

\040\101\056\305\236\056\061\013\060\011\006\003\125\004\006\023

\002\124\122

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\010\114\257\163\102\034\216\164\002

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\347\060\202\003\317\240\003\002\001\002\002\010\114  
\257\163\102\034\216\164\002\060\015\006\011\052\206\110\206\367  
\015\001\001\005\005\000\060\201\200\061\070\060\066\006\003\125  
\004\003\014\057\105\102\107\040\105\154\145\153\164\162\157\156  
\151\153\040\123\145\162\164\151\146\151\153\141\040\110\151\172  
\155\145\164\040\123\141\304\237\154\141\171\304\261\143\304\261  
\163\304\261\061\067\060\065\006\003\125\004\012\014\056\105\102  
\107\040\102\151\154\151\305\237\151\155\040\124\145\153\156\157  
\154\157\152\151\154\145\162\151\040\166\145\040\110\151\172\155  
\145\164\154\145\162\151\040\101\056\305\236\056\061\013\060\011  
\006\003\125\004\006\023\002\124\122\060\036\027\015\060\066\060  
\070\061\067\060\060\062\061\060\071\132\027\015\061\066\060\070  
\061\064\060\060\063\061\060\071\132\060\201\200\061\070\060\066  
\006\003\125\004\003\014\057\105\102\107\040\105\154\145\153\164  
\162\157\156\151\153\040\123\145\162\164\151\146\151\153\141\040  
\110\151\172\155\145\164\040\123\141\304\237\154\141\171\304\261  
\143\304\261\163\304\261\061\067\060\065\006\003\125\004\012\014  
\056\105\102\107\040\102\151\154\151\305\237\151\155\040\124\145  
\153\156\157\154\157\152\151\154\145\162\151\040\166\145\040\110  
\151\172\155\145\164\154\145\162\151\040\101\056\305\236\056\061  
\013\060\011\006\003\125\004\006\023\002\124\122\060\202\002\042  
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CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "EBG Elektronik Sertifika Hizmet Salaycs"

# Issuer: C=TR,O=EBG Biliim Teknolojileri ve Hizmetleri A...,CN=EBG Elektronik Sertifika Hizmet Salaycs

# Serial Number:4c:af:73:42:1c:8e:74:02

# Subject: C=TR,O=EBG Biliim Teknolojileri ve Hizmetleri A...,CN=EBG Elektronik Sertifika Hizmet Salaycs

# Not Valid Before: Thu Aug 17 00:21:09 2006

# Not Valid After: Sun Aug 14 00:31:09 2016

# Fingerprint (MD5): 2c:20:26:9d:cb:1a:4a:00:85:b5:b7:5a:ae:c2:01:37

# Fingerprint (SHA1): 8c:96:ba:eb:dd:2b:07:07:48:ee:30:32:66:a0:f3:98:6e:7c:ae:58

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "EBG Elektronik Sertifika Hizmet Salaycs"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

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CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

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CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

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CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "VAS Latvijas Pasts SSI(RCA)"
# Issuer: CN=VAS Latvijas Pasts SSI(RCA),OU=Sertifikācijas pakalpojumi,O=VAS Latvijas Pasts -
Vien.reg.Nr.40003052790,C=LV
# Serial Number:63:06:86:a7:c5:37:65:a5:43:90:a8:6a:58:cc:d4:32
# Subject: CN=VAS Latvijas Pasts SSI(RCA),OU=Sertifikācijas
pakalpojumi,O=VAS Latvijas Pasts - Vien.reg.Nr.40003052790,C=LV
# Not Valid Before: Wed Sep 13 09:22:10 2006
# Not Valid After: Fri Sep 13 09:27:57 2024
# Fingerprint (MD5): fd:49:be:5b:18:5a:25:ec:f9:c3:54:85:10:40:e8:d4
# Fingerprint (SHA1): 08:64:18:e9:06:ce:e8:9c:23:53:b6:e2:7f:bd:9e:74:39:f7:63:16
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CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "VAS Latvijas Pasts SSI(RCA)"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
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\174\357\224\362\361\211\365\267\337\122\002\041\151\322\352\226  
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\370\265\072\166\363\371\172\270\336\266\014\047\151\362\313\224  
\221\013\035\271\325\216\157\231\057\315\362\031\126\071\072\110  
\126\360\001\377\202\165\266\262\375\321\324\365\362\143\127\114  
\115\241\176\314\020\272\004\151\357\364\024\374\263\227\037\105  
\356\157\112\050\177\321\306\047\274\307\243\251\153\173\355\202  
\023\157\253\336\017\373\161\353\134\021\032\251\054\320\060\237  
\374\066\067\126\357\225\351\272\267\023\266\256\237\002\141\255  
\236\354\153\004\157\066\237\017\231\367\302\311\310\114\050\271  
\050\324\041\327\236\124\325\300\316\364\216\344\125\224\173\217  
\044\306\070\374\253\172\244\126\167\075\250\105\357\144\222\244  
\320\112\176\273\163\213\364\015\122\163\270\072\110\136\103\200  
\323\251\160\167\142\377\307\050\034\163\036\103\346\047\044\133  
\111\271\346\066\244\216\375\305\055\057\172\245\171\022\172\327  
\041\262\045\155\310\017\242\303\141\113\345\110\342\127\272\237  
\362\212\041\335\333\144\360\332\031\337\316\300\233\200\071\302  
\167\167\143\025\123\162\204\372\244\217\007\067\206\041\175\120  
\372\075\152\067\333\221\016\067\263\375\316\013\312\173\141\320  
\234\164\234\175\070\150\155\351\173\035\326\361\052\264\357\073  
\140\122\167\005\346\002\302\137\214\133\274\360\175\267\163\307  
\221\153\262\052\263\143\243\064\325\253\255\045\161\107\377\032  
\076\172\266\215\225\166\303\356\246\315\003\011\154\356\105\147  
\230\317\231\110\166\301\316\212\164\232\150\122\001\064\042\310  
\355\342\024\013\204\275\156\020\214\261\162\233\276\350\010\327  
\127\325\177\352\264\001\075\116\344\342\350\147\347\214\176\351  
\347\102\021\357\225\106\310\221\326\276\047\027\200\031\064\230  
\347\306\337\036\374\041\137\236\206\075\274\176\360\234\275\162  
\236\364\107\202\133\161\147\363\372\334\124\114\250\134\330\131  
\307\320\007\016\023\063\047\274\364\151\360\153\041

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER

CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "VAS Latvijas Pasts SSI(RCA)"

# Issuer: CN=VAS Latvijas Pasts SSI(RCA),OU=Sertifikācijas pakalpojumi,O=VAS Latvijas Pasts -  
Vien.reg.Nr.40003052790,C=LV

# Serial Number:63:06:86:a7:c5:37:65:a5:43:90:a8:6a:58:cc:d4:32

# Subject: CN=VAS Latvijas Pasts SSI(RCA),OU=Sertifikācijas pakalpojumi,O=VAS Latvijas Pasts -  
Vien.reg.Nr.40003052790,C=LV

# Not Valid Before: Wed Sep 13 09:22:10 2006

```
# Not Valid After: Fri Sep 13 09:27:57 2024
# Fingerprint (MD5): fd:49:be:5b:18:5a:25:ec:f9:c3:54:85:10:40:e8:d4
# Fingerprint (SHA1): 08:64:18:e9:06:ce:e8:9c:23:53:b6:e2:7f:bd:9e:74:39:f7:63:16
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "VAS Latvijas Pasts SSI(RCA)"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\010\144\030\351\006\316\350\234\043\123\266\342\177\275\236\164
\071\367\143\026
END
CKA_CERT_MD5_HASH
MULTILINE_OCTAL
\375\111\276\133\030\132\045\354\371\303\124\205\020\100\350\324
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\217\061\013\060\011\006\003\125\004\006\023\002\114\126
\061\065\060\063\006\003\125\004\012\023\054\126\101\123\040\114
\141\164\166\151\152\141\163\040\120\141\163\164\163\040\055\040
\126\151\145\156\056\162\145\147\056\116\162\056\064\060\060\060
\063\060\065\062\067\071\060\061\043\060\041\006\003\125\004\013
\023\032\123\145\162\164\151\146\151\153\141\143\151\152\141\163
\040\160\141\153\141\154\160\157\152\165\155\151\061\044\060\042
\006\003\125\004\003\023\033\126\101\123\040\114\141\164\166\151
\152\141\163\040\120\141\163\164\163\040\123\123\111\050\122\103
\101\051
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\143\006\206\247\305\067\145\245\103\220\250\152\130\314
\324\062
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST
CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
# Microsoft Code Signing Only Certificate
# Certificate "ANCERT Certificados CGN"
# Issuer: CN=ANCERT Certificados CGN,O=Agencia Notarial de Certificacion S.L. Unipersonal - CIF
B83395988,C=ES
# Serial Number:44:74:ec:c8:6c:72:1e:58:dd:b8:2c:7e:f4:fc:95
# Subject: CN=ANCERT Certificados CGN,O=Agencia Notarial de Certificacion S.L. Unipersonal - CIF
B83395988,C=ES
# Not Valid Before: Wed Feb 11 17:27:12 2004
# Not Valid After: Sun Feb 11 17:27:12 2024
# Fingerprint (MD5): 1c:4b:e2:c6:2d:b9:ac:31:14:f4:40:07:69:cb:1f:40
```

# Fingerprint (SHA1): 11:c5:b5:f7:55:52:b0:11:66:9c:2e:97:17:de:6d:9b:ff:5f:a8:10

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE  
CKA\_TOKEN CK\_BBOOL CK\_TRUE  
CKA\_PRIVATE CK\_BBOOL CK\_FALSE  
CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE  
CKA\_LABEL UTF8 "ANCERT Certificados CGN"  
CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509  
CKA\_SUBJECT MULTILINE\_OCTAL  
\060\174\061\013\060\011\006\003\125\004\006\023\002\105\123\061  
\113\060\111\006\003\125\004\012\023\102\101\147\145\156\143\151  
\141\040\116\157\164\141\162\151\141\154\040\144\145\040\103\145  
\162\164\151\146\151\143\141\143\151\157\156\040\123\056\114\056  
\040\125\156\151\160\145\162\163\157\156\141\154\040\055\040\103  
\111\106\040\102\070\063\063\071\065\071\070\070\061\040\060\036  
\006\003\125\004\003\023\027\101\116\103\105\122\124\040\103\145  
\162\164\151\146\151\143\141\144\157\163\040\103\107\116

END

CKA\_ID

UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL  
\060\174\061\013\060\011\006\003\125\004\006\023\002\105\123\061  
\113\060\111\006\003\125\004\012\023\102\101\147\145\156\143\151  
\141\040\116\157\164\141\162\151\141\154\040\144\145\040\103\145  
\162\164\151\146\151\143\141\143\151\157\156\040\123\056\114\056  
\040\125\156\151\160\145\162\163\157\156\141\154\040\055\040\103  
\111\106\040\102\070\063\063\071\065\071\070\070\061\040\060\036  
\006\003\125\004\003\023\027\101\116\103\105\122\124\040\103\145  
\162\164\151\146\151\143\141\144\157\163\040\103\107\116

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\017\104\164\354\310\154\162\036\130\335\270\054\176\364\374  
\225

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\052\060\202\004\022\240\003\002\001\002\002\017\104  
\164\354\310\154\162\036\130\335\270\054\176\364\374\225\060\015  
\006\011\052\206\110\206\367\015\001\001\005\005\000\060\174\061  
\013\060\011\006\003\125\004\006\023\002\105\123\061\113\060\111  
\006\003\125\004\012\023\102\101\147\145\156\143\151\141\040\116  
\157\164\141\162\151\141\154\040\144\145\040\103\145\162\164\151  
\146\151\143\141\143\151\157\156\040\123\056\114\056\040\125\156  
\151\160\145\162\163\157\156\141\154\040\055\040\103\111\106\040  
\102\070\063\063\071\065\071\070\070\061\040\060\036\006\003\125  
\004\003\023\027\101\116\103\105\122\124\040\103\145\162\164\151  
\146\151\143\141\144\157\163\040\103\107\116\060\036\027\015\060  
\064\060\062\061\061\061\067\062\067\061\062\132\027\015\062\064  
\060\062\061\061\061\067\062\067\061\062\132\060\174\061\013\060

\011\006\003\125\004\006\023\002\105\123\061\113\060\111\006\003  
\125\004\012\023\102\101\147\145\156\143\151\141\040\116\157\164  
\141\162\151\141\154\040\144\145\040\103\145\162\164\151\146\151  
\143\141\143\151\157\156\040\123\056\114\056\040\125\156\151\160  
\145\162\163\157\156\141\154\040\055\040\103\111\106\040\102\070  
\063\063\071\065\071\070\070\061\040\060\036\006\003\125\004\003  
\023\027\101\116\103\105\122\124\040\103\145\162\164\151\146\151  
\143\141\144\157\163\040\103\107\116\060\202\001\042\060\015\006  
\011\052\206\110\206\367\015\001\001\001\005\000\003\202\001\017  
\000\060\202\001\012\002\202\001\001\000\220\165\077\077\014\254  
\312\324\174\304\110\247\030\273\072\273\241\273\325\173\337\213  
\031\344\202\104\373\145\354\266\022\141\076\151\042\031\142\065  
\044\266\325\020\006\251\105\152\044\052\365\047\214\170\074\310  
\271\363\005\154\305\002\003\322\116\200\144\354\206\253\170\224  
\042\002\000\265\150\233\324\345\125\137\340\310\200\060\347\013  
\277\153\327\004\216\116\171\230\160\114\034\046\271\263\250\352  
\360\021\242\271\212\123\002\046\165\022\211\341\373\210\116\131  
\172\000\321\202\330\026\256\345\266\274\225\045\140\100\167\045  
\033\236\357\215\344\375\360\117\063\061\045\277\356\172\012\124  
\360\220\070\147\022\173\245\140\332\014\001\211\232\166\207\056  
\365\033\103\173\345\347\046\112\373\025\142\253\105\033\173\325  
\012\245\115\154\115\253\237\050\110\204\341\203\165\270\030\160  
\125\123\333\320\337\051\220\257\071\306\027\225\301\224\305\136  
\331\145\137\135\377\156\026\225\230\041\237\136\115\360\315\061  
\071\041\003\027\015\221\037\241\125\231\101\354\125\311\273\075  
\231\134\233\305\177\321\034\136\352\123\002\003\001\000\001\243  
\202\001\247\060\202\001\243\060\017\006\003\125\035\023\001\001  
\377\004\005\060\003\001\001\377\060\202\001\040\006\003\125\035  
\040\004\202\001\027\060\202\001\023\060\202\001\017\006\011\053  
\006\001\004\001\201\223\150\004\060\202\001\000\060\045\006\010  
\053\006\001\005\005\007\002\001\026\031\150\164\164\160\072\057  
\057\167\167\167\056\141\156\143\145\162\164\056\143\157\155\057  
\143\160\163\060\201\326\006\010\053\006\001\005\005\007\002\002  
\060\201\311\060\015\026\006\101\116\103\105\122\124\060\003\002  
\001\001\032\201\267\101\147\145\156\143\151\141\040\116\157\164  
\141\162\151\141\154\040\144\145\040\103\145\162\164\151\146\151  
\143\141\143\151\157\156\056\040\114\141\040\144\145\143\154\141  
\162\141\143\151\157\156\040\144\145\040\160\162\141\143\164\151  
\143\141\163\040\144\145\040\143\145\162\164\151\146\151\141\143  
\151\157\156\040\161\165\145\040\162\151\147\145\040\145\154\040  
\146\165\156\143\151\157\156\141\155\151\145\156\164\157\040\144  
\145\040\154\141\040\160\162\145\163\145\156\164\145\040\141\165  
\164\157\162\151\144\141\144\040\163\145\040\145\156\143\165\145  
\156\164\162\141\040\144\151\163\160\157\156\151\142\154\145\040  
\145\156\040\150\164\164\160\072\057\057\167\167\167\056\141\156  
\143\145\162\164\056\143\157\155\057\143\160\163\060\016\006\003  
\125\035\017\001\001\377\004\004\003\002\001\206\060\034\006\003  
\125\035\021\004\025\060\023\201\021\141\156\143\145\162\164\100



```
\141\156\143\145\162\164\056\143\157\155\060\037\006\003\125\035
\043\004\030\060\026\200\024\354\127\237\310\166\042\157\314\072
\256\133\360\055\241\142\130\321\215\002\314\060\035\006\003\125
\035\016\004\026\004\024\354\127\237\310\166\042\157\314\072\256
\133\360\055\241\142\130\321\215\002\314\060\015\006\011\052\206
\110\206\367\015\001\001\005\005\000\003\202\001\001\000\213\075
\337\334\066\054\177\047\234\374\265\130\123\161\012\022\135\020
\144\121\161\265\112\126\364\136\104\147\036\357\035\262\361\244
\121\074\147\154\054\145\226\172\241\022\243\257\013\010\067\016
\231\326\156\050\207\013\142\253\116\170\116\162\201\233\337\021
\117\211\140\310\121\246\033\006\011\161\163\174\067\267\034\070
\067\232\371\207\341\357\241\356\177\327\300\352\071\024\372\174
\157\013\371\206\312\346\305\167\151\240\237\215\051\243\167\156
\305\314\332\366\335\006\172\323\151\146\076\140\073\343\062\337
\256\360\033\236\052\235\314\204\337\032\020\107\355\245\126\226
\102\067\265\055\162\015\101\022\223\272\062\210\104\310\256\011
\304\275\200\355\375\140\017\162\262\266\144\366\143\040\062\160
\167\207\056\063\056\237\065\310\137\250\222\126\267\377\044\072
\054\135\362\046\005\150\031\362\121\147\317\337\122\011\351\202
\004\172\153\202\247\177\345\322\251\164\153\030\046\310\272\324
\325\036\245\113\073\046\301\235\042\341\373\022\275\325\142\106
\325\327\135\322\335\303\374\141\015\060\005\117\005\213
```

END

CKA\_NSS\_Mozilla\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "ANCERT Certificados CGN"

# Issuer: CN=ANCERT Certificados CGN,O=Agencia Notarial de Certificacion S.L. Unipersonal - CIF B83395988,C=ES

# Serial Number:44:74:ec:c8:6c:72:1e:58:dd:b8:2c:7e:f4:fc:95

# Subject: CN=ANCERT Certificados CGN,O=Agencia Notarial de Certificacion S.L. Unipersonal - CIF B83395988,C=ES

# Not Valid Before: Wed Feb 11 17:27:12 2004

# Not Valid After: Sun Feb 11 17:27:12 2024

# Fingerprint (MD5): 1c:4b:e2:c6:2d:b9:ac:31:14:f4:40:07:69:cb:1f:40

# Fingerprint (SHA1): 11:c5:b5:f7:55:52:b0:11:66:9c:2e:97:17:de:6d:9b:ff:5f:a8:10

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "ANCERT Certificados CGN"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\021\305\265\367\125\122\260\021\146\234\056\227\027\336\155\233
\377\137\250\020
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL  
\034\113\342\306\055\271\254\061\024\364\100\007\151\313\037\100  
END

CKA\_ISSUER MULTILINE\_OCTAL  
\060\174\061\013\060\011\006\003\125\004\006\023\002\105\123\061  
\113\060\111\006\003\125\004\012\023\102\101\147\145\156\143\151  
\141\040\116\157\164\141\162\151\141\154\040\144\145\040\103\145  
\162\164\151\146\151\143\141\143\151\157\156\040\123\056\114\056  
\040\125\156\151\160\145\162\163\157\156\141\154\040\055\040\103  
\111\106\040\102\070\063\063\071\065\071\070\070\061\040\060\036  
\006\003\125\004\003\023\027\101\116\103\105\122\124\040\103\145  
\162\164\151\146\151\143\141\144\157\163\040\103\107\116  
END

CKA\_SERIAL\_NUMBER  
MULTILINE\_OCTAL  
\002\017\104\164\354\310\154\162\036\130\335\270\054\176\364\374  
\225  
END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST  
CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST  
CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR  
CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate  
# Certificate "ANCERT Certificados Notariales"  
# Issuer: CN=ANCERT Certificados Notariales,O=Agencia Notarial de Certificacion S.L. Unipersonal - CIF  
B83395988,C=ES  
# Serial Number:f4:cf:89:ea:dd:a4:c6:3e:91:ad:48:0e:2d:22:36:84  
# Subject: CN=ANCERT Certificados Notariales,O=Agencia Notarial de Certificacion S.L. Unipersonal - CIF  
B83395988,C=ES  
# Not Valid Before: Wed Feb 11 15:58:30 2004  
# Not Valid After:  
Sun Feb 11 15:58:26 2024

# Fingerprint (MD5): 45:f7:50:11:4e:c5:ad:bd:53:68:86:63:ec:7b:6a:e1  
# Fingerprint (SHA1): c0:9a:b0:c8:ad:71:14:71:4e:d5:e2:1a:5a:27:6a:dc:d5:e7:ef:cb

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE  
CKA\_TOKEN CK\_BBOOL CK\_TRUE  
CKA\_PRIVATE CK\_BBOOL CK\_FALSE  
CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE  
CKA\_LABEL UTF8 "ANCERT Certificados Notariales"  
CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509  
CKA\_SUBJECT MULTILINE\_OCTAL

\060\201\203\061\013\060\011\006\003\125\004\006\023\002\105\123  
\061\113\060\111\006\003\125\004\012\023\102\101\147\145\156\143  
\151\141\040\116\157\164\141\162\151\141\154\040\144\145\040\103  
\145\162\164\151\146\151\143\141\143\151\157\156\040\123\056\114  
\056\040\125\156\151\160\145\162\163\157\156\141\154\040\055\040  
\103\111\106\040\102\070\063\063\071\065\071\070\070\061\047\060

\045\006\003\125\004\003\023\036\101\116\103\105\122\124\040\103  
\145\162\164\151\146\151\143\141\144\157\163\040\116\157\164\141  
\162\151\141\154\145\163

END

CKA\_ID UTF8 "0"

CKA\_ISSUER

MULTILINE\_OCTAL

\060\201\203\061\013\060\011\006\003\125\004\006\023\002\105\123  
\061\113\060\111\006\003\125\004\012\023\102\101\147\145\156\143  
\151\141\040\116\157\164\141\162\151\141\154\040\144\145\040\103  
\145\162\164\151\146\151\143\141\143\151\157\156\040\123\056\114  
\056\040\125\156\151\160\145\162\163\157\156\141\154\040\055\040  
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CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

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CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "ANCERT Certificados Notariales"

# Issuer: CN=ANCERT Certificados Notariales,O=Agencia Notarial de Certificacion S.L. Unipersonal - CIF  
B83395988,C=ES

# Serial Number:f4:cf:89:ea:dd:a4:c6:3e:91:ad:48:0e:2d:22:36:84

# Subject: CN=ANCERT Certificados Notariales,O=Agencia Notarial de Certificacion S.L. Unipersonal - CIF  
B83395988,C=ES

# Not Valid Before: Wed Feb 11 15:58:30 2004

# Not Valid After: Sun Feb 11 15:58:26 2024

# Fingerprint (MD5): 45:f7:50:11:4e:c5:ad:bd:53:68:86:63:ec:7b:6a:e1

# Fingerprint (SHA1): c0:9a:b0:c8:ad:71:14:71:4e:d5:e2:1a:5a:27:6a:dc:d5:e7:ef:cb

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN

CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "ANCERT Certificados Notariales"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

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END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

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CKA\_ISSUER MULTILINE\_OCTAL

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CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

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END

CKA\_TRUST\_SERVER\_AUTH

CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "ANCERT Corporaciones de Derecho Publico"

# Issuer: CN=ANCERT Corporaciones de Derecho Publico,O=Agencia Notarial de Certificacion S.L. Unipersonal -  
CIF B83395988,C=ES

# Serial Number:3f:b2:e5:f2:d1:7c:8b:18:64:56:62:a9:39:81:7f:a7

# Subject: CN=ANCERT Corporaciones de Derecho Publico,O=Agencia Notarial de Certificacion S.L. Unipersonal  
- CIF B83395988,C=ES

# Not Valid Before: Wed Feb 11 17:22:45 2004

# Not Valid After: Sun Feb 11 17:22:45 2024

# Fingerprint (MD5): 20:6b:d6:8b:4a:8f:48:ab:e4:88:09:0d:e5:65:1a:50

# Fingerprint (SHA1): 0c:fd:83:db:ae:44:b9:a0:c8:f6:76:f3:b5:70:65:0b:94:b6:9d:bf

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE

CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "ANCERT Corporaciones de Derecho Publico"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

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END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

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CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

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CKA\_VALUE MULTILINE\_OCTAL

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\167\336\214\301\050\232\102\254\005\207\014\064\234\161\207\375  
\354\001\024\037\276\303\056\360\337\372\044\246\135\037\074\361  
\242\013\121\210\001\256\022\207\244\265\135\161\262\337\357\015  
\174\040\343\177\023\013\115\246\300\167\314\077\326\017\161\307  
\161\114\056\036\372\031\006\145\311\255\126\154\167\215\106\077  
\275\060\203\036\340\056\125\270\170\043\164\074\130\012\143\072  
\115\201\173\157\065\160\256\266\045\331\366\044\376\043\306\332  
\032\210\257\250\024\223\163\340\300\133\260\061\151\032\366\051  
\137\126\267\032\012\302\371\013\352\002\301\063\021\142\152\174



\103\350\352\032\253\220\000\205\340\105\017\175\216\272\120\325

\306

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "ANCERT Corporaciones de Derecho Publico"

# Issuer: CN=ANCERT Corporaciones de Derecho Publico,O=Agencia Notarial de Certificacion S.L. Unipersonal -  
CIF B83395988,C=ES

# Serial Number:3f:b2:e5:f2:d1:7c:8b:18:64:56:62:a9:39:81:7f:a7

# Subject: CN=ANCERT Corporaciones de Derecho Publico,O=Agencia Notarial de Certificacion S.L. Unipersonal  
- CIF B83395988,C=ES

# Not Valid Before: Wed Feb 11 17:22:45 2004

# Not Valid After: Sun Feb 11 17:22:45 2024

# Fingerprint (MD5): 20:6b:d6:8b:4a:8f:48:ab:e4:88:09:0d:e5:65:1a:50

# Fingerprint (SHA1): 0c:fd:83:db:ae:44:b9:a0:c8:f6:76:f3:b5:70:65:0b:94:b6:9d:bf

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL

UTF8 "ANCERT Corporaciones de Derecho Publico"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\014\375\203\333\256\104\271\240\310\366\166\363\265\160\145\013  
\224\266\235\277

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\040\153\326\213\112\217\110\253\344\210\011\015\345\145\032\120

END

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\214\061\013\060\011\006\003\125\004\006\023\002\105\123  
\061\113\060\111\006\003\125\004\012\023\102\101\147\145\156\143  
\151\141\040\116\157\164\141\162\151\141\154\040\144\145\040\103  
\145\162\164\151\146\151\143\141\143\151\157\156\040\123\056\114  
\056\040\125\156\151\160\145\162\163\157\156\141\154\040\055\040  
\103\111\106\040\102\070\063\063\071\065\071\070\070\061\060\060  
\056\006\003\125\004\003\023\047\101\116\103\105\122\124\040\103  
\157\162\160\157\162\141\143\151\157\156\145\163\040\144\145\040  
\104\145\162\145\143\150\157\040\120\165\142\154\151\143\157

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\077\262\345\362\321\174\213\030\144\126\142\251\071\201  
\177\247

END

CKA\_TRUST\_SERVER\_AUTH

```
CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
# Microsoft Code Signing Only Certificate
```

```
# Certificate "GLOBALTRUST"
```

```
# Issuer: 1.2.840.113549.1.9.1=info@globaltrust.info,CN=GLOBALTRUST,OU=GLOBALTRUST Certification
Service,O=ARGE DATEN - Austrian Society for Data Protection,ST=Austria,L=Vienna,C=AT
```

```
# Serial Number: 0 (0x0)
```

```
# Subject: 1.2.840.113549.1.9.1=info@globaltrust.info,CN=GLOBALTRUST,OU=GLOBALTRUST Certification
Service,O=ARGE DATEN - Austrian Society for Data Protection,ST=Austria,L=Vienna,C=AT
```

```
# Not Valid Before: Mon Aug 07 14:12:35 2006
```

```
# Not Valid After: Thu Sep 18 14:12:35 2036
```

```
# Fingerprint (MD5): df:0d:bc:7c:c8:36:b7:76:99:a1:ab:f0:d2:0f:89:6a
```

```
# Fingerprint (SHA1): 34:2c:d9:d3:06:2d:a4:8c:34:69:65:29:7f:08:1e:bc:2e:f6:8f:dc
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE
```

```
CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "GLOBALTRUST"
```

```
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
```

```
CKA_SUBJECT MULTILINE_OCTAL
```

```
\060\201\324\061\013\060\011\006\003\125\004\006\023\002\101\124
\061\017\060\015\006\003\125\004\007\023\006\126\151\145\156\156
\141\061\020\060\016\006\003\125\004\010\023\007\101\165\163\164
\162\151\141\061\072\060\070\006\003\125\004\012\023\061\101\122
\107\105\040\104\101\124\105\116\040\055\040\101\165\163\164\162
\151\141\156\040\123\157\143\151\145\164\171\040\146\157\162\040
\104\141\164\141\040\120\162\157\164\145\143\164\151\157\156\061
\052\060\050\006\003\125\004\013\023\041\107\114\117\102\101\114
\124\122\125\123\124\040\103\145\162\164\151\146\151\143\141\164
\151\157\156\040\123\145\162\166\151\143\145\061\024\060\022\006
\003\125\004\003\023\013\107\114\117\102\101\114\124\122\125\123
\124\061\044\060\042\006\011\052\206\110\206\367\015\001\011\001
\026\025\151\156\146\157\100\147\154\157\142\141\154\164\162\165
\163\164\056\151\156\146\157
```

```
END
```

```
CKA_ID
```

```
UTF8 "0"
```

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\201\324\061\013\060\011\006\003\125\004\006\023\002\101\124
\061\017\060\015\006\003\125\004\007\023\006\126\151\145\156\156
\141\061\020\060\016\006\003\125\004\010\023\007\101\165\163\164
\162\151\141\061\072\060\070\006\003\125\004\012\023\061\101\122
\107\105\040\104\101\124\105\116\040\055\040\101\165\163\164\162
\151\141\156\040\123\157\143\151\145\164\171\040\146\157\162\040
```

\104\141\164\141\040\120\162\157\164\145\143\164\151\157\156\061  
\052\060\050\006\003\125\004\013\023\041\107\114\117\102\101\114  
\124\122\125\123\124\040\103\145\162\164\151\146\151\143\141\164  
\151\157\156\040\123\145\162\166\151\143\145\061\024\060\022\006  
\003\125\004\003\023\013\107\114\117\102\101\114\124\122\125\123  
\124\061\044\060\042\006\011\052\206\110\206\367\015\001\011\001  
\026\025\151\156\146\157\100\147\154\157\142\141\154\164\162\165  
\163\164\056\151\156\146\157

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\001\000

END

CKA\_VALUE

MULTILINE\_OCTAL

\060\202\007\376\060\202\005\346\240\003\002\001\002\002\001\000  
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060  
\201\324\061\013\060\011\006\003\125\004\006\023\002\101\124\061  
\017\060\015\006\003\125\004\007\023\006\126\151\145\156\156\141  
\061\020\060\016\006\003\125\004\010\023\007\101\165\163\164\162  
\151\141\061\072\060\070\006\003\125\004\012\023\061\101\122\107  
\105\040\104\101\124\105\116\040\055\040\101\165\163\164\162\151  
\141\156\040\123\157\143\151\145\164\171\040\146\157\162\040\104  
\141\164\141\040\120\162\157\164\145\143\164\151\157\156\061\052  
\060\050\006\003\125\004\013\023\041\107\114\117\102\101\114\124  
\122\125\123\124\040\103\145\162\164\151\146\151\143\141\164\151  
\157\156\040\123\145\162\166\151\143\145\061\024\060\022\006\003  
\125\004\003\023\013\107\114\117\102\101\114\124\122\125\123\124  
\061\044\060\042\006\011\052\206\110\206\367\015\001\011\001\026  
\025\151\156\146\157\100\147\154\157\142\141\154\164\162\165\163  
\164\056\151\156\146\157\060\036\027\015\060\066\060\070\060\067  
\061\064\061\062\063\065\132\027\015\063\066\060\071\061\070\061  
\064\061\062\063\065\132\060\201\324\061\013\060\011\006\003\125  
\004\006\023\002\101\124\061\017\060\015\006\003\125\004\007\023  
\006\126\151\145\156\156\141\061\020\060\016\006\003\125\004\010  
\023\007\101\165\163\164\162\151\141\061\072\060\070\006\003\125  
\004\012\023\061\101\122\107\105\040\104\101\124\105\116\040\055  
\040\101\165\163\164\162\151\141\156\040\123\157\143\151\145\164  
\171\040\146\157\162\040\104\141\164\141\040\120\162\157\164\145  
\143\164\151\157\156\061\052\060\050\006\003\125\004\013\023\041  
\107\114\117\102\101\114\124\122\125\123\124\040\103\145\162\164  
\151\146\151\143\141\164\151\157\156\040\123\145\162\166\151\143  
\145\061\024\060\022\006\003\125\004\003\023\013\107\114\117\102  
\101\114\124\122\125\123\124\061\044\060\042\006\011\052\206\110  
\206\367\015\001\011\001\026\025\151\156\146\157\100\147\154\157  
\142\141\154\164\162\165\163\164\056\151\156\146\157\060\202\002  
\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000  
\003\202\002\017\000\060\202\002\012\002\202\002\001\000\322\022  
\107\354\137\230\350\015\206\025\111\304\335\354\236\361\154\315

\121\266\373\225\117\213\304\220\075\123\063\261\323\023\305\110  
\342\245\277\365\364\003\204\017\234\170\161\366\222\227\361\133  
\131\165\030\077\047\013\121\057\134\150\307\241\353\000\363\366  
\225\075\151\303\176\302\254\304\012\066\162\172\133\246\320\367  
\001\173\050\307\052\307\062\140\356\131\270\327\013\047\335\263  
\105\005\053\173\144\247\163\134\350\223\002\227\150\354\374\204  
\333\236\324\325\201\107\306\234\300\254\227\313\031\352\207\245  
\012\243\270\165\044\347\120\047\015\253\026\371\126\135\261\201  
\001\026\175\363\351\341\044\363\010\041\271\272\254\135\236\307  
\110\171\177\152\312\337\071\167\004\155\033\156\072\315\177\316  
\134\110\254\022\074\131\362\152\317\200\110\341\366\000\147\170  
\040\340\375\265\144\173\027\227\263\345\047\335\105\153\233\141  
\231\006\276\362\347\236\244\155\213\073\153\014\201\356\264\157  
\241\276\032\022\101\113\236\255\016\371\106\264\132\321\003\000  
\224\026\300\300\363\254\373\174\274\226\300\051\330\371\063\026  
\211\243\016\035\225\331\003\324\041\014\335\126\010\111\145\310  
\215\253\041\037\124\273\231\274\361\104\133\173\000\030\375\052  
\031\130\322\005\311\331\051\066\045\376\167\356\153\131\124\117  
\010\024\242\231\011\105\127\255\007\336\042\374\207\034\240\357  
\240\171\335\012\175\300\177\065\350\014\146\115\343\265\152\026  
\131\161\133\363\220\260\122\136\221\002\307\250\271\302\004\157  
\236\117\264\000\055\354\010\354\256\100\156\360\051\047\042\071  
\266\315\240\206\020\272\013\065\354\173\132\015\266\171\303\372  
\307\255\301\373\353\355\053\204\015\352\336\371\353\232\131\063  
\154\301\053\022\214\270\076\305\066\043\070\032\326\167\223\220  
\326\167\165\152\130\031\027\241\025\216\156\166\016\243\163\341  
\134\225\111\333\301\017\224\024\305\325\142\033\231\253\070\325  
\147\156\322\251\031\341\132\072\207\152\110\077\221\226\343\306  
\305\047\153\127\164\061\230\366\076\161\161\355\176\336\260\115  
\054\363\356\217\333\173\150\327\020\104\051\255\354\253\120\131  
\122\232\154\152\162\024\115\026\024\121\367\327\176\037\002\003  
\001\000\001\243\202\001\327\060\202\001\323\060\035\006\003\125  
\035\016\004\026\004\024\300\001\325\340\170\037\057\164\072\343  
\353\300\041\122\246\004\356\046\313\244\060\202\001\001\006\003  
\125\035\043\004\201\371\060\201\366\200\024\300\001\325\340\170  
\037\057\164\072\343\353\300\041\122\246\004\356\046\313\244\241  
\201\332\244\201\327\060\201\324\061\013\060\011\006\003\125\004  
\006\023\002\101\124\061\017\060\015\006\003\125\004\007\023\006  
\126\151\145\156\156\141\061\020\060\016\006\003\125\004\010\023  
\007\101\165\163\164\162\151\141\061\072\060\070\006\003\125\004  
\012\023\061\101\122\107\105\040\104\101\124\105\116\040\055\040  
\101\165\163\164\162\151\141\156\040\123\157\143\151\145\164\171  
\040\146\157\162\040\104\141\164\141\040\120\162\157\164\145\143  
\164\151\157\156\061\052\060\050\006\003\125\004\013\023\041\107  
\114\117\102\101\114\124\122\125\123\124\040\103\145\162\164\151  
\146\151\143\141\164\151\157\156\040\123\145\162\166\151\143\145  
\061\024\060\022\006\003\125\004\003\023\013\107\114\117\102\101  
\114\124\122\125\123\124\061\044\060\042\006\011\052\206\110\206

\367\015\001\011\001\026\025\151\156\146\157\100\147\154\157\142  
\141\154\164\162\165\163\164\056\151\156\146\157\202\001\000\060  
\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377  
\060\013\006\003\125\035\017\004\004\003\002\001\306\060\021\006  
\003\125\035\040\004\012\060\010\060\006\006\004\125\035\040\000  
\060\075\006\003\125\035\021\004\066\060\064\201\025\151\156\146  
\157\100\147\154\157\142\141\154\164\162\165\163\164\056\151\156  
\146\157\206\033\150\164\164\160\072\057\057\167\167\167\056\147  
\154\157\142\141\154\164\162\165\163\164\056\151\156\146\157\060  
\075\006\003\125\035\022\004\066\060\064\201\025\151\156\146\157  
\100\147\154\157\142\141\154\164\162\165\163\164\056\151\156\146  
\157\206\033\150\164\164\160\072\057\057\167\167\167\056\147\154  
\157\142\141\154\164\162\165\163\164\056\151\156\146\157\060\015  
\006\011\052\206\110\206\367\015\001\001\005\005\000\003\202\002  
\001\000\025\073\210\203\136\016\336\076\360\076\135\334\055\241  
\112\372\050\245\326\007\245\044\110\316\236\171\350\171\232\134  
\044\216\130\162\024\101\205\307\105\356\074\050\151\070\111\256  
\042\215\273\214\005\155\256\145\273\207\271\176\166\073\050\143  
\152\326\157\063\060\210\176\125\005\272\271\025\003\230\035\142  
\322\316\300\017\156\034\232\064\356\344\257\037\142\321\354\264  
\171\317\317\151\222\212\130\375\301\307\166\013\134\315\122\064  
\110\153\345\013\177\311\062\022\337\230\012\026\331\063\126\026  
\217\337\103\077\327\275\077\305\036\305\255\041\254\207\054\232  
\344\034\037\205\003\254\213\307\267\063\142\111\301\370\252\053  
\116\135\207\076\166\122\256\131\176\061\341\174\272\122\213\130  
\220\327\200\106\013\064\066\336\357\021\311\134\042\106\302\074  
\247\177\142\004\157\337\076\110\216\352\013\076\010\254\030\032  
\122\326\361\366\324\142\057\003\271\232\326\074\123\177\125\046  
\306\065\053\041\164\260\211\220\124\344\001\210\134\234\205\052  
\232\145\136\113\127\362\200\034\354\147\064\232\106\334\002\166  
\376\162\067\162\011\261\360\043\217\130\263\002\175\356\170\016  
\271\075\163\022\055\125\237\027\143\257\256\330\256\163\266\307  
\120\152\205\301\333\175\373\224\131\160\306\303\007\154\126\305  
\260\007\374\116\175\223\035\271\047\300\260\225\325\347\174\005  
\274\367\017\012\263\364\156\025\127\111\033\265\024\000\244\060  
\053\132\364\126\130\277\166\064\242\075\376\001\046\360\335\270  
\155\360\244\347\274\040\366\121\010\366\343\067\211\127\066\366  
\367\057\376\315\270\144\275\352\327\246\320\377\170\357\176\341  
\034\036\124\176\017\064\031\201\020\163\322\343\170\006\027\266  
\322\121\373\065\170\166\332\167\203\067\101\076\055\106\250\176  
\206\336\126\364\312\220\236\264\255\260\036\105\030\074\064\210  
\002\207\350\360\066\221\353\362\347\265\322\004\271\056\270\135  
\215\035\232\056\013\026\031\315\166\244\253\373\321\342\243\242  
\334\204\175\173\352\120\352\365\262\004\073\211\122\072\262\303  
\031\117\271\046\261\274\274\054\262\341\201\246\263\141\265\364  
\105\140\057\054\165\305\310\055\210\113\046\273\160\356\073\177  
\001\055

END

```

CKA_NSS_MOZILLA_CA_POLICY
CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Trust for "GLOBALTRUST"
# Issuer: 1.2.840.113549.1.9.1=info@globaltrust.info,CN=GLOBALTRUST,OU=GLOBALTRUST Certification
Service,O=ARGE DATEN - Austrian Society for Data Protection,ST=Austria,L=Vienna,C=AT
# Serial Number: 0 (0x0)
# Subject: 1.2.840.113549.1.9.1=info@globaltrust.info,CN=GLOBALTRUST,OU=GLOBALTRUST Certification
Service,O=ARGE DATEN - Austrian Society for Data Protection,ST=Austria,L=Vienna,C=AT
# Not Valid Before: Mon
Aug 07 14:12:35 2006
# Not Valid After: Thu Sep 18 14:12:35 2036
# Fingerprint (MD5): df:0d:bc:7c:c8:36:b7:76:99:a1:ab:f0:d2:0f:89:6a
# Fingerprint (SHA1): 34:2c:d9:d3:06:2d:a4:8c:34:69:65:29:7f:08:1e:bc:2e:f6:8f:dc
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "GLOBALTRUST"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\064\054\331\323\006\055\244\214\064\151\145\051\177\010\036\274
\056\366\217\334
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\337\015\274\174\310\066\267\166\231\241\253\360\322\017\211\152
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\324\061\013\060\011\006\003\125\004\006\023\002\101\124
\061\017\060\015\006\003\125\004\007\023\006\126\151\145\156\156
\141\061\020\060\016\006\003\125\004\010\023\007\101\165\163\164
\162\151\141\061\072\060\070\006\003\125\004\012\023\061\101\122
\107\105\040\104\101\124\105\116\040\055\040\101\165\163\164\162
\151\141\156\040\123\157\143\151\145\164\171\040\146\157\162\040
\104\141\164\141\040\120\162\157\164\145\143\164\151\157\156\061
\052\060\050\006\003\125\004\013\023\041\107\114\117\102\101\114
\124\122\125\123\124\040\103\145\162\164\151\146\151\143\141\164
\151\157\156\040\123\145\162\166\151\143\145\061\024\060\022\006
\003\125\004\003\023\013\107\114\117\102\101\114\124\122\125\123
\124\061\044\060\042\006\011\052\206\110\206\367\015\001\011\001
\026\025\151\156\146\157\100\147\154\157\142\141\154\164\162\165
\163\164\056\151\156\146\157
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\001\000

```

```
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
# Microsoft Code Signing Only Certificate
# Certificate "Certipost E-Trust TOP Root CA"
# Issuer: CN=Certipost E-Trust TOP Root CA,O=Certipost s.a./n.v.,C=BE
# Serial Number:04:00:00:00:00:01:05:52:64:c1:95
# Subject: CN=Certipost
E-Trust TOP Root CA,O=Certipost s.a./n.v.,C=BE
# Not Valid Before: Tue Jul 26 10:00:00 2005
# Not Valid After: Sat Jul 26 10:00:00 2025
# Fingerprint (MD5): b8:d3:12:03:4e:8c:0c:5a:47:c9:b6:c5:9e:5b:97:fd
# Fingerprint (SHA1): 05:60:a2:c7:38:ff:98:d1:17:2a:94:fe:45:fb:8a:47:d6:65:37:1e
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Certipost E-Trust TOP Root CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\123\061\013\060\011\006\003\125\004\006\023\002\102\105\061
\034\060\032\006\003\125\004\012\023\023\103\145\162\164\151\160
\157\163\164\040\163\056\141\056\057\156\056\166\056\061\046\060
\044\006\003\125\004\003\023\035\103\145\162\164\151\160\157\163
\164\040\105\055\124\162\165\163\164\040\124\117\120\040\122\157
\157\164\040\103\101
```

```
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\123\061\013\060\011\006\003\125\004\006\023\002\102\105\061
\034\060\032\006\003\125\004\012\023\023\103\145\162\164\151\160
\157\163\164\040\163\056\141\056\057\156\056\166\056\061\046\060
\044\006\003\125\004\003\023\035\103\145\162\164\151\160\157\163
\164\040\105\055\124\162\165\163\164\040\124\117\120\040\122\157
\157\164\040\103\101
```

```
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\013\004\000\000\000\000\001\005\122\144\301\225
```

```
END
CKA_VALUE MULTILINE_OCTAL
\060\202\003\314\060\202\002\264\240\003\002\001\002\002\013\004
\000\000\000\000\001\005\122\144\301\225\060\015\006\011\052\206
\110\206\367\015\001\001\005\005\000\060\123\061\013\060\011\006
\003\125\004\006\023\002\102\105\061\034\060\032\006\003\125\004
```

\012\023\023\103\145\162\164\151\160\157\163\164\040\163\056\141  
\056\057\156\056\166\056\061\046\060\044\006\003\125\004\003\023  
\035\103\145\162\164\151\160\157\163\164\040\105\055\124\162\165  
\163\164\040\124\117\120\040\122\157\157\164\040\103\101\060\036  
\027\015\060\065\060\067\062\066\061\060\060\060\060\060\132\027  
\015\062\065\060\067\062\066\061\060\060\060\060\060\132\060\123  
\061\013\060\011\006\003\125\004\006\023\002\102\105\061\034\060  
\032\006\003\125\004\012\023\023\103\145\162\164\151\160\157\163  
\164\040\163\056\141\056\057\156\056\166\056\061\046\060\044\006  
\003\125\004\003\023\035\103\145\162\164\151\160\157\163\164\040  
\105\055\124\162\165\163\164\040\124\117\120\040\122\157\157\164  
\040\103\101\060\202\001\042\060\015\006\011\052\206\110\206\367  
\015\001\001\001\005\000\003\202\001\017\000\060\202\001\012\002  
\202\001\001\000\245\324\113\100\326\373\361\065\030\073\242\260  
\103\344\311\125\241\300\007\273\010\276\072\031\265\043\303\036  
\235\263\010\112\364\103\113\351\301\031\140\220\337\204\327\130  
\306\072\335\012\054\225\054\275\227\177\376\242\165\332\006\343  
\253\233\154\321\270\317\104\206\301\122\140\267\334\076\073\260  
\362\351\304\121\074\112\271\203\271\116\141\152\003\233\034\122  
\200\072\120\264\040\262\333\323\262\306\124\177\313\140\233\310  
\044\236\257\011\307\145\015\050\366\332\232\042\302\063\156\362  
\363\045\324\244\371\226\365\157\252\074\153\334\101\060\345\346  
\157\312\110\037\060\170\035\171\175\247\321\277\256\305\136\103  
\371\306\057\203\166\233\064\112\244\050\130\053\250\210\205\104  
\152\053\362\126\102\166\231\220\063\252\356\371\041\317\362\075  
\371\167\204\313\335\051\204\304\324\212\052\244\071\134\076\371  
\034\045\150\115\365\347\233\135\261\032\064\136\312\002\163\371  
\010\304\014\155\136\335\022\052\345\173\305\066\170\122\235\062  
\301\305\050\245\040\250\345\230\015\271\157\317\271\200\236\345  
\276\271\233\375\002\003\001\000\001\243\201\240\060\201\235\060  
\016\006\003\125\035\017\001\001\377\004\004\003\002\001\006\060  
\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377  
\060\035\006\003\125\035\016\004\026\004\024\113\336\276\005\061  
\056\363\065\310\330\312\247\126\305\224\015\264\132\145\305\060  
\110\006\003\125\035\040\004\101\060\077\060\075\006\011\003\220  
\016\007\001\000\001\002\000\060\060\060\056\006\010\053\006\001  
\005\005\007\002\001\026\042\150\164\164\160\072\057\057\167\167  
\167\056\145\055\164\162\165\163\164\056\142\145\057\103\120\123  
\057\121\116\143\145\162\164\163\040\060\021\006\011\140\206\110  
\001\206\370\102\001\001\004\004\003\002\000\007\060\015\006\011  
\052\206\110\206\367\015\001\001\005\005\000\003\202\001\001\000  
\211\143\314\242\316\370\124\152\174\131\064\170\253\001\264\226  
\055\052\041\156\100\055\137\320\226\042\231\203\005\034\345\044  
\315\342\365\065\004\277\000\226\007\354\262\244\072\152\053\043  
\076\311\017\312\023\035\270\044\226\011\046\330\074\052\201\316  
\341\201\310\311\163\076\365\273\017\010\036\220\340\260\222\271  
\322\072\227\120\340\006\216\344\202\060\074\140\040\267\244\356  
\253\211\006\341\374\045\273\221\324\371\267\137\150\143\250\240



```
\150\206\153\247\354\222\313\042\372\120\133\023\130\047\256\053
\103\013\266\027\306\060\162\004\063\104\046\112\104\007\037\163
\240\203\101\051\340\222\006\274\325\001\352\376\274\257\161\353
\040\037\012\135\015\240\051\136\316\344\101\121\125\226\303\037
\264\061\245\243\363\123\352\377\302\234\206\162\317\066\114\126
\132\006\062\176\136\253\112\241\316\247\353\237\244\214\052\271
\044\213\270\265\363\006\115\246\312\175\231\373\366\125\352\256
\110\171\356\046\131\323\037\014\123\025\367\142\121\371\204\015
\226\154\136\261\010\346\131\010\053\046\051\012\301\203\100\163
END
```

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "Certipost E-Trust TOP Root CA"

# Issuer: CN=Certipost E-Trust TOP Root CA,O=Certipost s.a./n.v.,C=BE

# Serial Number:04:00:00:00:00:01:05:52:64:c1:95

# Subject: CN=Certipost E-Trust TOP Root CA,O=Certipost s.a./n.v.,C=BE

# Not Valid Before: Tue Jul 26 10:00:00 2005

# Not Valid After: Sat Jul 26 10:00:00 2025

# Fingerprint (MD5): b8:d3:12:03:4e:8c:0c:5a:47:c9:b6:c5:9e:5b:97:fd

# Fingerprint (SHA1): 05:60:a2:c7:38:ff:98:d1:17:2a:94:fe:45:fb:8a:47:d6:65:37:1e

CKA\_CLASS

CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Certipost E-Trust TOP Root CA"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\005\140\242\307\070\377\230\321\027\052\224\376\105\373\212\107
\326\145\067\036
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\270\323\022\003\116\214\014\132\107\311\266\305\236\133\227\375
```

END

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\123\061\013\060\011\006\003\125\004\006\023\002\102\105\061
\034\060\032\006\003\125\004\012\023\023\103\145\162\164\151\160
\157\163\164\040\163\056\141\056\057\156\056\166\056\061\046\060
\044\006\003\125\004\003\023\035\103\145\162\164\151\160\157\163
\164\040\105\055\124\162\165\163\164\040\124\117\120\040\122\157
\157\164\040\103\101
```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

```
\002\013\004\000\000\000\000\001\005\122\144\301\225
```

END

```
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST
CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
# Microsoft Code Signing Only Certificate
# Certificate "Certipost E-Trust Primary Qualified CA"
# Issuer: CN=Certipost E-Trust Primary Qualified CA,O=Certipost s.a./n.v.,C=BE
# Serial Number:04:00:00:00:00:01:05:52:64:c4:25
# Subject: CN=Certipost E-Trust Primary Qualified CA,O=Certipost s.a./n.v.,C=BE
# Not Valid Before: Tue Jul 26 10:00:00 2005
# Not Valid After: Sun Jul 26 10:00:00 2020
# Fingerprint (MD5): 10:0e:ad:f3:5c:84:1d:8e:03:5f:2d:c9:39:37:f5:52
# Fingerprint (SHA1): 74:2c:df:15:94:04:9c:bf:17:a2:04:6c:c6:39:bb:38:88:e0:2e:33
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Certipost E-Trust Primary Qualified CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
```

```
\060\134\061\013\060\011\006\003\125\004\006\023\002\102\105\061
\034\060\032\006\003\125\004\012\023\023\103\145\162\164\151\160
\157\163\164\040\163\056\141\056\057\156\056\166\056\061\057\060
\055\006\003\125\004\003\023\046\103\145\162\164\151\160\157\163
\164\040\105\055\124\162\165\163\164\040\120\162\151\155\141\162
\171\040\121\165\141\154\151\146\151\145\144\040\103\101
```

```
END
```

```
CKA_ID
```

```
UTF8 "0"
```

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\134\061\013\060\011\006\003\125\004\006\023\002\102\105\061
\034\060\032\006\003\125\004\012\023\023\103\145\162\164\151\160
\157\163\164\040\163\056\141\056\057\156\056\166\056\061\057\060
\055\006\003\125\004\003\023\046\103\145\162\164\151\160\157\163
\164\040\105\055\124\162\165\163\164\040\120\162\151\155\141\162
\171\040\121\165\141\154\151\146\151\145\144\040\103\101
```

```
END
```

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
```

```
\002\013\004\000\000\000\000\001\005\122\144\304\045
```

```
END
```

```
CKA_VALUE MULTILINE_OCTAL
```

```
\060\202\003\336\060\202\002\306\240\003\002\001\002\002\013\004
\000\000\000\000\001\005\122\144\304\045\060\015\006\011\052\206
\110\206\367\015\001\001\005\005\000\060\134\061\013\060\011\006
\003\125\004\006\023\002\102\105\061\034\060\032\006\003\125\004
\012\023\023\103\145\162\164\151\160\157\163\164\040\163\056\141
```

\056\057\156\056\166\056\061\057\060\055\006\003\125\004\003\023  
\046\103\145\162\164\151\160\157\163\164\040\105\055\124\162\165  
\163\164\040\120\162\151\155\141\162\171\040\121\165\141\154\151  
\146\151\145\144\040\103\101\060\036\027\015\060\065\060\067\062  
\066\061\060\060\060\060\060\132\027\015\062\060\060\067\062\066  
\061\060\060\060\060\060\132\060\134\061\013\060\011\006\003\125  
\004\006\023\002\102\105\061\034\060\032\006\003\125\004\012\023  
\023\103\145\162\164\151\160\157\163\164\040\163\056\141\056\057  
\156\056\166\056\061\057\060\055\006\003\125\004\003\023\046\103  
\145\162\164\151\160\157\163\164\040\105\055\124\162\165\163\164  
\040\120\162\151\155\141\162\171\040\121\165\141\154\151\146\151  
\145\144\040\103\101\060\202\001\042\060\015\006\011\052\206\110  
\206\367\015\001\001\001\005\000\003\202\001\017\000\060\202\001  
\012\002\202\001\001\000\256\040\322\170\333\232\240\162\234\004  
\122\045\054\155\122\330\327\047\211\063\240\341\262\325\373\060  
\165\153\055\177\034\147\216\016\347\037\022\337\027\171\030\273  
\264\033\157\370\075\165\033\236\147\067\360\361\372\017\165\355  
\206\235\003\004\241\050\160\055\074\262\153\240\163\121\343\065  
\251\164\245\010\076\224\205\047\066\052\252\162\144\374\167\356  
\166\224\034\162\353\277\062\307\167\003\152\045\202\011\005\257  
\137\140\074\177\254\033\274\222\350\074\164\131\316\361\174\124  
\055\070\256\226\360\254\157\241\063\014\041\132\001\272\043\040  
\133\240\206\002\325\123\334\111\037\250\062\263\257\073\106\073  
\266\357\237\071\263\070\013\347\172\212\366\050\371\247\157\120  
\051\310\171\130\213\111\322\245\330\205\176\126\361\151\025\170  
\104\021\065\327\245\124\076\253\146\045\322\333\343\030\361\056  
\053\342\161\043\011\067\144\103\102\164\062\226\167\336\227\242  
\351\226\206\234\045\104\011\324\001\235\121\176\063\267\011\104  
\345\200\227\015\144\133\167\030\227\245\113\251\236\020\235\207  
\372\126\247\317\012\175\002\003\001\000\001\243\201\240\060\201  
\235\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001  
\006\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001  
\001\377\060\035\006\003\125\035\016\004\026\004\024\360\170\371  
\007\167\020\273\334\036\241\256\171\373\060\020\333\306\064\370  
\027\060\110\006\003\125\035\040\004\101\060\077\060\075\006\011  
\003\220\016\007\001\000\001\002\000\060\060\060\056\006\010\053  
\006\001\005\005\007\002\001\026\042\150\164\164\160\072\057\057  
\167\167\167\056\145\055\164\162\165\163\164\056\142\145\057\103  
\120\123\057\121\116\143\145\162\164\163\040\060\021\006\011\140  
\206\110\001\206\370\102\001\001\004\004\003\002\000\007\060\015  
\006\011\052\206\110\206\367\015\001\001\005\005\000\003\202\001  
\001\000\154\341\330\137\164\130\351\160\111\326\312\015\054\130  
\332\312\144\266\121\117\303\006\144\001\351\212\163\035\236\317  
\106\170\277\073\205\206\342\075\112\030\224\052\201\167\157\202  
\370\157\364\356\042\374\235\030\041\162\140\273\030\200\202\225  
\373\371\367\225\044\201\146\301\265\303\265\322\266\166\213\073  
\201\134\270\241\016\053\001\024\213\200\011\100\356\370\140\114  
\031\344\027\315\047\001\263\143\022\005\244\010\311\264\277\236

```
\120\116\265\336\017\222\063\146\165\320\075\347\043\174\352\045
\161\174\376\076\056\066\171\241\345\051\120\043\065\005\225\170
\273\237\171\144\334\127\110\047\054\342\134\063\315\302\273\176
\150\167\247\057\243\111\027\162\341\000\204\153\175\172\257\071
\013\054\325\330\127\144\062\154\204\012\152\166\072\323\254\315
\235\261\347\067\334\354\014\057\305\127\140\337\210\365\103\261
\001\144\046\264\047\202\020\262\243\120\357\227\346\177\277\221
\207\263\333\220\251\052\342\172\064\154\163\111\364\350\215\056
\153\212\335\241\212\177\143\320\277\130\036\257\314\077\222\120
\055\321
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL

CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "Certipost E-Trust Primary Qualified CA"

# Issuer: CN=Certipost E-Trust Primary Qualified CA,O=Certipost s.a./n.v.,C=BE

# Serial Number:04:00:00:00:00:01:05:52:64:c4:25

# Subject: CN=Certipost E-Trust Primary Qualified CA,O=Certipost s.a./n.v.,C=BE

# Not Valid Before: Tue Jul 26 10:00:00 2005

# Not Valid After: Sun Jul 26 10:00:00 2020

# Fingerprint (MD5): 10:0e:ad:f3:5c:84:1d:8e:03:5f:2d:c9:39:37:f5:52

# Fingerprint (SHA1): 74:2c:df:15:94:04:9c:bf:17:a2:04:6c:c6:39:bb:38:88:e0:2e:33

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Certipost E-Trust Primary Qualified CA"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\164\054\337\025\224\004\234\277\027\242\004\154\306\071\273\070
\210\340\056\063
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\020\016\255\363\134\204\035\216\003\137\055\311\071\067\365\122
```

END

CKA\_ISSUER

MULTILINE\_OCTAL

```
\060\134\061\013\060\011\006\003\125\004\006\023\002\102\105\061
\034\060\032\006\003\125\004\012\023\023\103\145\162\164\151\160
\157\163\164\040\163\056\141\056\057\156\056\166\056\061\057\060
\055\006\003\125\004\003\023\046\103\145\162\164\151\160\157\163
\164\040\105\055\124\162\165\163\164\040\120\162\151\155\141\162
\171\040\121\165\141\154\151\146\151\145\144\040\103\101
```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

```
\002\013\004\000\000\000\000\001\005\122\144\304\045
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
# Microsoft Code Signing Only Certificate
# Certificate "Certipost E-Trust Primary Normalised CA"
# Issuer: CN=Certipost E-Trust Primary Normalised CA,O=Certipost s.a./n.v.,C=BE
# Serial Number:04:00:00:00:00:01:05:52:64:c7:61
# Subject: CN=Certipost E-Trust Primary
Normalised CA,O=Certipost s.a./n.v.,C=BE
# Not Valid Before: Tue Jul 26 10:00:00 2005
# Not Valid After: Sun Jul 26 10:00:00 2020
# Fingerprint (MD5): 21:ef:b8:50:40:39:3f:75:6f:27:fe:e3:ea:58:70:eb
# Fingerprint (SHA1): a5:9c:9b:10:ec:73:57:51:5a:bb:66:0c:4d:94:f7:3b:9e:6e:92:72
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Certipost E-Trust Primary Normalised CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
```

```
\060\135\061\013\060\011\006\003\125\004\006\023\002\102\105\061
\034\060\032\006\003\125\004\012\023\023\103\145\162\164\151\160
\157\163\164\040\163\056\141\056\057\156\056\166\056\061\060\060
\056\006\003\125\004\003\023\047\103\145\162\164\151\160\157\163
\164\040\105\055\124\162\165\163\164\040\120\162\151\155\141\162
\171\040\116\157\162\155\141\154\151\163\145\144\040\103\101
END
```

```
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\135\061\013\060\011\006\003\125\004\006\023\002\102\105\061
\034\060\032\006\003\125\004\012\023\023\103\145\162\164\151\160
\157\163\164\040\163\056\141\056\057\156\056\166\056\061\060\060
\056\006\003\125\004\003\023\047\103\145\162\164\151\160\157\163
\164\040\105\055\124\162\165\163\164\040\120\162\151\155\141\162
\171\040\116\157\162\155\141\154\151\163\145\144\040\103\101
END
```

```
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\013\004\000\000\000\000\001\005\122\144\307\141
END
```

```
CKA_VALUE MULTILINE_OCTAL
\060\202\003\340\060\202\002\310\240\003\002\001\002\002\013\004
\000\000\000\000\001\005\122\144\307\141\060\015\006\011\052\206
\110\206\367\015\001\001\005\005\000\060\135\061\013\060\011\006
```

\003\125\004\006\023\002\102\105\061\034\060\032\006\003\125\004  
\012\023\023\103\145\162\164\151\160\157\163\164\040\163\056\141  
\056\057\156\056\166\056\061\060\060\056\006\003\125\004\003\023  
\047\103\145\162\164\151\160\157\163\164\040\105\055\124\162\165  
\163\164\040\120\162\151\155\141\162\171\040\116\157\162\155\141  
\154\151\163\145\144\040\103\101\060\036\027\015\060\065\060\067  
\062\066\061\060\060\060\060\060\132\027\015\062\060\060\067\062  
\066\061\060\060\060\060\060\132\060\135\061\013\060\011\006\003  
\125\004\006\023\002\102\105\061\034\060\032\006\003\125\004\012  
\023\023\103\145\162\164\151\160\157\163\164\040\163\056\141\056  
\057\156\056\166\056\061\060\060\056\006\003\125\004\003\023\047  
\103\145\162\164\151\160\157\163\164\040\105\055\124\162\165\163  
\164\040\120\162\151\155\141\162\171\040\116\157\162\155\141\154  
\151\163\145\144\040\103\101\060\202\001\042\060\015\006\011\052  
\206\110\206\367\015\001\001\001\005\000\003\202\001\017\000\060  
\202\001\012\002\202\001\001\000\325\263\252\122\204\172\027\223  
\042\017\270\004\030\312\311\362\202\052\254\025\013\247\120\161  
\266\114\045\153\367\377\001\252\127\132\167\116\136\023\024\015  
\125\362\036\361\205\315\205\327\202\034\014\332\011\053\275\375  
\274\236\376\155\211\115\242\002\044\346\121\352\067\177\061\106  
\132\173\232\166\263\056\240\135\137\344\370\231\012\007\276\356  
\222\046\022\311\173\347\135\154\320\203\107\016\300\214\247\321  
\171\127\300\013\031\234\233\236\103\305\116\221\045\316\210\053  
\155\171\331\171\212\326\146\116\042\303\032\105\116\357\310\260  
\142\046\116\046\124\120\237\014\157\263\153\314\174\237\177\336  
\017\015\265\217\303\153\324\341\302\373\273\126\120\252\214\075  
\217\000\213\074\374\110\027\152\322\132\363\165\155\145\201\275  
\106\135\237\242\142\123\256\316\363\251\344\221\053\132\046\303  
\171\146\321\246\123\146\065\034\006\161\261\356\231\016\304\373  
\130\022\254\042\106\055\342\042\222\333\341\074\277\273\376\206  
\347\223\064\163\317\170\151\323\313\336\371\014\262\150\332\311  
\212\012\140\124\304\363\126\143\002\003\001\000\001\243\201\240  
\060\201\235\060\016\006\003\125\035\017\001\001\377\004\004\003  
\002\001\006\060\017\006\003\125\035\023\001\001\377\004\005\060  
\003\001\001\377\060\110\006\003\125\035\040\004\101\060\077\060  
\075\006\011\003\220\016\007\001\000\001\002\000\060\060\060\056  
\006\010\053\006\001\005\005\007\002\001\026\042\150\164\164\160  
\072\057\057\167\167\167\056\145\055\164\162\165\163\164\056\142  
\145\057\103\120\123\057\121\116\143\145\162\164\163\040\060\035  
\006\003\125\035\016\004\026\004\024\021\362\013\226\322\063\070  
\201\127\130\023\375\100\244\021\157\116\231\372\147\060\021\006  
\011\140\206\110\001\206\370\102\001\001\004\004\003\002\000\007  
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\003  
\202\001\001\000\065\153\117\336\235\363\003\266\035\310\274\215  
\347\136\152\236\251\351\355\242\053\227\352\257\321\341\106\323  
\002\111\175\304\122\205\353\272\366\323\277\071\142\030\235\223  
\111\275\170\003\277\323\136\025\335\357\047\034\341\273\105\001  
\042\201\000\115\072\340\205\312\132\062\003\314\040\217\257\357

```
\301\333\250\372\363\334\327\262\261\017\003\201\011\051\340\161
\174\213\372\177\313\066\156\033\350\024\316\360\113\046\241\062
\051\117\314\264\365\207\110\014\023\374\307\235\257\253\324\223
\365\052\115\177\110\202\130\076\027\377\303\200\052\253\077\127
\125\270\071\054\146\020\144\046\155\214\153\326\335\240\203\032
\132\126\021\226\106\275\256\160\050\326\070\127\133\221\325\077
\115\351\254\263\303\044\112\226\145\134\064\320\036\324\277\010
\245\227\135\367\106\333\166\360\315\076\165\143\000\053\257\255
\256\206\336\137\246\231\124\015\205\043\245\374\272\355\033\122
\372\111\030\167\205\133\252\162\233\047\010\065\105\067\047\333
\227\311\372\213\075\310\320\235\336\132\357\135\243\026\266\230
\171\312\174\313
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "Certipost E-Trust Primary Normalised CA"

# Issuer: CN=Certipost E-Trust Primary Normalised CA,O=Certipost s.a./n.v.,C=BE

# Serial Number:04:00:00:00:00:01:05:52:64:c7:61

# Subject: CN=Certipost E-Trust Primary Normalised CA,O=Certipost s.a./n.v.,C=BE

# Not Valid

Before: Tue Jul 26 10:00:00 2005

# Not Valid After: Sun Jul 26 10:00:00 2020

# Fingerprint (MD5): 21:ef:b8:50:40:39:3f:75:6f:27:fe:e3:ea:58:70:eb

# Fingerprint (SHA1): a5:9c:9b:10:ec:73:57:51:5a:bb:66:0c:4d:94:f7:3b:9e:6e:92:72

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Certipost E-Trust Primary Normalised CA"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\245\234\233\020\354\163\127\121\132\273\146\014\115\224\367\073
\236\156\222\162
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\041\357\270\120\100\071\077\165\157\047\376\343\352\130\160\353
```

END

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\135\061\013\060\011\006\003\125\004\006\023\002\102\105\061
\034\060\032\006\003\125\004\012\023\023\103\145\162\164\151\160
\157\163\164\040\163\056\141\056\057\156\056\166\056\061\060\060
\056\006\003\125\004\003\023\047\103\145\162\164\151\160\157\163
\164\040\105\055\124\162\165\163\164\040\120\162\151\155\141\162
\171\040\116\157\162\155\141\154\151\163\145\144\040\103\101
```

END

```
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\013\004\000\000\000\000\001\005\122\144\307\141
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
# Microsoft Code Signing Only Certificate
# Certificate "Cybertrust Global Root"
# Issuer: CN=Cybertrust Global Root,O=Cybertrust\, Inc
# Serial Number:04:00:00:00:00:01:0f:85:aa:2d:48
# Subject: CN=Cybertrust Global Root,O=Cybertrust\, Inc
# Not Valid Before: Fri Dec 15 08:00:00 2006
# Not Valid After: Wed Dec 15 08:00:00 2021
# Fingerprint (MD5): 72:e4:4a:87:e3:69:40:80:77:ea:bc:e3:f4:ff:f0:e1
# Fingerprint (SHA1): 5f:43:e5:b1:bf:f8:78:8c:ac:1c:c7:ca:4a:9a:c6:22:2b:cc:34:c6
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8
```

```
"Cybertrust Global Root"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\073\061\030\060\026\006\003\125\004\012\023\017\103\171\142
\145\162\164\162\165\163\164\054\040\111\156\143\061\037\060\035
\006\003\125\004\003\023\026\103\171\142\145\162\164\162\165\163
\164\040\107\154\157\142\141\154\040\122\157\157\164
END
```

```
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\073\061\030\060\026\006\003\125\004\012\023\017\103\171\142
\145\162\164\162\165\163\164\054\040\111\156\143\061\037\060\035
\006\003\125\004\003\023\026\103\171\142\145\162\164\162\165\163
\164\040\107\154\157\142\141\154\040\122\157\157\164
END
```

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\013\004\000\000\000\000\001\017\205\252\055\110
END
CKA_VALUE MULTILINE_OCTAL
\060\202\003\241\060\202\002\211\240\003\002\001\002\002\013\004
\000\000\000\000\001\017\205\252\055\110\060\015\006\011\052\206
\110\206\367\015\001\001\005\005\000\060\073\061\030\060\026\006
\003\125\004\012\023\017\103\171\142\145\162\164\162\165\163\164
\054\040\111\156\143\061\037\060\035\006\003\125\004\003\023\026
\103\171\142\145\162\164\162\165\163\164\040\107\154\157\142\141
```



\154\040\122\157\157\164\060\036\027\015\060\066\061\062\061\065  
\060\070\060\060\060\060\132\027\015\062\061\061\062\061\065\060  
\070\060\060\060\060\132\060\073\061\030\060\026\006\003\125\004  
\012\023\017\103\171\142\145\162\164\162\165\163\164\054\040\111  
\156\143\061\037\060\035\006\003\125\004\003\023\026\103\171\142  
\145\162\164\162\165\163\164\040\107\154\157\142\141\154\040\122  
\157\157\164\060\202\001\042\060\015\006\011\052\206\110\206\367  
\015\001\001\001\005\000\003\202\001\017\000\060\202\001\012\002  
\202\001\001\000\370\310\274\275\024\120\146\023\377\360\323\171  
\354\043\362\267\032\307\216\205\361\022\163\246\031\252\020\333  
\234\242\145\164\132\167\076\121\175\126\366\334\043\266\324\355  
\137\130\261\067\115\325\111\016\156\365\152\207\326\322\214\322  
\047\306\342\377\066\237\230\145\240\023\116\306\052\144\233\325  
\220\022\317\024\006\364\073\343\324\050\276\350\016\370\253\116  
\110\224\155\216\225\061\020\134\355\242\055\275\325\072\155\262  
\034\273\140\300\106\113\001\365\111\256\176\106\212\320\164\215  
\241\014\002\316\356\374\347\217\270\153\146\363\177\104\000\277  
\146\045\024\053\335\020\060\035\007\226\077\115\366\153\270\217  
\267\173\014\245\070\353\336\107\333\325\135\071\374\210\247\363  
\327\052\164\361\350\132\242\073\237\120\272\246\214\105\065\302  
\120\145\225\334\143\202\357\335\277\167\115\234\142\311\143\163  
\026\320\051\017\111\251\110\360\263\252\267\154\305\247\060\071  
\100\135\256\304\342\135\046\123\360\316\034\043\010\141\250\224  
\031\272\004\142\100\354\037\070\160\167\022\006\161\247\060\030  
\135\045\047\245\002\003\001\000\001\243\201\245\060\201\242\060  
\016\006\003\125\035\017\001\001\377\004\004\003\002\001\006\060  
\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377  
\060\035\006\003\125\035\016\004\026\004\024\266\010\173\015\172  
\314\254\040\114\206\126\062\136\317\253\156\205\055\160\127\060  
\077\006\003\125\035\037\004\070\060\066\060\064\240\062\240\060  
\206\056\150\164\164\160\072\057\057\167\167\167\062\056\160\165  
\142\154\151\143\055\164\162\165\163\164\056\143\157\155\057\143  
\162\154\057\143\164\057\143\164\162\157\157\164\056\143\162\154  
\060\037\006\003\125\035\043\004\030\060\026\200\024\266\010\173  
\015\172\314\254\040\114\206\126\062\136\317\253\156\205\055\160  
\127\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000  
\003\202\001\001\000\126\357\012\043\240\124\116\225\227\311\370  
\211\332\105\301\324\243\000\045\364\037\023\253\267\243\205\130  
\151\302\060\255\330\025\212\055\343\311\315\201\132\370\163\043  
\132\247\174\005\363\375\042\073\016\321\006\304\333\066\114\163  
\004\216\345\260\042\344\305\363\056\245\331\043\343\270\116\112  
\040\247\156\002\044\237\042\140\147\173\213\035\162\011\305\061  
\134\351\171\237\200\107\075\255\241\013\007\024\075\107\377\003  
\151\032\014\013\104\347\143\045\247\177\262\311\270\166\204\355  
\043\366\175\007\253\105\176\323\337\263\277\351\212\266\315\250  
\242\147\053\122\325\267\145\360\071\114\143\240\221\171\223\122  
\017\124\335\203\273\237\321\217\247\123\163\303\313\377\060\354  
\174\004\270\330\104\037\223\137\161\011\042\267\156\076\352\034

```
\003\116\235\032\040\141\373\201\067\354\136\374\012\105\253\327
\347\027\125\320\240\352\140\233\246\366\343\214\133\051\302\006
\140\024\235\055\227\114\251\223\025\235\141\304\001\137\110\326
\130\275\126\061\022\116\021\310\041\340\263\021\221\145\333\264
\246\210\070\316\125
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "Cybertrust Global Root"

# Issuer: CN=Cybertrust Global Root,O=Cybertrust\, Inc

# Serial Number:04:00:00:00:00:01:0f:85:aa:2d:48

# Subject: CN=Cybertrust Global Root,O=Cybertrust\, Inc

# Not Valid Before: Fri Dec 15 08:00:00 2006

# Not Valid

After: Wed Dec 15 08:00:00 2021

# Fingerprint (MD5): 72:e4:4a:87:e3:69:40:80:77:ea:bc:e3:f4:ff:f0:e1

# Fingerprint (SHA1): 5f:43:e5:b1:bf:f8:78:8c:ac:1c:c7:ca:4a:9a:c6:22:2b:cc:34:c6

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Cybertrust Global Root"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\137\103\345\261\277\370\170\214\254\034\307\312\112\232\306\042
\053\314\064\306
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\162\344\112\207\343\151\100\200\167\352\274\343\364\377\360\341
```

END

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\073\061\030\060\026\006\003\125\004\012\023\017\103\171\142
\145\162\164\162\165\163\164\054\040\111\156\143\061\037\060\035
\006\003\125\004\003\023\026\103\171\142\145\162\164\162\165\163
\164\040\107\154\157\142\141\154\040\122\157\157\164
```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

```
\002\013\004\000\000\000\000\001\017\205\252\055\110
```

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION

CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

```
# Microsoft Code Signing Only Certificate
# Certificate "IGC/A"
# Issuer:
1.2.840.113549.1.9.1=igca@sgdn.pm.gouv.fr,CN=IGC/A,OU=DCSSI,O=PM/SGDN,L=Paris,ST=France,C=FR
# Serial Number:39:11:45:10:94
# Subject:
1.2.840.113549.1.9.1=igca@sgdn.pm.gouv.fr,CN=IGC/A,OU=DCSSI,O=PM/SGDN,L=Paris,ST=France,C=FR
# Not Valid Before: Fri Dec 13 14:29:23 2002
# Not Valid After: Sat Oct 17 14:29:22 2020
# Fingerprint (MD5): 0c:7f:dd:6a:f4:2a:b9:c8:9b:bd:20:7e:a9:db:5c:37
# Fingerprint (SHA1): 60:d6:89:74:b5:c2:65:9e:8a:0f:c1:88:7c:88:d2:46:69:1b:18:2c
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "IGC/A"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\205\061\013\060\011\006\003\125\004\006\023\002\106\122
\061\017\060\015\006\003\125\004\010\023\006\106\162\141\156\143
\145\061\016\060\014\006\003\125\004\007\023\005\120\141\162\151
\163\061\020\060\016\006\003\125\004\012\023\007\120\115\057\123
\107\104\116\061\016\060\014\006\003\125\004\013\023\005\104\103
\123\123\111\061\016\060\014\006\003\125\004\003\023\005\111\107
\103\057\101\061\043\060\041\006\011\052\206\110\206\367\015\001
\011\001\026\024\151\147\143\141\100\163\147\144\156\056\160\155
\056\147\157\165\166\056\146\162
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\205\061\013\060\011\006\003\125\004\006\023\002\106\122
\061\017\060\015\006\003\125\004\010\023\006\106\162\141\156\143
\145\061\016\060\014\006\003\125\004\007\023\005\120\141\162\151
\163\061\020\060\016\006\003\125\004\012\023\007\120\115\057\123
\107\104\116\061\016\060\014\006\003\125\004\013\023\005\104\103
\123\123\111\061\016\060\014\006\003\125\004\003\023\005\111\107
\103\057\101\061\043\060\041\006\011\052\206\110\206\367\015\001
\011\001\026\024\151\147\143\141\100\163\147\144\156\056\160\155
\056\147\157\165\166\056\146\162
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\005\071\021\105\020\224
END
CKA_VALUE MULTILINE_OCTAL
\060\202\004\002\060\202\002\352\240\003\002\001\002\002\005\071
\021\105\020\224\060\015\006\011\052\206\110\206\367\015\001\001
```

\005\005\000\060\201\205\061\013\060\011\006\003\125\004\006\023  
\002\106\122\061\017\060\015\006\003\125\004\010\023\006\106\162  
\141\156\143\145\061\016\060\014\006\003\125\004\007\023\005\120  
\141\162\151\163\061\020\060\016\006\003\125\004\012\023\007\120  
\115\057\123\107\104\116\061\016\060\014\006\003\125\004\013\023  
\005\104\103\123\123\111\061\016\060\014\006\003\125\004\003\023  
\005\111\107\103\057\101\061\043\060\041\006\011\052\206\110\206  
\367\015\001\011\001\026\024\151\147\143\141\100\163\147\144\156  
\056\160\155\056\147\157\165\166\056\146\162\060\036\027\015\060  
\062\061\062\061\063\061\064\062\071\062\063\132\027\015\062\060  
\061\060\061\067\061\064\062\071\062\062\132\060\201\205\061\013  
\060\011\006\003\125\004\006\023\002\106\122\061\017\060\015\006  
\003\125\004\010\023\006\106\162\141\156\143\145\061\016\060\014  
\006\003\125\004\007\023\005\120\141\162\151\163\061\020\060\016  
\006\003\125\004\012\023\007\120\115\057\123\107\104\116\061\016  
\060\014\006\003\125\004\013\023\005\104\103\123\123\111\061\016  
\060\014\006\003\125\004\003\023\005\111\107\103\057\101\061\043  
\060\041\006\011\052\206\110\206\367\015\001\011\001\026\024\151  
\147\143\141\100\163\147\144\156\056\160\155\056\147\157\165\166  
\056\146\162\060\202\001\042\060\015\006\011\052\206\110\206\367  
\015\001\001\001\005\000\003\202\001\017\000\060\202\001\012\002  
\202\001\001\000\262\037\321\320\142\305\063\073\300\004\206\210  
\263\334\370\210\367\375\337\103\337\172\215\232\111\134\366\116  
\252\314\034\271\241\353\047\211\362\106\351\073\112\161\325\035  
\216\055\317\346\255\253\143\120\307\124\013\156\022\311\220\066  
\306\330\057\332\221\252\150\305\162\376\027\012\262\027\176\171  
\265\062\210\160\312\160\300\226\112\216\344\125\315\035\047\224  
\277\316\162\052\354\134\371\163\040\376\275\367\056\211\147\270  
\273\107\163\022\367\321\065\151\072\362\012\271\256\377\106\102  
\106\242\277\241\205\032\371\277\344\377\111\205\367\243\160\206  
\062\034\135\237\140\367\251\255\245\377\317\321\064\371\175\133  
\027\306\334\326\016\050\153\302\335\361\365\063\150\235\116\374  
\207\174\066\022\326\243\200\350\103\015\125\141\224\352\144\067  
\107\352\167\312\320\262\130\005\303\135\176\261\250\106\220\061  
\126\316\160\052\226\262\060\270\167\346\171\300\275\051\073\375  
\224\167\114\275\040\315\101\045\340\056\307\033\273\356\244\004  
\101\322\135\255\022\152\212\233\107\373\311\335\106\100\341\235  
\074\063\320\265\002\003\001\000\001\243\167\060\165\060\017\006  
\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060\013  
\006\003\125\035\017\004\004\003\002\001\106\060\025\006\003\125  
\035\040\004\016\060\014\060\012\006\010\052\201\172\001\171\001  
\001\001\060\035\006\003\125\035\016\004\026\004\024\243\005\057  
\030\140\120\302\211\012\335\053\041\117\377\216\116\250\060\061  
\066\060\037\006\003\125\035\043\004\030\060\026\200\024\243\005  
\057\030\140\120\302\211\012\335\053\041\117\377\216\116\250\060  
\061\066\060\015\006\011\052\206\110\206\367\015\001\001\005\005  
\000\003\202\001\001\000\005\334\046\330\372\167\025\104\150\374  
\057\146\072\164\340\135\344\051\377\006\007\023\204\112\253\317

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\155\240\037\121\224\370\111\313\164\066\024\274\025\335\333\211
\057\335\217\240\135\174\365\022\353\237\236\070\244\107\314\263
\226\331\276\234\045\253\003\176\063\017\225\201\015\375\026\340
\210\276\067\360\154\135\320\061\233\062\053\135\027\145\223\230
\140\274\156\217\261\250\074\036\331\034\363\251\046\102\371\144
\035\302\347\222\366\364\036\132\252\031\122\135\257\350\242\367
\140\240\366\215\360\211\365\156\340\012\005\001\225\311\213\040
\012\272\132\374\232\054\074\275\303\267\311\135\170\045\005\077
\126\024\233\014\332\373\072\110\376\227\151\136\312\020\206\367
\116\226\004\010\115\354\260\276\135\334\073\216\117\301\375\232
\066\064\232\114\124\176\027\003\110\225\010\021\034\007\157\205
\010\176\135\115\304\235\333\373\256\316\262\321\263\270\203\154
\035\262\263\171\361\330\160\231\176\360\023\002\316\136\335\121
\323\337\066\201\241\033\170\057\161\263\361\131\114\106\030\050
\253\205\322\140\126\132
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "IGC/A"

# Issuer:

1.2.840.113549.1.9.1=igca@sgdn.pm.gouv.fr,CN=IGC/A,OU=DCSSI,O=PM/SGDN,L=Paris,ST=France,C=FR

# Serial Number:39:11:45:10:94

# Subject:

1.2.840.113549.1.9.1=igca@sgdn.pm.gouv.fr,CN=IGC/A,OU=DCSSI,O=PM/SGDN,L=Paris,ST=France,C=FR

# Not Valid Before: Fri Dec 13 14:29:23 2002

# Not Valid After: Sat Oct 17 14:29:22 2020

# Fingerprint (MD5): 0c:7f:dd:6a:f4:2a:b9:c8:9b:bd:20:7e:a9:db:5c:37

# Fingerprint (SHA1):

60:d6:89:74:b5:c2:65:9e:8a:0f:c1:88:7c:88:d2:46:69:1b:18:2c

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "IGC/A"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\140\326\211\164\265\302\145\236\212\017\301\210\174\210\322\106
\151\033\030\054
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\014\177\335\152\364\052\271\310\233\275\040\176\251\333\134\067
```

END

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\201\205\061\013\060\011\006\003\125\004\006\023\002\106\122
\061\017\060\015\006\003\125\004\010\023\006\106\162\141\156\143
```

```
\145\061\016\060\014\006\003\125\004\007\023\005\120\141\162\151
\163\061\020\060\016\006\003\125\004\012\023\007\120\115\057\123
\107\104\116\061\016\060\014\006\003\125\004\013\023\005\104\103
\123\123\111\061\016\060\014\006\003\125\004\003\023\005\111\107
\103\057\101\061\043\060\041\006\011\052\206\110\206\367\015\001
\011\001\026\024\151\147\143\141\100\163\147\144\156\056\160\155
\056\147\157\165\166\056\146\162
```

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

```
\002\005\071\021\105\020\224
```

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "SwissSign Platinum CA - G2"

# Issuer: CN=SwissSign Platinum CA - G2,O=SwissSign AG,C=CH

# Serial Number:4e:b2:00:67:0c:03:5d:4f

# Subject: CN=SwissSign Platinum CA - G2,O=SwissSign AG,C=CH

# Not Valid Before: Wed Oct 25 08:36:00 2006

# Not Valid After: Sat Oct 25 08:36:00 2036

# Fingerprint (MD5): c9:98:27:77:28:1e:3d:0e:15:3c:84:00:b8:85:03:e6

# Fingerprint (SHA1): 56:e0:fa:c0:3b:8f:18:23:55:18:e5:d3:11:ca:e8:c2:43:31:ab:66

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "SwissSign Platinum CA - G2"

CKA\_CERTIFICATE\_TYPE

CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

```
\060\111\061\013\060\011\006\003\125\004\006\023\002\103\110\061
\025\060\023\006\003\125\004\012\023\014\123\167\151\163\163\123
\151\147\156\040\101\107\061\043\060\041\006\003\125\004\003\023
\032\123\167\151\163\163\123\151\147\156\040\120\154\141\164\151
\156\165\155\040\103\101\040\055\040\107\062
```

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\111\061\013\060\011\006\003\125\004\006\023\002\103\110\061
\025\060\023\006\003\125\004\012\023\014\123\167\151\163\163\123
\151\147\156\040\101\107\061\043\060\041\006\003\125\004\003\023
\032\123\167\151\163\163\123\151\147\156\040\120\154\141\164\151
\156\165\155\040\103\101\040\055\040\107\062
```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\010\116\262\000\147\014\003\135\117

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\301\060\202\003\251\240\003\002\001\002\002\010\116  
\262\000\147\014\003\135\117\060\015\006\011\052\206\110\206\367  
\015\001\001\005\005\000\060\111\061\013\060\011\006\003\125\004  
\006\023\002\103\110\061\025\060\023\006\003\125\004\012\023\014  
\123\167\151\163\163\123\151\147\156\040\101\107\061\043\060\041  
\006\003\125\004\003\023\032\123\167\151\163\163\123\151\147\156  
\040\120\154\141\164\151\156\165\155\040\103\101\040\055\040\107  
\062\060\036\027\015\060\066\061\060\062\065\060\070\063\066\060  
\060\132\027\015\063\066\061\060\062\065\060\070\063\066\060\060  
\132\060\111\061\013\060\011\006\003\125\004\006\023\002\103\110  
\061\025\060\023\006\003\125\004\012\023\014\123\167\151\163\163  
\123\151\147\156\040\101\107\061\043\060\041\006\003\125\004\003  
\023\032\123\167\151\163\163\123\151\147\156\040\120\154\141\164  
\151\156\165\155\040\103\101\040\055\040\107\062\060\202\002\042  
\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003  
\202\002\017\000\060\202\002\012\002\202\002\001\000\312\337\242  
\002\342\332\370\374\007\026\261\336\140\252\336\226\134\144\037  
\307\057\176\317\147\372\104\102\326\166\143\225\256\353\257\162  
\040\212\105\107\206\142\170\206\326\040\071\046\364\256\243\375  
\043\347\245\234\265\042\041\031\267\067\223\042\300\120\234\202  
\173\324\325\004\104\134\313\264\302\237\222\276\044\330\173\147  
\042\342\151\137\345\005\170\324\207\331\161\160\063\045\123\264  
\207\073\051\220\050\066\232\125\104\060\150\244\203\227\177\015  
\036\234\166\377\025\235\140\227\000\215\212\205\003\354\200\276  
\352\054\156\020\121\222\314\176\325\243\063\330\326\111\336\130  
\052\257\366\026\353\113\173\220\062\227\271\272\235\130\361\370  
\127\111\004\036\242\135\006\160\335\161\333\371\335\213\232\033  
\214\317\075\243\115\316\313\174\366\273\234\240\372\011\316\043  
\142\262\351\015\037\342\162\050\217\237\254\150\040\175\157\073  
\250\205\061\011\177\013\307\350\145\351\343\170\016\011\147\060  
\213\064\202\373\135\340\314\235\201\155\142\356\010\036\004\054  
\116\233\354\376\251\117\137\375\151\170\357\011\037\241\264\277  
\372\363\357\220\036\114\005\213\036\352\172\221\172\303\327\345  
\373\060\274\154\033\020\130\230\367\032\137\320\051\062\003\023  
\106\115\141\152\205\114\122\164\057\006\037\173\021\342\204\227  
\306\231\363\155\177\327\147\203\176\023\150\330\161\050\132\330  
\316\335\350\020\024\232\376\155\043\207\156\216\132\160\074\325  
\215\011\000\247\252\274\260\061\067\155\310\204\024\036\133\275  
\105\143\040\153\113\164\214\275\333\072\016\301\317\132\026\217  
\245\230\362\166\211\262\023\022\073\013\167\167\254\273\345\074  
\051\112\222\162\312\141\032\053\136\114\342\203\164\167\372\065  
\110\172\205\115\215\232\123\304\337\170\312\227\221\110\053\105  
\053\001\367\034\032\242\355\030\272\012\275\203\372\157\274\215  
\127\223\073\324\324\246\316\036\361\240\261\316\253\375\053\050

\232\117\033\327\303\162\333\244\304\277\135\114\365\335\173\226  
\151\356\150\200\346\347\230\272\066\267\376\156\355\053\275\040  
\370\145\031\332\125\011\176\045\334\376\141\142\162\371\176\030  
\002\357\143\264\320\373\257\345\073\143\214\147\217\002\003\001  
\000\001\243\201\254\060\201\251\060\016\006\003\125\035\017\001  
\001\377\004\004\003\002\001\006\060\017\006\003\125\035\023\001  
\001\377\004\005\060\003\001\001\377\060\035\006\003\125\035\016  
\004\026\004\024\120\257\314\007\207\025\107\157\070\305\264\145  
\321\336\225\252\351\337\234\314\060\037\006\003\125\035\043\004  
\030\060\026\200\024\120\257\314\007\207\025\107\157\070\305\264  
\145\321\336\225\252\351\337\234\314\060\106\006\003\125\035\040  
\004\077\060\075\060\073\006\011\140\205\164\001\131\001\001\001  
\001\060\056\060\054\006\010\053\006\001\005\005\007\002\001\026  
\040\150\164\164\160\072\057\057\162\145\160\157\163\151\164\157  
\162\171\056\163\167\151\163\163\163\151\147\156\056\143\157\155  
\057\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000  
\003\202\002\001\000\010\205\246\365\026\014\374\104\032\301\143  
\340\371\125\106\010\374\160\034\102\050\226\216\267\305\301\101  
\165\116\011\161\171\345\155\226\312\113\245\210\140\320\060\164  
\270\312\010\334\264\060\236\100\007\026\153\145\225\167\001\256  
\244\267\065\013\201\332\161\025\251\164\027\070\173\130\312\371  
\057\373\300\145\166\215\133\001\271\175\336\202\075\144\270\276  
\024\164\243\012\124\323\054\225\030\027\065\365\121\153\077\217  
\242\226\141\071\170\153\113\345\246\240\370\123\337\121\020\223  
\142\347\200\057\342\321\340\274\216\066\106\167\063\354\270\373  
\216\232\054\211\115\061\021\017\046\236\004\273\267\004\215\013  
\362\271\374\132\235\073\026\267\057\310\230\253\376\212\120\131  
\056\243\073\374\051\135\213\301\113\311\342\212\023\035\261\277  
\273\102\035\122\335\116\330\024\136\020\306\061\007\357\161\047  
\367\033\071\011\334\202\352\213\263\225\206\136\375\365\332\135  
\061\246\340\061\266\224\346\104\111\164\305\026\345\367\037\003  
\141\050\305\310\313\022\240\102\113\371\153\210\010\215\264\062  
\030\363\165\237\304\177\000\117\005\225\234\243\027\002\303\263  
\123\233\252\040\071\051\053\146\372\235\257\136\263\222\322\265  
\246\341\032\371\055\101\151\201\024\264\264\265\355\211\075\316  
\373\251\235\065\102\104\261\034\024\163\201\317\052\001\065\232  
\061\325\055\217\155\204\337\200\115\127\343\077\305\204\165\332  
\211\306\060\273\353\217\313\042\010\240\256\252\361\003\154\072  
\113\115\011\245\016\162\306\126\153\041\102\116\043\045\024\150  
\256\166\012\174\014\007\160\144\371\232\057\366\005\071\046\306  
\014\217\031\177\103\136\156\364\133\025\057\333\141\135\346\147  
\057\077\010\224\371\140\264\230\061\332\164\361\204\223\161\115  
\137\373\140\130\321\373\304\301\155\211\242\273\040\037\235\161  
\221\313\062\233\023\075\076\175\222\122\065\254\222\224\242\323  
\030\302\174\307\352\257\166\005\026\335\147\047\302\176\034\007  
\042\041\363\100\012\033\064\007\104\023\302\204\152\216\337\031  
\132\277\177\353\035\342\032\070\321\134\257\107\222\153\200\265  
\060\245\311\215\330\253\061\201\037\337\302\146\067\323\223\251



\205\206\171\145\322

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only

Certificate

# Trust for "SwissSign Platinum CA - G2"

# Issuer: CN=SwissSign Platinum CA - G2,O=SwissSign AG,C=CH

# Serial Number:4e:b2:00:67:0c:03:5d:4f

# Subject: CN=SwissSign Platinum CA - G2,O=SwissSign AG,C=CH

# Not Valid Before: Wed Oct 25 08:36:00 2006

# Not Valid After: Sat Oct 25 08:36:00 2036

# Fingerprint (MD5): c9:98:27:77:28:1e:3d:0e:15:3c:84:00:b8:85:03:e6

# Fingerprint (SHA1): 56:e0:fa:c0:3b:8f:18:23:55:18:e5:d3:11:ca:e8:c2:43:31:ab:66

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "SwissSign Platinum CA - G2"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\126\340\372\300\073\217\030\043\125\030\345\323\021\312\350\302

\103\061\253\146

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\311\230\047\167\050\036\075\016\025\074\204\000\270\205\003\346

END

CKA\_ISSUER MULTILINE\_OCTAL

\060\111\061\013\060\011\006\003\125\004\006\023\002\103\110\061

\025\060\023\006\003\125\004\012\023\014\123\167\151\163\163\123

\151\147\156\040\101\107\061\043\060\041\006\003\125\004\003\023

\032\123\167\151\163\163\123\151\147\156\040\120\154\141\164\151

\156\165\155\040\103\101\040\055\040\107\062

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\010\116\262\000\147\014\003\135\117

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "S-TRUST Authentication and Encryption Root CA 2005:PN"

# Issuer: CN=S-TRUST Authentication and Encryption Root CA 2005:PN,O=Deutscher Sparkassen Verlag

```
GmbH,L=Stuttgart,ST=Baden-Wuerttemberg (BW),C=DE
# Serial Number:37:19:18:e6:53:54:7c:1a:b5:b8:cb:59:5a:db:35:b7
# Subject: CN=S-TRUST Authentication and Encryption Root CA 2005:PN,O=Deutscher Sparkassen Verlag
GmbH,L=Stuttgart,ST=Baden-Wuerttemberg (BW),C=DE
# Not Valid Before: Wed Jun 22 00:00:00 2005
#
Not Valid After: Fri Jun 21 23:59:59 2030
# Fingerprint (MD5): 04:4b:fd:c9:6c:da:2a:32:85:7c:59:84:61:46:8a:64
# Fingerprint (SHA1): be:b5:a9:95:74:6b:9e:df:73:8b:56:e6:df:43:7a:77:be:10:6b:81
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "S-TRUST Authentication and Encryption Root CA 2005:PN"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\256\061\013\060\011\006\003\125\004\006\023\002\104\105
\061\040\060\036\006\003\125\004\010\023\027\102\141\144\145\156
\055\127\165\145\162\164\164\145\155\142\145\162\147\040\050\102
\127\051\061\022\060\020\006\003\125\004\007\023\011\123\164\165
\164\164\147\141\162\164\061\051\060\047\006\003\125\004\012\023
\040\104\145\165\164\163\143\150\145\162\040\123\160\141\162\153
\141\163\163\145\156\040\126\145\162\154\141\147\040\107\155\142
\110\061\076\060\074\006\003\125\004\003\023\065\123\055\124\122
\125\123\124\040\101\165\164\150\145\156\164\151\143\141\164\151
\157\156\040\141\156\144\040\105\156\143\162\171\160\164\151\157
\156\040\122\157\157\164\040\103\101\040\062\060\060\065\072\120
\116
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\256\061\013\060\011\006\003\125\004\006\023\002\104\105
\061\040\060\036\006\003\125\004\010\023\027\102\141\144\145\156
\055\127\165\145\162\164\164\145\155\142\145\162\147\040\050\102
\127\051\061\022\060\020\006\003\125\004\007\023\011\123\164\165
\164\164\147\141\162\164\061\051\060\047\006\003\125\004\012\023
\040\104\145\165\164\163\143\150\145\162\040\123\160\141\162\153
\141\163\163\145\156\040\126\145\162\154\141\147\040\107\155\142
\110\061\076\060\074\006\003\125\004\003\023\065\123\055\124\122
\125\123\124\040\101\165\164\150\145\156\164\151\143\141\164\151
\157\156\040\141\156\144\040\105\156\143\162\171\160\164\151\157
\156\040\122\157\157\164\040\103\101\040\062\060\060\065\072\120
\116
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\067\031\030\346\123\124\174\032\265\270\313\131\132\333
\065\267
```

END

CKA\_VALUE

MULTILINE\_OCTAL

\060\202\004\173\060\202\003\143\240\003\002\001\002\002\020\067  
\031\030\346\123\124\174\032\265\270\313\131\132\333\065\267\060  
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\201  
\256\061\013\060\011\006\003\125\004\006\023\002\104\105\061\040  
\060\036\006\003\125\004\010\023\027\102\141\144\145\156\055\127  
\165\145\162\164\164\145\155\142\145\162\147\040\050\102\127\051  
\061\022\060\020\006\003\125\004\007\023\011\123\164\165\164\164  
\147\141\162\164\061\051\060\047\006\003\125\004\012\023\040\104  
\145\165\164\163\143\150\145\162\040\123\160\141\162\153\141\163  
\163\145\156\040\126\145\162\154\141\147\040\107\155\142\110\061  
\076\060\074\006\003\125\004\003\023\065\123\055\124\122\125\123  
\124\040\101\165\164\150\145\156\164\151\143\141\164\151\157\156  
\040\141\156\144\040\105\156\143\162\171\160\164\151\157\156\040  
\122\157\157\164\040\103\101\040\062\060\060\065\072\120\116\060  
\036\027\015\060\065\060\066\062\062\060\060\060\060\060\132  
\027\015\063\060\060\066\062\061\062\063\065\071\065\071\132\060  
\201\256\061\013\060\011\006\003\125\004\006\023\002\104\105\061  
\040\060\036\006\003\125\004\010\023\027\102\141\144\145\156\055  
\127\165\145\162\164\164\145\155\142\145\162\147\040\050\102\127  
\051\061\022\060\020\006\003\125\004\007\023\011\123\164\165\164  
\164\147\141\162\164\061\051\060\047\006\003\125\004\012\023\040  
\104\145\165\164\163\143\150\145\162\040\123\160\141\162\153\141  
\163\163\145\156\040\126\145\162\154\141\147\040\107\155\142\110  
\061\076\060\074\006\003\125\004\003\023\065\123\055\124\122\125  
\123\124\040\101\165\164\150\145\156\164\151\143\141\164\151\157  
\156\040\141\156\144\040\105\156\143\162\171\160\164\151\157\156  
\040\122\157\157\164\040\103\101\040\062\060\060\065\072\120\116  
\060\202\001\042\060\015\006\011\052\206\110\206\367\015\001\001  
\001\005\000\003\202\001\017\000\060\202\001\012\002\202\001\001  
\000\331\265\112\301\323\063\352\323\106\263\321\342\114\322\365  
\266\203\320\157\325\030\351\223\257\047\216\023\315\265\045\066  
\120\064\022\144\051\241\125\341\072\140\223\236\050\311\343\363  
\233\341\004\260\043\277\225\212\216\133\033\101\177\132\303\350  
\115\114\325\044\026\076\207\110\324\047\256\346\367\123\035\273  
\014\000\357\076\141\161\255\277\072\172\130\037\224\075\134\201  
\325\325\157\337\270\233\322\365\345\313\203\162\222\302\123\262  
\202\002\353\255\255\137\026\055\222\123\166\361\211\266\054\365  
\301\057\340\247\112\157\240\060\152\062\353\232\164\003\150\170  
\023\235\312\057\233\013\035\276\317\165\015\046\227\233\307\365  
\136\012\237\170\337\263\274\354\232\272\357\125\217\033\232\246  
\007\143\051\027\131\142\011\052\171\007\167\245\340\321\027\151  
\351\133\335\366\220\253\342\230\012\000\321\045\155\236\327\205  
\207\057\222\361\321\166\203\117\013\072\131\067\050\057\063\247  
\027\120\326\040\013\012\364\046\371\237\070\347\055\244\270\233  
\211\215\255\255\311\152\175\211\027\273\366\177\200\203\172\346

\355\002\003\001\000\001\243\201\222\060\201\217\060\022\006\003  
\125\035\023\001\001\377\004\010\060\006\001\001\377\002\001\000  
\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001\006  
\060\051\006\003\125\035\021\004\042\060\040\244\036\060\034\061  
\032\060\030\006\003\125\004\003\023\021\123\124\122\157\156\154  
\151\156\145\061\055\062\060\064\070\055\065\060\035\006\003\125  
\035\016\004\026\004\024\017\312\036\134\171\340\242\363\051\266  
\322\205\263\013\112\265\145\354\153\122\060\037\006\003\125\035  
\043\004\030\060\026\200\024\017\312\036\134\171\340\242\363\051  
\266\322\205\263\013\112\265\145\354\153\122\060\015\006\011\052  
\206\110\206\367\015\001\001\005\005\000\003\202\001\001\000\257  
\001\360\355\031\074\050\350\115\134\273\245\143\034\210\063\003  
\247\000\207\244\037\040\253\326\034\343\006\037\227\176\124\275  
\267\321\262\311\325\332\200\354\027\327\212\365\173\302\000\366  
\351\021\157\204\240\132\045\061\342\211\371\244\000\077\061\150  
\056\325\075\350\156\346\325\035\074\077\262\275\237\167\353\235  
\323\214\272\300\327\266\115\354\123\234\017\004\156\352\065\147  
\127\343\012\145\173\220\072\341\117\076\303\000\222\172\273\005  
\211\163\214\313\246\115\300\373\366\002\326\260\007\243\003\302  
\047\100\237\014\344\205\202\055\257\232\102\035\320\307\215\370  
\100\356\235\006\127\034\331\242\330\200\024\376\341\143\055\062  
\207\325\224\122\226\072\106\306\161\226\075\367\230\016\262\221  
\252\217\332\364\116\044\000\071\125\350\255\027\271\323\064\053  
\112\251\100\314\027\052\125\145\101\164\102\176\365\300\257\310  
\223\255\362\030\133\075\211\014\333\107\071\044\370\340\114\362  
\037\260\075\012\312\005\116\211\041\032\343\052\231\254\374\177  
\241\361\017\033\037\075\236\004\203\335\226\331\035\072\224

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "S-TRUST Authentication

and Encryption Root CA 2005:PN"

# Issuer: CN=S-TRUST Authentication and Encryption Root CA 2005:PN,O=Deutscher Sparkassen Verlag  
GmbH,L=Stuttgart,ST=Baden-Wuerttemberg (BW),C=DE

# Serial Number:37:19:18:e6:53:54:7c:1a:b5:b8:cb:59:5a:db:35:b7

# Subject: CN=S-TRUST Authentication and Encryption Root CA 2005:PN,O=Deutscher Sparkassen Verlag  
GmbH,L=Stuttgart,ST=Baden-Wuerttemberg (BW),C=DE

# Not Valid Before: Wed Jun 22 00:00:00 2005

# Not Valid After: Fri Jun 21 23:59:59 2030

# Fingerprint (MD5): 04:4b:fd:c9:6c:da:2a:32:85:7c:59:84:61:46:8a:64

# Fingerprint (SHA1): be:b5:a9:95:74:6b:9e:df:73:8b:56:e6:df:43:7a:77:be:10:6b:81

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

```

CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "S-TRUST Authentication and Encryption Root CA 2005:PN"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\276\265\251\225\164\153\236\337\163\213\126\346\337\103\172\167
\276\020\153\201
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\004\113\375\311\154\332\052\062\205\174\131\204\141\106\212\144
END
CKA_ISSUER
MULTILINE_OCTAL
\060\201\256\061\013\060\011\006\003\125\004\006\023\002\104\105
\061\040\060\036\006\003\125\004\010\023\027\102\141\144\145\156
\055\127\165\145\162\164\164\145\155\142\145\162\147\040\050\102
\127\051\061\022\060\020\006\003\125\004\007\023\011\123\164\165
\164\164\147\141\162\164\061\051\060\047\006\003\125\004\012\023
\040\104\145\165\164\163\143\150\145\162\040\123\160\141\162\153
\141\163\163\145\156\040\126\145\162\154\141\147\040\107\155\142
\110\061\076\060\074\006\003\125\004\003\023\065\123\055\124\122
\125\123\124\040\101\165\164\150\145\156\164\151\143\141\164\151
\157\156\040\141\156\144\040\105\156\143\162\171\160\164\151\157
\156\040\122\157\157\164\040\103\101\040\062\060\060\065\072\120
\116
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\067\031\030\346\123\124\174\032\265\270\313\131\132\333
\065\267
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION
CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "GeoTrust Primary Certification Authority"
# Issuer: CN=GeoTrust Primary Certification Authority,O=GeoTrust Inc.,C=US
# Serial Number: 18:ac:b5:6a:fd:69:b6:15:3a:63:6c:af:da:fa:c4:a1
# Subject: CN=GeoTrust Primary Certification Authority,O=GeoTrust Inc.,C=US
# Not Valid Before: Mon Nov 27 00:00:00 2006
# Not Valid After: Wed Jul 16 23:59:59 2036
# Fingerprint (MD5): 02:26:c3:01:5e:08:30:37:43:a9:d0:7d:cf:37:e6:bf
# Fingerprint (SHA1): 32:3c:11:8e:1b:f7:b8:b6:52:54:e2:e2:10:0d:d6:02:90:37:f0:96
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "GeoTrust Primary Certification Authority"

```

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\130\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\026\060\024\006\003\125\004\012\023\015\107\145\157\124\162\165  
\163\164\040\111\156\143\056\061\061\060\057\006\003\125\004\003  
\023\050\107\145\157\124\162\165\163\164\040\120\162\151\155\141  
\162\171\040\103\145\162\164\151\146\151\143\141\164\151\157\156  
\040\101\165\164\150\157\162\151\164\171

END

CKA\_ID

UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\130\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\026\060\024\006\003\125\004\012\023\015\107\145\157\124\162\165  
\163\164\040\111\156\143\056\061\061\060\057\006\003\125\004\003  
\023\050\107\145\157\124\162\165\163\164\040\120\162\151\155\141  
\162\171\040\103\145\162\164\151\146\151\143\141\164\151\157\156  
\040\101\165\164\150\157\162\151\164\171

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\030\254\265\152\375\151\266\025\072\143\154\257\332\372  
\304\241

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\174\060\202\002\144\240\003\002\001\002\002\020\030  
\254\265\152\375\151\266\025\072\143\154\257\332\372\304\241\060  
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\130  
\061\013\060\011\006\003\125\004\006\023\002\125\123\061\026\060  
\024\006\003\125\004\012\023\015\107\145\157\124\162\165\163\164  
\040\111\156\143\056\061\061\060\057\006\003\125\004\003\023\050  
\107\145\157\124\162\165\163\164\040\120\162\151\155\141\162\171  
\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101  
\165\164\150\157\162\151\164\171\060\036\027\015\060\066\061\061  
\062\067\060\060\060\060\060\060\132\027\015\063\066\060\067\061  
\066\062\063\065\071\065\071\132\060\130\061\013\060\011\006\003  
\125\004\006\023\002\125\123\061\026\060\024\006\003\125\004\012  
\023\015\107\145\157\124\162\165\163\164\040\111\156\143\056\061  
\061\060\057\006\003\125\004\003\023\050\107\145\157\124\162\165  
\163\164\040\120\162\151\155\141\162\171\040\103\145\162\164\151  
\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151  
\164\171\060\202\001\042\060\015\006\011\052\206\110\206\367\015  
\001\001\001\005\000\003\202\001\017\000\060\202\001\012\002\202  
\001\001\000\276\270\025\173\377\324\174\175\147\255\203\144\173  
\310\102\123\055\337\366\204\010\040\141\326\001\131\152\234\104  
\021\257\357\166\375\225\176\316\141\060\273\172\203\137\002\275  
\001\146\312\356\025\215\157\241\060\234\275\241\205\236\224\072  
\363\126\210\000\061\317\330\356\152\226\002\331\355\003\214\373  
\165\155\347\352\270\125\026\005\026\232\364\340\136\261\210\300

\144\205\134\025\115\210\307\267\272\340\165\351\255\005\075\235  
\307\211\110\340\273\050\310\003\341\060\223\144\136\122\300\131  
\160\042\065\127\210\212\361\225\012\203\327\274\061\163\001\064  
\355\357\106\161\340\153\002\250\065\162\153\227\233\146\340\313  
\034\171\137\330\032\004\150\036\107\002\346\235\140\342\066\227  
\001\337\316\065\222\337\276\147\307\155\167\131\073\217\235\326  
\220\025\224\274\102\064\020\301\071\371\261\047\076\176\326\212  
\165\305\262\257\226\323\242\336\233\344\230\276\175\341\351\201  
\255\266\157\374\327\016\332\340\064\260\015\032\167\347\343\010  
\230\357\130\372\234\204\267\066\257\302\337\254\322\364\020\006  
\160\161\065\002\003\001\000\001\243\102\060\100\060\017\006\003  
\125\035\023\001\001\377\004\005\060\003\001\001\377\060\016\006  
\003\125\035\017\001\001\377\004\004\003\002\001\006\060\035\006  
\003\125\035\016\004\026\004\024\054\325\120\101\227\025\213\360  
\217\066\141\133\112\373\153\331\231\311\063\222\060\015\006\011  
\052\206\110\206\367\015\001\001\005\005\000\003\202\001\001\000  
\132\160\177\054\335\267\064\117\365\206\121\251\046\276\113\270  
\252\361\161\015\334\141\307\240\352\064\036\172\167\017\004\065  
\350\047\217\154\220\277\221\026\044\106\076\112\116\316\053\026  
\325\013\122\035\374\037\147\242\002\105\061\117\316\363\372\003  
\247\171\235\123\152\331\332\143\072\370\200\327\323\231\341\245  
\341\276\324\125\161\230\065\072\276\223\352\256\255\102\262\220  
\157\340\374\041\115\065\143\063\211\111\326\233\116\312\307\347  
\116\011\000\367\332\307\357\231\142\231\167\266\225\042\136\212  
\240\253\364\270\170\230\312\070\031\231\311\162\236\170\315\113  
\254\257\031\240\163\022\055\374\302\101\272\201\221\332\026\132  
\061\267\371\264\161\200\022\110\231\162\163\132\131\123\301\143  
\122\063\355\247\311\322\071\002\160\372\340\261\102\146\051\252  
\233\121\355\060\124\042\024\137\331\253\035\301\344\224\360\370  
\365\053\367\352\312\170\106\326\270\221\375\246\015\053\032\024  
\001\076\200\360\102\240\225\007\136\155\315\314\113\244\105\215  
\253\022\350\263\336\132\345\240\174\350\017\042\035\132\351\131

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "GeoTrust Primary Certification Authority"

# Issuer: CN=GeoTrust Primary Certification Authority,O=GeoTrust Inc.,C=US

# Serial Number: 18:ac:b5:6a:fd:69:b6:15:3a:63:6c:af:da:fa:c4:a1

# Subject: CN=GeoTrust Primary Certification Authority,O=GeoTrust Inc.,C=US

# Not Valid

Before: Mon Nov 27 00:00:00 2006

# Not Valid After: Wed Jul 16 23:59:59 2036

# Fingerprint (MD5): 02:26:c3:01:5e:08:30:37:43:a9:d0:7d:cf:37:e6:bf

# Fingerprint (SHA1): 32:3c:11:8e:1b:f7:b8:b6:52:54:e2:e2:10:0d:d6:02:90:37:f0:96

```

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "GeoTrust Primary Certification Authority"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\062\074\021\216\033\367\270\266\122\124\342\342\020\015\326\002
\220\067\360\226
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\002\046\303\001\136\010\060\067\103\251\320\175\317\067\346\277
END
CKA_ISSUER MULTILINE_OCTAL
\060\130\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\026\060\024\006\003\125\004\012\023\015\107\145\157\124\162\165
\163\164\040\111\156\143\056\061\061\060\057\006\003\125\004\003
\023\050\107\145\157\124\162\165\163\164\040\120\162\151\155\141
\162\171\040\103\145\162\164\151\146\151\143\141\164\151\157\156
\040\101\165\164\150\157\162\151\164\171
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\030\254\265\152\375\151\266\025\072\143\154\257\332\372
\304\241
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

```

```

# Microsoft Code Signing Only Certificate
# Certificate "thawte Primary Root CA"
# Issuer: CN=thawte Primary Root CA,OU=(c) 2006 thawte\, Inc. - For authorized use only,OU=Certification
Services Division,O=thawte\, Inc.,C=US
# Serial Number:34:4e:d5:57:20:d5:ed:ec:49:f4:2f:ce:37:db:2b:6d
# Subject: CN=thawte Primary Root CA,OU=(c) 2006 thawte\, Inc. - For authorized use only,OU=Certification
Services Division,O=thawte\, Inc.,C=US
# Not Valid Before: Fri Nov 17 00:00:00 2006
# Not Valid After: Wed Jul 16 23:59:59 2036
# Fingerprint (MD5): 8c:ca:dc:0b:22:ce:f5:be:72:ac:41:1a:11:a8:d8:12
# Fingerprint (SHA1): 91:c6:d6:ee:3e:8a:c8:63:84:e5:48:c2:99:29:5c:75:6c:81:7b:81

```

```

CKA_CLASS
CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "thawte Primary Root CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

```



CKA\_SUBJECT MULTILINE\_OCTAL

\060\201\251\061\013\060\011\006\003\125\004\006\023\002\125\123  
\061\025\060\023\006\003\125\004\012\023\014\164\150\141\167\164  
\145\054\040\111\156\143\056\061\050\060\046\006\003\125\004\013  
\023\037\103\145\162\164\151\146\151\143\141\164\151\157\156\040  
\123\145\162\166\151\143\145\163\040\104\151\166\151\163\151\157  
\156\061\070\060\066\006\003\125\004\013\023\057\050\143\051\040  
\062\060\060\066\040\164\150\141\167\164\145\054\040\111\156\143  
\056\040\055\040\106\157\162\040\141\165\164\150\157\162\151\172  
\145\144\040\165\163\145\040\157\156\154\171\061\037\060\035\006  
\003\125\004\003\023\026\164\150\141\167\164\145\040\120\162\151  
\155\141\162\171\040\122\157\157\164\040\103\101

END

CKA\_ID

UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\251\061\013\060\011\006\003\125\004\006\023\002\125\123  
\061\025\060\023\006\003\125\004\012\023\014\164\150\141\167\164  
\145\054\040\111\156\143\056\061\050\060\046\006\003\125\004\013  
\023\037\103\145\162\164\151\146\151\143\141\164\151\157\156\040  
\123\145\162\166\151\143\145\163\040\104\151\166\151\163\151\157  
\156\061\070\060\066\006\003\125\004\013\023\057\050\143\051\040  
\062\060\060\066\040\164\150\141\167\164\145\054\040\111\156\143  
\056\040\055\040\106\157\162\040\141\165\164\150\157\162\151\172  
\145\144\040\165\163\145\040\157\156\154\171\061\037\060\035\006  
\003\125\004\003\023\026\164\150\141\167\164\145\040\120\162\151  
\155\141\162\171\040\122\157\157\164\040\103\101

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\064\116\325\127\040\325\355\354\111\364\057\316\067\333  
\053\155

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\004\040\060\202\003\010\240\003\002\001\002\002\020\064  
\116\325\127\040\325\355\354\111\364\057\316\067\333\053\155\060  
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\201  
\251\061\013\060\011\006\003\125\004\006\023\002\125\123\061\025  
\060\023\006\003\125\004\012\023\014\164\150\141\167\164\145\054  
\040\111\156\143\056\061\050\060\046\006\003\125\004\013\023\037  
\103\145\162\164\151\146\151\143\141\164\151\157\156\040\123\145  
\162\166\151\143\145\163\040\104\151\166\151\163\151\157\156\061  
\070\060\066\006\003\125\004\013\023\057\050\143\051\040\062\060  
\060\066\040\164\150\141\167\164\145\054\040\111\156\143\056\040  
\055\040\106\157\162\040\141\165\164\150\157\162\151\172\145\144  
\040\165\163\145\040\157\156\154\171\061\037\060\035\006\003\125  
\004\003\023\026\164\150\141\167\164\145\040\120\162\151\155\141  
\162\171\040\122\157\157\164\040\103\101\060\036\027\015\060\066  
\061\061\061\067\060\060\060\060\060\060\132\027\015\063\066\060

\067\061\066\062\063\065\071\065\071\132\060\201\251\061\013\060  
\011\006\003\125\004\006\023\002\125\123\061\025\060\023\006\003  
\125\004\012\023\014\164\150\141\167\164\145\054\040\111\156\143  
\056\061\050\060\046\006\003\125\004\013\023\037\103\145\162\164  
\151\146\151\143\141\164\151\157\156\040\123\145\162\166\151\143  
\145\163\040\104\151\166\151\163\151\157\156\061\070\060\066\006  
\003\125\004\013\023\057\050\143\051\040\062\060\060\066\040\164  
\150\141\167\164\145\054\040\111\156\143\056\040\055\040\106\157  
\162\040\141\165\164\150\157\162\151\172\145\144\040\165\163\145  
\040\157\156\154\171\061\037\060\035\006\003\125\004\003\023\026  
\164\150\141\167\164\145\040\120\162\151\155\141\162\171\040\122  
\157\157\164\040\103\101\060\202\001\042\060\015\006\011\052\206  
\110\206\367\015\001\001\001\005\000\003\202\001\017\000\060\202  
\001\012\002\202\001\001\000\254\240\360\373\200\131\324\234\307  
\244\317\235\241\131\163\011\020\105\014\015\054\156\150\361\154  
\133\110\150\111\131\067\374\013\063\031\302\167\177\314\020\055  
\225\064\034\346\353\115\011\247\034\322\270\311\227\066\002\267  
\211\324\044\137\006\300\314\104\224\224\215\002\142\157\353\132  
\335\021\215\050\232\134\204\220\020\172\015\275\164\146\057\152  
\070\240\342\325\124\104\353\035\007\237\007\272\157\356\351\375  
\116\013\051\365\076\204\240\001\361\234\253\370\034\176\211\244  
\350\241\330\161\145\015\243\121\173\356\274\322\042\140\015\271  
\133\235\337\272\374\121\133\013\257\230\262\351\056\351\004\350  
\142\207\336\053\310\327\116\301\114\144\036\335\317\207\130\272  
\112\117\312\150\007\035\034\235\112\306\325\057\221\314\174\161  
\162\034\305\300\147\353\062\375\311\222\134\224\332\205\300\233  
\277\123\175\053\011\364\214\235\221\037\227\152\122\313\336\011  
\066\244\167\330\173\207\120\104\325\076\156\051\151\373\071\111  
\046\036\011\245\200\173\100\055\353\350\047\205\311\376\141\375  
\176\346\174\227\035\325\235\002\003\001\000\001\243\102\060\100  
\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001  
\377\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001  
\006\060\035\006\003\125\035\016\004\026\004\024\173\133\105\317  
\257\316\313\172\375\061\222\032\152\266\363\106\353\127\110\120  
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\003  
\202\001\001\000\171\021\300\113\263\221\266\374\360\351\147\324  
\015\156\105\276\125\350\223\322\316\003\077\355\332\045\260\035  
\127\313\036\072\166\240\114\354\120\166\350\144\162\014\244\251  
\361\270\213\326\326\207\204\273\062\345\101\021\300\167\331\263  
\140\235\353\033\325\321\156\104\104\251\246\001\354\125\142\035  
\167\270\134\216\110\111\174\234\073\127\021\254\255\163\067\216  
\057\170\134\220\150\107\331\140\140\346\374\007\075\042\040\027  
\304\367\026\351\304\330\162\371\310\163\174\337\026\057\025\251  
\076\375\152\047\266\241\353\132\272\230\037\325\343\115\144\012  
\235\023\310\141\272\365\071\034\207\272\270\275\173\042\177\366  
\376\254\100\171\345\254\020\157\075\217\033\171\166\213\304\067  
\263\041\030\204\345\066\000\353\143\040\231\271\351\376\063\004  
\273\101\310\301\002\371\104\143\040\236\201\316\102\323\326\077

```
\054\166\323\143\234\131\335\217\246\341\016\240\056\101\367\056
\225\107\317\274\375\063\363\366\013\141\176\176\221\053\201\107
\302\047\060\356\247\020\135\067\217\134\071\053\344\004\360\173
\215\126\214\150
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "thawte Primary Root CA"

# Issuer: CN=thawte Primary Root CA,OU=(c) 2006 thawte\, Inc. - For authorized use only,OU=Certification Services Division,O=thawte\, Inc.,C=US

# Serial Number:34:4e:d5:57:20:d5:ed:ec:49:f4:2f:ce:37:db:2b:6d

# Subject: CN=thawte Primary Root CA,OU=(c) 2006 thawte\, Inc. - For authorized use only,OU=Certification Services Division,O=thawte\, Inc.,C=US

# Not Valid Before: Fri Nov 17 00:00:00 2006

# Not Valid After: Wed Jul 16 23:59:59 2036

# Fingerprint (MD5): 8c:ca:dc:0b:22:ce:f5:be:72:ac:41:1a:11:a8:d8:12

# Fingerprint (SHA1): 91:c6:d6:ee:3e:8a:c8:63:84:e5:48:c2:99:29:5c:75:6c:81:7b:81

CKA\_CLASS

CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "thawte Primary Root CA"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\221\306\326\356\076\212\310\143\204\345\110\302\231\051\134\165
\154\201\173\201
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\214\312\334\013\042\316\365\276\162\254\101\032\021\250\330\022
```

END

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\201\251\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\025\060\023\006\003\125\004\012\023\014\164\150\141\167\164
\145\054\040\111\156\143\056\061\050\060\046\006\003\125\004\013
\023\037\103\145\162\164\151\146\151\143\141\164\151\157\156\040
\123\145\162\166\151\143\145\163\040\104\151\166\151\163\151\157
\156\061\070\060\066\006\003\125\004\013\023\057\050\143\051\040
\062\060\060\066\040\164\150\141\167\164\145\054\040\111\156\143
\056\040\055\040\106\157\162\040\141\165\164\150\157\162\151\172
\145\144\040\165\163\145\040\157\156\154\171\061\037\060\035\006
\003\125\004\003\023\026\164\150\141\167\164\145\040\120\162\151
\155\141\162\171\040\122\157\157\164\040\103\101
```

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\020\064\116\325\127\040\325\355\354\111\364\057\316\067\333  
\053\155

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST  
CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST  
CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR  
CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "VeriSign Class 3 Public Primary Certification Authority - G5"

# Issuer: CN=VeriSign Class 3 Public Primary Certification Authority - G5,OU=(c) 2006 VeriSign, Inc. - For  
authorized use only,OU=VeriSign Trust Network,O=VeriSign, Inc.,C=US

# Serial Number:18:da:d1:9e:26:7d:e8:bb:4a:21:58:cd:cc:6b:3b:4a

# Subject: CN=VeriSign Class 3 Public Primary Certification Authority - G5,OU=(c) 2006 VeriSign, Inc. - For  
authorized use only,OU=VeriSign Trust Network,O=VeriSign, Inc.,C=US

#

Not Valid Before: Wed Nov 08 00:00:00 2006

# Not Valid After: Wed Jul 16 23:59:59 2036

# Fingerprint (MD5): cb:17:e4:31:67:3e:e2:09:fe:45:57:93:f3:0a:fa:1c

# Fingerprint (SHA1): 4e:b6:d5:78:49:9b:1c:cf:5f:58:1e:ad:56:be:3d:9b:67:44:a5:e5

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "VeriSign Class 3 Public Primary Certification Authority - G5"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\201\312\061\013\060\011\006\003\125\004\006\023\002\125\123  
\061\027\060\025\006\003\125\004\012\023\016\126\145\162\151\123  
\151\147\156\054\040\111\156\143\056\061\037\060\035\006\003\125  
\004\013\023\026\126\145\162\151\123\151\147\156\040\124\162\165  
\163\164\040\116\145\164\167\157\162\153\061\072\060\070\006\003  
\125\004\013\023\061\050\143\051\040\062\060\060\066\040\126\145  
\162\151\123\151\147\156\054\040\111\156\143\056\040\055\040\106  
\157\162\040\141\165\164\150\157\162\151\172\145\144\040\165\163  
\145\040\157\156\154\171\061\105\060\103\006\003\125\004\003\023  
\074\126\145\162\151\123\151\147\156\040\103\154\141\163\163\040  
\063\040\120\165\142\154\151\143\040\120\162\151\155\141\162\171  
\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101  
\165\164\150\157\162\151\164\171\040\055\040\107\065

END

CKA\_ID

UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\312\061\013\060\011\006\003\125\004\006\023\002\125\123  
\061\027\060\025\006\003\125\004\012\023\016\126\145\162\151\123  
\151\147\156\054\040\111\156\143\056\061\037\060\035\006\003\125

\004\013\023\026\126\145\162\151\123\151\147\156\040\124\162\165  
\163\164\040\116\145\164\167\157\162\153\061\072\060\070\006\003  
\125\004\013\023\061\050\143\051\040\062\060\060\066\040\126\145  
\162\151\123\151\147\156\054\040\111\156\143\056\040\055\040\106  
\157\162\040\141\165\164\150\157\162\151\172\145\144\040\165\163  
\145\040\157\156\154\171\061\105\060\103\006\003\125\004\003\023  
\074\126\145\162\151\123\151\147\156\040\103\154\141\163\163\040  
\063\040\120\165\142\154\151\143\040\120\162\151\155\141\162\171  
\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101  
\165\164\150\157\162\151\164\171\040\055\040\107\065

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\020\030\332\321\236\046\175\350\273\112\041\130\315\314\153  
\073\112

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\004\323\060\202\003\273\240\003\002\001\002\002\020\030  
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\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\201  
\312\061\013\060\011\006\003\125\004\006\023\002\125\123\061\027  
\060\025\006\003\125\004\012\023\016\126\145\162\151\123\151\147  
\156\054\040\111\156\143\056\061\037\060\035\006\003\125\004\013  
\023\026\126\145\162\151\123\151\147\156\040\124\162\165\163\164  
\040\116\145\164\167\157\162\153\061\072\060\070\006\003\125\004  
\013\023\061\050\143\051\040\062\060\060\066\040\126\145\162\151  
\123\151\147\156\054\040\111\156\143\056\040\055\040\106\157\162  
\040\141\165\164\150\157\162\151\172\145\144\040\165\163\145\040  
\157\156\154\171\061\105\060\103\006\003\125\004\003\023\074\126  
\145\162\151\123\151\147\156\040\103\154\141\163\163\040\063\040  
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\145\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164  
\150\157\162\151\164\171\040\055\040\107\065\060\036\027\015\060  
\066\061\061\060\070\060\060\060\060\060\060\132\027\015\063\066  
\060\067\061\066\062\063\065\071\065\071\132\060\201\312\061\013  
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\111\156\143\056\061\037\060\035\006\003\125\004\013\023\026\126  
\145\162\151\123\151\147\156\040\124\162\165\163\164\040\116\145  
\164\167\157\162\153\061\072\060\070\006\003\125\004\013\023\061  
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\156\054\040\111\156\143\056\040\055\040\106\157\162\040\141\165  
\164\150\157\162\151\172\145\144\040\165\163\145\040\157\156\154  
\171\061\105\060\103\006\003\125\004\003\023\074\126\145\162\151  
\123\151\147\156\040\103\154\141\163\163\040\063\040\120\165\142  
\154\151\143\040\120\162\151\155\141\162\171\040\103\145\162\164  
\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162  
\151\164\171\040\055\040\107\065\060\202\001\042\060\015\006\011

\052\206\110\206\367\015\001\001\001\005\000\003\202\001\017\000  
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\236\140\014\252\347\113\073\116\334\174\274\074\105\034\273\053  
\340\376\051\002\371\127\010\243\144\205\025\047\365\361\255\310  
\061\211\135\042\350\052\252\246\102\263\217\370\271\125\267\261  
\267\113\263\376\217\176\007\127\354\357\103\333\146\142\025\141  
\317\140\015\244\330\336\370\340\303\142\010\075\124\023\353\111  
\312\131\124\205\046\345\053\217\033\237\353\365\241\221\302\063  
\111\330\103\143\152\122\113\322\217\350\160\121\115\321\211\151  
\173\307\160\366\263\334\022\164\333\173\135\113\126\323\226\277  
\025\167\241\260\364\242\045\362\257\034\222\147\030\345\364\006  
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\356\340\213\353\067\213\354\364\327\254\362\366\360\075\257\335  
\165\221\063\031\035\034\100\313\164\044\031\041\223\331\024\376  
\254\052\122\307\217\325\004\111\344\215\143\107\210\074\151\203  
\313\376\107\275\053\176\117\305\225\256\016\235\324\321\103\300  
\147\163\343\024\010\176\345\077\237\163\270\063\012\317\135\077  
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\262\060\201\257\060\017\006\003\125\035\023\001\001\377\004\005  
\060\003\001\001\377\060\016\006\003\125\035\017\001\001\377\004  
\004\003\002\001\006\060\155\006\010\053\006\001\005\005\007\001  
\014\004\141\060\137\241\135\240\133\060\131\060\127\060\125\026  
\011\151\155\141\147\145\057\147\151\146\060\041\060\037\060\007  
\006\005\053\016\003\002\032\004\024\217\345\323\032\206\254\215  
\216\153\303\317\200\152\324\110\030\054\173\031\056\060\045\026  
\043\150\164\164\160\072\057\057\154\157\147\157\056\166\145\162  
\151\163\151\147\156\056\143\157\155\057\166\163\154\157\147\157  
\056\147\151\146\060\035\006\003\125\035\016\004\026\004\024\177  
\323\145\247\302\335\354\273\360\060\011\363\103\071\372\002\257  
\063\061\063\060\015\006\011\052\206\110\206\367\015\001\001\005  
\005\000\003\202\001\001\000\223\044\112\060\137\142\317\330\032  
\230\057\075\352\334\231\055\275\167\366\245\171\042\070\354\304  
\247\240\170\022\255\142\016\105\160\144\305\347\227\146\055\230  
\011\176\137\257\326\314\050\145\362\001\252\010\032\107\336\371  
\371\174\222\132\010\151\040\015\331\076\155\156\074\015\156\330  
\346\006\221\100\030\271\370\301\355\337\333\101\252\340\226\040  
\311\315\144\025\070\201\311\224\356\242\204\051\013\023\157\216  
\333\014\335\045\002\333\244\213\031\104\322\101\172\005\151\112  
\130\117\140\312\176\202\152\013\002\252\045\027\071\265\333\177  
\347\204\145\052\225\212\275\206\336\136\201\026\203\055\020\314  
\336\375\250\202\052\155\050\037\015\013\304\345\347\032\046\031  
\341\364\021\157\020\265\225\374\347\102\005\062\333\316\235\121  
\136\050\266\236\205\323\133\357\245\175\105\100\162\216\267\016  
\153\016\006\373\063\065\110\161\270\235\047\213\304\145\137\015  
\206\166\234\104\172\366\225\134\366\135\062\010\063\244\124\266  
\030\077\150\134\362\102\112\205\070\124\203\137\321\350\054\362  
\254\021\326\250\355\143\152

END

CKA\_NSS\_MOZILLA\_CA\_POLICY  
CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate  
# Trust for "VeriSign Class 3 Public Primary Certification Authority - G5"  
# Issuer: CN=VeriSign Class 3 Public Primary Certification Authority - G5,OU=(c) 2006 VeriSign\, Inc. - For authorized use only,OU=VeriSign Trust Network,O=VeriSign\, Inc.,C=US  
# Serial Number:18:da:d1:9e:26:7d:e8:bb:4a:21:58:cd:cc:6b:3b:4a  
# Subject: CN=VeriSign Class 3 Public Primary Certification Authority - G5,OU=(c) 2006 VeriSign\, Inc. - For authorized use only,OU=VeriSign Trust Network,O=VeriSign\, Inc.,C=US  
# Not Valid Before: Wed Nov 08 00:00:00 2006  
# Not Valid After: Wed Jul 16 23:59:59 2036

# Fingerprint (MD5): cb:17:e4:31:67:3e:e2:09:fe:45:57:93:f3:0a:fa:1c  
# Fingerprint (SHA1): 4e:b6:d5:78:49:9b:1c:cf:5f:58:1e:ad:56:be:3d:9b:67:44:a5:e5  
CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST  
CKA\_TOKEN CK\_BBOOL CK\_TRUE  
CKA\_PRIVATE CK\_BBOOL CK\_FALSE  
CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE  
CKA\_LABEL UTF8 "VeriSign Class 3 Public Primary Certification Authority - G5"  
CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL  
\116\266\325\170\111\233\034\317\137\130\036\255\126\276\075\233  
\147\104\245\345

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL  
\313\027\344\061\147\076\342\011\376\105\127\223\363\012\372\034  
END

CKA\_ISSUER MULTILINE\_OCTAL  
\060\201\312\061\013\060\011\006\003\125\004\006\023\002\125\123  
\061\027\060\025\006\003\125\004\012\023\016\126\145\162\151\123  
\151\147\156\054\040\111\156\143\056\061\037\060\035\006\003\125  
\004\013\023\026\126\145\162\151\123\151\147\156\040\124\162\165  
\163\164\040\116\145\164\167\157\162\153\061\072\060\070\006\003  
\125\004\013\023\061\050\143\051\040\062\060\060\066\040\126\145  
\162\151\123\151\147\156\054\040\111\156\143\056\040\055\040\106  
\157\162\040\141\165\164\150\157\162\151\172\145\144\040\165\163  
\145\040\157\156\154\171\061\105\060\103\006\003\125\004\003\023  
\074\126\145\162\151\123\151\147\156\040\103\154\141\163\163\040  
\063\040\120\165\142\154\151\143\040\120\162\151\155\141\162\171  
\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101  
\165\164\150\157\162\151\164\171\040\055\040\107\065

END

CKA\_SERIAL\_NUMBER  
MULTILINE\_OCTAL  
\002\020\030\332\321\236\046\175\350\273\112\041\130\315\314\153  
\073\112  
END

```
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
# Microsoft Code Signing Only
```

```
Certificate
```

```
# Certificate "Swisscom Root CA 1"
```

```
# Issuer: CN=Swisscom Root CA 1,OU=Digital Certificate Services,O=Swisscom,C=ch
```

```
# Serial Number:5c:0b:85:5c:0b:e7:59:41:df:57:cc:3f:7f:9d:a8:36
```

```
# Subject: CN=Swisscom Root CA 1,OU=Digital Certificate Services,O=Swisscom,C=ch
```

```
# Not Valid Before: Thu Aug 18 12:06:20 2005
```

```
# Not Valid After: Mon Aug 18 22:06:20 2025
```

```
# Fingerprint (MD5): f8:38:7c:77:88:df:2c:16:68:2e:c2:e2:52:4b:b8:f9
```

```
# Fingerprint (SHA1): 5f:3a:fc:0a:8b:64:f6:86:67:34:74:df:7e:a9:a2:fe:f9:fa:7a:51
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "Swisscom Root CA 1"
```

```
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
```

```
CKA_SUBJECT MULTILINE_OCTAL
```

```
\060\144\061\013\060\011\006\003\125\004\006\023\002\143\150\061
\021\060\017\006\003\125\004\012\023\010\123\167\151\163\163\143
\157\155\061\045\060\043\006\003\125\004\013\023\034\104\151\147
\151\164\141\154\040\103\145\162\164\151\146\151\143\141\164\145
\040\123\145\162\166\151\143\145\163\061\033\060\031\006\003\125
\004\003\023\022\123\167\151\163\163\143\157\155\040\122\157\157
\164\040\103\101\040\061
```

```
END
```

```
CKA_ID
```

```
UTF8 "0"
```

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\144\061\013\060\011\006\003\125\004\006\023\002\143\150\061
\021\060\017\006\003\125\004\012\023\010\123\167\151\163\163\143
\157\155\061\045\060\043\006\003\125\004\013\023\034\104\151\147
\151\164\141\154\040\103\145\162\164\151\146\151\143\141\164\145
\040\123\145\162\166\151\143\145\163\061\033\060\031\006\003\125
\004\003\023\022\123\167\151\163\163\143\157\155\040\122\157\157
\164\040\103\101\040\061
```

```
END
```

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
```

```
\002\020\134\013\205\134\013\347\131\101\337\127\314\077\177\235
\250\066
```

```
END
```

```
CKA_VALUE MULTILINE_OCTAL
```

```
\060\202\005\331\060\202\003\301\240\003\002\001\002\002\020\134
\013\205\134\013\347\131\101\337\127\314\077\177\235\250\066\060
```



\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\144  
\061\013\060\011\006\003\125\004\006\023\002\143\150\061\021\060  
\017\006\003\125\004\012\023\010\123\167\151\163\163\143\157\155  
\061\045\060\043\006\003\125\004\013\023\034\104\151\147\151\164  
\141\154\040\103\145\162\164\151\146\151\143\141\164\145\040\123  
\145\162\166\151\143\145\163\061\033\060\031\006\003\125\004\003  
\023\022\123\167\151\163\163\143\157\155\040\122\157\157\164\040  
\103\101\040\061\060\036\027\015\060\065\060\070\061\070\061\062  
\060\066\062\060\132\027\015\062\065\060\070\061\070\062\062\060  
\066\062\060\132\060\144\061\013\060\011\006\003\125\004\006\023  
\002\143\150\061\021\060\017\006\003\125\004\012\023\010\123\167  
\151\163\163\143\157\155\061\045\060\043\006\003\125\004\013\023  
\034\104\151\147\151\164\141\154\040\103\145\162\164\151\146\151  
\143\141\164\145\040\123\145\162\166\151\143\145\163\061\033\060  
\031\006\003\125\004\003\023\022\123\167\151\163\163\143\157\155  
\040\122\157\157\164\040\103\101\040\061\060\202\002\042\060\015  
\006\011\052\206\110\206\367\015\001\001\001\005\000\003\202\002  
\017\000\060\202\002\012\002\202\002\001\000\320\271\260\250\014  
\331\273\077\041\370\033\325\063\223\200\026\145\040\165\262\075  
\233\140\155\106\310\214\061\157\027\303\372\232\154\126\355\074  
\305\221\127\303\315\253\226\111\220\052\031\113\036\243\155\127  
\335\361\053\142\050\165\105\136\252\326\133\372\013\045\330\241  
\026\371\034\304\056\346\225\052\147\314\320\051\156\074\205\064  
\070\141\111\261\000\237\326\072\161\137\115\155\316\137\271\251  
\344\211\177\152\122\372\312\233\362\334\251\371\235\231\107\077  
\116\051\137\264\246\215\135\173\013\231\021\003\003\376\347\333  
\333\243\377\035\245\315\220\036\001\037\065\260\177\000\333\220  
\157\306\176\173\321\356\172\172\247\252\014\127\157\244\155\305  
\023\073\260\245\331\355\062\034\264\136\147\213\124\334\163\207  
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\221\326\227\276\050\365\230\036\352\133\046\311\275\260\227\163  
\332\256\221\046\353\150\301\371\071\025\326\147\113\012\155\117  
\313\317\260\344\102\161\214\123\171\347\356\341\333\035\240\156  
\035\214\032\167\065\134\026\036\053\123\037\064\213\321\154\374  
\362\147\007\172\365\255\355\326\232\253\241\261\113\341\314\067  
\137\375\177\315\115\256\270\037\234\103\371\052\130\125\103\105  
\274\226\315\160\016\374\311\343\146\272\116\215\073\201\313\025  
\144\173\271\224\350\135\063\122\205\161\056\117\216\242\006\021  
\121\311\343\313\241\156\061\010\144\014\302\322\074\365\066\350  
\327\320\016\170\043\040\221\311\044\052\145\051\133\042\367\041  
\316\203\136\244\363\336\113\323\150\217\106\165\134\203\011\156  
\051\153\304\160\214\365\235\327\040\057\377\106\322\053\070\302  
\057\165\034\075\176\332\245\357\036\140\205\151\102\323\314\370  
\143\376\036\103\071\205\246\266\143\101\020\263\163\036\274\323  
\372\312\175\026\107\342\247\325\320\243\212\012\010\226\142\126  
\156\064\333\331\002\271\060\165\343\004\322\347\217\302\260\021  
\100\012\254\325\161\002\142\213\061\276\335\306\043\130\061\102

\103\055\164\371\306\236\246\212\017\351\376\277\203\346\103\127  
\044\272\357\106\064\252\327\022\001\070\355\002\003\001\000\001  
\243\201\206\060\201\203\060\016\006\003\125\035\017\001\001\377  
\004\004\003\002\001\206\060\035\006\003\125\035\041\004\026\060  
\024\060\022\006\007\140\205\164\001\123\000\001\006\007\140\205  
\164\001\123\000\001\060\022\006\003\125\035\023\001\001\377\004  
\010\060\006\001\001\377\002\001\007\060\037\006\003\125\035\043  
\004\030\060\026\200\024\003\045\057\336\157\202\001\072\134\054  
\334\053\241\151\265\147\324\214\323\375\060\035\006\003\125\035  
\016\004\026\004\024\003\045\057\336\157\202\001\072\134\054\334  
\053\241\151\265\147\324\214\323\375\060\015\006\011\052\206\110  
\206\367\015\001\001\005\005\000\003\202\002\001\000\065\020\313  
\354\246\004\015\015\017\315\300\333\253\250\362\210\227\014\337  
\223\057\115\174\100\126\061\172\353\244\017\140\315\172\363\276  
\303\047\216\003\076\244\335\022\357\176\036\164\006\074\077\061  
\362\034\173\221\061\041\264\360\320\154\227\324\351\227\262\044  
\126\036\126\303\065\275\210\005\017\133\020\032\144\341\307\202  
\060\371\062\255\236\120\054\347\170\005\320\061\261\132\230\212  
\165\116\220\134\152\024\052\340\122\107\202\140\346\036\332\201  
\261\373\024\013\132\361\237\322\225\272\076\320\033\326\025\035  
\243\276\206\325\333\017\300\111\144\273\056\120\031\113\322\044  
\370\335\036\007\126\320\070\240\225\160\040\166\214\327\335\036  
\336\237\161\304\043\357\203\023\134\243\044\025\115\051\100\074  
\152\304\251\330\267\246\104\245\015\364\340\235\167\036\100\160  
\046\374\332\331\066\344\171\344\265\077\274\233\145\276\273\021  
\226\317\333\306\050\071\072\010\316\107\133\123\132\305\231\376  
\135\251\335\357\114\324\306\245\255\002\346\214\007\022\036\157  
\003\321\157\240\243\363\051\275\022\307\120\242\260\177\210\251  
\231\167\232\261\300\245\071\056\134\174\151\342\054\260\352\067  
\152\244\341\132\341\365\120\345\203\357\245\273\052\210\347\214  
\333\375\155\136\227\031\250\176\146\165\153\161\352\277\261\307  
\157\240\364\216\244\354\064\121\133\214\046\003\160\241\167\325  
\001\022\127\000\065\333\043\336\016\212\050\231\375\261\020\157  
\113\377\070\055\140\116\054\234\353\147\265\255\111\356\113\037  
\254\257\373\015\220\132\146\140\160\135\252\315\170\324\044\356  
\310\101\240\223\001\222\234\152\236\374\271\044\305\263\025\202  
\176\276\256\225\053\353\261\300\332\343\001\140\013\136\151\254  
\204\126\141\276\161\027\376\035\023\017\376\306\207\105\351\376  
\062\240\032\015\023\244\224\125\161\245\026\213\272\312\211\260  
\262\307\374\217\330\124\265\223\142\235\316\317\131\373\075\030  
\316\052\313\065\025\202\135\377\124\042\133\161\122\373\267\311  
\376\140\233\000\101\144\360\252\052\354\266\102\103\316\211\146  
\201\310\213\237\071\124\003\045\323\026\065\216\204\320\137\372  
\060\032\365\232\154\364\016\123\371\072\133\321\034

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER  
CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate  
# Trust for "Swisscom Root CA 1"  
# Issuer: CN=Swisscom Root CA 1,OU=Digital Certificate Services,O=Swisscom,C=ch  
# Serial Number:5c:0b:85:5c:0b:e7:59:41:df:57:cc:3f:7f:9d:a8:36  
# Subject: CN=Swisscom Root CA 1,OU=Digital Certificate Services,O=Swisscom,C=ch  
# Not Valid Before: Thu Aug 18 12:06:20 2005  
# Not Valid After: Mon Aug 18 22:06:20 2025  
# Fingerprint (MD5): f8:38:7c:77:88:df:2c:16:68:2e:c2:e2:52:4b:b8:f9  
# Fingerprint (SHA1): 5f:3a:fc:0a:8b:64:f6:86:67:34:74:df:7e:a9:a2:fe:f9:fa:7a:51

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST  
CKA\_TOKEN CK\_BBOOL CK\_TRUE  
CKA\_PRIVATE CK\_BBOOL CK\_FALSE  
CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE  
CKA\_LABEL UTF8 "Swisscom Root CA 1"  
CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL  
\137\072\374\012\213\144\366\206\147\064\164\337\176\251\242\376  
\371\372\172\121

END  
CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL  
\370\070\174\167\210\337\054\026\150\056\302\342\122\113\270\371  
END

CKA\_ISSUER MULTILINE\_OCTAL  
\060\144\061\013\060\011\006\003\125\004\006\023\002\143\150\061  
\021\060\017\006\003\125\004\012\023\010\123\167\151\163\163\143  
\157\155\061\045\060\043\006\003\125\004\013\023\034\104\151\147  
\151\164\141\154\040\103\145\162\164\151\146\151\143\141\164\145  
\040\123\145\162\166\151\143\145\163\061\033\060\031\006\003\125  
\004\003\023\022\123\167\151\163\163\143\157\155\040\122\157\157  
\164\040\103\101\040\061

END  
CKA\_SERIAL\_NUMBER  
MULTILINE\_OCTAL  
\002\020\134\013\205\134\013\347\131\101\337\127\314\077\177\235  
\250\066  
END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST  
CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST  
CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR  
CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate  
# Certificate "Microsec e-Szigno Root CA"  
# Issuer: CN=Microsec e-Szigno Root CA,OU=e-Szigno CA,O=Microsec Ltd.,L=Budapest,C=HU  
# Serial Number:cc:b8:e7:bf:4e:29:1a:fd:a2:dc:66:a5:1c:2c:0f:11  
# Subject: CN=Microsec e-Szigno

```
Root CA,OU=e-Szigno CA,O=Microsec Ltd.,L=Budapest,C=HU
# Not Valid Before: Wed Apr 06 12:28:44 2005
# Not Valid After: Thu Apr 06 12:28:44 2017
# Fingerprint (MD5): f0:96:b6:2f:c5:10:d5:67:8e:83:25:32:e8:5e:2e:e5
# Fingerprint (SHA1): 23:88:c9:d3:71:cc:9e:96:3d:ff:7d:3c:a7:ce:fc:d6:25:ec:19:0d
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Microsec e-Szigno Root CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\162\061\013\060\011\006\003\125\004\006\023\002\110\125\061
\021\060\017\006\003\125\004\007\023\010\102\165\144\141\160\145
\163\164\061\026\060\024\006\003\125\004\012\023\015\115\151\143
\162\157\163\145\143\040\114\164\144\056\061\024\060\022\006\003
\125\004\013\023\013\145\055\123\172\151\147\156\157\040\103\101
\061\042\060\040\006\003\125\004\003\023\031\115\151\143\162\157
\163\145\143\040\145\055\123\172\151\147\156\157\040\122\157\157
\164\040\103\101
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\162\061\013\060\011\006\003\125\004\006\023\002\110\125\061
\021\060\017\006\003\125\004\007\023\010\102\165\144\141\160\145
\163\164\061\026\060\024\006\003\125\004\012\023\015\115\151\143
\162\157\163\145\143\040\114\164\144\056\061\024\060\022\006\003
\125\004\013\023\013\145\055\123\172\151\147\156\157\040\103\101
\061\042\060\040\006\003\125\004\003\023\031\115\151\143\162\157
\163\145\143\040\145\055\123\172\151\147\156\157\040\122\157\157
\164\040\103\101
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\021\000\314\270\347\277\116\051\032\375\242\334\146\245\034
\054\017\021
END
CKA_VALUE MULTILINE_OCTAL
\060\202\007\250\060\202\006\220\240\003\002\001\002\002\021\000
\314\270\347\277\116\051\032\375\242\334\146\245\034\054\017\021
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060
\162\061\013\060\011\006\003\125\004\006\023\002\110\125\061\021
\060\017\006\003\125\004\007\023\010\102\165\144\141\160\145\163
\164\061\026\060\024\006\003\125\004\012\023\015\115\151\143\162
\157\163\145\143\040\114\164\144\056\061\024\060\022\006\003\125
\004\013\023\013\145\055\123\172\151\147\156\157\040\103\101\061
\042\060\040\006\003\125\004\003\023\031\115\151\143\162\157\163
\145\143\040\145\055\123\172\151\147\156\157\040\122\157\157\164
```

\040\103\101\060\036\027\015\060\065\060\064\060\066\061\062\062  
\070\064\064\132\027\015\061\067\060\064\060\066\061\062\062\070  
\064\064\132\060\162\061\013\060\011\006\003\125\004\006\023\002  
\110\125\061\021\060\017\006\003\125\004\007\023\010\102\165\144  
\141\160\145\163\164\061\026\060\024\006\003\125\004\012\023\015  
\115\151\143\162\157\163\145\143\040\114\164\144\056\061\024\060  
\022\006\003\125\004\013\023\013\145\055\123\172\151\147\156\157  
\040\103\101\061\042\060\040\006\003\125\004\003\023\031\115\151  
\143\162\157\163\145\143\040\145\055\123\172\151\147\156\157\040  
\122\157\157\164\040\103\101\060\202\001\042\060\015\006\011\052  
\206\110\206\367\015\001\001\001\005\000\003\202\001\017\000\060  
\202\001\012\002\202\001\001\000\355\310\000\325\201\173\315\070  
\000\107\314\333\204\301\041\151\054\164\220\014\041\331\123\207  
\355\076\103\104\123\257\253\370\200\233\074\170\215\324\215\256  
\270\357\323\021\334\201\346\317\073\226\214\326\157\025\306\167  
\176\241\057\340\137\222\266\047\327\166\232\035\103\074\352\331  
\354\057\356\071\363\152\147\113\213\202\317\042\370\145\125\376  
\054\313\057\175\110\172\075\165\371\252\240\047\273\170\302\006  
\312\121\302\176\146\113\257\315\242\247\115\002\202\077\202\254  
\205\306\341\017\220\107\231\224\012\161\162\223\052\311\246\300  
\276\074\126\114\163\222\047\361\153\265\365\375\374\060\005\140  
\222\306\353\226\176\001\221\302\151\261\036\035\173\123\105\270  
\334\101\037\311\213\161\326\124\024\343\213\124\170\077\276\364  
\142\073\133\365\243\354\325\222\164\342\164\060\357\001\333\341  
\324\253\231\233\052\153\370\275\246\034\206\043\102\137\354\111  
\336\232\213\133\364\162\072\100\305\111\076\245\276\216\252\161  
\353\154\372\365\032\344\152\375\173\175\125\100\357\130\156\346  
\331\325\274\044\253\301\357\267\002\003\001\000\001\243\202\004  
\067\060\202\004\063\060\147\006\010\053\006\001\005\005\007\001  
\001\004\133\060\131\060\050\006\010\053\006\001\005\005\007\060  
\001\206\034\150\164\164\160\163\072\057\057\162\143\141\056\145  
\055\163\172\151\147\156\157\056\150\165\057\157\143\163\160\060  
\055\006\010\053\006\001\005\005\007\060\002\206\041\150\164\164  
\160\072\057\057\167\167\167\056\145\055\163\172\151\147\156\157  
\056\150\165\057\122\157\157\164\103\101\056\143\162\164\060\017  
\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060  
\202\001\163\006\003\125\035\040\004\202\001\152\060\202\001\146  
\060\202\001\142\006\014\053\006\001\004\001\201\250\030\002\001  
\001\001\060\202\001\120\060\050\006\010\053\006\001\005\005\007  
\002\001\026\034\150\164\164\160\072\057\057\167\167\167\056\145  
\055\163\172\151\147\156\157\056\150\165\057\123\132\123\132\057  
\060\202\001\042\006\010\053\006\001\005\005\007\002\002\060\202  
\001\024\036\202\001\020\000\101\000\040\000\164\000\141\000\156  
\000\372\000\163\000\355\000\164\000\166\000\341\000\156\000\171  
\000\040\000\351\000\162\000\164\000\145\000\154\000\155\000\145  
\000\172\000\351\000\163\000\351\000\150\000\145\000\172\000\040  
\000\351\000\163\000\040\000\145\000\154\000\146\000\157\000\147  
\000\141\000\144\000\341\000\163\000\341\000\150\000\157\000\172

\000\040\000\141\000\040\000\123\000\172\000\157\000\154\000\147  
\000\341\000\154\000\164\000\141\000\164\000\363\000\040\000\123  
\000\172\000\157\000\154\000\147\000\341\000\154\000\164\000\141  
\000\164\000\341\000\163\000\151\000\040\000\123\000\172\000\141  
\000\142\000\341\000\154\000\171\000\172\000\141\000\164\000\141  
\000\040\000\163\000\172\000\145\000\162\000\151\000\156\000\164  
\000\040\000\153\000\145\000\154\000\154\000\040\000\145\000\154  
\000\152\000\341\000\162\000\156\000\151\000\072\000\040\000\150  
\000\164\000\164\000\160\000\072\000\057\000\057\000\167\000\167  
\000\167\000\056\000\145\000\055\000\163\000\172\000\151\000\147  
\000\156\000\157\000\056\000\150\000\165\000\057\000\123\000\132  
\000\123\000\132\000\057\060\201\310\006\003\125\035\037\004\201  
\300\060\201\275\060\201\272\240\201\267\240\201\264\206\041\150  
\164\164\160\072\057\057\167\167\167\056\145\055\163\172\151\147  
\156\157\056\150\165\057\122\157\157\164\103\101\056\143\162\154  
\206\201\216\154\144\141\160\072\057\057\154\144\141\160\056\145  
\055\163\172\151\147\156\157\056\150\165\057\103\116\075\115\151  
\143\162\157\163\145\143\045\062\060\145\055\123\172\151\147\156  
\157\045\062\060\122\157\157\164\045\062\060\103\101\054\117\125  
\075\145\055\123\172\151\147\156\157\045\062\060\103\101\054\117  
\075\115\151\143\162\157\163\145\143\045\062\060\114\164\144\056  
\054\114\075\102\165\144\141\160\145\163\164\054\103\075\110\125  
\077\143\145\162\164\151\146\151\143\141\164\145\122\145\166\157  
\143\141\164\151\157\156\114\151\163\164\073\142\151\156\141\162  
\171\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001  
\006\060\201\226\006\003\125\035\021\004\201\216\060\201\213\201  
\020\151\156\146\157\100\145\055\163\172\151\147\156\157\056\150  
\165\244\167\060\165\061\043\060\041\006\003\125\004\003\014\032  
\115\151\143\162\157\163\145\143\040\145\055\123\172\151\147\156  
\303\263\040\122\157\157\164\040\103\101\061\026\060\024\006\003  
\125\004\013\014\015\145\055\123\172\151\147\156\303\263\040\110  
\123\132\061\026\060\024\006\003\125\004\012\023\015\115\151\143  
\162\157\163\145\143\040\113\146\164\056\061\021\060\017\006\003  
\125\004\007\023\010\102\165\144\141\160\145\163\164\061\013\060  
\011\006\003\125\004\006\023\002\110\125\060\201\254\006\003\125  
\035\043\004\201\244\060\201\241\200\024\307\240\111\165\026\141  
\204\333\061\113\204\322\361\067\100\220\357\116\334\367\241\166  
\244\164\060\162\061\013\060\011\006\003\125\004\006\023\002\110  
\125\061\021\060\017\006\003\125\004\007\023\010\102\165\144\141  
\160\145\163\164\061\026\060\024\006\003\125\004\012\023\015\115  
\151\143\162\157\163\145\143\040\114\164\144\056\061\024\060\022  
\006\003\125\004\013\023\013\145\055\123\172\151\147\156\157\040  
\103\101\061\042\060\040\006\003\125\004\003\023\031\115\151\143  
\162\157\163\145\143\040\145\055\123\172\151\147\156\157\040\122  
\157\157\164\040\103\101\202\021\000\314\270\347\277\116\051\032  
\375\242\334\146\245\034\054\017\021\060\035\006\003\125\035\016  
\004\026\004\024\307\240\111\165\026\141\204\333\061\113\204\322  
\361\067\100\220\357\116\334\367\060\015\006\011\052\206\110\206

```
\367\015\001\001\005\005\000\003\202\001\001\000\323\023\234\146
\143\131\056\312\134\160\014\374\203\274\125\261\364\216\007\154
\146\047\316\301\073\040\251\034\273\106\124\160\356\132\314\240
\167\352\150\104\047\353\362\051\335\167\251\325\373\343\324\247
\004\304\225\270\013\341\104\150\140\007\103\060\061\102\141\345
\356\331\345\044\325\033\337\341\112\033\252\237\307\137\370\172
\021\352\023\223\000\312\212\130\261\356\355\016\115\264\327\250
\066\046\174\340\072\301\325\127\202\361\165\266\375\211\137\332
\363\250\070\237\065\006\010\316\042\225\276\315\325\374\276\133
\336\171\153\334\172\251\145\146\276\261\045\132\137\355\176\323
\254\106\155\114\364\062\207\264\040\004\340\154\170\260\167\321
\205\106\113\246\022\267\165\350\112\311\126\154\327\222\253\235
\365\111\070\322\117\123\343\125\220\021\333\230\226\306\111\362
\076\364\237\033\340\367\210\334\045\142\231\104\330\163\277\077
\060\363\014\067\076\324\302\050\200\163\261\001\267\235\132\226
\024\001\113\251\021\235\051\152\056\320\135\201\300\317\262\040
\103\307\003\340\067\116\135\012\334\131\040\045
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "Microsec e-Szigno Root CA"

# Issuer: CN=Microsec e-Szigno Root CA,OU=e-Szigno CA,O=Microsec Ltd.,L=Budapest,C=HU

# Serial Number:cc:b8:e7:bf:4e:29:1a:fd:a2:dc:66:a5:1c:2c:0f:11

#

Subject: CN=Microsec e-Szigno Root CA,OU=e-Szigno CA,O=Microsec Ltd.,L=Budapest,C=HU

# Not Valid Before: Wed Apr 06 12:28:44 2005

# Not Valid After: Thu Apr 06 12:28:44 2017

# Fingerprint (MD5): f0:96:b6:2f:c5:10:d5:67:8e:83:25:32:e8:5e:2e:e5

# Fingerprint (SHA1): 23:88:c9:d3:71:cc:9e:96:3d:ff:7d:3c:a7:ce:fc:d6:25:ec:19:0d

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Microsec e-Szigno Root CA"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\043\210\311\323\161\314\236\226\075\377\175\074\247\316\374\326
\045\354\031\015
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\360\226\266\057\305\020\325\147\216\203\045\062\350\136\056\345
```

END

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\162\061\013\060\011\006\003\125\004\006\023\002\110\125\061
\021\060\017\006\003\125\004\007\023\010\102\165\144\141\160\145
```

```
\163\164\061\026\060\024\006\003\125\004\012\023\015\115\151\143
\162\157\163\145\143\040\114\164\144\056\061\024\060\022\006\003
\125\004\013\023\013\145\055\123\172\151\147\156\157\040\103\101
\061\042\060\040\006\003\125\004\003\023\031\115\151\143\162\157
\163\145\143\040\145\055\123\172\151\147\156\157\040\122\157\157
\164\040\103\101
```

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

```
\002\021\000\314\270\347\277\116\051\032\375\242\334\146\245\034
\054\017\021
```

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "LGPKI"

# Issuer: OU=Application CA G2,O=LGPKI,C=JP

# Serial Number: 49 (0x31)

# Subject: OU=Application CA G2,O=LGPKI,C=JP

# Not Valid Before: Fri Mar 31 15:00:00 2006

# Not Valid After: Thu Mar 31 14:59:59 2016

# Fingerprint (MD5): f3:d7:52:a8:75:fd:18:ec:e1:7d:35:b1:70:6e:a5:9c

# Fingerprint (SHA1): 96:83:38:f1:13:e3:6a:7b:ab:dd:08:f7:77:63:91:a6:87:36:58:2e

CKA\_CLASS

CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "LGPKI"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

```
\060\071\061\013\060\011\006\003\125\004\006\023\002\112\120\061
\016\060\014\006\003\125\004\012\023\005\114\107\120\113\111\061
\032\060\030\006\003\125\004\013\023\021\101\160\160\154\151\143
\141\164\151\157\156\040\103\101\040\107\062
```

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\071\061\013\060\011\006\003\125\004\006\023\002\112\120\061
\016\060\014\006\003\125\004\012\023\005\114\107\120\113\111\061
\032\060\030\006\003\125\004\013\023\021\101\160\160\154\151\143
\141\164\151\157\156\040\103\101\040\107\062
```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

```
\002\001\061
```



END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\240\060\202\002\210\240\003\002\001\002\002\001\061  
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060  
\071\061\013\060\011\006\003\125\004\006\023\002\112\120\061\016  
\060\014\006\003\125\004\012\023\005\114\107\120\113\111\061\032  
\060\030\006\003\125\004\013\023\021\101\160\160\154\151\143\141  
\164\151\157\156\040\103\101\040\107\062\060\036\027\015\060\066  
\060\063\063\061\061\065\060\060\060\060\132\027\015\061\066\060  
\063\063\061\061\064\065\071\065\071\132\060\071\061\013\060\011  
\006\003\125\004\006\023\002\112\120\061\016\060\014\006\003\125  
\004\012\023\005\114\107\120\113\111\061\032\060\030\006\003\125  
\004\013\023\021\101\160\160\154\151\143\141\164\151\157\156\040  
\103\101\040\107\062\060\202\001\042\060\015\006\011\052\206\110  
\206\367\015\001\001\001\005\000\003\202\001\017\000\060\202\001  
\012\002\202\001\001\000\271\065\306\020\370\333\150\333\007\304  
\100\114\260\035\036\066\334\303\101\366\317\125\025\155\010\177  
\134\306\150\125\345\347\127\361\226\121\346\341\115\170\017\156  
\100\025\160\073\145\376\021\337\347\323\326\130\065\073\341\237  
\002\374\224\122\106\056\263\236\140\233\002\236\311\202\322\366  
\343\256\011\117\204\104\266\142\233\000\121\150\270\072\255\354  
\144\321\062\113\351\224\104\203\264\016\316\041\211\153\260\066  
\300\230\306\113\234\302\076\133\140\052\011\061\053\055\253\114  
\336\261\240\375\130\126\302\203\035\040\274\304\204\011\207\173  
\250\225\227\306\045\216\203\340\076\223\015\321\307\175\163\251  
\250\374\031\000\100\056\042\270\172\063\101\365\170\375\132\161  
\347\202\331\110\210\134\354\250\205\207\055\155\200\211\147\032  
\151\276\020\300\132\216\355\210\175\076\157\054\070\153\067\316  
\107\330\242\061\060\336\176\123\145\154\213\206\123\101\040\154  
\275\110\245\176\257\000\132\126\022\130\201\321\334\211\131\371  
\265\356\370\115\232\330\104\051\213\171\247\367\042\252\352\174  
\134\264\026\210\040\015\002\003\001\000\001\243\201\262\060\201  
\257\060\035\006\003\125\035\016\004\026\004\024\177\270\135\216  
\304\030\153\306\175\314\056\351\256\316\064\347\027\135\340\241  
\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001\006  
\060\114\006\003\125\035\037\004\105\060\103\060\101\240\077\240  
\075\244\073\060\071\061\013\060\011\006\003\125\004\006\023\002  
\112\120\061\016\060\014\006\003\125\004\012\023\005\114\107\120  
\113\111\061\032\060\030\006\003\125\004\013\023\021\101\160\160  
\154\151\143\141\164\151\157\156\040\103\101\040\107\062\060\017  
\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060  
\037\006\003\125\035\043\004\030\060\026\200\024\177\270\135\216  
\304\030\153\306\175\314\056\351\256\316\064\347\027\135\340\241  
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\003  
\202\001\001\000\074\330\163\066\100\006\110\112\124\031\365\047  
\110\071\045\245\156\102\347\266\315\033\313\071\064\267\233\354  
\117\052\276\167\344\312\204\374\035\353\233\042\100\325\364\373  
\150\207\162\374\107\135\152\016\122\112\343\265\135\110\306\042

```
\226\346\063\155\155\253\366\315\327\313\044\132\214\250\105\236
\076\141\202\175\224\325\005\360\032\065\137\161\057\056\124\265
\101\005\357\206\015\122\357\234\230\033\361\054\114\072\321\363
\206\323\214\076\172\057\206\105\216\203\062\046\133\277\123\312
\016\121\126\334\232\302\132\060\031\015\247\236\325\252\233\040
\071\151\170\041\364\227\155\321\016\021\114\056\323\033\132\260
\371\227\170\134\052\217\122\145\356\114\102\045\302\067\060\016
\155\053\065\224\203\006\350\257\105\073\004\146\247\060\273\371
\340\041\073\143\156\175\104\135\072\152\123\357\021\027\044\375
\124\262\132\154\163\126\041\311\154\055\227\244\102\263\047\141
\005\041\143\155\352\050\274\117\032\157\102\334\230\253\125\323
\036\033\300\222\077\233\301\346\073\027\126\342\304\230\103\045
\356\266\313\000
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "LGPKI"

# Issuer: OU=Application CA G2,O=LGPKI,C=JP

# Serial Number: 49 (0x31)

# Subject: OU=Application CA G2,O=LGPKI,C=JP

# Not Valid Before: Fri

Mar 31 15:00:00 2006

# Not Valid After: Thu Mar 31 14:59:59 2016

# Fingerprint (MD5): f3:d7:52:a8:75:fd:18:ec:e1:7d:35:b1:70:6e:a5:9c

# Fingerprint (SHA1): 96:83:38:f1:13:e3:6a:7b:ab:dd:08:f7:77:63:91:a6:87:36:58:2e

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "LGPKI"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\226\203\070\361\023\343\152\173\253\335\010\367\167\143\221\246
\207\066\130\056
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\363\327\122\250\165\375\030\354\341\175\065\261\160\156\245\234
```

END

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\071\061\013\060\011\006\003\125\004\006\023\002\112\120\061
\016\060\014\006\003\125\004\012\023\005\114\107\120\113\111\061
\032\060\030\006\003\125\004\013\023\021\101\160\160\154\151\143
\141\164\151\157\156\040\103\101\040\107\062
```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

```
\002\001\061
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION
CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "AC RAIZ DNIE"
# Issuer: CN=AC RAIZ DNIE,OU=DNIE,O=DIRECCION GENERAL DE LA POLICIA,C=ES
# Serial Number:d2:85:70:fd:ae:a7:d6:5f:11:84:15:c6:31:b5:cb
# Subject: CN=AC RAIZ DNIE,OU=DNIE,O=DIRECCION GENERAL DE LA POLICIA,C=ES
# Not Valid Before: Thu Feb 16 10:37:25 2006
# Not Valid After: Fri Feb 08 22:59:59 2036
# Fingerprint (MD5): 15:5e:f5:11:7a:a2:c1:15:0e:92:7e:66:fe:3b:84:c3
# Fingerprint (SHA1): b3:8f:ec:ec:0b:14:8a:a6:86:c3:d0:0f:01:ec:c8:84:8e:80:85:eb
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "AC RAIZ DNIE"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\135\061\013\060\011\006\003\125\004\006\023\002\105\123\061
\050\060\046\006\003\125\004\012\014\037\104\111\122\105\103\103
\111\117\116\040\107\105\116\105\122\101\114\040\104\105\040\114
\101\040\120\117\114\111\103\111\101\061\015\060\013\006\003\125
\004\013\014\004\104\116\111\105\061\025\060\023\006\003\125\004
\003\014\014\101\103\040\122\101\111\132\040\104\116\111\105
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\135\061\013\060\011\006\003\125\004\006\023\002\105\123\061
\050\060\046\006\003\125\004\012\014\037\104\111\122\105\103\103
\111\117\116\040\107\105\116\105\122\101\114\040\104\105\040\114
\101\040\120\117\114\111\103\111\101\061\015\060\013\006\003\125
\004\013\014\004\104\116\111\105\061\025\060\023\006\003\125\004
\003\014\014\101\103\040\122\101\111\132\040\104\116\111\105
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\000\322\205\160\375\256\247\326\137\021\204\025\306\061
\265\313
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\277\060\202\003\247\240\003\002\001\002\002\020\000
\322\205\160\375\256\247\326\137\021\204\025\306\061\265\313\060
```

\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\135  
\061\013\060\011\006\003\125\004\006\023\002\105\123\061\050\060  
\046\006\003\125\004\012\014\037\104\111\122\105\103\103\111\117  
\116\040\107\105\116\105\122\101\114\040\104\105\040\114\101\040  
\120\117\114\111\103\111\101\061\015\060\013\006\003\125\004\013  
\014\004\104\116\111\105\061\025\060\023\006\003\125\004\003\014  
\014\101\103\040\122\101\111\132\040\104\116\111\105\060\036\027  
\015\060\066\060\062\061\066\061\060\063\067\062\065\132\027\015  
\063\066\060\062\060\070\062\062\065\071\065\071\132\060\135\061  
\013\060\011\006\003\125\004\006\023\002\105\123\061\050\060\046  
\006\003\125\004\012\014\037\104\111\122\105\103\103\111\117\116  
\040\107\105\116\105\122\101\114\040\104\105\040\114\101\040\120  
\117\114\111\103\111\101\061\015\060\013\006\003\125\004\013\014  
\004\104\116\111\105\061\025\060\023\006\003\125\004\003\014\014  
\101\103\040\122\101\111\132\040\104\116\111\105\060\202\002\042  
\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003  
\202\002\017\000\060\202\002\012\002\202\002\001\000\200\000\255  
\014\303\243\040\007\243\143\377\367\064\240\315\356\152\124\010  
\027\135\261\001\025\247\346\271\137\212\161\377\014\302\035\352  
\067\363\336\223\177\326\005\115\204\262\325\327\034\014\364\304  
\221\160\100\016\132\310\230\244\200\350\015\063\300\007\363\267  
\365\254\241\070\172\300\146\124\044\374\122\314\060\052\362\303  
\304\241\054\166\277\301\300\277\202\361\233\360\150\172\023\100  
\310\227\274\034\045\007\010\012\267\226\357\314\051\124\340\346  
\145\055\352\262\056\261\011\151\022\116\060\325\330\370\274\000  
\200\057\115\223\017\315\056\127\033\063\273\237\060\116\304\245  
\313\171\247\373\342\064\030\266\040\236\033\237\135\247\311\072  
\255\105\144\263\030\316\021\022\234\155\036\125\105\050\204\234  
\127\147\115\371\313\342\213\217\130\011\324\071\377\310\066\322  
\070\342\014\145\177\025\016\175\301\007\335\251\042\337\221\000  
\304\154\161\064\164\334\071\352\352\117\104\151\177\130\333\130  
\012\122\161\053\354\251\035\120\164\063\371\051\152\372\376\231  
\364\347\314\105\105\155\312\132\045\242\022\343\316\327\070\005  
\071\360\032\011\365\166\131\316\142\157\172\064\015\054\321\274  
\004\022\354\075\123\310\372\320\002\313\316\075\041\265\305\340  
\071\063\145\317\071\123\311\233\106\371\235\063\363\131\200\010  
\101\276\157\113\240\372\112\316\244\166\034\205\342\257\257\024  
\235\145\254\367\177\227\344\063\111\246\257\276\316\053\067\361  
\056\301\163\005\234\234\140\114\235\060\015\227\124\236\201\142  
\273\347\340\057\367\024\007\024\251\167\221\351\334\221\225\216  
\323\210\220\063\107\157\161\303\024\151\372\246\055\001\036\033  
\352\323\056\342\177\013\334\317\347\042\360\361\101\243\001\222  
\345\200\323\276\251\142\250\125\210\013\064\064\354\334\041\025  
\252\357\326\042\136\211\365\121\222\023\052\157\200\026\331\261  
\015\331\056\370\020\270\302\376\122\105\063\234\035\070\174\334  
\025\151\064\163\277\240\054\273\021\173\224\315\370\067\055\157  
\075\357\203\132\306\036\233\164\111\217\331\302\215\276\026\166  
\120\310\132\321\045\026\366\366\314\214\234\132\060\236\145\276

\320\232\110\223\327\372\150\015\165\061\207\371\367\002\003\001  
\000\001\243\173\060\171\060\017\006\003\125\035\023\001\001\377  
\004\005\060\003\001\001\377\060\016\006\003\125\035\017\001\001  
\377\004\004\003\002\001\006\060\035\006\003\125\035\016\004\026  
\004\024\216\105\364\237\163\305\377\057\033\005\333\001\107\140  
\033\003\212\201\267\272\060\067\006\003\125\035\040\004\060\060  
\056\060\054\006\004\125\035\040\000\060\044\060\042\006\010\053  
\006\001\005\005\007\002\001\026\026\150\164\164\160\072\057\057  
\167\167\167\056\144\156\151\145\056\145\163\057\144\160\143\060  
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\003\202  
\002\001\000\165\345\163\311\121\121\057\213\031\240\207\351\377  
\256\066\066\246\374\101\037\343\036\327\161\140\031\306\157\232  
\002\060\275\142\161\255\163\376\221\055\116\344\046\100\104\251  
\256\170\046\043\061\151\334\232\163\226\036\111\121\013\340\357  
\301\270\103\357\161\234\356\101\267\305\120\037\062\204\236\042  
\206\361\367\037\217\331\255\053\116\332\227\050\227\273\226\232  
\032\370\261\331\172\004\363\124\231\022\031\226\025\200\147\071  
\377\002\137\172\374\125\102\120\132\346\271\242\377\270\250\142  
\036\024\315\331\077\276\243\145\110\305\073\327\067\316\015\372  
\050\220\332\277\371\343\121\107\045\175\112\323\147\115\207\252  
\142\274\136\354\172\200\104\174\367\237\012\275\145\127\224\312  
\362\021\146\326\122\177\344\072\160\165\004\315\073\227\324\066  
\162\367\121\126\277\064\365\322\101\341\264\332\250\103\376\153  
\022\111\022\264\135\317\042\102\226\214\010\043\046\214\262\020  
\116\135\252\123\356\001\057\165\345\271\242\021\063\304\327\152  
\375\370\016\312\156\202\331\347\273\131\043\116\265\371\021\035  
\057\153\043\365\173\021\040\352\101\022\220\062\106\333\061\073  
\251\301\133\163\150\072\106\033\214\376\227\267\126\271\141\231  
\314\116\360\203\372\067\361\336\034\235\034\161\213\003\223\303  
\304\163\202\056\250\230\035\144\242\232\214\367\124\010\115\317  
\352\201\313\365\133\011\231\143\257\165\214\226\370\171\065\325  
\334\353\101\201\171\070\204\136\157\361\157\142\166\333\221\316  
\132\205\140\071\035\133\342\052\057\103\045\333\302\172\044\323  
\025\260\242\361\214\240\175\153\110\011\023\377\242\114\146\212  
\354\160\122\011\123\214\060\314\270\325\272\044\334\060\231\076  
\241\136\267\337\201\254\354\067\276\116\233\047\130\336\176\241  
\233\124\177\006\266\057\344\062\120\375\347\020\273\250\315\332  
\030\033\324\143\146\075\352\121\161\071\364\234\076\337\132\364  
\332\307\114\046\355\213\265\041\272\064\171\002\163\141\020\332  
\230\061\250\140\313\176\007\247\320\267\005\103\211\133\315\205  
\046\331\260\121\257\367\214\122\252\022\247\130\337\222\233\147  
\362\235\362\346\364\151\061\364\026\347\336\167\133\036\335\232  
\005\001\255

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

```
#
Microsoft Code Signing Only Certificate
# Trust for "AC RAIZ DNIE"
# Issuer: CN=AC RAIZ DNIE,OU=DNIE,O=DIRECCION GENERAL DE LA POLICIA,C=ES
# Serial Number:d2:85:70:fd:ae:a7:d6:5f:11:84:15:c6:31:b5:cb
# Subject: CN=AC RAIZ DNIE,OU=DNIE,O=DIRECCION GENERAL DE LA POLICIA,C=ES
# Not Valid Before: Thu Feb 16 10:37:25 2006
# Not Valid After: Fri Feb 08 22:59:59 2036
# Fingerprint (MD5): 15:5e:f5:11:7a:a2:c1:15:0e:92:7e:66:fe:3b:84:c3
# Fingerprint (SHA1): b3:8f:ec:ec:0b:14:8a:a6:86:c3:d0:0f:01:ec:c8:84:8e:80:85:eb
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "AC RAIZ DNIE"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\263\217\354\354\013\024\212\246\206\303\320\017\001\354\310\204
\216\200\205\353
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\025\136\365\021\172\242\301\025\016\222\176\146\376\073\204\303
END
CKA_ISSUER MULTILINE_OCTAL
\060\135\061\013\060\011\006\003\125\004\006\023\002\105\123\061
\050\060\046\006\003\125\004\012\014\037\104\111\122\105\103\103
\111\117\116\040\107\105\116\105\122\101\114\040\104\105\040\114
\101\040\120\117\114\111\103\111\101\061\015\060\013\006\003\125
\004\013\014\004\104\116\111\105\061\025\060\023\006\003\125\004
\003\014\014\101\103\040\122\101\111\132\040\104\116\111\105
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\000\322\205\160\375\256\247\326\137\021\204\025\306\061
\265\313
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
# Microsoft Code Signing Only Certificate
# Certificate "EC-ACC"
# Issuer: CN=EC-ACC,OU=Jerarquia Entitats de Certificacio Catalanes,OU=Vegeu https://www.catcert.net/verarrel
(c)03,OU=Serveis Publics de Certificacio,O=Agencia Catalana de Certificacio (NIF Q-0801176-I),C=ES
# Serial Number: -23701579247955709139626555126524820479 (0x-11d4c2142bde21eb579d53fb0c223bff)
#
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Subject: CN=EC-ACC,OU=Jerarquia Entitats de Certificacio Catalanes,OU=Vegeu <https://www.catcert.net/verarrel>  
(c)03,OU=Serveis Publics de Certificacio,O=Agencia Catalana de Certificacio (NIF Q-0801176-I),C=ES

# Not Valid Before: Tue Jan 07 23:00:00 2003

# Not Valid After: Tue Jan 07 22:59:59 2031

# Fingerprint (MD5): eb:f5:9d:29:0d:61:f9:42:1f:7c:c2:ba:6d:e3:15:09

# Fingerprint (SHA1): 28:90:3a:63:5b:52:80:fa:e6:77:4c:0b:6d:a7:d6:ba:a6:4a:f2:e8

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "EC-ACC"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\201\363\061\013\060\011\006\003\125\004\006\023\002\105\123  
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\151\141\040\103\141\164\141\154\141\156\141\040\144\145\040\103  
\145\162\164\151\146\151\143\141\143\151\157\040\050\116\111\106  
\040\121\055\060\070\060\061\061\067\066\055\111\051\061\050\060  
\046\006\003\125\004\013\023\037\123\145\162\166\145\151\163\040  
\120\165\142\154\151\143\163\040\144\145\040\103\145\162\164\151  
\146\151\143\141\143\151\157\061\065\060\063\006\003\125\004\013  
\023\054\126\145\147\145\165\040\150\164\164\160\163\072\057\057  
\167\167\167\056\143\141\164\143\145\162\164\056\156\145\164\057  
\166\145\162\141\162\162\145\154\040\050\143\051\060\063\061\065  
\060\063\006\003\125\004\013\023\054\112\145\162\141\162\161\165  
\151\141\040\105\156\164\151\164\141\164\163\040\144\145\040\103  
\145\162\164\151\146\151\143\141\143\151\157\040\103\141\164\141  
\154\141\156\145\163\061\017\060\015\006\003\125\004\003\023\006  
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END

CKA\_ID

UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\363\061\013\060\011\006\003\125\004\006\023\002\105\123  
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\151\141\040\103\141\164\141\154\141\156\141\040\144\145\040\103  
\145\162\164\151\146\151\143\141\143\151\157\040\050\116\111\106  
\040\121\055\060\070\060\061\061\067\066\055\111\051\061\050\060  
\046\006\003\125\004\013\023\037\123\145\162\166\145\151\163\040  
\120\165\142\154\151\143\163\040\144\145\040\103\145\162\164\151  
\146\151\143\141\143\151\157\061\065\060\063\006\003\125\004\013  
\023\054\126\145\147\145\165\040\150\164\164\160\163\072\057\057  
\167\167\167\056\143\141\164\143\145\162\164\056\156\145\164\057  
\166\145\162\141\162\162\145\154\040\050\143\051\060\063\061\065  
\060\063\006\003\125\004\013\023\054\112\145\162\141\162\161\165  
\151\141\040\105\156\164\151\164\141\164\163\040\144\145\040\103  
\145\162\164\151\146\151\143\141\143\151\157\040\103\141\164\141  
\154\141\156\145\163\061\017\060\015\006\003\125\004\003\023\006

\105\103\055\101\103\103

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

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CKA\_VALUE MULTILINE\_OCTAL

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\363\061\013\060\011\006\003\125\004\006\023\002\105\123\061\073  
\060\071\006\003\125\004\012\023\062\101\147\145\156\143\151\141  
\040\103\141\164\141\154\141\156\141\040\144\145\040\103\145\162  
\164\151\146\151\143\141\143\151\157\040\050\116\111\106\040\121  
\055\060\070\060\061\061\067\066\055\111\051\061\050\060\046\006  
\003\125\004\013\023\037\123\145\162\166\145\151\163\040\120\165  
\142\154\151\143\163\040\144\145\040\103\145\162\164\151\146\151  
\143\141\143\151\157\061\065\060\063\006\003\125\004\013\023\054  
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\167\056\143\141\164\143\145\162\164\056\156\145\164\057\166\145  
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\156\145\163\061\017\060\015\006\003\125\004\003\023\006\105\103  
\055\101\103\103\060\036\027\015\060\063\060\061\060\067\062\063  
\060\060\060\060\132\027\015\063\061\060\061\060\067\062\062\065  
\071\065\071\132\060\201\363\061\013\060\011\006\003\125\004\006  
\023\002\105\123\061\073\060\071\006\003\125\004\012\023\062\101  
\147\145\156\143\151\141\040\103\141\164\141\154\141\156\141\040  
\144\145\040\103\145\162\164\151\146\151\143\141\143\151\157\040  
\050\116\111\106\040\121\055\060\070\060\061\061\067\066\055\111  
\051\061\050\060\046\006\003\125\004\013\023\037\123\145\162\166  
\145\151\163\040\120\165\142\154\151\143\163\040\144\145\040\103  
\145\162\164\151\146\151\143\141\143\151\157\061\065\060\063\006  
\003\125\004\013\023\054\126\145\147\145\165\040\150\164\164\160  
\163\072\057\057\167\167\167\056\143\141\164\143\145\162\164\056  
\156\145\164\057\166\145\162\141\162\162\145\154\040\050\143\051  
\060\063\061\065\060\063\006\003\125\004\013\023\054\112\145\162  
\141\162\161\165\151\141\040\105\156\164\151\164\141\164\163\040  
\144\145\040\103\145\162\164\151\146\151\143\141\143\151\157\040  
\103\141\164\141\154\141\156\145\163\061\017\060\015\006\003\125  
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\227\102\225\210\107\203\100\366\035\027\363\203\163\044\036\121  
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\265\224\145\031\042\025\027\302\103\154\146\104\232\015\004\076  
\071\157\245\113\172\252\143\267\212\104\235\331\143\221\204\146  
\340\050\017\272\102\343\156\216\367\024\047\223\151\356\221\016  
\243\137\016\261\353\146\242\162\117\022\023\206\145\172\076\333  
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\145\270\242\165\270\036\363\345\102\175\257\355\363\212\110\144  
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\102\120\171\320\224\076\153\014\000\276\330\153\016\116\052\354  
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\164\056\156\145\164\060\017\006\003\125\035\023\001\001\377\004  
\005\060\003\001\001\377\060\016\006\003\125\035\017\001\001\377  
\004\004\003\002\001\006\060\035\006\003\125\035\016\004\026\004  
\024\240\303\213\104\252\067\245\105\277\227\200\132\321\361\170  
\242\233\351\135\215\060\177\006\003\125\035\040\004\170\060\166  
\060\164\006\013\053\006\001\004\001\365\170\001\003\001\012\060  
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\164\164\160\163\072\057\057\167\167\167\056\143\141\164\143\145  
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\056\143\141\164\143\145\162\164\056\156\145\164\057\166\145\162  
\141\162\162\145\154\040\060\015\006\011\052\206\110\206\367\015  
\001\001\005\005\000\003\202\001\001\000\240\110\133\202\001\366  
\115\110\270\071\125\065\234\200\172\123\231\325\132\377\261\161  
\073\314\071\011\224\136\326\332\357\276\001\133\135\323\036\330  
\375\175\117\315\240\101\340\064\223\277\313\342\206\234\067\222  
\220\126\034\334\353\051\005\345\304\236\307\065\337\212\014\315  
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\010\351\167\013\177\160\253\172\335\331\227\054\144\036\205\277  
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\106\237\373\110\325\136\227\346\261\241\370\344\357\106\045\224  
\234\211\333\151\070\276\354\134\016\126\307\145\121\345\120\210  
\210\277\102\325\053\075\345\371\272\236\056\263\312\364\163\222  
\002\013\276\114\146\353\040\376\271\313\265\231\177\346\266\023  
\372\312\113\115\331\356\123\106\006\073\306\116\255\223\132\201  
\176\154\052\113\152\005\105\214\362\041\244\061\220\207\154\145  
\234\235\245\140\225\072\122\177\365\321\253\010\156\363\356\133  
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END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "EC-ACC"

# Issuer: CN=EC-ACC,OU=Jerarquia Entitats de Certificacio Catalanes,OU=Vegeu <https://www.catcert.net/verarrel> (c)03,OU=Serveis Publics de Certificacio,O=Agencia Catalana de Certificacio (NIF Q-0801176-I),C=ES

# Serial Number: -23701579247955709139626555126524820479 (0x-11d4c2142bde21eb579d53fb0c223bff)

# Subject: CN=EC-ACC,OU=Jerarquia

Entitats de Certificacio Catalanes,OU=Vegeu <https://www.catcert.net/verarrel> (c)03,OU=Serveis Publics de Certificacio,O=Agencia Catalana de Certificacio (NIF Q-0801176-I),C=ES

# Not Valid Before: Tue Jan 07 23:00:00 2003

# Not Valid After: Tue Jan 07 22:59:59 2031

# Fingerprint (MD5): eb:f5:9d:29:0d:61:f9:42:1f:7c:c2:ba:6d:e3:15:09

# Fingerprint (SHA1): 28:90:3a:63:5b:52:80:fa:e6:77:4c:0b:6d:a7:d6:ba:a6:4a:f2:e8

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "EC-ACC"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

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CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\353\365\235\051\015\141\371\102\037\174\302\272\155\343\025\011

END

CKA\_ISSUER MULTILINE\_OCTAL

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\145\162\164\151\146\151\143\141\143\151\157\040\050\116\111\106  
\040\121\055\060\070\060\061\061\067\066\055\111\051\061\050\060  
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END

CKA\_SERIAL\_NUMBER

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MULTILINE_OCTAL
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CKA_TRUST_EMAIL_PROTECTION
CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "A-Trust-nQual-03"
# Issuer: CN=A-Trust-nQual-03,OU=A-Trust-nQual-03,O=A-Trust Ges. f. Sicherheitssysteme im elektr.
Datenverkehr GmbH,C=AT
# Serial Number: 14:b4:f9
# Subject: CN=A-Trust-nQual-03,OU=A-Trust-nQual-03,O=A-Trust Ges. f. Sicherheitssysteme im elektr.
Datenverkehr GmbH,C=AT
# Not Valid Before: Wed Jul 23 10:38:29 2014
# Not Valid After: Wed Jul 23 08:38:29 2025
# Fingerprint (MD5): a6:b2:ec:05:6b:b4:86:f0:e4:05:05:b0:d3:26:fc:fa
# Fingerprint (SHA1): 4c:ae:e3:89:31:d1:9a:e7:3b:31:aa:75:ca:33:d6:21:29:0f:a7:5e
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "A-Trust-nQual-03"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
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UTF8 "0"
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\040\145\154\145\153\164\162\056\040\104\141\164\145\156\166\145
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\141\154\055\060\063\061\031\060\027\006\003\125\004\003\014\020  
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MULTILINE\_OCTAL  
\002\003\024\264\371  
END  
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\124\061\110\060\106\006\003\125\004\012\014\077\101\055\124\162  
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\145\162\150\145\151\164\163\163\171\163\164\145\155\145\040\151  
\155\040\145\154\145\153\164\162\056\040\104\141\164\145\156\166  
\145\162\153\145\150\162\040\107\155\142\110\061\031\060\027\006  
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\165\141\154\055\060\063\061\031\060\027\006\003\125\004\003\014  
\020\101\055\124\162\165\163\164\055\156\121\165\141\154\055\060  
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\071\132\027\015\062\065\060\067\062\063\060\070\063\070\062\071  
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\001\000\255\075\141\156\003\363\220\073\300\101\013\204\200\315  
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\055\121\243\121\362\336\043\360\064\104\377\224\353\314\005\043  
\225\100\271\007\170\245\045\366\012\275\105\206\350\331\275\300  
\004\216\205\104\141\357\177\247\311\372\301\045\314\205\054\143  
\077\005\140\163\111\005\340\140\170\225\020\113\334\371\021\131  
\316\161\177\100\233\212\252\044\337\013\102\342\333\126\274\112  
\322\245\014\233\267\103\076\335\203\323\046\020\002\317\352\043  
\304\111\116\345\323\351\264\210\253\014\256\142\222\324\145\207  
\331\152\327\364\205\237\344\063\042\045\245\345\310\063\272\303  
\307\101\334\137\306\152\314\000\016\155\062\250\266\207\066\000  
\142\167\233\036\037\064\313\220\074\170\210\164\005\353\171\365  
\223\161\145\312\235\307\153\030\055\075\134\116\347\325\370\077  
\061\175\217\207\354\012\042\057\043\351\376\273\175\311\340\364  
\354\353\174\304\260\303\055\142\265\232\161\326\261\152\350\354  
\331\355\325\162\354\276\127\001\316\005\125\237\336\321\140\210

```
\020\263\002\003\001\000\001\243\066\060\064\060\017\006\003\125
\035\023\001\001\377\004\005\060\003\001\001\377\060\021\006\003
\125\035\016\004\012\004\010\104\152\225\147\125\171\021\117\060
\016\006\003\125\035\017\001\001\377\004\004\003\002\001\006\060
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\003\202
\001\001\000\022\214\244\075\340\000\377\250\212\233\246\047\177
\033\022\034\127\276\016\330\232\237\154\200\037\302\366\116\243
\035\160\167\222\007\376\313\327\036\367\272\340\336\142\113\265
\205\262\220\001\171\337\136\173\137\361\037\225\202\064\001\117
\014\064\150\066\371\327\256\047\172\326\034\025\262\264\203\313
\225\131\120\252\072\137\060\177\162\133\001\114\107\113\326\353
\160\122\244\263\340\211\050\372\372\251\016\207\372\306\365\243
\335\166\355\317\110\101\046\130\077\164\277\200\300\032\033\015
\034\111\071\154\236\213\004\320\376\124\257\233\307\261\252\146
\025\135\325\371\123\243\140\333\066\030\264\256\341\164\002\142
\364\210\246\307\303\046\237\025\260\237\301\061\204\275\032\241
\257\103\377\152\031\255\037\300\106\304\061\247\133\346\147\011
\267\017\304\052\016\040\046\330\114\203\023\237\073\227\225\270
\044\067\074\001\026\071\356\145\254\352\323\166\364\310\226\032
\141\122\351\354\346\032\010\166\134\213\270\332\236\300\255\354
\024\236\215\343\253\024\354\270\311\056\244\212\140\100\174\272
\312\010\213
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "A-Trust-nQual-03"

# Issuer: CN=A-Trust-nQual-03,OU=A-Trust-nQual-03,O=A-Trust Ges. f. Sicherheitssysteme im elektr.  
Datenverkehr GmbH,C=AT

# Serial Number:14:b4:f9

# Subject: CN=A-Trust-nQual-03,OU=A-Trust-nQual-03,O=A-Trust Ges. f. Sicherheitssysteme im elektr.  
Datenverkehr GmbH,C=AT

# Not Valid Before: Wed Jul 23 10:38:29 2014

# Not Valid After: Wed Jul 23 08:38:29 2025

# Fingerprint (MD5): a6:b2:ec:05:6b:b4:86:f0:e4:05:05:b0:d3:26:fc:fa

# Fingerprint (SHA1): 4c:ae:e3:89:31:d1:9a:e7:3b:31:aa:75:ca:33:d6:21:29:0f:a7:5e

CKA\_CLASS

CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "A-Trust-nQual-03"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\114\256\343\211\061\321\232\347\073\061\252\165\312\063\326\041
```

```
\051\017\247\136
```

```

END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\246\262\354\005\153\264\206\360\344\005\005\260\323\046\374\372
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\215\061\013\060\011\006\003\125\004\006\023\002\101\124
\061\110\060\106\006\003\125\004\012\014\077\101\055\124\162\165
\163\164\040\107\145\163\056\040\146\056\040\123\151\143\150\145
\162\150\145\151\164\163\163\171\163\164\145\155\145\040\151\155
\040\145\154\145\153\164\162\056\040\104\141\164\145\156\166\145
\162\153\145\150\162\040\107\155\142\110\061\031\060\027\006\003
\125\004\013\014\020\101\055\124\162\165\163\164\055\156\121\165
\141\154\055\060\063\061\031\060\027\006\003\125\004\003\014\020
\101\055\124\162\165\163\164\055\156\121\165\141\154\055\060\063
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\003\024\264\371
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "KISA RootCA 1"
# Issuer: CN=KISA RootCA 1,OU=Korea Certification Authority Central,O=KISA,C=KR
# Serial Number: 4 (0x4)
# Subject: CN=KISA RootCA 1,OU=Korea Certification Authority Central,O=KISA,C=KR
# Not Valid Before: Wed Aug 24 08:05:46 2005
# Not Valid After: Sun Aug 24 08:05:46 2025
# Fingerprint (MD5): 68:9b:17:c6:54:e0:e0:e0:99:55:16:42:f7:5a:86:d8
# Fingerprint (SHA1): 02:72:68:29:3e:5f:5d:17:aa:a4:b3:c3:e6:36:1e:1f:92:57:5e:aa
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "KISA RootCA 1"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT
MULTILINE_OCTAL
\060\144\061\013\060\011\006\003\125\004\006\023\002\113\122\061
\015\060\013\006\003\125\004\012\014\004\113\111\123\101\061\056
\060\054\006\003\125\004\013\014\045\113\157\162\145\141\040\103
\145\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164
\150\157\162\151\164\171\040\103\145\156\164\162\141\154\061\026
\060\024\006\003\125\004\003\014\015\113\111\123\101\040\122\157
\157\164\103\101\040\061

```

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\144\061\013\060\011\006\003\125\004\006\023\002\113\122\061  
\015\060\013\006\003\125\004\012\014\004\113\111\123\101\061\056  
\060\054\006\003\125\004\013\014\045\113\157\162\145\141\040\103  
\145\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164  
\150\157\162\151\164\171\040\103\145\156\164\162\141\154\061\026  
\060\024\006\003\125\004\003\014\015\113\111\123\101\040\122\157  
\157\164\103\101\040\061

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\001\004

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\163\060\202\002\133\240\003\002\001\002\002\001\004  
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060  
\144\061\013\060\011\006\003\125\004\006\023\002\113\122\061\015  
\060\013\006\003\125\004\012\014\004\113\111\123\101\061\056\060  
\054\006\003\125\004\013\014\045\113\157\162\145\141\040\103\145  
\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150  
\157\162\151\164\171\040\103\145\156\164\162\141\154\061\026\060  
\024\006\003\125\004\003\014\015\113\111\123\101\040\122\157\157  
\164\103\101\040\061\060\036\027\015\060\065\060\070\062\064\060  
\070\060\065\064\066\132\027\015\062\065\060\070\062\064\060\070  
\060\065\064\066\132\060\144\061\013\060\011\006\003\125\004\006  
\023\002\113\122\061\015\060\013\006\003\125\004\012\014\004\113  
\111\123\101\061\056\060\054\006\003\125\004\013\014\045\113\157  
\162\145\141\040\103\145\162\164\151\146\151\143\141\164\151\157  
\156\040\101\165\164\150\157\162\151\164\171\040\103\145\156\164  
\162\141\154\061\026\060\024\006\003\125\004\003\014\015\113\111  
\123\101\040\122\157\157\164\103\101\040\061\060\202\001\040\060  
\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003\202  
\001\015\000\060\202\001\010\002\202\001\001\000\274\004\344\372  
\023\071\360\064\226\040\153\154\150\273\372\333\167\377\047\367  
\254\354\057\347\375\360\177\155\157\214\052\315\045\011\133\044  
\364\241\150\374\050\354\311\045\342\254\355\336\310\063\204\365  
\260\245\011\072\247\261\107\110\305\314\117\214\171\234\371\006  
\127\175\335\356\070\366\317\024\262\234\352\323\300\135\167\142  
\360\107\015\271\032\100\123\134\144\160\257\010\132\300\367\317  
\165\371\154\215\144\050\036\040\376\267\033\031\323\132\146\203  
\162\342\260\233\275\323\045\025\015\062\157\144\067\224\205\106  
\310\162\276\167\325\156\037\050\057\307\151\355\347\203\211\063  
\130\323\336\240\277\100\350\103\120\356\334\115\153\274\245\352  
\246\310\141\216\365\303\144\257\006\025\334\051\213\077\165\214  
\274\161\104\333\374\255\265\027\035\155\211\203\317\306\063\275  
\277\105\242\376\012\237\243\021\137\017\271\037\234\032\302\106  
\314\234\050\146\237\160\046\074\056\337\252\200\376\214\305\004

\011\045\117\315\223\107\074\067\352\002\147\222\376\374\042\044  
\134\254\322\054\340\134\001\063\212\301\031\333\002\001\003\243  
\062\060\060\060\035\006\003\125\035\016\004\026\004\024\277\266  
\047\330\003\132\166\145\114\141\001\101\126\061\345\213\173\072  
\331\314\060\017\006\003\125\035\023\001\001\377\004\005\060\003  
\001\001\377\060\015\006\011\052\206\110\206\367\015\001\001\005  
\005\000\003\202\001\001\000\023\257\121\013\336\212\152\133\346  
\232\012\310\261\220\112\116\241\002\235\314\210\322\253\146\275  
\075\354\273\261\102\225\152\262\134\132\377\241\143\144\226\251  
\150\025\177\045\136\212\370\244\163\301\200\212\205\012\016\122  
\350\062\347\105\370\116\145\200\221\231\164\103\345\105\235\111  
\052\360\224\225\335\351\341\060\322\023\156\311\116\261\167\345  
\004\317\255\132\036\224\011\132\327\074\010\034\256\172\351\024  
\062\301\105\255\322\046\110\162\254\250\101\332\360\041\207\071  
\136\337\374\144\377\141\164\052\234\331\233\213\137\302\067\223  
\330\243\067\057\073\223\153\262\033\007\247\177\011\120\357\323  
\072\276\041\153\212\220\073\047\112\121\116\153\236\234\207\235  
\370\170\220\061\355\021\047\306\250\131\276\374\030\013\373\216  
\176\056\102\341\355\347\011\041\275\271\023\305\126\147\364\046  
\246\102\103\220\104\124\264\161\233\166\344\032\022\254\032\050  
\000\337\233\301\325\370\333\134\243\370\222\261\275\264\324\371  
\120\331\000\002\117\333\203\320\021\117\244\102\126\141\072\176  
\023\062\323\204\037\311\272

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "KISA RootCA 1"

# Issuer: CN=KISA RootCA 1,OU=Korea Certification Authority Central,O=KISA,C=KR

# Serial Number: 4 (0x4)

# Subject: CN=KISA RootCA 1,OU=Korea Certification Authority Central,O=KISA,C=KR

# Not Valid

Before: Wed Aug 24 08:05:46 2005

# Not Valid After: Sun Aug 24 08:05:46 2025

# Fingerprint (MD5): 68:9b:17:c6:54:e0:e0:e0:99:55:16:42:f7:5a:86:d8

# Fingerprint (SHA1): 02:72:68:29:3e:5f:5d:17:aa:a4:b3:c3:e6:36:1e:1f:92:57:5e:aa

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "KISA RootCA 1"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\002\162\150\051\076\137\135\027\252\244\263\303\346\066\036\037  
\222\127\136\252

END



CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL  
\150\233\027\306\124\340\340\340\231\125\026\102\367\132\206\330  
END

CKA\_ISSUER MULTILINE\_OCTAL  
\060\144\061\013\060\011\006\003\125\004\006\023\002\113\122\061  
\015\060\013\006\003\125\004\012\014\004\113\111\123\101\061\056  
\060\054\006\003\125\004\013\014\045\113\157\162\145\141\040\103  
\145\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164  
\150\157\162\151\164\171\040\103\145\156\164\162\141\154\061\026  
\060\024\006\003\125\004\003\014\015\113\111\123\101\040\122\157  
\157\164\103\101\040\061  
END

CKA\_SERIAL\_NUMBER  
MULTILINE\_OCTAL  
\002\001\004  
END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST  
CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST  
CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR  
CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate  
# Certificate "NetLock Minositett Kozjegyzoi (Class QA) Tanusitvanykiado"  
# Issuer: 1.2.840.113549.1.9.1=info@netlock.hu,CN=NetLock Minositett Kozjegyzoi (Class QA)  
Tanusitvanykiado,OU=Tanusitvanykiadok,O=NetLock Halozatbiztonsagi Kft.,L=Budapest,C=HU  
# Serial Number: 123 (0x7b)  
# Subject: 1.2.840.113549.1.9.1=info@netlock.hu,CN=NetLock Minositett Kozjegyzoi (Class QA)  
Tanusitvanykiado,OU=Tanusitvanykiadok,O=NetLock Halozatbiztonsagi Kft.,L=Budapest,C=HU  
# Not Valid Before: Sun Mar 30 01:47:11 2003  
# Not Valid After: Thu Dec 15 01:47:11 2022  
# Fingerprint (MD5): d4:80:65:68:24:f9:89:22:28:db:f5:a4:9a:17:8f:14  
# Fingerprint

(SHA1): 01:68:97:e1:a0:b8:f2:c3:b1:34:66:5c:20:a7:27:b7:a1:58:e2:8f

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE  
CKA\_TOKEN CK\_BBOOL CK\_TRUE  
CKA\_PRIVATE CK\_BBOOL CK\_FALSE  
CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE  
CKA\_LABEL UTF8 "NetLock Minositett Kozjegyzoi (Class QA) Tanusitvanykiado"  
CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509  
CKA\_SUBJECT MULTILINE\_OCTAL

\060\201\311\061\013\060\011\006\003\125\004\006\023\002\110\125  
\061\021\060\017\006\003\125\004\007\023\010\102\165\144\141\160  
\145\163\164\061\047\060\045\006\003\125\004\012\023\036\116\145  
\164\114\157\143\153\040\110\141\154\157\172\141\164\142\151\172  
\164\157\156\163\141\147\151\040\113\146\164\056\061\032\060\030  
\006\003\125\004\013\023\021\124\141\156\165\163\151\164\166\141  
\156\171\153\151\141\144\157\153\061\102\060\100\006\003\125\004  
\003\023\071\116\145\164\114\157\143\153\040\115\151\156\157\163

\151\164\145\164\164\040\113\157\172\152\145\147\171\172\157\151  
\040\050\103\154\141\163\163\040\121\101\051\040\124\141\156\165  
\163\151\164\166\141\156\171\153\151\141\144\157\061\036\060\034  
\006\011\052\206\110\206\367\015\001\011\001\026\017\151\156\146  
\157\100\156\145\164\154\157\143\153\056\150\165

END

CKA\_ID

UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\311\061\013\060\011\006\003\125\004\006\023\002\110\125  
\061\021\060\017\006\003\125\004\007\023\010\102\165\144\141\160  
\145\163\164\061\047\060\045\006\003\125\004\012\023\036\116\145  
\164\114\157\143\153\040\110\141\154\157\172\141\164\142\151\172  
\164\157\156\163\141\147\151\040\113\146\164\056\061\032\060\030  
\006\003\125\004\013\023\021\124\141\156\165\163\151\164\166\141  
\156\171\153\151\141\144\157\153\061\102\060\100\006\003\125\004  
\003\023\071\116\145\164\114\157\143\153\040\115\151\156\157\163  
\151\164\145\164\164\040\113\157\172\152\145\147\171\172\157\151  
\040\050\103\154\141\163\163\040\121\101\051\040\124\141\156\165  
\163\151\164\166\141\156\171\153\151\141\144\157\061\036\060\034  
\006\011\052\206\110\206\367\015\001\011\001\026\017\151\156\146  
\157\100\156\145\164\154\157\143\153\056\150\165

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\001\173

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\006\321\060\202\005\271\240\003\002\001\002\002\001\173  
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060  
\201\311\061\013\060\011\006\003\125\004\006\023\002\110\125\061  
\021\060\017\006\003\125\004\007\023\010\102\165\144\141\160\145  
\163\164\061\047\060\045\006\003\125\004\012\023\036\116\145\164  
\114\157\143\153\040\110\141\154\157\172\141\164\142\151\172\164  
\157\156\163\141\147\151\040\113\146\164\056\061\032\060\030\006  
\003\125\004\013\023\021\124\141\156\165\163\151\164\166\141\156  
\171\153\151\141\144\157\153\061\102\060\100\006\003\125\004\003  
\023\071\116\145\164\114\157\143\153\040\115\151\156\157\163\151  
\164\145\164\164\040\113\157\172\152\145\147\171\172\157\151\040  
\050\103\154\141\163\163\040\121\101\051\040\124\141\156\165\163  
\151\164\166\141\156\171\153\151\141\144\157\061\036\060\034\006  
\011\052\206\110\206\367\015\001\011\001\026\017\151\156\146\157  
\100\156\145\164\154\157\143\153\056\150\165\060\036\027\015\060  
\063\060\063\063\060\060\061\064\067\061\061\132\027\015\062\062  
\061\062\061\065\060\061\064\067\061\061\132\060\201\311\061\013  
\060\011\006\003\125\004\006\023\002\110\125\061\021\060\017\006  
\003\125\004\007\023\010\102\165\144\141\160\145\163\164\061\047  
\060\045\006\003\125\004\012\023\036\116\145\164\114\157\143\153

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\023\021\124\141\156\165\163\151\164\166\141\156\171\153\151\141  
\144\157\153\061\102\060\100\006\003\125\004\003\023\071\116\145  
\164\114\157\143\153\040\115\151\156\157\163\151\164\145\164\164  
\040\113\157\172\152\145\147\171\172\157\151\040\050\103\154\141  
\163\163\040\121\101\051\040\124\141\156\165\163\151\164\166\141  
\156\171\153\151\141\144\157\061\036\060\034\006\011\052\206\110  
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\202\001\012\002\202\001\001\000\307\122\045\262\330\075\324\204  
\125\011\247\033\275\154\271\024\364\212\002\333\166\374\152\052  
\170\253\345\167\360\156\340\214\043\147\333\245\144\231\271\335  
\001\076\157\357\055\232\074\042\360\135\311\127\240\125\101\177  
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\334\270\133\233\355\133\071\324\137\142\260\247\216\174\146\070  
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\040\141\040\115\151\156\157\163\151\164\145\164\164\040\123\172  
\157\154\147\141\154\164\141\164\141\163\151\040\123\172\141\142  
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\145\163\151\040\145\154\152\141\162\141\163\040\155\145\147\164  
\145\164\145\154\145\056\040\101\040\144\157\153\165\155\145\156  
\164\165\155\157\153\040\155\145\147\164\141\154\141\154\150\141  
\164\157\153\040\141\040\150\164\164\160\163\072\057\057\167\167  
\167\056\156\145\164\154\157\143\153\056\150\165\057\144\157\143  
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\145\164\154\157\143\153\056\156\145\164\040\145\055\155\141\151  
\154\040\143\151\155\145\156\056\040\127\101\122\116\111\116\107  
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\050\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000  
\003\202\001\001\000\221\152\120\234\333\170\201\233\077\213\102  
\343\073\374\246\303\356\103\340\317\363\342\200\065\111\105\166  
\002\342\343\057\005\305\361\052\347\300\101\063\306\266\233\320  
\063\071\315\300\333\241\255\154\067\002\114\130\101\073\362\227  
\222\306\110\250\315\345\212\071\211\141\371\122\227\351\275\366  
\371\224\164\350\161\016\274\167\206\303\006\314\132\174\112\176  
\064\120\060\056\373\177\062\232\215\075\363\040\133\370\152\312  
\206\363\061\114\054\131\200\002\175\376\070\311\060\165\034\267  
\125\343\274\237\272\250\155\204\050\005\165\263\213\015\300\221  
\124\041\347\246\013\264\231\365\121\101\334\315\243\107\042\331  
\307\001\201\304\334\107\117\046\352\037\355\333\315\015\230\364  
\243\234\264\163\062\112\226\231\376\274\177\310\045\130\370\130  
\363\166\146\211\124\244\246\076\304\120\134\272\211\030\202\165  
\110\041\322\117\023\350\140\176\007\166\333\020\265\121\346\252  
\271\150\252\315\366\235\220\165\022\352\070\032\312\104\350\267  
\231\247\052\150\225\146\225\253\255\357\211\313\140\251\006\022  
\306\224\107\351\050

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

```
# Microsoft Code Signing Only Certificate
# Trust for "NetLock Minositett Kozjegyzoi (Class QA) Tanusitvanykiado"
# Issuer: 1.2.840.113549.1.9.1=info@netlock.hu,CN=NetLock Minositett Kozjegyzoi (Class QA)
Tanusitvanykiado,OU=Tanusitvanykiadok,O=NetLock Halozatbiztonsagi Kft.,L=Budapest,C=HU
# Serial Number: 123 (0x7b)
# Subject: 1.2.840.113549.1.9.1=info@netlock.hu,CN=NetLock Minositett Kozjegyzoi (Class QA)
Tanusitvanykiado,OU=Tanusitvanykiadok,O=NetLock Halozatbiztonsagi Kft.,L=Budapest,C=HU
# Not Valid Before: Sun Mar 30 01:47:11 2003
# Not Valid After: Thu Dec 15 01:47:11 2022
# Fingerprint
(MD5): d4:80:65:68:24:f9:89:22:28:db:f5:a4:9a:17:8f:14
# Fingerprint (SHA1): 01:68:97:e1:a0:b8:f2:c3:b1:34:66:5c:20:a7:27:b7:a1:58:e2:8f
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "NetLock Minositett Kozjegyzoi (Class QA) Tanusitvanykiado"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\001\150\227\341\240\270\362\303\261\064\146\134\040\247\047\267
\241\130\342\217
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\324\200\145\150\044\371\211\042\050\333\365\244\232\027\217\024
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\311\061\013\060\011\006\003\125\004\006\023\002\110\125
\061\021\060\017\006\003\125\004\007\023\010\102\165\144\141\160
\145\163\164\061\047\060\045\006\003\125\004\012\023\036\116\145
\164\114\157\143\153\040\110\141\154\157\172\141\164\142\151\172
\164\157\156\163\141\147\151\040\113\146\164\056\061\032\060\030
\006\003\125\004\013\023\021\124\141\156\165\163\151\164\166\141
\156\171\153\151\141\144\157\153\061\102\060\100\006\003\125\004
\003\023\071\116\145\164\114\157\143\153\040\115\151\156\157\163
\151\164\145\164\164\040\113\157\172\152\145\147\171\172\157\151
\040\050\103\154\141\163\163\040\121\101\051\040\124\141\156\165
\163\151\164\166\141\156\171\153\151\141\144\157\061\036\060\034
\006\011\052\206\110\206\367\015\001\011\001\026\017\151\156\146
\157\100\156\145\164\154\157\143\153\056\150\165
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\001\173
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

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# Microsoft Code Signing Only Certificate
# Certificate "Staat der Nederlanden Root CA"
# Issuer: CN=Staat der Nederlanden Root CA,O=Staat der Nederlanden,C=NL
# Serial Number:98:96:8a
# Subject: CN=Staat der Nederlanden Root CA,O=Staat der Nederlanden,C=NL
# Not Valid Before: Tue Dec 17 09:23:49 2002
#
Not Valid After: Wed Dec 16 09:15:38 2015
# Fingerprint (MD5): 60:84:7c:5a:ce:db:0c:d4:cb:a7:e9:fe:02:c6:a9:c0
# Fingerprint (SHA1): 10:1d:fa:3f:d5:0b:cb:bb:9b:b5:60:0c:19:55:a4:1a:f4:73:3a:04
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Staat der Nederlanden Root CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\125\061\013\060\011\006\003\125\004\006\023\002\116\114\061
\036\060\034\006\003\125\004\012\023\025\123\164\141\141\164\040
\144\145\162\040\116\145\144\145\162\154\141\156\144\145\156\061
\046\060\044\006\003\125\004\003\023\035\123\164\141\141\164\040
\144\145\162\040\116\145\144\145\162\154\141\156\144\145\156\040
\122\157\157\164\040\103\101
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\125\061\013\060\011\006\003\125\004\006\023\002\116\114\061
\036\060\034\006\003\125\004\012\023\025\123\164\141\141\164\040
\144\145\162\040\116\145\144\145\162\154\141\156\144\145\156\061
\046\060\044\006\003\125\004\003\023\035\123\164\141\141\164\040
\144\145\162\040\116\145\144\145\162\154\141\156\144\145\156\040
\122\157\157\164\040\103\101
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\004\000\230\226\212
END
CKA_VALUE MULTILINE_OCTAL
\060\202\003\272\060\202\002\242\240\003\002\001\002\002\004\000
\230\226\212\060\015\006\011\052\206\110\206\367\015\001\001\005
\005\000\060\125\061\013\060\011\006\003\125\004\006\023\002\116
\114\061\036\060\034\006\003\125\004\012\023\025\123\164\141\141
\164\040\144\145\162\040\116\145\144\145\162\154\141\156\144\145
\156\061\046\060\044\006\003\125\004\003\023\035\123\164\141\141
\164\040\144\145\162\040\116\145\144\145\162\154\141\156\144\145
\156\040\122\157\157\164\040\103\101\060\036\027\015\060\062\061
\062\061\067\060\071\062\063\064\071\132\027\015\061\065\061\062
\061\066\060\071\061\065\063\070\132\060\125\061\013\060\011\006

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\003\125\004\006\023\002\116\114\061\036\060\034\006\003\125\004  
\012\023\025\123\164\141\141\164\040\144\145\162\040\116\145\144  
\145\162\154\141\156\144\145\156\061\046\060\044\006\003\125\004  
\003\023\035\123\164\141\141\164\040\144\145\162\040\116\145\144  
\145\162\154\141\156\144\145\156\040\122\157\157\164\040\103\101  
\060\202\001\042\060\015\006\011\052\206\110\206\367\015\001\001  
\001\005\000\003\202\001\017\000\060\202\001\012\002\202\001\001  
\000\230\322\265\121\021\172\201\246\024\230\161\155\276\314\347  
\023\033\326\047\016\172\263\152\030\034\266\141\132\325\141\011  
\277\336\220\023\307\147\356\335\363\332\305\014\022\236\065\125  
\076\054\047\210\100\153\367\334\335\042\141\365\302\307\016\365  
\366\325\166\123\115\217\214\274\030\166\067\205\235\350\312\111  
\307\322\117\230\023\011\242\076\042\210\234\177\326\362\020\145  
\264\356\137\030\325\027\343\370\305\375\342\235\242\357\123\016  
\205\167\242\017\341\060\107\356\000\347\063\175\104\147\032\013  
\121\350\213\240\236\120\230\150\064\122\037\056\155\001\362\140  
\105\362\061\353\251\061\150\051\273\172\101\236\306\031\177\224  
\264\121\071\003\177\262\336\247\062\233\264\107\216\157\264\112  
\256\345\257\261\334\260\033\141\274\231\162\336\344\211\267\172  
\046\135\332\063\111\133\122\234\016\365\212\255\303\270\075\350  
\006\152\302\325\052\013\154\173\204\275\126\005\313\206\145\222  
\354\104\053\260\216\271\334\160\013\106\332\255\274\143\210\071  
\372\333\152\376\043\372\274\344\110\364\147\053\152\021\020\041  
\111\002\003\001\000\001\243\201\221\060\201\216\060\014\006\003  
\125\035\023\004\005\060\003\001\001\377\060\117\006\003\125\035  
\040\004\110\060\106\060\104\006\004\125\035\040\000\060\074\060  
\072\006\010\053\006\001\005\005\007\002\001\026\056\150\164\164  
\160\072\057\057\167\167\167\056\160\153\151\157\166\145\162\150  
\145\151\144\056\156\154\057\160\157\154\151\143\151\145\163\057  
\162\157\157\164\055\160\157\154\151\143\171\060\016\006\003\125  
\035\017\001\001\377\004\004\003\002\001\006\060\035\006\003\125  
\035\016\004\026\004\024\250\175\353\274\143\244\164\023\164\000  
\354\226\340\323\064\301\054\277\154\370\060\015\006\011\052\206  
\110\206\367\015\001\001\005\005\000\003\202\001\001\000\005\204  
\207\125\164\066\141\301\273\321\324\306\025\250\023\264\237\244  
\376\273\356\025\264\057\006\014\051\362\250\222\244\141\015\374  
\253\134\010\133\121\023\053\115\302\052\141\310\370\011\130\374  
\055\002\262\071\175\231\146\201\277\156\134\225\105\040\154\346  
\171\247\321\330\034\051\374\302\040\047\121\310\361\174\135\064  
\147\151\205\021\060\306\000\322\327\363\323\174\266\360\061\127  
\050\022\202\163\351\063\057\246\125\264\013\221\224\107\234\372  
\273\172\102\062\350\256\176\055\310\274\254\024\277\331\017\331  
\133\374\301\371\172\225\341\175\176\226\374\161\260\302\114\310  
\337\105\064\311\316\015\362\234\144\010\320\073\303\051\305\262  
\355\220\004\301\261\051\221\305\060\157\301\251\162\063\314\376  
\135\026\027\054\021\151\347\176\376\305\203\010\337\274\334\042  
\072\056\040\151\043\071\126\140\147\220\213\056\166\071\373\021  
\210\227\366\174\275\113\270\040\026\147\005\215\342\073\301\162

\077\224\225\067\307\135\271\236\330\223\241\027\217\377\014\146

\025\301\044\174\062\174\003\035\073\241\130\105\062\223

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "Staat der Nederlanden Root CA"

# Issuer: CN=Staat der Nederlanden Root CA,O=Staat der Nederlanden,C=NL

# Serial Number:98:96:8a

# Subject: CN=Staat der Nederlanden Root CA,O=Staat der Nederlanden,C=NL

# Not Valid Before: Tue Dec 17 09:23:49 2002

# Not Valid After: Wed Dec 16 09:15:38 2015

# Fingerprint (MD5): 60:84:7c:5a:ce:db:0c:d4:cb:a7:e9:fe:02:c6:a9:c0

# Fingerprint (SHA1): 10:1d:fa:3f:d5:0b:cb:bb:9b:b5:60:0c:19:55:a4:1a:f4:73:3a:04

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Staat der Nederlanden

Root CA"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\020\035\372\077\325\013\313\273\233\265\140\014\031\125\244\032

\364\163\072\004

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\140\204\174\132\316\333\014\324\313\247\351\376\002\306\251\300

END

CKA\_ISSUER MULTILINE\_OCTAL

\060\125\061\013\060\011\006\003\125\004\006\023\002\116\114\061

\036\060\034\006\003\125\004\012\023\025\123\164\141\141\164\040

\144\145\162\040\116\145\144\145\162\154\141\156\144\145\156\061

\046\060\044\006\003\125\004\003\023\035\123\164\141\141\164\040

\144\145\162\040\116\145\144\145\162\154\141\156\144\145\156\040

\122\157\157\164\040\103\101

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\004\000\230\226\212

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "America Online Root Certification Authority



1"

# Issuer: CN=America Online Root Certification Authority 1,O=America Online Inc.,C=US

# Serial Number: 1 (0x1)

# Subject: CN=America Online Root Certification Authority 1,O=America Online Inc.,C=US

# Not Valid Before: Tue May 28 06:00:00 2002

# Not Valid After: Thu Nov 19 20:43:00 2037

# Fingerprint (MD5): 14:f1:08:ad:9d:fa:64:e2:89:e7:1c:cf:a8:ad:7d:5e

# Fingerprint (SHA1): 39:21:c1:15:c1:5d:0e:ca:5c:cb:5b:c4:f0:7d:21:d8:05:0b:56:6a

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "America Online Root Certification Authority 1"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\143\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\034\060\032\006\003\125\004\012\023\023\101\155\145\162\151\143  
\141\040\117\156\154\151\156\145\040\111\156\143\056\061\066\060  
\064\006\003\125\004\003\023\055\101\155\145\162\151\143\141\040  
\117\156\154\151\156\145\040\122\157\157\164\040\103\145\162\164  
\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162  
\151\164\171\040\061

END

CKA\_ID

UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\143\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\034\060\032\006\003\125\004\012\023\023\101\155\145\162\151\143  
\141\040\117\156\154\151\156\145\040\111\156\143\056\061\066\060  
\064\006\003\125\004\003\023\055\101\155\145\162\151\143\141\040  
\117\156\154\151\156\145\040\122\157\157\164\040\103\145\162\164  
\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162  
\151\164\171\040\061

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\001\001

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\244\060\202\002\214\240\003\002\001\002\002\001\001  
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060  
\143\061\013\060\011\006\003\125\004\006\023\002\125\123\061\034  
\060\032\006\003\125\004\012\023\023\101\155\145\162\151\143\141  
\040\117\156\154\151\156\145\040\111\156\143\056\061\066\060\064  
\006\003\125\004\003\023\055\101\155\145\162\151\143\141\040\117  
\156\154\151\156\145\040\122\157\157\164\040\103\145\162\164\151  
\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151  
\164\171\040\061\060\036\027\015\060\062\060\065\062\070\060\066  
\060\060\060\060\132\027\015\063\067\061\061\061\071\062\060\064

\063\060\060\132\060\143\061\013\060\011\006\003\125\004\006\023  
\002\125\123\061\034\060\032\006\003\125\004\012\023\023\101\155  
\145\162\151\143\141\040\117\156\154\151\156\145\040\111\156\143  
\056\061\066\060\064\006\003\125\004\003\023\055\101\155\145\162  
\151\143\141\040\117\156\154\151\156\145\040\122\157\157\164\040  
\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101\165  
\164\150\157\162\151\164\171\040\061\060\202\001\042\060\015\006  
\011\052\206\110\206\367\015\001\001\001\005\000\003\202\001\017  
\000\060\202\001\012\002\202\001\001\000\250\057\350\244\151\006  
\003\107\303\351\052\230\377\031\242\160\232\306\120\262\176\245  
\337\150\115\033\174\017\266\227\150\175\055\246\213\227\351\144  
\206\311\243\357\240\206\277\140\145\234\113\124\210\302\110\305  
\112\071\277\024\343\131\125\345\031\264\164\310\264\005\071\134  
\026\245\342\225\005\340\022\256\131\213\242\063\150\130\034\246  
\324\025\267\330\237\327\334\161\253\176\232\277\233\216\063\017  
\042\375\037\056\347\007\066\357\142\071\305\335\313\272\045\024  
\043\336\014\306\075\074\316\202\010\346\146\076\332\121\073\026  
\072\243\005\177\240\334\207\325\234\374\162\251\240\175\170\344  
\267\061\125\036\145\273\324\141\260\041\140\355\020\062\162\305  
\222\045\036\370\220\112\030\170\107\337\176\060\067\076\120\033  
\333\034\323\153\232\206\123\007\260\357\254\006\170\370\204\231  
\376\041\215\114\200\266\014\202\366\146\160\171\032\323\117\243  
\317\361\317\106\260\113\017\076\335\210\142\270\214\251\011\050  
\073\172\307\227\341\036\345\364\237\300\300\256\044\240\310\241  
\331\017\326\173\046\202\151\062\075\247\002\003\001\000\001\243  
\143\060\141\060\017\006\003\125\035\023\001\001\377\004\005\060  
\003\001\001\377\060\035\006\003\125\035\016\004\026\004\024\000  
\255\331\243\366\171\366\156\164\251\177\063\075\201\027\327\114  
\317\063\336\060\037\006\003\125\035\043\004\030\060\026\200\024  
\000\255\331\243\366\171\366\156\164\251\177\063\075\201\027\327  
\114\317\063\336\060\016\006\003\125\035\017\001\001\377\004\004  
\003\002\001\206\060\015\006\011\052\206\110\206\367\015\001\001  
\005\005\000\003\202\001\001\000\174\212\321\037\030\067\202\340  
\270\260\243\355\126\225\310\142\141\234\005\242\315\302\142\046  
\141\315\020\026\327\314\264\145\064\320\021\212\255\250\251\005  
\146\357\164\363\155\137\235\231\257\366\213\373\353\122\262\005  
\230\242\157\052\305\124\275\045\275\137\256\310\206\352\106\054  
\301\263\275\301\351\111\160\030\026\227\010\023\214\040\340\033  
\056\072\107\313\036\344\000\060\225\133\364\105\243\300\032\260  
\001\116\253\275\300\043\156\143\077\200\112\305\007\355\334\342  
\157\307\301\142\361\343\162\326\004\310\164\147\013\372\210\253  
\241\001\310\157\360\024\257\322\231\315\121\223\176\355\056\070  
\307\275\316\106\120\075\162\343\171\045\235\233\210\053\020\040  
\335\245\270\062\237\215\340\051\337\041\164\206\202\333\057\202  
\060\306\307\065\206\263\371\226\137\106\333\014\105\375\363\120  
\303\157\306\303\110\255\106\246\341\047\107\012\035\016\233\266  
\302\167\177\143\362\340\175\032\276\374\340\337\327\307\247\154  
\260\371\256\272\074\375\164\264\021\350\130\015\200\274\323\250

```

\200\072\231\355\165\314\106\173
END
CKA_NSS_MOZILLA_CA_POLICY
CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRUST_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRUST_AFTER CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Trust for "America Online Root Certification Authority 1"
# Issuer: CN=America Online Root Certification Authority 1,O=America Online Inc.,C=US
# Serial Number: 1 (0x1)
# Subject: CN=America Online Root Certification Authority 1,O=America Online Inc.,C=US
# Not Valid Before: Tue May 28 06:00:00 2002
# Not Valid After: Thu Nov 19 20:43:00
2037
# Fingerprint (MD5): 14:f1:08:ad:9d:fa:64:e2:89:e7:1c:cf:a8:ad:7d:5e
# Fingerprint (SHA1): 39:21:c1:15:c1:5d:0e:ca:5c:cb:5b:c4:f0:7d:21:d8:05:0b:56:6a
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "America Online Root Certification Authority 1"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\071\041\301\025\301\135\016\312\134\313\133\304\360\175\041\330
\005\013\126\152
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\024\361\010\255\235\372\144\342\211\347\034\317\250\255\175\136
END
CKA_ISSUER MULTILINE_OCTAL
\060\143\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\034\060\032\006\003\125\004\012\023\023\101\155\145\162\151\143
\141\040\117\156\154\151\156\145\040\111\156\143\056\061\066\060
\064\006\003\125\004\003\023\055\101\155\145\162\151\143\141\040
\117\156\154\151\156\145\040\122\157\157\164\040\103\145\162\164
\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162
\151\164\171\040\061
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\001\001
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate

```

```
# Certificate "Juur-SK"
# Issuer: CN=Juur-SK,O=AS Sertifitseerimiskeskus,C=EE,1.2.840.1.13549.1.9.1=pki@sk.ee
# Serial Number:3b:8e:4b:fc
# Subject: CN=Juur-SK,O=AS Sertifitseerimiskeskus,C=EE,1.2.840.1.13549.1.9.1=pki@sk.ee
# Not Valid Before: Thu Aug 30 14:23:01 2001
# Not Valid After: Fri Aug 26 14:23:01 2016
# Fingerprint (MD5): aa:8e:5d:d9:f8:db:0a:58:b7:8d:26:87:6c:82:35:55
# Fingerprint (SHA1): 40:9d:4b:d9:17:b5:5c:27:b6:9b:64:cb:98:22:44:0d:cd:09:b8:89
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Juur-SK"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT
MULTILINE_OCTAL
\060\135\061\030\060\026\006\011\052\206\110\206\367\015\001\011
\001\026\011\160\153\151\100\163\153\056\145\145\061\013\060\011
\006\003\125\004\006\023\002\105\105\061\042\060\040\006\003\125
\004\012\023\031\101\123\040\123\145\162\164\151\146\151\164\163
\145\145\162\151\155\151\163\153\145\163\153\165\163\061\020\060
\016\006\003\125\004\003\023\007\112\165\165\162\055\123\113
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\135\061\030\060\026\006\011\052\206\110\206\367\015\001\011
\001\026\011\160\153\151\100\163\153\056\145\145\061\013\060\011
\006\003\125\004\006\023\002\105\105\061\042\060\040\006\003\125
\004\012\023\031\101\123\040\123\145\162\164\151\146\151\164\163
\145\145\162\151\155\151\163\153\145\163\153\165\163\061\020\060
\016\006\003\125\004\003\023\007\112\165\165\162\055\123\113
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\004\073\216\113\374
END
CKA_VALUE MULTILINE_OCTAL
\060\202\004\346\060\202\003\316\240\003\002\001\002\002\004\073
\216\113\374\060\015\006\011\052\206\110\206\367\015\001\001\005
\005\000\060\135\061\030\060\026\006\011\052\206\110\206\367\015
\001\011\001\026\011\160\153\151\100\163\153\056\145\145\061\013
\060\011\006\003\125\004\006\023\002\105\105\061\042\060\040\006
\003\125\004\012\023\031\101\123\040\123\145\162\164\151\146\151
\164\163\145\145\162\151\155\151\163\153\145\163\153\165\163\061
\020\060\016\006\003\125\004\003\023\007\112\165\165\162\055\123
\113\060\036\027\015\060\061\060\070\063\060\061\064\062\063\060
\061\132\027\015\061\066\060\070\062\066\061\064\062\063\060\061
\132\060\135\061\030\060\026\006\011\052\206\110\206\367\015\001
\011\001\026\011\160\153\151\100\163\153\056\145\145\061\013\060
```

\011\006\003\125\004\006\023\002\105\105\061\042\060\040\006\003  
\125\004\012\023\031\101\123\040\123\145\162\164\151\146\151\164  
\163\145\145\162\151\155\151\163\153\145\163\153\165\163\061\020  
\060\016\006\003\125\004\003\023\007\112\165\165\162\055\123\113  
\060\202\001\042\060\015\006\011\052\206\110\206\367\015\001\001  
\001\005\000\003\202\001\017\000\060\202\001\012\002\202\001\001  
\000\201\161\066\076\063\007\326\343\060\215\023\176\167\062\106  
\313\317\031\262\140\061\106\227\206\364\230\106\244\302\145\105  
\317\323\100\174\343\132\042\250\020\170\063\314\210\261\323\201  
\112\366\142\027\173\137\115\012\056\320\317\213\043\356\117\002  
\116\273\353\016\312\275\030\143\350\200\034\215\341\034\215\075  
\340\377\133\137\352\144\345\227\350\077\231\177\014\012\011\063  
\000\032\123\247\041\341\070\113\326\203\033\255\257\144\302\371  
\034\172\214\146\110\115\146\037\030\012\342\076\273\037\007\145  
\223\205\271\032\260\271\304\373\015\021\366\365\326\371\033\307  
\054\053\267\030\121\376\340\173\366\250\110\257\154\073\117\057  
\357\370\321\107\036\046\127\360\121\035\063\226\377\357\131\075  
\332\115\321\025\064\307\352\077\026\110\173\221\034\200\103\017  
\075\270\005\076\321\263\225\315\330\312\017\302\103\147\333\267  
\223\340\042\202\056\276\365\150\050\203\271\301\073\151\173\040  
\332\116\234\155\341\272\315\217\172\154\260\011\042\327\213\013  
\333\034\325\132\046\133\015\300\352\345\140\320\237\376\065\337  
\077\002\003\001\000\001\243\202\001\254\060\202\001\250\060\017  
\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060  
\202\001\026\006\003\125\035\040\004\202\001\015\060\202\001\011  
\060\202\001\005\006\012\053\006\001\004\001\316\037\001\001\001  
\060\201\366\060\201\320\006\010\053\006\001\005\005\007\002\002  
\060\201\303\036\201\300\000\123\000\145\000\145\000\040\000\163  
\000\145\000\162\000\164\000\151\000\146\000\151\000\153\000\141  
\000\141\000\164\000\040\000\157\000\156\000\040\000\166\000\344  
\000\154\000\152\000\141\000\163\000\164\000\141\000\164\000\165  
\000\144\000\040\000\101\000\123\000\055\000\151\000\163\000\040  
\000\123\000\145\000\162\000\164\000\151\000\146\000\151\000\164  
\000\163\000\145\000\145\000\162\000\151\000\155\000\151\000\163  
\000\153\000\145\000\163\000\153\000\165\000\163\000\040\000\141  
\000\154\000\141\000\155\000\055\000\123\000\113\000\040\000\163  
\000\145\000\162\000\164\000\151\000\146\000\151\000\153\000\141  
\000\141\000\164\000\151\000\144\000\145\000\040\000\153\000\151  
\000\156\000\156\000\151\000\164\000\141\000\155\000\151\000\163  
\000\145\000\153\000\163\060\041\006\010\053\006\001\005\005\007  
\002\001\026\025\150\164\164\160\072\057\057\167\167\167\056\163  
\153\056\145\145\057\143\160\163\057\060\053\006\003\125\035\037  
\004\044\060\042\060\040\240\036\240\034\206\032\150\164\164\160  
\072\057\057\167\167\167\056\163\153\056\145\145\057\152\165\165  
\162\057\143\162\154\057\060\035\006\003\125\035\016\004\026\004  
\024\004\252\172\107\243\344\211\257\032\317\012\100\247\030\077  
\157\357\351\175\276\060\037\006\003\125\035\043\004\030\060\026  
\200\024\004\252\172\107\243\344\211\257\032\317\012\100\247\030

\077\157\357\351\175\276\060\016\006\003\125\035\017\001\001\377  
\004\004\003\002\001\346\060\015\006\011\052\206\110\206\367\015  
\001\001\005\005\000\003\202\001\001\000\173\301\030\224\123\242  
\011\363\376\046\147\232\120\344\303\005\057\053\065\170\221\114  
\174\250\021\021\171\114\111\131\254\310\367\205\145\134\106\273  
\073\020\240\002\257\315\117\265\314\066\052\354\135\376\357\240  
\221\311\266\223\157\174\200\124\354\307\010\160\015\216\373\202  
\354\052\140\170\151\066\066\321\305\234\213\151\265\100\310\224  
\145\167\362\127\041\146\073\316\205\100\266\063\143\032\277\171  
\036\374\134\035\323\035\223\033\213\014\135\205\275\231\060\062  
\030\011\221\122\351\174\241\272\377\144\222\232\354\376\065\356  
\214\057\256\374\040\206\354\112\336\033\170\062\067\246\201\322  
\235\257\132\022\026\312\231\133\374\157\155\016\305\240\036\206  
\311\221\320\134\230\202\137\143\014\212\132\253\330\225\246\314  
\313\212\326\277\144\113\216\312\212\262\260\351\041\062\236\252  
\250\205\230\064\201\071\041\073\250\072\122\062\075\366\153\067  
\206\006\132\025\230\334\360\021\146\376\064\040\267\003\364\101  
\020\175\071\204\171\226\162\143\266\226\002\345\153\271\255\031  
\115\273\306\104\333\066\313\052\234\216

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "Juur-SK"

# Issuer: CN=Juur-SK,O=AS Sertifitseerimiskeskus,C=EE,1.2.840.113549.1.9.1=pki@sk.ee

# Serial Number:3b:8e:4b:fc

# Subject: CN=Juur-SK,O=AS Sertifitseerimiskeskus,C=EE,1.2.840.113549.1.9.1=pki@sk.ee

# Not Valid Before: Thu Aug 30 14:23:01 2001

# Not Valid After: Fri Aug 26 14:23:01 2016

# Fingerprint (MD5): aa:8e:5d:d9:f8:db:0a:58:b7:8d:26:87:6c:82:35:55

# Fingerprint (SHA1): 40:9d:4b:d9:17:b5:5c:27:b6:9b:64:cb:98:22:44:0d:cd:09:b8:89

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Juur-SK"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\100\235\113\331\027\265\134\047\266\233\144\313\230\042\104\015  
\315\011\270\211

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\252\216\135\331\370\333\012\130\267\215\046\207\154\202\065\125

END

CKA\_ISSUER

```

MULTILINE_OCTAL
\060\135\061\030\060\026\006\011\052\206\110\206\367\015\001\011
\001\026\011\160\153\151\100\163\153\056\145\145\061\013\060\011
\006\003\125\004\006\023\002\105\105\061\042\060\040\006\003\125
\004\012\023\031\101\123\040\123\145\162\164\151\146\151\164\163
\145\145\162\151\155\151\163\153\145\163\153\165\163\061\020\060
\016\006\003\125\004\003\023\007\112\165\165\162\055\123\113
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\004\073\216\113\374
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "ComSign CA"
# Issuer: C=IL,O=ComSign,CN=ComSign CA
# Serial Number:14:13:96:83:14:55:8c:ea:7b:63:e5:fc:34:87:77:44
# Subject: C=IL,O=ComSign,CN=ComSign CA
#
# Not Valid Before: Wed Mar 24 11:32:18 2004
# Not Valid After: Mon Mar 19 15:02:18 2029
# Fingerprint (MD5): cd:f4:39:f3:b5:18:50:d7:3e:a4:c5:91:a0:3e:21:4b
# Fingerprint (SHA1): e1:a4:5b:14:1a:21:da:1a:79:f4:1a:42:a9:61:d6:69:cd:06:34:c1
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "ComSign CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\064\061\023\060\021\006\003\125\004\003\023\012\103\157\155
\123\151\147\156\040\103\101\061\020\060\016\006\003\125\004\012
\023\007\103\157\155\123\151\147\156\061\013\060\011\006\003\125
\004\006\023\002\111\114
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\064\061\023\060\021\006\003\125\004\003\023\012\103\157\155
\123\151\147\156\040\103\101\061\020\060\016\006\003\125\004\012
\023\007\103\157\155\123\151\147\156\061\013\060\011\006\003\125
\004\006\023\002\111\114
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\024\023\226\203\024\125\214\352\173\143\345\374\064\207
\167\104

```

END

CKA\_VALUE

MULTILINE\_OCTAL

\060\202\003\223\060\202\002\173\240\003\002\001\002\002\020\024  
\023\226\203\024\125\214\352\173\143\345\374\064\207\167\104\060  
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\064  
\061\023\060\021\006\003\125\004\003\023\012\103\157\155\123\151  
\147\156\040\103\101\061\020\060\016\006\003\125\004\012\023\007  
\103\157\155\123\151\147\156\061\013\060\011\006\003\125\004\006  
\023\002\111\114\060\036\027\015\060\064\060\063\062\064\061\061  
\063\062\061\070\132\027\015\062\071\060\063\061\071\061\065\060  
\062\061\070\132\060\064\061\023\060\021\006\003\125\004\003\023  
\012\103\157\155\123\151\147\156\040\103\101\061\020\060\016\006  
\003\125\004\012\023\007\103\157\155\123\151\147\156\061\013\060  
\011\006\003\125\004\006\023\002\111\114\060\202\001\042\060\015  
\006\011\052\206\110\206\367\015\001\001\001\005\000\003\202\001  
\017\000\060\202\001\012\002\202\001\001\000\360\344\124\151\053  
\323\307\217\152\104\344\176\130\047\370\013\320\344\224\022\212  
\361\033\070\070\057\037\061\234\006\324\054\247\336\013\052\256  
\032\240\343\236\152\277\237\074\307\156\242\371\213\144\154\072  
\255\205\125\121\124\245\070\125\270\253\203\004\362\077\144\066  
\367\300\215\103\103\152\146\321\367\027\052\325\357\066\372\060  
\020\102\327\123\315\371\372\063\163\114\263\351\204\040\212\326  
\101\047\065\344\070\372\224\233\270\172\344\171\037\063\373\033  
\330\041\011\050\174\115\030\151\136\144\212\172\031\223\312\176  
\354\363\162\347\067\007\130\131\050\254\102\371\305\377\315\077  
\347\245\372\070\261\320\014\307\331\122\032\123\326\201\314\102  
\172\065\133\355\113\072\172\366\265\216\314\377\017\174\344\140  
\066\207\057\255\360\241\045\175\377\322\113\021\210\160\124\246  
\101\250\147\123\122\102\136\344\064\236\344\276\243\354\252\142  
\135\335\303\114\246\202\101\344\063\013\254\311\063\017\144\202  
\127\052\375\014\255\066\341\014\256\113\305\357\073\231\331\043  
\263\133\135\264\127\354\164\160\014\052\117\002\003\001\000\001  
\243\201\240\060\201\235\060\014\006\003\125\035\023\004\005\060  
\003\001\001\377\060\075\006\003\125\035\037\004\066\060\064\060  
\062\240\060\240\056\206\054\150\164\164\160\072\057\057\146\145  
\144\151\162\056\143\157\155\163\151\147\156\056\143\157\056\151  
\154\057\143\162\154\057\103\157\155\123\151\147\156\103\101\056  
\143\162\154\060\016\006\003\125\035\017\001\001\377\004\004\003  
\002\001\206\060\037\006\003\125\035\043\004\030\060\026\200\024  
\113\001\233\076\126\032\145\066\166\313\173\227\252\222\005\356  
\062\347\050\061\060\035\006\003\125\035\016\004\026\004\024\113  
\001\233\076\126\032\145\066\166\313\173\227\252\222\005\356\062  
\347\050\061\060\015\006\011\052\206\110\206\367\015\001\001\005  
\005\000\003\202\001\001\000\320\331\245\176\376\051\140\105\235  
\176\203\317\156\274\107\156\365\032\236\124\166\102\161\264\074  
\130\077\055\100\045\102\366\201\234\361\211\020\310\016\252\170  
\117\070\011\127\260\074\300\010\374\065\216\361\110\121\215\014



```
\161\164\272\204\304\327\162\233\204\174\070\116\144\006\047\052
\341\247\265\354\010\231\264\012\015\324\205\163\310\022\341\065
\355\361\005\061\035\163\231\014\353\226\312\335\323\346\205\252
\360\212\373\165\301\362\011\074\145\145\144\363\114\330\255\313
\210\151\363\344\203\267\014\275\027\132\226\027\312\133\377\255
\273\034\351\055\204\200\330\041\276\205\122\331\324\164\271\151
\205\272\115\355\050\062\353\371\141\112\344\304\066\036\031\334
\157\204\021\037\225\365\203\050\030\250\063\222\103\047\335\135
\023\004\105\117\207\325\106\315\075\250\272\360\363\270\126\044
\105\353\067\307\341\166\117\162\071\030\337\176\164\162\307\163
\055\071\352\140\346\255\021\242\126\207\173\303\150\232\376\370
\214\160\250\337\145\062\364\244\100\214\241\302\104\003\016\224
\000\147\240\161\000\202\110
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code

Signing Only Certificate

# Trust for "ComSign CA"

# Issuer: C=IL,O=ComSign,CN=ComSign CA

# Serial Number: 14:13:96:83:14:55:8c:ea:7b:63:e5:fc:34:87:77:44

# Subject: C=IL,O=ComSign,CN=ComSign CA

# Not Valid Before: Wed Mar 24 11:32:18 2004

# Not Valid After: Mon Mar 19 15:02:18 2029

# Fingerprint (MD5): cd:f4:39:f3:b5:18:50:d7:3e:a4:c5:91:a0:3e:21:4b

# Fingerprint (SHA1): e1:a4:5b:14:1a:21:da:1a:79:f4:1a:42:a9:61:d6:69:cd:06:34:c1

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "ComSign CA"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\341\244\133\024\032\041\332\032\171\364\032\102\251\141\326\151
```

```
\315\006\064\301
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\315\364\071\363\265\030\120\327\076\244\305\221\240\076\041\113
```

END

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\064\061\023\060\021\006\003\125\004\003\023\012\103\157\155
```

```
\123\151\147\156\040\103\101\061\020\060\016\006\003\125\004\012
```

```
\023\007\103\157\155\123\151\147\156\061\013\060\011\006\003\125
```

```
\004\006\023\002\111\114
```

END

CKA\_SERIAL\_NUMBER

```
MULTILINE_OCTAL
\002\020\024\023\226\203\024\125\214\352\173\143\345\374\064\207
\167\104
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
# Microsoft Code Signing Only Certificate
# Certificate "ComSign Secured CA"
# Issuer: C=IL,O=ComSign,CN=ComSign Secured CA
# Serial Number:c7:28:47:09:b3:b8:6c:45:8c:1d:fa:24:f5:36:4e:e9
# Subject: C=IL,O=ComSign,CN=ComSign Secured CA
# Not Valid Before: Wed Mar 24 11:37:20 2004
# Not Valid After: Fri Mar 16 15:04:56 2029
# Fingerprint (MD5): 40:01:25:06:8d:21:43:6a:0e:43:00:9c:e7:43:f3:d5
# Fingerprint (SHA1): f9:cd:0e:2c:da:76:24:c1:8f:bd:f0:f0:ab:b6:45:b8:f7:fe:d5:7a
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL
CK_FALSE
```

```
CKA_LABEL UTF8 "ComSign Secured CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\074\061\033\060\031\006\003\125\004\003\023\022\103\157\155
\123\151\147\156\040\123\145\143\165\162\145\144\040\103\101\061
\020\060\016\006\003\125\004\012\023\007\103\157\155\123\151\147
\156\061\013\060\011\006\003\125\004\006\023\002\111\114
END
```

```
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\074\061\033\060\031\006\003\125\004\003\023\022\103\157\155
\123\151\147\156\040\123\145\143\165\162\145\144\040\103\101\061
\020\060\016\006\003\125\004\012\023\007\103\157\155\123\151\147
\156\061\013\060\011\006\003\125\004\006\023\002\111\114
END
```

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\021\000\307\050\107\011\263\270\154\105\214\035\372\044\365
\066\116\351
END
```

```
CKA_VALUE MULTILINE_OCTAL
\060\202\003\253\060\202\002\223\240\003\002\001\002\002\021\000
\307\050\107\011\263\270\154\105\214\035\372\044\365\066\116\351
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060
\074\061\033\060\031\006\003\125\004\003\023\022\103\157\155\123
\151\147\156\040\123\145\143\165\162\145\144\040\103\101\061\020
```

\060\016\006\003\125\004\012\023\007\103\157\155\123\151\147\156  
\061\013\060\011\006\003\125\004\006\023\002\111\114\060\036\027  
\015\060\064\060\063\062\064\061\061\063\067\062\060\132\027\015  
\062\071\060\063\061\066\061\065\060\064\065\066\132\060\074\061  
\033\060\031\006\003\125\004\003\023\022\103\157\155\123\151\147  
\156\040\123\145\143\165\162\145\144\040\103\101\061\020\060\016  
\006\003\125\004\012\023\007\103\157\155\123\151\147\156\061\013  
\060\011\006\003\125\004\006\023\002\111\114\060\202\001\042\060  
\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003\202  
\001\017\000\060\202\001\012\002\202\001\001\000\306\265\150\137  
\035\224\025\303\244\010\125\055\343\240\127\172\357\351\164\052  
\273\271\174\127\111\032\021\136\117\051\207\014\110\326\152\347  
\217\324\176\127\044\271\006\211\344\034\074\352\254\343\332\041  
\200\163\041\012\357\171\230\154\037\010\377\241\120\175\362\230  
\033\311\124\157\076\245\050\354\041\004\017\105\273\007\075\241  
\300\372\052\230\035\116\006\223\373\365\210\073\253\137\313\026  
\277\346\363\236\112\207\355\031\352\302\237\103\344\361\201\245  
\177\020\117\076\321\112\142\255\123\033\313\203\377\007\145\245  
\222\055\146\251\133\270\132\364\035\264\041\221\112\027\173\236  
\062\376\126\044\071\262\124\204\103\365\204\302\330\274\101\220  
\314\235\326\150\332\351\202\120\251\073\150\317\265\135\002\224  
\140\026\261\103\331\103\135\335\135\207\156\352\273\263\311\153  
\366\003\224\011\160\336\026\021\172\053\350\166\217\111\020\230  
\167\271\143\134\213\063\227\165\366\013\214\262\253\133\336\164  
\040\045\077\343\363\021\371\207\150\206\065\161\303\035\214\055  
\353\345\032\254\017\163\325\202\131\100\200\323\002\003\001\000  
\001\243\201\247\060\201\244\060\014\006\003\125\035\023\004\005  
\060\003\001\001\377\060\104\006\003\125\035\037\004\075\060\073  
\060\071\240\067\240\065\206\063\150\164\164\160\072\057\057\146  
\145\144\151\162\056\143\157\155\163\151\147\156\056\143\157\056  
\151\154\057\143\162\154\057\103\157\155\123\151\147\156\123\145  
\143\165\162\145\144\103\101\056\143\162\154\060\016\006\003\125  
\035\017\001\001\377\004\004\003\002\001\206\060\037\006\003\125  
\035\043\004\030\060\026\200\024\301\113\355\160\266\367\076\174  
\000\073\000\217\307\076\016\105\237\036\135\354\060\035\006\003  
\125\035\016\004\026\004\024\301\113\355\160\266\367\076\174\000  
\073\000\217\307\076\016\105\237\036\135\354\060\015\006\011\052  
\206\110\206\367\015\001\001\005\005\000\003\202\001\001\000\026  
\317\356\222\023\120\253\173\024\236\063\266\102\040\152\324\025  
\275\011\253\374\162\350\357\107\172\220\254\121\301\144\116\351  
\210\275\103\105\201\343\146\043\077\022\206\115\031\344\005\260  
\346\067\302\215\332\006\050\311\017\211\244\123\251\165\077\260  
\226\373\253\114\063\125\371\170\046\106\157\033\066\230\373\102  
\166\301\202\271\216\336\373\105\371\143\033\142\073\071\006\312  
\167\172\250\074\011\317\154\066\075\017\012\105\113\151\026\032  
\105\175\063\003\145\371\122\161\220\046\225\254\114\014\365\213  
\223\077\314\165\164\205\230\272\377\142\172\115\037\211\376\256  
\275\224\000\231\277\021\245\334\340\171\305\026\013\175\002\141

```
\035\352\205\371\002\025\117\347\132\211\116\024\157\343\067\113
\205\365\301\074\141\340\375\005\101\262\222\177\303\035\240\320
\256\122\144\140\153\030\306\046\234\330\365\144\344\066\032\142
\237\212\017\076\377\155\116\031\126\116\040\221\154\237\064\063
\072\064\127\120\072\157\201\136\006\306\365\076\174\116\216\053
\316\145\006\056\135\322\052\123\164\136\323\156\047\236\217
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "ComSign Secured CA"

# Issuer: C=IL,O=ComSign,CN=ComSign Secured CA

# Serial Number:c7:28:47:09:b3:b8:6c:45:8c:1d:fa:24:f5:36:4e:e9

# Subject: C=IL,O=ComSign,CN=ComSign

Secured CA

# Not Valid Before: Wed Mar 24 11:37:20 2004

# Not Valid After: Fri Mar 16 15:04:56 2029

# Fingerprint (MD5): 40:01:25:06:8d:21:43:6a:0e:43:00:9c:e7:43:f3:d5

# Fingerprint (SHA1): f9:cd:0e:2c:da:76:24:c1:8f:bd:f0:f0:ab:b6:45:b8:f7:fe:d5:7a

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "ComSign Secured CA"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\371\315\016\054\332\166\044\301\217\275\360\360\253\266\105\270
\367\376\325\172
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\100\001\045\006\215\041\103\152\016\103\000\234\347\103\363\325
```

END

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\074\061\033\060\031\006\003\125\004\003\023\022\103\157\155
\123\151\147\156\040\123\145\143\165\162\145\144\040\103\101\061
\020\060\016\006\003\125\004\012\023\007\103\157\155\123\151\147
\156\061\013\060\011\006\003\125\004\006\023\002\111\114
```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

```
\002\021\000\307\050\107\011\263\270\154\105\214\035\372\044\365
\066\116\351
```

END

CKA\_TRUST\_SERVER\_AUTH

CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "ComSign Advanced Security CA"

# Issuer: CN=ComSign Advanced Security CA

# Serial Number:7a:5d:e9:33:d0:04:9e:b3:4a:1a:17:74:cb:16:9b:6d

# Subject: CN=ComSign Advanced Security CA

# Not Valid Before: Wed Mar 24 21:52:04 2004

# Not Valid After: Sat Mar 24 21:55:55 2029

# Fingerprint (MD5): f0:9e:63:93:76:a5:95:bc:18:61:f1:9b:fb:d3:64:dd

# Fingerprint (SHA1): 80:bf:3d:e9:a4:1d:76:8d:19:4b:29:3c:85:63:2c:db:c8:ea:8c:f7

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "ComSign Advanced Security CA"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT

MULTILINE\_OCTAL

\060\047\061\045\060\043\006\003\125\004\003\023\034\103\157\155  
\123\151\147\156\040\101\144\166\141\156\143\145\144\040\123\145  
\143\165\162\151\164\171\040\103\101

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\047\061\045\060\043\006\003\125\004\003\023\034\103\157\155  
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CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

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CKA\_VALUE MULTILINE\_OCTAL

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\363\132\365\037\141\275\376\025\131\223\012\336\372\121\372\106  
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END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER

CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "ComSign Advanced Security CA"

# Issuer: CN=ComSign Advanced Security CA

# Serial Number:7a:5d:e9:33:d0:04:9e:b3:4a:1a:17:74:cb:16:9b:6d

# Subject: CN=ComSign Advanced Security CA

```
# Not Valid Before: Wed Mar 24 21:52:04 2004
# Not Valid After: Sat Mar 24 21:55:55 2029
# Fingerprint (MD5): f0:9e:63:93:76:a5:95:bc:18:61:f1:9b:fb:d3:64:dd
# Fingerprint (SHA1): 80:bf:3d:e9:a4:1d:76:8d:19:4b:29:3c:85:63:2c:db:c8:ea:8c:f7
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "ComSign Advanced Security CA"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\200\277\075\351\244\035\166\215\031\113\051\074\205\143\054\333
\310\352\214\367
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\360\236\143\223\166\245\225\274\030\141\361\233\373\323\144\335
END
CKA_ISSUER MULTILINE_OCTAL
\060\047\061\045\060\043\006\003\125\004\003\023\034\103\157\155
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MULTILINE_OCTAL
\002\020\172\135\351\063\320\004\236\263\112\032\027\164\313\026
\233\155
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "Global Chambersign Root"
# Issuer: CN=Global Chambersign Root,OU=http://www.chambersign.org,O=AC Camerfirma SA CIF
A82743287,C=EU
# Serial Number: 0 (0x0)
# Subject: CN=Global Chambersign Root,OU=http://www.chambersign.org,O=AC Camerfirma SA CIF
A82743287,C=EU
# Not Valid Before: Tue Sep 30 16:14:18 2003
# Not Valid After: Wed Sep 30 16:14:18 2037
# Fingerprint (MD5): c5:e6:7b:bf:06:d0:4f:43:ed:c4:7a:65:8a:fb:6b:19
# Fingerprint (SHA1): 33:9b:6b:14:50:24:9b:55:7a:01:87:72:84:d9:e0:2f:c3:d2:d8:e9
CKA_CLASS
CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Global Chambersign Root"
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CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

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END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

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END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

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END

CKA\_VALUE MULTILINE\_OCTAL

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\062\067\064\063\062\070\067\061\043\060\041\006\003\125\004\013  
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\262\323\005\003\121\306\007\357\314\024\162\164\075\156\162\316
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END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "Global Chambersign Root"

# Issuer: CN=Global Chambersign Root,OU=http://www.chambersign.org,O=AC Camerfirma SA CIF  
A82743287,C=EU

# Serial Number: 0 (0x0)

# Subject: CN=Global Chambersign Root,OU=http://www.chambersign.org,O=AC Camerfirma SA CIF  
A82743287,C=EU

# Not Valid Before: Tue Sep 30 16:14:18 2003

# Not Valid After: Wed Sep 30 16:14:18 2037

# Fingerprint (MD5): c5:e6:7b:bf:06:d0:4f:43:ed:c4:7a:65:8a:fb:6b:19

#

Fingerprint (SHA1): 33:9b:6b:14:50:24:9b:55:7a:01:87:72:84:d9:e0:2f:c3:d2:d8:e9

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Global Chambersign Root"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\063\233\153\024\120\044\233\125\172\001\207\162\204\331\340\057
\303\322\330\351
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\305\346\173\277\006\320\117\103\355\304\172\145\212\373\153\031
```

END

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\175\061\013\060\011\006\003\125\004\006\023\002\105\125\061
\047\060\045\006\003\125\004\012\023\036\101\103\040\103\141\155
\145\162\146\151\162\155\141\040\123\101\040\103\111\106\040\101
\070\062\067\064\063\062\070\067\061\043\060\041\006\003\125\004
\013\023\032\150\164\164\160\072\057\057\167\167\167\056\143\150
\141\155\142\145\162\163\151\147\156\056\157\162\147\061\040\060
\036\006\003\125\004\003\023\027\107\154\157\142\141\154\040\103
\150\141\155\142\145\162\163\151\147\156\040\122\157\157\164
```

END

```
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\001\000
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
# Microsoft Code Signing Only Certificate
# Certificate "GeoTrust Global CA"
# Issuer: CN=GeoTrust Global CA,O=GeoTrust Inc.,C=US
# Serial Number: 144470 (0x23456)
# Subject: CN=GeoTrust Global CA,O=GeoTrust Inc.,C=US
# Not Valid Before: Tue May 21 04:00:00 2002
# Not Valid After: Sat May 21 04:00:00 2022
# Fingerprint (MD5): f7:75:ab:29:fb:51:4e:b7:77:5e:ff:05:3c:99:8e:f5
# Fingerprint (SHA1): de:28:f4:a4:ff:e5:b9:2f:a3:c5:03:d1:a3:49:a7:f9:96:2a:82:12
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "GeoTrust Global CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
```

```
CKA_SUBJECT
MULTILINE_OCTAL
\060\102\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\026\060\024\006\003\125\004\012\023\015\107\145\157\124\162\165
\163\164\040\111\156\143\056\061\033\060\031\006\003\125\004\003
\023\022\107\145\157\124\162\165\163\164\040\107\154\157\142\141
\154\040\103\101
END
```

```
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\102\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\026\060\024\006\003\125\004\012\023\015\107\145\157\124\162\165
\163\164\040\111\156\143\056\061\033\060\031\006\003\125\004\003
\023\022\107\145\157\124\162\165\163\164\040\107\154\157\142\141
\154\040\103\101
END
```

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\003\002\064\126
END
CKA_VALUE MULTILINE_OCTAL
\060\202\003\124\060\202\002\074\240\003\002\001\002\002\003\002
\064\126\060\015\006\011\052\206\110\206\367\015\001\001\005\005
\000\060\102\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\026\060\024\006\003\125\004\012\023\015\107\145\157\124\162
```

\165\163\164\040\111\156\143\056\061\033\060\031\006\003\125\004  
\003\023\022\107\145\157\124\162\165\163\164\040\107\154\157\142  
\141\154\040\103\101\060\036\027\015\060\062\060\065\062\061\060  
\064\060\060\060\060\132\027\015\062\062\060\065\062\061\060\064  
\060\060\060\060\132\060\102\061\013\060\011\006\003\125\004\006  
\023\002\125\123\061\026\060\024\006\003\125\004\012\023\015\107  
\145\157\124\162\165\163\164\040\111\156\143\056\061\033\060\031  
\006\003\125\004\003\023\022\107\145\157\124\162\165\163\164\040  
\107\154\157\142\141\154\040\103\101\060\202\001\042\060\015\006  
\011\052\206\110\206\367\015\001\001\001\005\000\003\202\001\017  
\000\060\202\001\012\002\202\001\001\000\332\314\030\143\060\375  
\364\027\043\032\126\176\133\337\074\154\070\344\161\267\170\221  
\324\274\241\330\114\370\250\103\266\003\351\115\041\007\010\210  
\332\130\057\146\071\051\275\005\170\213\235\070\350\005\267\152  
\176\161\244\346\304\140\246\260\357\200\344\211\050\017\236\045  
\326\355\203\363\255\246\221\307\230\311\102\030\065\024\235\255  
\230\106\222\056\117\312\361\207\103\301\026\225\127\055\120\357  
\211\055\200\172\127\255\362\356\137\153\322\000\215\271\024\370  
\024\025\065\331\300\106\243\173\162\310\221\277\311\125\053\315  
\320\227\076\234\046\144\314\337\316\203\031\161\312\116\346\324  
\325\173\251\031\315\125\336\310\354\322\136\070\123\345\134\117  
\214\055\376\120\043\066\374\146\346\313\216\244\071\031\000\267  
\225\002\071\221\013\016\376\070\056\321\035\005\232\366\115\076  
\157\017\007\035\257\054\036\217\140\071\342\372\066\123\023\071  
\324\136\046\053\333\075\250\024\275\062\353\030\003\050\122\004  
\161\345\253\063\075\341\070\273\007\066\204\142\234\171\352\026  
\060\364\137\300\053\350\161\153\344\371\002\003\001\000\001\243  
\123\060\121\060\017\006\003\125\035\023\001\001\377\004\005\060  
\003\001\001\377\060\035\006\003\125\035\016\004\026\004\024\300  
\172\230\150\215\211\373\253\005\144\014\021\175\252\175\145\270  
\312\314\116\060\037\006\003\125\035\043\004\030\060\026\200\024  
\300\172\230\150\215\211\373\253\005\144\014\021\175\252\175\145  
\270\312\314\116\060\015\006\011\052\206\110\206\367\015\001\001  
\005\005\000\003\202\001\001\000\065\343\051\152\345\057\135\124  
\216\051\120\224\237\231\032\024\344\217\170\052\142\224\242\047  
\147\236\320\317\032\136\107\351\301\262\244\317\335\101\032\005  
\116\233\113\356\112\157\125\122\263\044\241\067\012\353\144\166  
\052\056\054\363\375\073\165\220\277\372\161\330\307\075\067\322  
\265\005\225\142\271\246\336\211\075\066\173\070\167\110\227\254  
\246\040\217\056\246\311\014\302\262\231\105\000\307\316\021\121  
\042\042\340\245\352\266\025\110\011\144\352\136\117\164\367\005  
\076\307\212\122\014\333\025\264\275\155\233\345\306\261\124\150  
\251\343\151\220\266\232\245\017\270\271\077\040\175\256\112\265  
\270\234\344\035\266\253\346\224\245\301\307\203\255\333\365\047  
\207\016\004\154\325\377\335\240\135\355\207\122\267\053\025\002  
\256\071\246\152\164\351\332\304\347\274\115\064\036\251\134\115  
\063\137\222\011\057\210\146\135\167\227\307\035\166\023\251\325  
\345\361\026\011\021\065\325\254\333\044\161\160\054\230\126\013

```
\331\027\264\321\343\121\053\136\165\350\325\320\334\117\064\355
\302\005\146\200\241\313\346\063
END
CKA_NSS_MOZILLA_CA_POLICY
CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

```
# Microsoft Code Signing Only Certificate
# Trust for "GeoTrust Global CA"
# Issuer: CN=GeoTrust Global CA,O=GeoTrust Inc.,C=US
# Serial Number: 144470 (0x23456)
# Subject: CN=GeoTrust Global CA,O=GeoTrust Inc.,C=US
# Not Valid Before: Tue May 21 04:00:00 2002
# Not Valid After: Sat May 21 04:00:00 2022
# Fingerprint (MD5): f7:75:ab:29:fb:51:4e:b7:77:5e:ff:05:3c:99:8e:f5
# Fingerprint (SHA1): de:28:f4:a4:ff:e5:b9:2f:a3:c5:03:d1:a3:49:a7:f9:96:2a:82:12
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "GeoTrust Global CA"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\336\050\364\244\377\345\271\057\243\305\003\321\243\111\247\371
\226\052\202\022
END
```

```
CKA_CERT_MD5_HASH
MULTILINE_OCTAL
\367\165\253\051\373\121\116\267\167\136\377\005\074\231\216\365
END
```

```
CKA_ISSUER MULTILINE_OCTAL
\060\102\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\026\060\024\006\003\125\004\012\023\015\107\145\157\124\162\165
\163\164\040\111\156\143\056\061\033\060\031\006\003\125\004\003
\023\022\107\145\157\124\162\165\163\164\040\107\154\157\142\141
\154\040\103\101
END
```

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\003\002\064\126
END
```

```
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
# Microsoft Code Signing Only Certificate
# Certificate "GeoTrust Global CA 2"
# Issuer: CN=GeoTrust Global CA 2,O=GeoTrust Inc.,C=US
```

```
# Serial Number: 1 (0x1)
# Subject: CN=GeoTrust Global CA 2,O=GeoTrust Inc.,C=US
# Not Valid
  Before: Thu Mar 04 05:00:00 2004
# Not Valid After: Mon Mar 04 05:00:00 2019
# Fingerprint (MD5): 0e:40:a7:6c:de:03:5d:8f:d1:0f:e4:d1:8d:f9:6c:a9
# Fingerprint (SHA1): a9:e9:78:08:14:37:58:88:f2:05:19:b0:6d:2b:0d:2b:60:16:90:7d
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "GeoTrust Global CA 2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\104\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\026\060\024\006\003\125\004\012\023\015\107\145\157\124\162\165
\163\164\040\111\156\143\056\061\035\060\033\006\003\125\004\003
\023\024\107\145\157\124\162\165\163\164\040\107\154\157\142\141
\154\040\103\101\040\062
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\104\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\026\060\024\006\003\125\004\012\023\015\107\145\157\124\162\165
\163\164\040\111\156\143\056\061\035\060\033\006\003\125\004\003
\023\024\107\145\157\124\162\165\163\164\040\107\154\157\142\141
\154\040\103\101\040\062
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\001\001
END
CKA_VALUE MULTILINE_OCTAL
\060\202\003\146\060\202\002\116\240\003\002\001\002\002\001\001
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060
\104\061\013\060\011\006\003\125\004\006\023\002\125\123\061\026
\060\024\006\003\125\004\012\023\015\107\145\157\124\162\165\163
\164\040\111\156\143\056\061\035\060\033\006\003\125\004\003\023
\024\107\145\157\124\162\165\163\164\040\107\154\157\142\141\154
\040\103\101\040\062\060\036\027\015\060\064\060\063\060\064\060
\065\060\060\060\060\132\027\015\061\071\060\063\060\064\060\065
\060\060\060\060\132\060\104\061\013\060\011\006\003\125\004\006
\023\002\125\123\061\026\060\024\006\003\125\004\012\023\015\107
\145\157\124\162\165\163\164\040\111\156\143\056\061\035\060\033
\006\003\125\004\003\023\024\107\145\157\124\162\165\163\164\040
\107\154\157\142\141\154\040\103\101\040\062\060\202\001\042\060
\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003\202
\001\017\000\060\202\001\012\002\202\001\001\000\357\074\115\100
```

\075\020\337\073\123\000\341\147\376\224\140\025\076\205\210\361  
\211\015\220\310\050\043\231\005\350\053\040\235\306\363\140\106  
\330\301\262\325\214\061\331\334\040\171\044\201\277\065\062\374  
\143\151\333\261\052\153\356\041\130\362\010\351\170\313\157\313  
\374\026\122\310\221\304\377\075\163\336\261\076\247\302\175\146  
\301\365\176\122\044\032\342\325\147\221\320\202\020\327\170\113  
\117\053\102\071\275\144\055\100\240\260\020\323\070\110\106\210  
\241\014\273\072\063\052\142\230\373\000\235\023\131\177\157\073  
\162\252\356\246\017\206\371\005\141\352\147\177\014\067\226\213  
\346\151\026\107\021\302\047\131\003\263\246\140\302\041\100\126  
\372\240\307\175\072\023\343\354\127\307\263\326\256\235\211\200  
\367\001\347\054\366\226\053\023\015\171\054\331\300\344\206\173  
\113\214\014\162\202\212\373\027\315\000\154\072\023\074\260\204  
\207\113\026\172\051\262\117\333\035\324\013\363\146\067\275\330  
\366\127\273\136\044\172\270\074\213\271\372\222\032\032\204\236  
\330\164\217\252\033\177\136\364\376\105\042\041\002\003\001\000  
\001\243\143\060\141\060\017\006\003\125\035\023\001\001\377\004  
\005\060\003\001\001\377\060\035\006\003\125\035\016\004\026\004  
\024\161\070\066\362\002\061\123\107\053\156\272\145\106\251\020  
\025\130\040\005\011\060\037\006\003\125\035\043\004\030\060\026  
\200\024\161\070\066\362\002\061\123\107\053\156\272\145\106\251  
\020\025\130\040\005\011\060\016\006\003\125\035\017\001\001\377  
\004\004\003\002\001\206\060\015\006\011\052\206\110\206\367\015  
\001\001\005\005\000\003\202\001\001\000\003\367\265\053\253\135  
\020\374\173\262\262\136\254\233\016\176\123\170\131\076\102\004  
\376\165\243\255\254\201\116\327\002\213\136\304\055\310\122\166  
\307\054\037\374\201\062\230\321\113\306\222\223\063\065\061\057  
\374\330\035\104\335\340\201\177\235\351\213\341\144\221\142\013  
\071\010\214\254\164\235\131\331\172\131\122\227\021\271\026\173  
\157\105\323\226\331\061\175\002\066\017\234\073\156\317\054\015  
\003\106\105\353\240\364\177\110\104\306\010\100\314\336\033\160  
\265\051\255\272\213\073\064\145\165\033\161\041\035\054\024\012  
\260\226\225\270\326\352\362\145\373\051\272\117\352\221\223\164  
\151\266\362\377\341\032\320\014\321\166\205\313\212\045\275\227  
\136\054\157\025\231\046\347\266\051\377\042\354\311\002\307\126  
\000\315\111\271\263\154\173\123\004\032\342\250\311\252\022\005  
\043\302\316\347\273\004\002\314\300\107\242\344\304\051\057\133  
\105\127\211\121\356\074\353\122\010\377\007\065\036\237\065\152  
\107\112\126\230\321\132\205\037\214\365\042\277\253\316\203\363  
\342\042\051\256\175\203\100\250\272\154

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "GeoTrust Global CA 2"



```
# Issuer: CN=GeoTrust Global CA 2,O=GeoTrust Inc.,C=US
#
Serial Number: 1 (0x1)
# Subject: CN=GeoTrust Global CA 2,O=GeoTrust Inc.,C=US
# Not Valid Before: Thu Mar 04 05:00:00 2004
# Not Valid After: Mon Mar 04 05:00:00 2019
# Fingerprint (MD5): 0e:40:a7:6c:de:03:5d:8f:d1:0f:e4:d1:8d:f9:6c:a9
# Fingerprint (SHA1): a9:e9:78:08:14:37:58:88:f2:05:19:b0:6d:2b:0d:2b:60:16:90:7d
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "GeoTrust Global CA 2"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\251\351\170\010\024\067\130\210\362\005\031\260\155\053\015\053
\140\026\220\175
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\016\100\247\154\336\003\135\217\321\017\344\321\215\371\154\251
END
CKA_ISSUER MULTILINE_OCTAL
\060\104\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\026\060\024\006\003\125\004\012\023\015\107\145\157\124\162\165
\163\164\040\111\156\143\056\061\035\060\033\006\003\125\004\003
\023\024\107\145\157\124\162\165\163\164\040\107\154\157\142\141
\154\040\103\101\040\062
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\001\001
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
# Microsoft Code Signing Only Certificate
# Certificate "GeoTrust Universal CA"
# Issuer: CN=GeoTrust Universal CA,O=GeoTrust Inc.,C=US
# Serial Number: 1 (0x1)
# Subject: CN=GeoTrust Universal CA,O=GeoTrust Inc.,C=US
# Not Valid Before: Thu Mar 04 05:00:00 2004
# Not Valid After: Sun Mar 04 05:00:00 2029
# Fingerprint (MD5): 92:65:58:8b:a2:1a:31:72:73:68:5c:b4:a5:7a:07:48
# Fingerprint (SHA1): e6:21:f3:35:43:79:05:9a:4b:68:30:9d:8a:2f:74:22:15:87:ec:79
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "GeoTrust Universal CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\105\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\026\060\024\006\003\125\004\012\023\015\107\145\157\124\162\165
\163\164\040\111\156\143\056\061\036\060\034\006\003\125\004\003
\023\025\107\145\157\124\162\165\163\164\040\125\156\151\166\145
\162\163\141\154\040\103\101
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\105\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\026\060\024\006\003\125\004\012\023\015\107\145\157\124\162\165
\163\164\040\111\156\143\056\061\036\060\034\006\003\125\004\003
\023\025\107\145\157\124\162\165\163\164\040\125\156\151\166\145
\162\163\141\154\040\103\101
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\001
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\150\060\202\003\120\240\003\002\001\002\002\001\001
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060
\105\061\013\060\011\006\003\125\004\006\023\002\125\123\061\026
\060\024\006\003\125\004\012\023\015\107\145\157\124\162\165\163
\164\040\111\156\143\056\061\036\060\034\006\003\125\004\003\023
\025\107\145\157\124\162\165\163\164\040\125\156\151\166\145\162
\163\141\154\040\103\101\060\036\027\015\060\064\060\063\060\064
\060\065\060\060\060\060\132\027\015\062\071\060\063\060\064\060
\065\060\060\060\060\132\060\105\061\013\060\011\006\003\125\004
\006\023\002\125\123\061\026\060\024\006\003\125\004\012\023\015
\107\145\157\124\162\165\163\164\040\111\156\143\056\061\036\060
\034\006\003\125\004\003\023\025\107\145\157\124\162\165\163\164
\040\125\156\151\166\145\162\163\141\154\040\103\101\060\202\002
\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000
\003\202\002\017\000\060\202\002\012\002\202\002\001\000\246\025
\125\240\243\306\340\037\214\235\041\120\327\301\276\053\133\265
\244\236\241\331\162\130\275\000\033\114\277\141\311\024\035\105
\202\253\306\035\200\326\075\353\020\234\072\257\155\044\370\274
\161\001\236\006\365\174\137\036\301\016\125\312\203\232\131\060
\256\031\313\060\110\225\355\042\067\215\364\112\232\162\146\076
\255\225\300\340\026\000\340\020\037\053\061\016\327\224\124\323
\102\063\240\064\035\036\105\166\335\117\312\030\067\354\205\025
\172\031\010\374\325\307\234\360\362\251\056\020\251\222\346\075
\130\075\251\026\150\074\057\165\041\030\177\050\167\245\341\141
\027\267\246\351\370\036\231\333\163\156\364\012\242\041\154\356
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\332\252\205\222\146\257\366\172\153\202\332\272\042\010\065\017  
\317\102\361\065\372\152\356\176\053\045\314\072\021\344\155\257  
\163\262\166\035\255\320\262\170\147\032\244\071\034\121\013\147  
\126\203\375\070\135\015\316\335\360\273\053\226\037\336\173\062  
\122\375\035\273\265\006\241\262\041\136\245\326\225\150\177\360  
\231\236\334\105\010\076\347\322\011\015\065\224\335\200\116\123  
\227\327\265\011\104\040\144\026\027\003\002\114\123\015\150\336  
\325\252\162\115\223\155\202\016\333\234\275\317\264\363\134\135  
\124\172\151\011\226\326\333\021\301\215\165\250\264\317\071\310  
\316\074\274\044\174\346\142\312\341\275\175\247\275\127\145\013  
\344\376\045\355\266\151\020\334\050\032\106\275\001\035\320\227  
\265\341\230\073\300\067\144\326\075\224\356\013\341\365\050\256  
\013\126\277\161\213\043\051\101\216\206\305\113\122\173\330\161  
\253\037\212\025\246\073\203\132\327\130\001\121\306\114\101\331  
\177\330\101\147\162\242\050\337\140\203\251\236\310\173\374\123  
\163\162\131\365\223\172\027\166\016\316\367\345\134\331\013\125  
\064\242\252\133\265\152\124\347\023\312\127\354\227\155\364\136  
\006\057\105\213\130\324\043\026\222\344\026\156\050\143\131\060  
\337\120\001\234\143\211\032\237\333\027\224\202\160\067\303\044  
\236\232\107\326\132\312\116\250\151\211\162\037\221\154\333\176  
\236\033\255\307\037\163\335\054\117\031\145\375\177\223\100\020  
\056\322\360\355\074\236\056\050\076\151\046\063\305\173\002\003  
\001\000\001\243\143\060\141\060\017\006\003\125\035\023\001\001  
\377\004\005\060\003\001\001\377\060\035\006\003\125\035\016\004  
\026\004\024\332\273\056\252\260\014\270\210\046\121\164\134\155  
\003\323\300\330\217\172\326\060\037\006\003\125\035\043\004\030  
\060\026\200\024\332\273\056\252\260\014\270\210\046\121\164\134  
\155\003\323\300\330\217\172\326\060\016\006\003\125\035\017\001  
\001\377\004\004\003\002\001\206\060\015\006\011\052\206\110\206  
\367\015\001\001\005\005\000\003\202\002\001\000\061\170\346\307  
\265\337\270\224\100\311\161\304\250\065\354\106\035\302\205\363  
\050\130\206\260\013\374\216\262\071\217\104\125\253\144\204\134  
\151\251\320\232\070\074\372\345\037\065\345\104\343\200\171\224  
\150\244\273\304\237\075\341\064\315\060\106\213\124\053\225\245  
\357\367\077\231\204\375\065\346\317\061\306\334\152\277\247\327  
\043\010\341\230\136\303\132\010\166\251\246\257\167\057\267\140  
\275\104\106\152\357\227\377\163\225\301\216\350\223\373\375\061  
\267\354\127\021\021\105\233\060\361\032\210\071\301\117\074\247  
\000\325\307\374\253\155\200\042\160\245\014\340\135\004\051\002  
\373\313\240\221\321\174\326\303\176\120\325\235\130\276\101\070  
\353\271\165\074\025\331\233\311\112\203\131\300\332\123\375\063  
\273\066\030\233\205\017\025\335\356\055\254\166\223\271\331\001  
\215\110\020\250\373\365\070\206\361\333\012\306\275\204\243\043  
\101\336\326\167\157\205\324\205\034\120\340\256\121\212\272\215  
\076\166\342\271\312\047\362\137\237\357\156\131\015\006\330\053  
\027\244\322\174\153\273\137\024\032\110\217\032\114\347\263\107  
\034\216\114\105\053\040\356\110\337\347\335\011\216\030\250\332  
\100\215\222\046\021\123\141\163\135\353\275\347\304\115\051\067

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\141\353\254\071\055\147\056\026\326\365\000\203\205\241\314\177
\166\304\175\344\267\113\146\357\003\105\140\151\266\014\122\226
\222\204\136\246\243\265\244\076\053\331\314\330\033\107\252\362
\104\332\117\371\003\350\360\024\313\077\363\203\336\320\301\124
\343\267\350\012\067\115\213\040\131\003\060\031\241\054\310\275
\021\037\337\256\311\112\305\363\047\146\146\206\254\150\221\377
\331\346\123\034\017\213\134\151\145\012\046\310\036\064\303\135
\121\173\327\251\234\006\241\066\335\325\211\224\274\331\344\055
\014\136\011\154\010\227\174\243\075\174\223\377\077\241\024\247
\317\265\135\353\333\333\034\304\166\337\210\271\275\105\005\225
\033\256\374\106\152\114\257\110\343\316\256\017\322\176\353\346
\154\234\117\201\152\172\144\254\273\076\325\347\313\166\056\305
\247\110\301\134\220\017\313\310\077\372\346\062\341\215\033\157
\244\346\216\330\371\051\110\212\316\163\376\054
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "GeoTrust Universal CA"

# Issuer: CN=GeoTrust Universal CA,O=GeoTrust Inc.,C=US

# Serial Number: 1 (0x1)

# Subject: CN=GeoTrust Universal CA,O=GeoTrust Inc.,C=US

# Not Valid Before: Thu Mar 04 05:00:00 2004

# Not Valid After: Sun Mar 04 05:00:00 2029

# Fingerprint (MD5): 92:65:58:8b:a2:1a:31:72:73:68:5c:b4:a5:7a:07:48

# Fingerprint (SHA1): e6:21:f3:35:43:79:05:9a:4b:68:30:9d:8a:2f:74:22:15:87:ec:79

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN

CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "GeoTrust Universal CA"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\346\041\363\065\103\171\005\232\113\150\060\235\212\057\164\042
\025\207\354\171
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\222\145\130\213\242\032\061\162\163\150\134\264\245\172\007\110
```

END

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\105\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\026\060\024\006\003\125\004\012\023\015\107\145\157\124\162\165
\163\164\040\111\156\143\056\061\036\060\034\006\003\125\004\003
\023\025\107\145\157\124\162\165\163\164\040\125\156\151\166\145
\162\163\141\154\040\103\101
```

```

END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\001
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate
"GeoTrust Universal CA 2"
# Issuer: CN=GeoTrust Universal CA 2,O=GeoTrust Inc.,C=US
# Serial Number: 1 (0x1)
# Subject: CN=GeoTrust Universal CA 2,O=GeoTrust Inc.,C=US
# Not Valid Before: Thu Mar 04 05:00:00 2004
# Not Valid After: Sun Mar 04 05:00:00 2029
# Fingerprint (MD5): 34:fc:b8:d0:36:db:9e:14:b3:c2:f2:db:8f:e4:94:c7
# Fingerprint (SHA1): 37:9a:19:7b:41:85:45:35:0c:a6:03:69:f3:3c:2e:af:47:4f:20:79
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "GeoTrust Universal CA 2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\107\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\026\060\024\006\003\125\004\012\023\015\107\145\157\124\162\165
\163\164\040\111\156\143\056\061\040\060\036\006\003\125\004\003
\023\027\107\145\157\124\162\165\163\164\040\125\156\151\166\145
\162\163\141\154\040\103\101\040\062
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\107\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\026\060\024\006\003\125\004\012\023\015\107\145\157\124\162\165
\163\164\040\111\156\143\056\061\040\060\036\006\003\125\004\003
\023\027\107\145\157\124\162\165\163\164\040\125\156\151\166\145
\162\163\141\154\040\103\101\040\062
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\001\001
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\154\060\202\003\124\240\003\002\001\002\002\001\001
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060
\107\061\013\060\011\006\003\125\004\006\023\002\125\123\061\026

```

\060\024\006\003\125\004\012\023\015\107\145\157\124\162\165\163  
\164\040\111\156\143\056\061\040\060\036\006\003\125\004\003\023  
\027\107\145\157\124\162\165\163\164\040\125\156\151\166\145\162  
\163\141\154\040\103\101\040\062\060\036\027\015\060\064\060\063  
\060\064\060\065\060\060\060\060\132\027\015\062\071\060\063\060  
\064\060\065\060\060\060\060\132\060\107\061\013\060\011\006\003  
\125\004\006\023\002\125\123\061\026\060\024\006\003\125\004\012  
\023\015\107\145\157\124\162\165\163\164\040\111\156\143\056\061  
\040\060\036\006\003\125\004\003\023\027\107\145\157\124\162\165  
\163\164\040\125\156\151\166\145\162\163\141\154\040\103\101\040  
\062\060\202\002\042\060\015\006\011\052\206\110\206\367\015\001  
\001\001\005\000\003\202\002\017\000\060\202\002\012\002\202\002  
\001\000\263\124\122\301\311\076\362\331\334\261\123\032\131\051  
\347\261\303\105\050\345\327\321\355\305\305\113\241\252\164\173  
\127\257\112\046\374\330\365\136\247\156\031\333\164\014\117\065  
\133\062\013\001\343\333\353\172\167\065\352\252\132\340\326\350  
\241\127\224\360\220\243\164\126\224\104\060\003\036\134\116\053  
\205\046\164\202\172\014\166\240\157\115\316\101\055\240\025\006  
\024\137\267\102\315\173\217\130\141\064\334\052\010\371\056\303  
\001\246\042\104\034\114\007\202\346\133\316\320\112\174\004\323  
\031\163\047\360\252\230\177\056\257\116\353\207\036\044\167\152  
\135\266\350\133\105\272\334\303\241\005\157\126\216\217\020\046  
\245\111\303\056\327\101\207\042\340\117\206\312\140\265\352\241  
\143\300\001\227\020\171\275\000\074\022\155\053\025\261\254\113  
\261\356\030\271\116\226\334\334\166\377\073\276\317\137\003\300  
\374\073\350\276\106\033\377\332\100\302\122\367\376\343\072\367  
\152\167\065\320\332\215\353\136\030\152\061\307\036\272\074\033  
\050\326\153\124\306\252\133\327\242\054\033\031\314\242\002\366  
\233\131\275\067\153\206\265\155\202\272\330\352\311\126\274\251  
\066\130\375\076\031\363\355\014\046\251\223\070\370\117\301\135  
\042\006\320\227\352\341\255\306\125\340\201\053\050\203\072\372  
\364\173\041\121\000\276\122\070\316\315\146\171\250\364\201\126  
\342\320\203\011\107\121\133\120\152\317\333\110\032\135\076\367  
\313\366\145\367\154\361\225\370\002\073\062\126\202\071\172\133  
\275\057\211\033\277\241\264\350\377\177\215\214\337\003\361\140  
\116\130\021\114\353\243\077\020\053\203\232\001\163\331\224\155  
\204\000\047\146\254\360\160\100\011\102\222\255\117\223\015\141  
\011\121\044\330\222\325\013\224\141\262\207\262\355\377\232\065  
\377\205\124\312\355\104\103\254\033\074\026\153\110\112\012\034  
\100\210\037\222\302\013\000\005\377\362\310\002\112\244\252\251  
\314\231\226\234\057\130\340\175\341\276\273\007\334\137\004\162  
\134\061\064\303\354\137\055\340\075\144\220\042\346\321\354\270  
\056\335\131\256\331\241\067\277\124\065\334\163\062\117\214\004  
\036\063\262\311\106\361\330\134\310\125\120\311\150\275\250\272  
\066\011\002\003\001\000\001\243\143\060\141\060\017\006\003\125  
\035\023\001\001\377\004\005\060\003\001\001\377\060\035\006\003  
\125\035\016\004\026\004\024\166\363\125\341\372\244\066\373\360  
\237\134\142\161\355\074\364\107\070\020\053\060\037\006\003\125

\035\043\004\030\060\026\200\024\166\363\125\341\372\244\066\373  
\360\237\134\142\161\355\074\364\107\070\020\053\060\016\006\003  
\125\035\017\001\001\377\004\004\003\002\001\206\060\015\006\011  
\052\206\110\206\367\015\001\001\005\005\000\003\202\002\001\000  
\146\301\306\043\363\331\340\056\156\137\350\317\256\260\260\045  
\115\053\370\073\130\233\100\044\067\132\313\253\026\111\377\263  
\165\171\063\241\057\155\160\027\064\221\376\147\176\217\354\233  
\345\136\202\251\125\037\057\334\324\121\007\022\376\254\026\076  
\054\065\306\143\374\334\020\353\015\243\252\320\174\314\321\320  
\057\121\056\304\024\132\336\350\031\341\076\306\314\244\051\347  
\056\204\252\006\060\170\166\124\163\050\230\131\070\340\000\015  
\142\323\102\175\041\237\256\075\072\214\325\372\167\015\030\053  
\026\016\137\066\341\374\052\265\060\044\317\340\143\014\173\130  
\032\376\231\272\102\022\261\221\364\174\150\342\310\350\257\054  
\352\311\176\256\273\052\075\015\025\334\064\225\266\030\164\250  
\152\017\307\264\364\023\304\344\133\355\012\322\244\227\114\052  
\355\057\154\022\211\075\361\047\160\252\152\003\122\041\237\100  
\250\147\120\362\363\132\037\337\337\043\366\334\170\116\346\230  
\117\125\072\123\343\357\362\364\237\307\174\330\130\257\051\042  
\227\270\340\275\221\056\260\166\354\127\021\317\357\051\104\363  
\351\205\172\140\143\344\135\063\211\027\331\061\252\332\326\363  
\030\065\162\317\207\053\057\143\043\204\135\204\214\077\127\240  
\210\374\231\221\050\046\151\231\324\217\227\104\276\216\325\110  
\261\244\050\051\361\025\264\341\345\236\335\370\217\246\157\046  
\327\011\074\072\034\021\016\246\154\067\367\255\104\207\054\050  
\307\330\164\202\263\320\157\112\127\273\065\051\047\240\213\350  
\041\247\207\144\066\135\314\330\026\254\307\262\047\100\222\125  
\070\050\215\121\156\335\024\147\123\154\161\134\046\204\115\165  
\132\266\176\140\126\251\115\255\373\233\036\227\363\015\331\322  
\227\124\167\332\075\022\267\340\036\357\010\006\254\371\205\207  
\351\242\334\257\176\030\022\203\375\126\027\101\056\325\051\202  
\175\231\364\061\366\161\251\317\054\001\047\245\005\271\252\262  
\110\116\052\357\237\223\122\121\225\074\122\163\216\126\114\027  
\100\300\011\050\344\213\152\110\123\333\354\315\125\125\361\306  
\370\351\242\054\114\246\321\046\137\176\257\132\114\332\037\246  
\362\034\054\176\256\002\026\322\126\320\057\127\123\107\350\222

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "GeoTrust Universal CA 2"

# Issuer: CN=GeoTrust Universal CA 2,O=GeoTrust Inc.,C=US

# Serial Number: 1 (0x1)

# Subject: CN=GeoTrust Universal CA 2,O=GeoTrust Inc.,C=US

# Not Valid Before: Thu Mar 04 05:00:00 2004

```
# Not Valid After: Sun Mar 04 05:00:00 2029
# Fingerprint (MD5): 34:fc:b8:d0:36:db:9e:14:b3:c2:f2:db:8f:e4:94:c7
# Fingerprint (SHA1): 37:9a:19:7b:41:85:45:35:0c:a6:03:69:f3:3c:2e:af:47:4f:20:79
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "GeoTrust Universal CA 2"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\067\232\031\173\101\205\105\065\014\246\003\151\363\074\056\257
\107\117\040\171
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\064\374\270\320\066\333\236\024\263\302\362\333\217\344\224\307
END
CKA_ISSUER
MULTILINE_OCTAL
\060\107\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\026\060\024\006\003\125\004\012\023\015\107\145\157\124\162\165
\163\164\040\111\156\143\056\061\040\060\036\006\003\125\004\003
\023\027\107\145\157\124\162\165\163\164\040\125\156\151\166\145
\162\163\141\154\040\103\101\040\062
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\001
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
# Microsoft Code Signing Only Certificate
# Certificate "QuoVadis Root Certification Authority"
# Issuer: CN=QuoVadis Root Certification Authority,OU=Root Certification Authority,O=QuoVadis
Limited,C=BM
# Serial Number:3a:b6:50:8b
# Subject: CN=QuoVadis Root Certification Authority,OU=Root Certification Authority,O=QuoVadis
Limited,C=BM
# Not Valid Before:
Mon Mar 19 18:33:33 2001
# Not Valid After: Wed Mar 17 18:33:33 2021
# Fingerprint (MD5): 27:de:36:fe:72:b7:00:03:00:9d:f4:f0:1e:6c:04:24
# Fingerprint (SHA1): de:3f:40:bd:50:93:d3:9b:6c:60:f6:da:bc:07:62:01:00:89:76:c9
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "QuoVadis Root Certification Authority"
```



CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\177\061\013\060\011\006\003\125\004\006\023\002\102\115\061  
\031\060\027\006\003\125\004\012\023\020\121\165\157\126\141\144  
\151\163\040\114\151\155\151\164\145\144\061\045\060\043\006\003  
\125\004\013\023\034\122\157\157\164\040\103\145\162\164\151\146  
\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164  
\171\061\056\060\054\006\003\125\004\003\023\045\121\165\157\126  
\141\144\151\163\040\122\157\157\164\040\103\145\162\164\151\146  
\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164  
\171

END

CKA\_ID

UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\177\061\013\060\011\006\003\125\004\006\023\002\102\115\061  
\031\060\027\006\003\125\004\012\023\020\121\165\157\126\141\144  
\151\163\040\114\151\155\151\164\145\144\061\045\060\043\006\003  
\125\004\013\023\034\122\157\157\164\040\103\145\162\164\151\146  
\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164  
\171\061\056\060\054\006\003\125\004\003\023\045\121\165\157\126  
\141\144\151\163\040\122\157\157\164\040\103\145\162\164\151\146  
\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164  
\171

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\004\072\266\120\213

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\320\060\202\004\270\240\003\002\001\002\002\004\072  
\266\120\213\060\015\006\011\052\206\110\206\367\015\001\001\005  
\005\000\060\177\061\013\060\011\006\003\125\004\006\023\002\102  
\115\061\031\060\027\006\003\125\004\012\023\020\121\165\157\126  
\141\144\151\163\040\114\151\155\151\164\145\144\061\045\060\043  
\006\003\125\004\013\023\034\122\157\157\164\040\103\145\162\164  
\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162  
\151\164\171\061\056\060\054\006\003\125\004\003\023\045\121\165  
\157\126\141\144\151\163\040\122\157\157\164\040\103\145\162\164  
\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162  
\151\164\171\060\036\027\015\060\061\060\063\061\071\061\070\063  
\063\063\063\132\027\015\062\061\060\063\061\067\061\070\063\063  
\063\063\132\060\177\061\013\060\011\006\003\125\004\006\023\002  
\102\115\061\031\060\027\006\003\125\004\012\023\020\121\165\157  
\126\141\144\151\163\040\114\151\155\151\164\145\144\061\045\060  
\043\006\003\125\004\013\023\034\122\157\157\164\040\103\145\162  
\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157  
\162\151\164\171\061\056\060\054\006\003\125\004\003\023\045\121  
\165\157\126\141\144\151\163\040\122\157\157\164\040\103\145\162

\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157  
\162\151\164\171\060\202\001\042\060\015\006\011\052\206\110\206  
\367\015\001\001\001\005\000\003\202\001\017\000\060\202\001\012  
\002\202\001\001\000\277\141\265\225\123\272\127\374\372\362\147  
\013\072\032\337\021\200\144\225\264\321\274\315\172\317\366\051  
\226\056\044\124\100\044\070\367\032\205\334\130\114\313\244\047  
\102\227\320\237\203\212\303\344\006\003\133\000\245\121\036\160  
\004\164\342\301\324\072\253\327\255\073\007\030\005\216\375\203  
\254\352\146\331\030\033\150\212\365\127\032\230\272\365\355\166  
\075\174\331\336\224\152\073\113\027\301\325\217\275\145\070\072  
\225\320\075\125\066\116\337\171\127\061\052\036\330\131\145\111  
\130\040\230\176\253\137\176\237\351\326\115\354\203\164\251\307  
\154\330\356\051\112\205\052\006\024\371\124\346\323\332\145\007  
\213\143\067\022\327\320\354\303\173\040\101\104\243\355\313\240  
\027\341\161\145\316\035\146\061\367\166\001\031\310\175\003\130  
\266\225\111\035\246\022\046\350\306\014\166\340\343\146\313\352  
\135\246\046\356\345\314\137\275\147\247\001\047\016\242\312\124  
\305\261\172\225\035\161\036\112\051\212\003\334\152\105\301\244  
\031\136\157\066\315\303\242\260\267\376\134\070\342\122\274\370  
\104\103\346\220\273\002\003\001\000\001\243\202\002\122\060\202  
\002\116\060\075\006\010\053\006\001\005\005\007\001\001\004\061  
\060\057\060\055\006\010\053\006\001\005\005\007\060\001\206\041  
\150\164\164\160\163\072\057\057\157\143\163\160\056\161\165\157  
\166\141\144\151\163\157\146\146\163\150\157\162\145\056\143\157  
\155\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001  
\001\377\060\202\001\032\006\003\125\035\040\004\202\001\021\060  
\202\001\015\060\202\001\011\006\011\053\006\001\004\001\276\130  
\000\001\060\201\373\060\201\324\006\010\053\006\001\005\005\007  
\002\002\060\201\307\032\201\304\122\145\154\151\141\156\143\145  
\040\157\156\040\164\150\145\040\121\165\157\126\141\144\151\163  
\040\122\157\157\164\040\103\145\162\164\151\146\151\143\141\164  
\145\040\142\171\040\141\156\171\040\160\141\162\164\171\040\141  
\163\163\165\155\145\163\040\141\143\143\145\160\164\141\156\143  
\145\040\157\146\040\164\150\145\040\164\150\145\156\040\141\160  
\160\154\151\143\141\142\154\145\040\163\164\141\156\144\141\162  
\144\040\164\145\162\155\163\040\141\156\144\040\143\157\156\144  
\151\164\151\157\156\163\040\157\146\040\165\163\145\054\040\143  
\145\162\164\151\146\151\143\141\164\151\157\156\040\160\162\141  
\143\164\151\143\145\163\054\040\141\156\144\040\164\150\145\040  
\121\165\157\126\141\144\151\163\040\103\145\162\164\151\146\151  
\143\141\164\145\040\120\157\154\151\143\171\056\060\042\006\010  
\053\006\001\005\005\007\002\001\026\026\150\164\164\160\072\057  
\057\167\167\167\056\161\165\157\166\141\144\151\163\056\142\155  
\060\035\006\003\125\035\016\004\026\004\024\213\113\155\355\323  
\051\271\006\031\354\071\071\251\360\227\204\152\313\357\337\060  
\201\256\006\003\125\035\043\004\201\246\060\201\243\200\024\213  
\113\155\355\323\051\271\006\031\354\071\071\251\360\227\204\152  
\313\357\337\241\201\204\244\201\201\060\177\061\013\060\011\006

\003\125\004\006\023\002\102\115\061\031\060\027\006\003\125\004  
\012\023\020\121\165\157\126\141\144\151\163\040\114\151\155\151  
\164\145\144\061\045\060\043\006\003\125\004\013\023\034\122\157  
\157\164\040\103\145\162\164\151\146\151\143\141\164\151\157\156  
\040\101\165\164\150\157\162\151\164\171\061\056\060\054\006\003  
\125\004\003\023\045\121\165\157\126\141\144\151\163\040\122\157  
\157\164\040\103\145\162\164\151\146\151\143\141\164\151\157\156  
\040\101\165\164\150\157\162\151\164\171\202\004\072\266\120\213  
\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001\006  
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\003  
\202\001\001\000\212\324\024\265\376\364\232\222\247\031\324\244  
\176\162\030\217\331\150\174\122\044\335\147\157\071\172\304\252  
\136\075\342\130\260\115\160\230\204\141\350\033\343\151\030\016  
\316\373\107\120\240\116\377\360\044\037\275\262\316\365\047\374  
\354\057\123\252\163\173\003\075\164\156\346\026\236\353\245\056  
\304\277\126\047\120\053\142\272\276\113\034\074\125\134\101\035  
\044\276\202\040\107\135\325\104\176\172\026\150\337\175\115\121  
\160\170\127\035\063\036\375\002\231\234\014\315\012\005\117\307  
\273\216\244\165\372\112\155\261\200\216\011\126\271\234\032\140  
\376\135\301\327\172\334\021\170\320\326\135\301\267\325\255\062  
\231\003\072\212\314\124\045\071\061\201\173\023\042\121\272\106  
\154\241\273\236\372\004\154\111\046\164\217\322\163\353\314\060  
\242\346\352\131\042\207\370\227\365\016\375\352\314\222\244\026  
\304\122\030\352\041\316\261\361\346\204\201\345\272\251\206\050  
\362\103\132\135\022\235\254\036\331\250\345\012\152\247\177\240  
\207\051\317\362\211\115\324\354\305\342\346\172\320\066\043\212  
\112\164\066\371

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "QuoVadis Root Certification Authority"

# Issuer: CN=QuoVadis Root

Certification Authority,OU=Root Certification Authority,O=QuoVadis Limited,C=BM

# Serial Number:3a:b6:50:8b

# Subject: CN=QuoVadis Root Certification Authority,OU=Root Certification Authority,O=QuoVadis Limited,C=BM

# Not Valid Before: Mon Mar 19 18:33:33 2001

# Not Valid After: Wed Mar 17 18:33:33 2021

# Fingerprint (MD5): 27:de:36:fe:72:b7:00:03:00:9d:f4:f0:1e:6c:04:24

# Fingerprint (SHA1): de:3f:40:bd:50:93:d3:9b:6c:60:f6:da:bc:07:62:01:00:89:76:c9

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

```

CKA_LABEL UTF8 "QuoVadis Root Certification Authority"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\336\077\100\275\120\223\323\233\154\140\366\332\274\007\142\001
\000\211\166\311
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\047\336\066\376\162\267\000\003\000\235\364\360\036\154\004\044
END
CKA_ISSUER MULTILINE_OCTAL
\060\177\061\013\060\011\006\003\125\004\006\023\002\102\115\061
\031\060\027\006\003\125\004\012\023\020\121\165\157\126\141\144
\151\163\040\114\151\155\151\164\145\144\061\045\060\043\006\003
\125\004\013\023\034\122\157\157\164\040\103\145\162\164\151\146
\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164
\171\061\056\060\054\006\003\125\004\003\023\045\121\165\157\126
\141\144\151\163\040\122\157\157\164\040\103\145\162\164\151\146
\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164
\171
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\004\072\266\120\213
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "Sonera Class2 CA"
# Issuer: CN=Sonera Class2 CA,O=Sonera,C=FI
# Serial Number: 29 (0x1d)
# Subject: CN=Sonera Class2 CA,O=Sonera,C=FI
# Not Valid Before: Fri Apr 06 07:29:40 2001
# Not Valid After: Tue Apr 06 07:29:40 2021
# Fingerprint
(MD5): a3:ec:75:0f:2e:88:df:fa:48:01:4e:0b:5c:48:6f:fb
# Fingerprint (SHA1): 37:f7:6d:e6:07:7c:90:c5:b1:3e:93:1a:b7:41:10:b4:f2:e4:9a:27
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Sonera Class2 CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\071\061\013\060\011\006\003\125\004\006\023\002\106\111\061
\017\060\015\006\003\125\004\012\023\006\123\157\156\145\162\141
\061\031\060\027\006\003\125\004\003\023\020\123\157\156\145\162

```

```
\141\040\103\154\141\163\163\062\040\103\101
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\071\061\013\060\011\006\003\125\004\006\023\002\106\111\061
\017\060\015\006\003\125\004\012\023\006\123\157\156\145\162\141
\061\031\060\027\006\003\125\004\003\023\020\123\157\156\145\162
\141\040\103\154\141\163\163\062\040\103\101
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\035
END
CKA_VALUE MULTILINE_OCTAL
\060\202\003\040\060\202\002\010\240\003\002\001\002\002\001\035
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060
\071\061\013\060\011\006\003\125\004\006\023\002\106\111\061\017
\060\015\006\003\125\004\012\023\006\123\157\156\145\162\141\061
\031\060\027\006\003\125\004\003\023\020\123\157\156\145\162\141
\040\103\154\141\163\163\062\040\103\101\060\036\027\015\060\061
\060\064\060\066\060\067\062\071\064\060\132\027\015\062\061\060
\064\060\066\060\067\062\071\064\060\132\060\071\061\013\060\011
\006\003\125\004\006\023\002\106\111\061\017\060\015\006\003\125
\004\012\023\006\123\157\156\145\162\141\061\031\060\027\006\003
\125\004\003\023\020\123\157\156\145\162\141\040\103\154\141\163
\163\062\040\103\101\060\202\001\042\060\015\006\011\052\206\110
\206\367\015\001\001\001\005\000\003\202\001\017\000\060\202\001
\012\002\202\001\001\000\220\027\112\065\235\312\360\015\226\307
\104\372\026\067\374\110\275\275\177\200\055\065\073\341\157\250
\147\251\277\003\034\115\214\157\062\107\325\101\150\244\023\004
\301\065\014\232\204\103\374\134\035\377\211\263\350\027\030\315
\221\137\373\211\343\352\277\116\135\174\033\046\323\165\171\355
\346\204\343\127\345\255\051\304\364\072\050\347\245\173\204\066
\151\263\375\136\166\275\243\055\231\323\220\116\043\050\175\030
\143\361\124\073\046\235\166\133\227\102\262\377\256\360\116\354
\335\071\225\116\203\006\177\347\111\100\310\305\001\262\124\132
\146\035\075\374\371\351\074\012\236\201\270\160\360\001\213\344
\043\124\174\310\256\370\220\036\000\226\162\324\124\317\141\043
\274\352\373\235\002\225\321\266\271\161\072\151\010\077\017\264
\341\102\307\210\365\077\230\250\247\272\034\340\161\161\357\130
\127\201\120\172\134\153\164\106\016\203\003\230\303\216\250\156
\362\166\062\156\047\203\302\163\363\334\030\350\264\223\352\165
\104\153\004\140\040\161\127\207\235\363\276\240\220\043\075\212
\044\341\332\041\333\303\002\003\001\000\001\243\063\060\061\060
\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377
\060\021\006\003\125\035\016\004\012\004\010\112\240\252\130\204
\323\136\074\060\013\006\003\125\035\017\004\004\003\002\001\006
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\003
\202\001\001\000\132\316\207\371\026\162\025\127\113\035\331\233
```

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\347\242\046\060\354\223\147\337\326\055\322\064\257\367\070\245
\316\253\026\271\253\057\174\065\313\254\320\017\264\114\053\374
\200\357\153\214\221\137\066\166\367\333\263\033\031\352\364\262
\021\375\141\161\104\277\050\263\072\035\277\263\103\350\237\277
\334\061\010\161\260\235\215\326\064\107\062\220\306\145\044\367
\240\112\174\004\163\217\071\157\027\214\162\265\275\113\310\172
\370\173\203\303\050\116\234\011\352\147\077\262\147\004\033\303
\024\332\370\347\111\044\221\320\035\152\372\141\071\357\153\347
\041\165\006\007\330\022\264\041\040\160\102\161\201\332\074\232
\066\276\246\133\015\152\154\232\037\221\173\371\371\357\102\272
\116\116\236\314\014\215\224\334\331\105\234\136\354\102\120\143
\256\364\135\304\261\022\334\312\073\250\056\235\024\132\005\165
\267\354\327\143\342\272\065\266\004\010\221\350\332\235\234\366
\146\265\030\254\012\246\124\046\064\063\322\033\301\324\177\032
\072\216\013\252\062\156\333\374\117\045\237\331\062\307\226\132
\160\254\337\114
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "Sonera Class2 CA"

# Issuer: CN=Sonera Class2 CA,O=Sonera,C=FI

# Serial Number: 29 (0x1d)

# Subject: CN=Sonera Class2 CA,O=Sonera,C=FI

# Not Valid Before: Fri Apr 06 07:29:40 2001

# Not Valid After: Tue Apr 06 07:29:40 2021

# Fingerprint (MD5): a3:ec:75:0f:2e:88:df:fa:48:01:4e:0b:5c:48:6f:fb

# Fingerprint (SHA1): 37:f7:6d:e6:07:7c:90:c5:b1:3e:93:1a:b7:41:10:b4:f2:e4:9a:27

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Sonera Class2 CA"

CKA\_CERT\_SHA1\_HASH

MULTILINE\_OCTAL

```
\067\367\155\346\007\174\220\305\261\076\223\032\267\101\020\264
\362\344\232\047
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\243\354\165\017\056\210\337\372\110\001\116\013\134\110\157\373
```

END

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\071\061\013\060\011\006\003\125\004\006\023\002\106\111\061
\017\060\015\006\003\125\004\012\023\006\123\157\156\145\162\141
\061\031\060\027\006\003\125\004\003\023\020\123\157\156\145\162
```

```

\141\040\103\154\141\163\163\062\040\103\101
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\035
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "VeriSign Class 3 Public Primary Certification Authority - G3"
# Issuer: CN=VeriSign Class 3 Public Primary Certification Authority - G3,OU=(c) 1999 VeriSign\, Inc. - For
authorized
use only,OU=VeriSign Trust Network,O=VeriSign\, Inc.,C=US
# Serial Number:9b:7e:06:49:a3:3e:62:b9:d5:ee:90:48:71:29:ef:57
# Subject: CN=VeriSign Class 3 Public Primary Certification Authority - G3,OU=(c) 1999 VeriSign\, Inc. - For
authorized use only,OU=VeriSign Trust Network,O=VeriSign\, Inc.,C=US
# Not Valid Before: Fri Oct 01 00:00:00 1999
# Not Valid After: Wed Jul 16 23:59:59 2036
# Fingerprint (MD5): cd:68:b6:a7:c7:c4:ce:75:e0:1d:4f:57:44:61:92:09
# Fingerprint (SHA1): 13:2d:0d:45:53:4b:69:97:cd:b2:d5:c3:39:e2:55:76:60:9b:5c:c6
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "VeriSign Class 3 Public Primary Certification Authority - G3"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\312\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\027\060\025\006\003\125\004\012\023\016\126\145\162\151\123
\151\147\156\054\040\111\156\143\056\061\037\060\035\006\003\125
\004\013\023\026\126\145\162\151\123\151\147\156\040\124\162\165
\163\164\040\116\145\164\167\157\162\153\061\072\060\070\006\003
\125\004\013\023\061\050\143\051\040\061\071\071\071\040\126\145
\162\151\123\151\147\156\054\040\111\156\143\056\040\055\040\106
\157\162\040\141\165\164\150\157\162\151\172\145\144\040\165\163
\145\040\157\156\154\171\061\105\060\103\006\003\125\004\003\023
\074\126\145\162\151\123\151\147\156\040\103\154\141\163\163\040
\063\040\120\165\142\154\151\143\040\120\162\151\155\141\162\171
\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101
\165\164\150\157\162\151\164\171\040\055\040\107\063
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\312\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\027\060\025\006\003\125\004\012\023\016\126\145\162\151\123

```

\151\147\156\054\040\111\156\143\056\061\037\060\035\006\003\125  
\004\013\023\026\126\145\162\151\123\151\147\156\040\124\162\165  
\163\164\040\116\145\164\167\157\162\153\061\072\060\070\006\003  
\125\004\013\023\061\050\143\051\040\061\071\071\071\040\126\145  
\162\151\123\151\147\156\054\040\111\156\143\056\040\055\040\106  
\157\162\040\141\165\164\150\157\162\151\172\145\144\040\165\163  
\145\040\157\156\154\171\061\105\060\103\006\003\125\004\003\023  
\074\126\145\162\151\123\151\147\156\040\103\154\141\163\163\040  
\063\040\120\165\142\154\151\143\040\120\162\151\155\141\162\171  
\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101  
\165\164\150\157\162\151\164\171\040\055\040\107\063

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\021\000\233\176\006\111\243\076\142\271\325\356\220\110\161  
\051\357\127

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\004\032\060\202\003\002\002\021\000\233\176\006\111\243  
\076\142\271\325\356\220\110\161\051\357\127\060\015\006\011\052  
\206\110\206\367\015\001\001\005\005\000\060\201\312\061\013\060  
\011\006\003\125\004\006\023\002\125\123\061\027\060\025\006\003  
\125\004\012\023\016\126\145\162\151\123\151\147\156\054\040\111  
\156\143\056\061\037\060\035\006\003\125\004\013\023\026\126\145  
\162\151\123\151\147\156\040\124\162\165\163\164\040\116\145\164  
\167\157\162\153\061\072\060\070\006\003\125\004\013\023\061\050  
\143\051\040\061\071\071\071\040\126\145\162\151\123\151\147\156  
\054\040\111\156\143\056\040\055\040\106\157\162\040\141\165\164  
\150\157\162\151\172\145\144\040\165\163\145\040\157\156\154\171  
\061\105\060\103\006\003\125\004\003\023\074\126\145\162\151\123  
\151\147\156\040\103\154\141\163\163\040\063\040\120\165\142\154  
\151\143\040\120\162\151\155\141\162\171\040\103\145\162\164\151  
\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151  
\164\171\040\055\040\107\063\060\036\027\015\071\071\061\060\060  
\061\060\060\060\060\060\060\132\027\015\063\066\060\067\061\066  
\062\063\065\071\065\071\132\060\201\312\061\013\060\011\006\003  
\125\004\006\023\002\125\123\061\027\060\025\006\003\125\004\012  
\023\016\126\145\162\151\123\151\147\156\054\040\111\156\143\056  
\061\037\060\035\006\003\125\004\013\023\026\126\145\162\151\123  
\151\147\156\040\124\162\165\163\164\040\116\145\164\167\157\162  
\153\061\072\060\070\006\003\125\004\013\023\061\050\143\051\040  
\061\071\071\071\040\126\145\162\151\123\151\147\156\054\040\111  
\156\143\056\040\055\040\106\157\162\040\141\165\164\150\157\162  
\151\172\145\144\040\165\163\145\040\157\156\154\171\061\105\060  
\103\006\003\125\004\003\023\074\126\145\162\151\123\151\147\156  
\040\103\154\141\163\163\040\063\040\120\165\142\154\151\143\040  
\120\162\151\155\141\162\171\040\103\145\162\164\151\146\151\143  
\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171\040



\055\040\107\063\060\202\001\042\060\015\006\011\052\206\110\206  
\367\015\001\001\001\005\000\003\202\001\017\000\060\202\001\012  
\002\202\001\001\000\313\272\234\122\374\170\037\032\036\157\033  
\067\163\275\370\311\153\224\022\060\117\360\066\107\365\320\221  
\012\365\027\310\245\141\301\026\100\115\373\212\141\220\345\166  
\040\301\021\006\175\253\054\156\246\365\021\101\216\372\055\255  
\052\141\131\244\147\046\114\320\350\274\122\133\160\040\004\130  
\321\172\311\244\151\274\203\027\144\255\005\213\274\320\130\316  
\215\214\365\353\360\102\111\013\235\227\047\147\062\156\341\256  
\223\025\034\160\274\040\115\057\030\336\222\210\350\154\205\127  
\021\032\351\176\343\046\021\124\242\105\226\125\203\312\060\211  
\350\334\330\243\355\052\200\077\177\171\145\127\076\025\040\146  
\010\057\225\223\277\252\107\057\250\106\227\360\022\342\376\302  
\012\053\121\346\166\346\267\106\267\342\015\246\314\250\303\114  
\131\125\211\346\350\123\134\034\352\235\360\142\026\013\247\311  
\137\014\360\336\302\166\316\257\367\152\362\372\101\246\242\063  
\024\311\345\172\143\323\236\142\067\325\205\145\236\016\346\123  
\044\164\033\136\035\022\123\133\307\054\347\203\111\073\025\256  
\212\150\271\127\227\002\003\001\000\001\060\015\006\011\052\206  
\110\206\367\015\001\001\005\005\000\003\202\001\001\000\021\024  
\226\301\253\222\010\367\077\057\311\262\376\344\132\237\144\336  
\333\041\117\206\231\064\166\066\127\335\320\025\057\305\255\177  
\025\037\067\142\163\076\324\347\137\316\027\003\333\065\372\053  
\333\256\140\011\137\036\137\217\156\273\013\075\352\132\023\036  
\014\140\157\265\300\265\043\042\056\007\013\313\251\164\313\107  
\273\035\301\327\245\153\314\057\322\102\375\111\335\247\211\317  
\123\272\332\000\132\050\277\202\337\370\272\023\035\120\206\202  
\375\216\060\217\051\106\260\036\075\065\332\070\142\026\030\112  
\255\346\266\121\154\336\257\142\353\001\320\036\044\376\172\217  
\022\032\022\150\270\373\146\231\024\024\105\134\256\347\256\151  
\027\201\053\132\067\311\136\052\364\306\342\241\134\124\233\246  
\124\000\317\360\361\301\307\230\060\032\073\066\026\333\243\156  
\352\375\255\262\302\332\357\002\107\023\212\300\361\263\061\255  
\117\034\341\117\234\257\017\014\235\367\170\015\330\364\065\126  
\200\332\267\155\027\217\235\036\201\144\341\376\305\105\272\255  
\153\271\012\172\116\117\113\204\356\113\361\175\335\021

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "VeriSign Class 3 Public Primary Certification Authority - G3"

# Issuer: CN=VeriSign Class 3 Public Primary Certification Authority - G3,OU=(c) 1999 VeriSign, Inc. - For authorized use only,OU=VeriSign Trust Network,O=VeriSign, Inc.,C=US

# Serial Number:9b:7e:06:49:a3:3e:62:b9:d5:ee:90:48:71:29:ef:57

# Subject: CN=VeriSign Class 3 Public Primary Certification Authority - G3,OU=(c) 1999 VeriSign, Inc. - For

```
authorized use only,OU=VeriSign Trust Network,O=VeriSign\, Inc.,C=US
# Not Valid Before: Fri Oct 01 00:00:00 1999
# Not Valid After: Wed Jul 16 23:59:59 2036
# Fingerprint (MD5): cd:68:b6:a7:c7:c4:ce:75:e0:1d:4f:57:44:61:92:09
# Fingerprint (SHA1): 13:2d:0d:45:53:4b:69:97:cd:b2:d5:c3:39:e2:55:76:60:9b:5c:c6
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE
CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "VeriSign Class 3 Public Primary Certification Authority - G3"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\023\055\015\105\123\113\151\227\315\262\325\303\071\342\125\166
\140\233\134\306
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\315\150\266\247\307\304\316\165\340\035\117\127\104\141\222\011
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\312\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\027\060\025\006\003\125\004\012\023\016\126\145\162\151\123
\151\147\156\054\040\111\156\143\056\061\037\060\035\006\003\125
\004\013\023\026\126\145\162\151\123\151\147\156\040\124\162\165
\163\164\040\116\145\164\167\157\162\153\061\072\060\070\006\003
\125\004\013\023\061\050\143\051\040\061\071\071\071\040\126\145
\162\151\123\151\147\156\054\040\111\156\143\056\040\055\040\106
\157\162\040\141\165\164\150\157\162\151\172\145\144\040\165\163
\145\040\157\156\154\171\061\105\060\103\006\003\125\004\003\023
\074\126\145\162\151\123\151\147\156\040\103\154\141\163\163\040
\063\040\120\165\142\154\151\143\040\120\162\151\155\141\162\171
\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101
\165\164\150\157\162\151\164\171\040\055\040\107\063
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\021\000\233\176\006\111\243\076\142\271\325\356\220\110\161
\051\357\127
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "VeriSign, Inc."
# Issuer: OU=VeriSign Commercial Software Publishers CA,O=VeriSign\, Inc.,L=Internet
# Serial Number:03:c7:8f:37:db:92:28:df:3c:bb:1a:ad:82:fa:67:10
# Subject: OU=VeriSign Commercial Software Publishers CA,O=VeriSign\, Inc.,L=Internet
```

```
# Not Valid Before: Tue Apr 09 00:00:00 1996
# Not Valid After: Wed Jan 07 23:59:59 2004
# Fingerprint (MD5): dd:75:3f:56:bf:bb:c5:a1:7a:15:53:c6:90:f9:fb:cc
# Fingerprint
(SHA1): 24:a4:0a:1f:57:36:43:a6:7f:0a:4b:07:49:f6:a2:2b:f2:8a:bb:6b
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "VeriSign, Inc."
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\141\061\021\060\017\006\003\125\004\007\023\010\111\156\164
\145\162\156\145\164\061\027\060\025\006\003\125\004\012\023\016
\126\145\162\151\123\151\147\156\054\040\111\156\143\056\061\063
\060\061\006\003\125\004\013\023\052\126\145\162\151\123\151\147
\156\040\103\157\155\155\145\162\143\151\141\154\040\123\157\146
\164\167\141\162\145\040\120\165\142\154\151\163\150\145\162\163
\040\103\101
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\141\061\021\060\017\006\003\125\004\007\023\010\111\156\164
\145\162\156\145\164\061\027\060\025\006\003\125\004\012\023\016
\126\145\162\151\123\151\147\156\054\040\111\156\143\056\061\063
\060\061\006\003\125\004\013\023\052\126\145\162\151\123\151\147
\156\040\103\157\155\155\145\162\143\151\141\154\040\123\157\146
\164\167\141\162\145\040\120\165\142\154\151\163\150\145\162\163
\040\103\101
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\003\307\217\067\333\222\050\337\074\273\032\255\202\372
\147\020
END
CKA_VALUE MULTILINE_OCTAL
\060\202\002\100\060\202\001\251\002\020\003\307\217\067\333\222
\050\337\074\273\032\255\202\372\147\020\060\015\006\011\052\206
\110\206\367\015\001\001\002\005\000\060\141\061\021\060\017\006
\003\125\004\007\023\010\111\156\164\145\162\156\145\164\061\027
\060\025\006\003\125\004\012\023\016\126\145\162\151\123\151\147
\156\054\040\111\156\143\056\061\063\060\061\006\003\125\004\013
\023\052\126\145\162\151\123\151\147\156\040\103\157\155\155\145
\162\143\151\141\154\040\123\157\146\164\167\141\162\145\040\120
\165\142\154\151\163\150\145\162\163\040\103\101\060\036\027\015
\071\066\060\064\060\071\060\060\060\060\060\060\132\027\015\060
\064\060\061\060\067\062\063\065\071\065\071\132\060\141\061\021
\060\017\006\003\125\004\007\023\010\111\156\164\145\162\156\145
```

\164\061\027\060\025\006\003\125\004\012\023\016\126\145\162\151  
\123\151\147\156\054\040\111\156\143\056\061\063\060\061\006\003  
\125\004\013\023\052\126\145\162\151\123\151\147\156\040\103\157  
\155\155\145\162\143\151\141\154\040\123\157\146\164\167\141\162  
\145\040\120\165\142\154\151\163\150\145\162\163\040\103\101\060  
\201\237\060\015\006\011\052\206\110\206\367\015\001\001\001\005  
\000\003\201\215\000\060\201\211\002\201\201\000\303\323\151\145  
\122\001\224\124\253\050\306\142\030\263\124\125\305\104\207\105  
\112\073\302\176\330\323\327\310\200\206\215\330\014\361\026\234  
\314\153\251\051\262\217\166\163\222\310\305\142\246\074\355\036  
\005\165\360\023\000\154\024\115\324\230\220\007\276\151\163\201  
\270\142\116\061\036\321\374\311\014\353\175\220\277\256\264\107  
\121\354\157\316\144\065\002\326\175\147\005\167\342\217\331\121  
\327\373\227\031\274\076\327\167\201\306\103\335\362\335\337\312  
\243\203\213\313\101\301\075\042\110\110\246\031\002\003\001\000  
\001\060\015\006\011\052\206\110\206\367\015\001\001\002\005\000  
\003\201\201\000\265\274\260\165\152\211\242\206\275\144\170\303  
\247\062\165\162\021\252\046\002\027\140\060\114\343\110\064\031  
\271\122\112\121\030\200\376\123\055\173\325\061\214\305\145\231  
\101\101\057\362\256\143\172\350\163\231\025\220\032\037\172\213  
\101\320\216\072\320\315\070\064\104\320\165\370\352\161\304\201  
\031\070\027\065\112\256\305\076\062\346\041\270\005\300\223\341  
\307\070\134\330\367\223\070\144\220\355\124\316\312\323\323\320  
\137\357\004\233\336\002\202\335\210\051\261\303\117\245\315\161  
\144\061\074\074

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "VeriSign, Inc."

# Issuer: OU=VeriSign Commercial Software Publishers CA,O=VeriSign\, Inc.,L=Internet

# Serial Number:03:c7:8f:37:db:92:28:df:3c:bb:1a:ad:82:fa:67:10

#

Subject: OU=VeriSign Commercial Software Publishers CA,O=VeriSign\, Inc.,L=Internet

# Not Valid Before: Tue Apr 09 00:00:00 1996

# Not Valid After: Wed Jan 07 23:59:59 2004

# Fingerprint (MD5): dd:75:3f:56:bf:bb:c5:a1:7a:15:53:c6:90:f9:fb:cc

# Fingerprint (SHA1): 24:a4:0a:1f:57:36:43:a6:7f:0a:4b:07:49:f6:a2:2b:f2:8a:bb:6b

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "VeriSign, Inc."

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\044\244\012\037\127\066\103\246\177\012\113\007\111\366\242\053

\362\212\273\153

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\335\165\077\126\277\273\305\241\172\025\123\306\220\371\373\314

END

CKA\_ISSUER MULTILINE\_OCTAL

\060\141\061\021\060\017\006\003\125\004\007\023\010\111\156\164

\145\162\156\145\164\061\027\060\025\006\003\125\004\012\023\016

\126\145\162\151\123\151\147\156\054\040\111\156\143\056\061\063

\060\061\006\003\125\004\013\023\052\126\145\162\151\123\151\147

\156\040\103\157\155\155\145\162\143\151\141\154\040\123\157\146

\164\167\141\162\145\040\120\165\142\154\151\163\150\145\162\163

\040\103\101

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\020\003\307\217\067\333\222\050\337\074\273\032\255\202\372

\147\020

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "Microsoft Root Authority"

# Issuer: CN=Microsoft Root Authority,OU=Microsoft Corporation,OU=Copyright (c) 1997 Microsoft Corp.

# Serial Number:c1:00:8b:3c:3c:88:11:d1:3e:f6:63:ec:df:40

# Subject: CN=Microsoft Root Authority,OU=Microsoft Corporation,OU=Copyright (c) 1997 Microsoft Corp.

# Not Valid Before: Fri Jan 10 07:00:00 1997

# Not Valid After: Thu Dec 31 07:00:00 2020

# Fingerprint (MD5): 2a:95:4e:ca:79:b2:87:45:73:d9:2d:90:ba:f9:9f:b6

#

Fingerprint (SHA1): a4:34:89:15:9a:52:0f:0d:93:d0:32:cc:af:37:e7:fe:20:a8:b4:19

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Microsoft Root Authority"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\160\061\053\060\051\006\003\125\004\013\023\042\103\157\160

\171\162\151\147\150\164\040\050\143\051\040\061\071\071\067\040

\115\151\143\162\157\163\157\146\164\040\103\157\162\160\056\061

\036\060\034\006\003\125\004\013\023\025\115\151\143\162\157\163

\157\146\164\040\103\157\162\160\157\162\141\164\151\157\156\061

\041\060\037\006\003\125\004\003\023\030\115\151\143\162\157\163

\157\146\164\040\122\157\157\164\040\101\165\164\150\157\162\151

```
\164\171
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\160\061\053\060\051\006\003\125\004\013\023\042\103\157\160
\171\162\151\147\150\164\040\050\143\051\040\061\071\071\067\040
\115\151\143\162\157\163\157\146\164\040\103\157\162\160\056\061
\036\060\034\006\003\125\004\013\023\025\115\151\143\162\157\163
\157\146\164\040\103\157\162\160\157\162\141\164\151\157\156\061
\041\060\037\006\003\125\004\003\023\030\115\151\143\162\157\163
\157\146\164\040\122\157\157\164\040\101\165\164\150\157\162\151
\164\171
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\017\000\301\000\213\074\074\210\021\321\076\366\143\354\337
\100
END
CKA_VALUE MULTILINE_OCTAL
\060\202\004\022\060\202\002\372\240\003\002\001\002\002\017\000
\301\000\213\074\074\210\021\321\076\366\143\354\337\100\060\015
\006\011\052\206\110\206\367\015\001\001\004\005\000\060\160\061
\053\060\051\006\003\125\004\013\023\042\103\157\160\171\162\151
\147\150\164\040\050\143\051\040\061\071\071\067\040\115\151\143
\162\157\163\157\146\164\040\103\157\162\160\056\061\036\060\034
\006\003\125\004\013\023\025\115\151\143\162\157\163\157\146\164
\040\103\157\162\160\157\162\141\164\151\157\156\061\041\060\037
\006\003\125\004\003\023\030\115\151\143\162\157\163\157\146\164
\040\122\157\157\164\040\101\165\164\150\157\162\151\164\171\060
\036\027\015\071\067\060\061\061\060\060\067\060\060\060\060\132
\027\015\062\060\061\062\063\061\060\067\060\060\060\060\132\060
\160\061\053\060\051\006\003\125\004\013\023\042\103\157\160\171
\162\151\147\150\164\040\050\143\051\040\061\071\071\067\040\115
\151\143\162\157\163\157\146\164\040\103\157\162\160\056\061\036
\060\034\006\003\125\004\013\023\025\115\151\143\162\157\163\157
\146\164\040\103\157\162\160\157\162\141\164\151\157\156\061\041
\060\037\006\003\125\004\003\023\030\115\151\143\162\157\163\157
\146\164\040\122\157\157\164\040\101\165\164\150\157\162\151\164
\171\060\202\001\042\060\015\006\011\052\206\110\206\367\015\001
\001\001\005\000\003\202\001\017\000\060\202\001\012\002\202\001
\001\000\251\002\275\301\160\346\073\362\116\033\050\237\227\170
\136\060\352\242\251\215\045\137\370\376\225\114\243\267\376\235
\242\040\076\174\121\242\233\242\217\140\062\153\321\102\144\171
\356\254\166\311\124\332\362\353\234\206\034\217\237\204\146\263
\305\153\172\142\043\326\035\074\336\017\001\222\350\226\304\277
\055\146\232\232\150\046\231\320\072\054\277\014\265\130\046\301
\106\347\012\076\070\226\054\251\050\071\250\354\111\203\102\343
\204\017\273\232\154\125\141\254\202\174\241\140\055\167\114\351
```

\231\264\144\073\232\120\034\061\010\044\024\237\251\347\221\053  
\030\346\075\230\143\024\140\130\005\145\237\035\067\122\207\367  
\247\357\224\002\306\033\323\277\125\105\263\211\200\277\072\354  
\124\224\116\256\375\247\172\155\164\116\257\030\314\226\011\050  
\041\000\127\220\140\151\067\273\113\022\007\074\126\377\133\373  
\244\146\012\010\246\322\201\126\127\357\266\073\136\026\201\167  
\004\332\366\276\256\200\225\376\260\315\177\326\247\032\162\134  
\074\312\274\360\010\243\042\060\263\006\205\311\263\040\167\023  
\205\337\002\003\001\000\001\243\201\250\060\201\245\060\201\242  
\006\003\125\035\001\004\201\232\060\201\227\200\020\133\320\160  
\357\151\162\236\043\121\176\024\262\115\216\377\313\241\162\060  
\160\061\053\060\051\006\003\125\004\013\023\042\103\157\160\171  
\162\151\147\150\164\040\050\143\051\040\061\071\071\067\040\115  
\151\143\162\157\163\157\146\164\040\103\157\162\160\056\061\036  
\060\034\006\003\125\004\013\023\025\115\151\143\162\157\163\157  
\146\164\040\103\157\162\160\157\162\141\164\151\157\156\061\041  
\060\037\006\003\125\004\003\023\030\115\151\143\162\157\163\157  
\146\164\040\122\157\157\164\040\101\165\164\150\157\162\151\164  
\171\202\017\000\301\000\213\074\074\210\021\321\076\366\143\354  
\337\100\060\015\006\011\052\206\110\206\367\015\001\001\004\005  
\000\003\202\001\001\000\225\350\013\300\215\363\227\030\065\355  
\270\001\044\330\167\021\363\134\140\062\237\236\013\313\076\005  
\221\210\217\311\072\346\041\362\360\127\223\054\265\240\107\310  
\142\357\374\327\314\073\073\132\251\066\124\151\376\044\155\077  
\311\314\252\336\005\174\335\061\215\075\237\020\160\152\273\376  
\022\117\030\151\300\374\320\103\343\021\132\040\117\352\142\173  
\257\252\031\310\053\067\045\055\276\145\241\022\212\045\017\143  
\243\367\124\034\371\041\311\326\025\363\122\254\156\103\062\007  
\375\202\027\370\345\147\154\015\121\366\275\361\122\307\275\347  
\304\060\374\040\061\011\210\035\225\051\032\115\325\035\002\245  
\361\200\340\003\264\133\364\261\335\310\127\356\145\111\307\122  
\124\266\264\003\050\022\377\220\326\360\010\217\176\270\227\305  
\253\067\054\344\172\344\250\167\343\166\240\000\320\152\077\301  
\322\066\212\340\101\022\250\065\152\033\152\333\065\341\324\034  
\004\344\250\105\004\310\132\063\070\156\115\034\015\142\267\012  
\242\214\323\325\124\077\106\315\034\125\246\160\333\022\072\207  
\223\165\237\247\322\240

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "Microsoft Root Authority"

# Issuer: CN=Microsoft Root Authority,OU=Microsoft Corporation,OU=Copyright  
(c) 1997 Microsoft Corp.

# Serial Number:c1:00:8b:3c:3c:88:11:d1:3e:f6:63:ec:df:40

```
# Subject: CN=Microsoft Root Authority,OU=Microsoft Corporation,OU=Copyright (c) 1997 Microsoft Corp.
# Not Valid Before: Fri Jan 10 07:00:00 1997
# Not Valid After: Thu Dec 31 07:00:00 2020
# Fingerprint (MD5): 2a:95:4e:ca:79:b2:87:45:73:d9:2d:90:ba:f9:9f:b6
# Fingerprint (SHA1): a4:34:89:15:9a:52:0f:0d:93:d0:32:cc:af:37:e7:fe:20:a8:b4:19
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Microsoft Root Authority"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\244\064\211\025\232\122\017\015\223\320\062\314\257\067\347\376
\040\250\264\031
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\052\225\116\312\171\262\207\105\163\331\055\220\272\371\237\266
END
CKA_ISSUER MULTILINE_OCTAL
\060\160\061\053\060\051\006\003\125\004\013\023\042\103\157\160
\171\162\151\147\150\164\040\050\143\051\040\061\071\071\067\040
\115\151\143\162\157\163\157\146\164\040\103\157\162\160\056\061
\036\060\034\006\003\125\004\013\023\025\115\151\143\162\157\163
\157\146\164\040\103\157\162\160\157\162\141\164\151\157\156\061
\041\060\037\006\003\125\004\003\023\030\115\151\143\162\157\163
\157\146\164\040\122\157\157\164\040\101\165\164\150\157\162\151
\164\171
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\017\000\301\000\213\074\074\210\021\321\076\366\143\354\337
\100
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
# Microsoft Code Signing Only Certificate
# Certificate "Microsoft Root Certificate Authority"
# Issuer: CN=Microsoft Root Certificate Authority,DC=microsoft,DC=com
# Serial Number:79:ad:16:a1:4a:a0:a5:ad:4c:73:58:f4:07:13:2e:65
# Subject: CN=Microsoft Root Certificate Authority,DC=microsoft,DC=com
# Not Valid Before: Wed May 09 23:19:22
2001
# Not Valid After: Sun May 09 23:28:13 2021
# Fingerprint (MD5): e1:c0:7e:a0:aa:bb:d4:b7:7b:84:c2:28:11:78:08:a7
# Fingerprint (SHA1): cd:d4:ee:ae:60:00:ac:7f:40:c3:80:2c:17:1e:30:14:80:30:c0:72
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
```



```
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Microsoft Root Certificate Authority"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\137\061\023\060\021\006\012\011\222\046\211\223\362\054\144
\001\031\026\003\143\157\155\061\031\060\027\006\012\011\222\046
\211\223\362\054\144\001\031\026\011\155\151\143\162\157\163\157
\146\164\061\055\060\053\006\003\125\004\003\023\044\115\151\143
\162\157\163\157\146\164\040\122\157\157\164\040\103\145\162\164
\151\146\151\143\141\164\145\040\101\165\164\150\157\162\151\164
\171
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\137\061\023\060\021\006\012\011\222\046\211\223\362\054\144
\001\031\026\003\143\157\155\061\031\060\027\006\012\011\222\046
\211\223\362\054\144\001\031\026\011\155\151\143\162\157\163\157
\146\164\061\055\060\053\006\003\125\004\003\023\044\115\151\143
\162\157\163\157\146\164\040\122\157\157\164\040\103\145\162\164
\151\146\151\143\141\164\145\040\101\165\164\150\157\162\151\164
\171
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\171\255\026\241\112\240\245\255\114\163\130\364\007\023
\056\145
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\231\060\202\003\201\240\003\002\001\002\002\020\171
\255\026\241\112\240\245\255\114\163\130\364\007\023\056\145\060
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\137
\061\023\060\021\006\012\011\222\046\211\223\362\054\144\001\031
\026\003\143\157\155\061\031\060\027\006\012\011\222\046\211\223
\362\054\144\001\031\026\011\155\151\143\162\157\163\157\146\164
\061\055\060\053\006\003\125\004\003\023\044\115\151\143\162\157
\163\157\146\164\040\122\157\157\164\040\103\145\162\164\151\146
\151\143\141\164\145\040\101\165\164\150\157\162\151\164\171\060
\036\027\015\060\061\060\065\060\071\062\063\061\071\062\062\132
\027\015\062\061\060\065\060\071\062\063\062\070\061\063\132\060
\137\061\023\060\021\006\012\011\222\046\211\223\362\054\144\001
\031\026\003\143\157\155\061\031\060\027\006\012\011\222\046\211
\223\362\054\144\001\031\026\011\155\151\143\162\157\163\157\146
\164\061\055\060\053\006\003\125\004\003\023\044\115\151\143\162
\157\163\157\146\164\040\122\157\157\164\040\103\145\162\164\151
\146\151\143\141\164\145\040\101\165\164\150\157\162\151\164\171
\060\202\002\042\060\015\006\011\052\206\110\206\367\015\001\001
```

\001\005\000\003\202\002\017\000\060\202\002\012\002\202\002\001  
\000\363\135\372\200\147\324\132\247\251\014\054\220\040\320\065  
\010\074\165\204\315\267\007\211\234\211\332\336\316\303\140\372  
\221\150\132\236\224\161\051\030\166\174\302\340\310\045\166\224  
\016\130\372\004\064\066\346\337\257\367\200\272\351\130\013\053  
\223\345\235\005\343\167\042\221\367\064\144\074\042\221\035\136  
\341\011\220\274\024\376\374\165\130\031\341\171\267\007\222\243  
\256\210\131\010\330\237\007\312\003\130\374\150\051\155\062\327  
\322\250\313\113\374\341\013\110\062\117\346\353\270\255\117\344  
\134\157\023\224\231\333\225\325\165\333\250\032\267\224\221\264  
\167\133\365\110\014\217\152\171\175\024\160\004\175\155\257\220  
\365\332\160\330\107\267\277\233\057\154\347\005\267\341\021\140  
\254\171\221\024\174\305\326\246\344\341\176\325\303\176\345\222  
\322\074\000\265\066\202\336\171\341\155\363\265\156\370\237\063  
\311\313\122\175\163\230\066\333\213\241\153\242\225\227\233\243  
\336\302\115\046\377\006\226\147\045\006\310\347\254\344\356\022  
\063\225\061\231\310\065\010\116\064\312\171\123\325\265\276\143  
\062\131\100\066\300\245\116\004\115\075\333\133\007\063\344\130  
\277\357\077\123\144\330\102\131\065\127\375\017\105\174\044\004  
\115\236\326\070\164\021\227\042\220\316\150\104\164\222\157\325  
\113\157\260\206\343\307\066\102\240\320\374\301\300\132\371\243  
\141\271\060\107\161\226\012\026\260\221\300\102\225\357\020\177  
\050\152\343\052\037\261\344\315\003\077\167\161\004\307\040\374  
\111\017\035\105\210\244\327\313\176\210\255\216\055\354\105\333  
\304\121\004\311\052\374\354\206\236\232\021\227\133\336\316\123  
\210\346\342\267\375\254\225\302\050\100\333\357\004\220\337\201  
\063\071\331\262\105\245\043\207\006\245\125\211\061\273\006\055  
\140\016\101\030\175\037\056\265\227\313\021\353\025\325\044\245  
\224\357\025\024\211\375\113\163\372\062\133\374\321\063\000\371  
\131\142\160\007\062\352\056\253\100\055\173\312\335\041\147\033  
\060\231\217\026\252\043\250\101\321\260\156\021\233\066\304\336  
\100\164\234\341\130\145\301\140\036\172\133\070\310\217\273\004  
\046\174\324\026\100\345\266\153\154\252\206\375\000\277\316\301  
\065\002\003\001\000\001\243\121\060\117\060\013\006\003\125\035  
\017\004\004\003\002\001\306\060\017\006\003\125\035\023\001\001  
\377\004\005\060\003\001\001\377\060\035\006\003\125\035\016\004  
\026\004\024\016\254\202\140\100\126\047\227\345\045\023\374\052  
\341\012\123\225\131\344\244\060\020\006\011\053\006\001\004\001  
\202\067\025\001\004\003\002\001\000\060\015\006\011\052\206\110  
\206\367\015\001\001\005\005\000\003\202\002\001\000\305\021\115  
\003\072\140\335\135\122\021\167\217\262\273\066\310\262\005\277  
\264\267\250\330\040\235\134\023\003\266\034\042\372\006\023\065  
\266\310\143\324\232\107\157\046\127\322\125\361\004\261\046\137  
\326\251\120\150\240\274\322\270\156\314\303\351\254\337\031\315  
\170\254\131\164\254\146\064\066\304\033\076\154\070\114\063\016  
\060\022\015\243\046\376\121\123\000\377\257\132\116\204\015\017  
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\277\120\257\175\172\071\240\067\355\143\003\017\374\023\006\316

\026\066\324\124\073\225\033\121\142\072\345\115\027\324\005\071  
\222\232\047\250\133\252\275\354\273\276\343\040\211\140\161\154  
\126\263\245\023\320\155\016\043\176\225\003\355\150\075\362\330  
\143\270\153\115\266\350\060\265\341\312\224\113\367\242\252\135  
\231\060\262\075\247\302\121\154\050\040\001\044\047\053\113\000  
\267\235\021\153\160\276\262\020\202\274\014\233\150\320\215\073  
\044\207\252\231\050\162\235\063\137\131\220\275\365\336\223\236  
\072\142\132\064\071\342\210\125\035\271\006\260\301\211\153\055  
\327\151\303\031\022\066\204\320\311\240\332\377\057\151\170\262  
\345\172\332\353\327\014\300\367\275\143\027\270\071\023\070\242  
\066\133\173\362\205\126\152\035\144\142\301\070\342\252\277\121  
\146\242\224\365\022\234\146\042\020\153\362\267\060\222\055\362  
\051\360\075\073\024\103\150\242\361\234\051\067\313\316\070\040  
\045\155\174\147\363\176\044\022\044\003\010\201\107\354\245\236  
\227\365\030\327\317\273\325\357\166\226\357\375\316\333\126\235  
\225\240\102\371\227\130\341\327\061\042\323\137\131\346\076\156  
\042\000\352\103\204\266\045\333\331\363\010\126\150\300\144\153  
\035\174\354\266\223\242\142\127\156\056\330\347\130\217\304\061  
\111\046\335\336\051\065\207\365\060\161\160\133\024\074\151\275  
\211\022\175\353\056\243\376\330\177\236\202\132\122\012\053\301  
\103\053\331\060\210\237\310\020\373\211\215\346\241\205\165\063  
\176\154\236\333\163\023\144\142\151\245\057\175\312\226\155\237  
\370\004\115\060\222\075\156\041\024\041\311\075\340\303\375\212  
\153\235\112\375\321\241\235\231\103\167\077\260\332

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "Microsoft Root Certificate Authority"

# Issuer: CN=Microsoft Root Certificate Authority,DC=microsoft,DC=com

# Serial Number: 79:ad:16:a1:4a:a0:a5:ad:4c:73:58:f4:07:13:2e:65

# Subject: CN=Microsoft Root Certificate Authority,DC=microsoft,DC=com

# Not Valid Before: Wed May 09 23:19:22 2001

# Not Valid After: Sun May 09 23:28:13 2021

# Fingerprint (MD5): e1:c0:7e:a0:aa:bb:d4:b7:7b:84:c2:28:11:78:08:a7

# Fingerprint (SHA1): cd:d4:ee:ae:60:00:ac:7f:40:c3:80:2c:17:1e:30:14:80:30:c0:72

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN

CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Microsoft Root Certificate Authority"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\315\324\356\256\140\000\254\177\100\303\200\054\027\036\060\024

\200\060\300\162

```

END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\341\300\176\240\252\273\324\267\173\204\302\050\021\170\010\247
END
CKA_ISSUER MULTILINE_OCTAL
\060\137\061\023\060\021\006\012\011\222\046\211\223\362\054\144
\001\031\026\003\143\157\155\061\031\060\027\006\012\011\222\046
\211\223\362\054\144\001\031\026\011\155\151\143\162\157\163\157
\146\164\061\055\060\053\006\003\125\004\003\023\044\115\151\143
\162\157\163\157\146\164\040\122\157\157\164\040\103\145\162\164
\151\146\151\143\141\164\145\040\101\165\164\150\157\162\151\164
\171
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\171\255\026\241\112\240\245\255\114\163\130\364\007\023
\056\145
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION
CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "Microsoft Root Certificate Authority 2010"
# Issuer: CN=Microsoft Root Certificate Authority 2010,O=Microsoft
Corporation,L=Redmond,ST=Washington,C=US
# Serial Number:28:cc:3a:25:bf:ba:44:ac:44:9a:9b:58:6b:43:39:aa
# Subject: CN=Microsoft Root Certificate Authority 2010,O=Microsoft
Corporation,L=Redmond,ST=Washington,C=US
# Not Valid Before: Wed Jun 23 21:57:24 2010
# Not Valid After: Sat Jun 23 22:04:01 2035
# Fingerprint (MD5): a2:66:bb:7d:cc:38:a5:62:63:13:61:bb:f6:1d:d1:1b
# Fingerprint (SHA1): 3b:1e:fd:3a:66:ea:28:b1:66:97:39:47:03:a7:2c:a3:40:a0:5b:d5
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Microsoft Root Certificate Authority 2010"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT
MULTILINE_OCTAL
\060\201\210\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\023\060\021\006\003\125\004\010\023\012\127\141\163\150\151
\156\147\164\157\156\061\020\060\016\006\003\125\004\007\023\007
\122\145\144\155\157\156\144\061\036\060\034\006\003\125\004\012
\023\025\115\151\143\162\157\163\157\146\164\040\103\157\162\160
\157\162\141\164\151\157\156\061\062\060\060\006\003\125\004\003

```

\023\051\115\151\143\162\157\163\157\146\164\040\122\157\157\164  
\040\103\145\162\164\151\146\151\143\141\164\145\040\101\165\164  
\150\157\162\151\164\171\040\062\060\061\060

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\210\061\013\060\011\006\003\125\004\006\023\002\125\123  
\061\023\060\021\006\003\125\004\010\023\012\127\141\163\150\151  
\156\147\164\157\156\061\020\060\016\006\003\125\004\007\023\007  
\122\145\144\155\157\156\144\061\036\060\034\006\003\125\004\012  
\023\025\115\151\143\162\157\163\157\146\164\040\103\157\162\160  
\157\162\141\164\151\157\156\061\062\060\060\006\003\125\004\003  
\023\051\115\151\143\162\157\163\157\146\164\040\122\157\157\164  
\040\103\145\162\164\151\146\151\143\141\164\145\040\101\165\164  
\150\157\162\151\164\171\040\062\060\061\060

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\020\050\314\072\045\277\272\104\254\104\232\233\130\153\103  
\071\252

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\355\060\202\003\325\240\003\002\001\002\002\020\050  
\314\072\045\277\272\104\254\104\232\233\130\153\103\071\252\060  
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\201  
\210\061\013\060\011\006\003\125\004\006\023\002\125\123\061\023  
\060\021\006\003\125\004\010\023\012\127\141\163\150\151\156\147  
\164\157\156\061\020\060\016\006\003\125\004\007\023\007\122\145  
\144\155\157\156\144\061\036\060\034\006\003\125\004\012\023\025  
\115\151\143\162\157\163\157\146\164\040\103\157\162\160\157\162  
\141\164\151\157\156\061\062\060\060\006\003\125\004\003\023\051  
\115\151\143\162\157\163\157\146\164\040\122\157\157\164\040\103  
\145\162\164\151\146\151\143\141\164\145\040\101\165\164\150\157  
\162\151\164\171\040\062\060\061\060\060\036\027\015\061\060\060  
\066\062\063\062\061\065\067\062\064\132\027\015\063\065\060\066  
\062\063\062\062\060\064\060\061\132\060\201\210\061\013\060\011  
\006\003\125\004\006\023\002\125\123\061\023\060\021\006\003\125  
\004\010\023\012\127\141\163\150\151\156\147\164\157\156\061\020  
\060\016\006\003\125\004\007\023\007\122\145\144\155\157\156\144  
\061\036\060\034\006\003\125\004\012\023\025\115\151\143\162\157  
\163\157\146\164\040\103\157\162\160\157\162\141\164\151\157\156  
\061\062\060\060\006\003\125\004\003\023\051\115\151\143\162\157  
\163\157\146\164\040\122\157\157\164\040\103\145\162\164\151\146  
\151\143\141\164\145\040\101\165\164\150\157\162\151\164\171\040  
\062\060\061\060\060\202\002\042\060\015\006\011\052\206\110\206  
\367\015\001\001\001\005\000\003\202\002\017\000\060\202\002\012  
\002\202\002\001\000\271\010\236\050\344\344\354\006\116\120\150  
\263\101\305\173\353\256\266\216\257\201\272\042\104\037\145\064

|151|114|276|160|100|027|362|026|173|342|171|375|206|355|015|071  
|364|033|250|255|222|220|036|313|075|166|217|132|331|265|221|020  
|056|074|005|215|212|155|044|124|347|037|355|126|255|203|264|120  
|234|025|245|027|164|210|131|040|374|010|305|204|166|323|150|324  
|157|050|170|316|134|270|363|120|220|104|377|343|143|137|276|241  
|232|054|226|025|004|326|007|376|036|204|041|340|102|061|021|304  
|050|066|224|317|120|244|142|236|311|326|253|161|000|262|133|014  
|346|226|324|012|044|226|365|377|306|325|267|033|327|313|267|041  
|142|257|022|334|241|135|067|343|032|373|032|106|230|300|233|300  
|347|143|037|052|010|223|002|176|036|152|216|362|237|030|211|344  
|042|205|242|261|204|127|100|377|365|016|330|157|234|355|342|105  
|061|001|315|027|351|177|260|201|105|343|252|041|100|046|241|162  
|252|247|117|074|001|005|176|356|203|130|261|136|006|143|231|142  
|221|170|202|267|015|223|014|044|152|264|033|333|047|354|137|225  
|004|077|223|112|060|365|227|030|263|247|371|031|247|223|063|035  
|001|310|333|042|122|134|327|045|311|106|371|242|373|207|131|103  
|276|233|142|261|215|055|206|104|032|106|254|170|141|176|060|011  
|372|256|211|304|101|052|042|146|003|221|071|105|234|307|213|014  
|250|312|015|057|373|122|352|014|367|143|063|043|235|376|260|037  
|255|147|326|247|120|003|306|004|160|143|265|054|261|206|132|103  
|267|373|256|371|156|051|156|041|041|101|046|006|214|311|303|356  
|260|302|205|223|241|271|205|331|346|062|154|113|114|077|326|135  
|243|345|265|235|167|303|234|300|125|267|164|000|343|270|070|253  
|203|227|120|341|232|102|044|035|306|300|243|060|321|032|132|310  
|122|064|367|163|361|307|030|037|063|255|172|354|313|101|140|363  
|043|224|040|302|110|105|254|134|121|306|056|200|302|342|167|025  
|275|205|207|355|066|235|226|221|356|000|265|243|160|354|237|343  
|215|200|150|203|166|272|257|135|160|122|042|026|342|146|373|272  
|263|305|302|367|076|057|167|246|312|336|301|246|306|110|114|303  
|067|121|043|323|047|327|270|116|160|226|360|241|104|166|257|170  
|317|232|341|146|023|002|003|001|000|001|243|121|060|117|060|013  
|006|003|125|035|017|004|004|003|002|001|206|060|017|006|003|125  
|035|023|001|001|377|004|005|060|003|001|001|377|060|035|006|003  
|125|035|016|004|026|004|024|325|366|126|313|217|350|242|134|142  
|150|321|075|224|220|133|327|316|232|030|304|060|020|006|011|053  
|006|001|004|001|202|067|025|001|004|003|002|001|000|060|015|006  
|011|052|206|110|206|367|015|001|001|013|005|000|003|202|002|001  
|000|254|245|226|214|277|273|256|246|366|327|161|207|103|061|126  
|210|375|034|062|161|133|065|267|324|360|221|362|257|067|342|024  
|361|363|002|046|005|076|026|024|177|024|272|270|117|373|211|262  
|262|347|324|011|314|155|271|133|073|144|145|160|146|267|362|261  
|132|337|032|002|363|365|121|270|147|155|171|363|277|126|173|344  
|204|271|053|036|233|100|234|046|064|371|107|030|230|151|330|034  
|327|266|321|277|217|141|302|147|304|265|357|140|103|216|020|033  
|066|111|344|040|312|255|247|301|261|047|145|011|370|315|365|133  
|052|320|204|063|363|357|037|362|365|234|013|130|223|067|240|165  
|240|336|162|336|154|165|052|146|042|365|214|006|060|126|237|100  
|271|060|252|100|167|025|202|327|213|354|300|323|262|275|203|305

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\167\014\036\256\257\031\123\240\115\171\161\237\017\257\060\316
\147\371\326\054\314\042\101\172\007\362\227\102\030\316\131\171
\020\125\336\157\020\344\270\332\203\146\100\026\011\150\043\133
\227\056\046\232\002\273\127\214\305\270\272\151\142\062\200\211
\236\241\375\300\222\174\173\053\063\031\204\052\143\305\000\150
\142\372\237\107\215\231\172\105\072\247\351\355\356\151\102\265
\363\201\233\107\126\020\173\374\160\066\204\030\163\352\357\371
\227\115\236\063\043\335\046\013\272\052\267\077\104\334\203\047
\377\275\141\131\053\021\267\312\117\333\305\213\014\034\061\256
\062\370\370\271\102\367\177\334\141\232\166\261\132\004\341\021
\075\146\105\267\030\161\276\311\044\205\326\363\324\272\101\064
\135\022\055\045\271\215\246\023\110\155\113\260\007\175\231\223
\011\141\201\164\127\046\212\253\151\343\344\331\307\210\314\044
\330\354\122\044\134\036\274\221\024\342\226\336\353\012\332\236
\335\137\263\133\333\324\202\354\306\040\120\207\045\100\072\373
\307\356\315\376\063\345\156\303\204\011\125\003\045\071\300\351
\065\135\145\061\250\366\277\240\011\315\051\307\263\066\062\056
\334\225\363\203\301\132\317\213\215\366\352\263\041\370\244\355
\036\061\016\266\114\021\253\140\013\244\022\043\042\027\243\066
\144\202\221\004\022\340\253\157\036\313\120\005\141\264\100\377
\131\206\161\321\325\063\151\174\251\163\212\070\327\144\014\361
\151
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "Microsoft Root Certificate Authority 2010"

# Issuer: CN=Microsoft Root Certificate Authority 2010,O=Microsoft Corporation,L=Redmond,ST=Washington,C=US

# Serial Number:28:cc:3a:25:bf:ba:44:ac:44:9a:9b:58:6b:43:39:aa

# Subject: CN=Microsoft Root Certificate Authority 2010,O=Microsoft Corporation,L=Redmond,ST=Washington,C=US

# Not Valid Before: Wed Jun 23 21:57:24 2010

# Not Valid After: Sat Jun 23 22:04:01 2035

# Fingerprint (MD5): a2:66:bb:7d:cc:38:a5:62:63:13:61:bb:f6:1d:d1:1b

# Fingerprint (SHA1): 3b:1e:fd:3a:66:ea:28:b1:66:97:39:47:03:a7:2c:a3:40:a0:5b:d5

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Microsoft Root Certificate Authority 2010"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\073\036\375\072\146\352\050\261\146\227\071\107\003\247\054\243
\100\240\133\325
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL  
\242\146\273\175\314\070\245\142\143\023\141\273\366\035\321\033  
END

CKA\_ISSUER MULTILINE\_OCTAL  
\060\201\210\061\013\060\011\006\003\125\004\006\023\002\125\123  
\061\023\060\021\006\003\125\004\010\023\012\127\141\163\150\151  
\156\147\164\157\156\061\020\060\016\006\003\125\004\007\023\007  
\122\145\144\155\157\156\144\061\036\060\034\006\003\125\004\012  
\023\025\115\151\143\162\157\163\157\146\164\040\103\157\162\160  
\157\162\141\164\151\157\156\061\062\060\060\006\003\125\004\003  
\023\051\115\151\143\162\157\163\157\146\164\040\122\157\157\164  
\040\103\145\162\164\151\146\151\143\141\164\145\040\101\165\164  
\150\157\162\151\164\171\040\062\060\061\060  
END

CKA\_SERIAL\_NUMBER  
MULTILINE\_OCTAL  
\002\020\050\314\072\045\277\272\104\254\104\232\233\130\153\103  
\071\252  
END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST  
CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST  
CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR  
CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate  
# Certificate "GTE CyberTrust Global Root"  
# Issuer: CN=GTE CyberTrust Global Root,OU=GTE CyberTrust Solutions\, Inc.,O=GTE Corporation,C=US  
# Serial Number: 421 (0x1a5)  
# Subject: CN=GTE CyberTrust Global Root,OU=GTE CyberTrust Solutions\, Inc.,O=GTE Corporation,C=US  
# Not Valid Before: Thu Aug 13 00:29:00 1998  
# Not Valid  
After: Mon Aug 13 23:59:00 2018  
# Fingerprint (MD5): ca:3d:d3:68:f1:03:5c:d0:32:fa:b8:2b:59:e8:5a:db  
# Fingerprint (SHA1): 97:81:79:50:d8:1c:96:70:cc:34:d8:09:cf:79:44:31:36:7e:f4:74

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE  
CKA\_TOKEN CK\_BBOOL CK\_TRUE  
CKA\_PRIVATE CK\_BBOOL CK\_FALSE  
CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE  
CKA\_LABEL UTF8 "GTE CyberTrust Global Root"  
CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509  
CKA\_SUBJECT MULTILINE\_OCTAL  
\060\165\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\030\060\026\006\003\125\004\012\023\017\107\124\105\040\103\157  
\162\160\157\162\141\164\151\157\156\061\047\060\045\006\003\125  
\004\013\023\036\107\124\105\040\103\171\142\145\162\124\162\165  
\163\164\040\123\157\154\165\164\151\157\156\163\054\040\111\156  
\143\056\061\043\060\041\006\003\125\004\003\023\032\107\124\105  
\040\103\171\142\145\162\124\162\165\163\164\040\107\154\157\142



\141\154\040\122\157\157\164

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\165\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\030\060\026\006\003\125\004\012\023\017\107\124\105\040\103\157  
\162\160\157\162\141\164\151\157\156\061\047\060\045\006\003\125  
\004\013\023\036\107\124\105\040\103\171\142\145\162\124\162\165  
\163\164\040\123\157\154\165\164\151\157\156\163\054\040\111\156  
\143\056\061\043\060\041\006\003\125\004\003\023\032\107\124\105  
\040\103\171\142\145\162\124\162\165\163\164\040\107\154\157\142  
\141\154\040\122\157\157\164

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\002\001\245

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\002\132\060\202\001\303\002\002\001\245\060\015\006\011  
\052\206\110\206\367\015\001\001\004\005\000\060\165\061\013\060  
\011\006\003\125\004\006\023\002\125\123\061\030\060\026\006\003  
\125\004\012\023\017\107\124\105\040\103\157\162\160\157\162\141  
\164\151\157\156\061\047\060\045\006\003\125\004\013\023\036\107  
\124\105\040\103\171\142\145\162\124\162\165\163\164\040\123\157  
\154\165\164\151\157\156\163\054\040\111\156\143\056\061\043\060  
\041\006\003\125\004\003\023\032\107\124\105\040\103\171\142\145  
\162\124\162\165\163\164\040\107\154\157\142\141\154\040\122\157  
\157\164\060\036\027\015\071\070\060\070\061\063\060\060\062\071  
\060\060\132\027\015\061\070\060\070\061\063\062\063\065\071\060  
\060\132\060\165\061\013\060\011\006\003\125\004\006\023\002\125  
\123\061\030\060\026\006\003\125\004\012\023\017\107\124\105\040  
\103\157\162\160\157\162\141\164\151\157\156\061\047\060\045\006  
\003\125\004\013\023\036\107\124\105\040\103\171\142\145\162\124  
\162\165\163\164\040\123\157\154\165\164\151\157\156\163\054\040  
\111\156\143\056\061\043\060\041\006\003\125\004\003\023\032\107  
\124\105\040\103\171\142\145\162\124\162\165\163\164\040\107\154  
\157\142\141\154\040\122\157\157\164\060\201\237\060\015\006\011  
\052\206\110\206\367\015\001\001\001\005\000\003\201\215\000\060  
\201\211\002\201\201\000\225\017\240\266\360\120\234\350\172\307  
\210\315\335\027\016\056\260\224\320\033\075\016\366\224\300\212  
\224\307\006\310\220\227\310\270\144\032\172\176\154\074\123\341  
\067\050\163\140\177\262\227\123\007\237\123\371\155\130\224\322  
\257\215\155\210\147\200\346\355\262\225\317\162\061\312\245\034  
\162\272\134\002\347\144\102\347\371\251\054\326\072\015\254\215  
\102\252\044\001\071\346\234\077\001\205\127\015\130\207\105\370  
\323\205\252\223\151\046\205\160\110\200\077\022\025\307\171\264  
\037\005\057\073\142\231\002\003\001\000\001\060\015\006\011\052  
\206\110\206\367\015\001\001\004\005\000\003\201\201\000\155\353

```
\033\011\351\136\331\121\333\147\042\141\244\052\074\110\167\343
\240\174\246\336\163\242\024\003\205\075\373\253\016\060\305\203
\026\063\201\023\010\236\173\064\116\337\100\310\164\327\271\175
\334\364\166\125\175\233\143\124\030\351\360\352\363\134\261\331
\213\102\036\271\300\225\116\272\372\325\342\174\365\150\141\277
\216\354\005\227\137\133\260\327\243\205\064\304\044\247\015\017
\225\223\357\313\224\330\236\037\235\134\205\155\307\252\256\117
\037\042\265\315\225\255\272\247\314\371\253\013\172\177
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "GTE CyberTrust Global Root"

# Issuer: CN=GTE CyberTrust Global Root,OU=GTE CyberTrust Solutions\, Inc.,O=GTE Corporation,C=US

# Serial Number: 421 (0x1a5)

# Subject: CN=GTE CyberTrust Global Root,OU=GTE CyberTrust Solutions\, Inc.,O=GTE Corporation,C=US

# Not Valid Before: Thu Aug 13 00:29:00 1998

# Not Valid After: Mon Aug 13 23:59:00 2018

# Fingerprint (MD5): ca:3d:d3:68:f1:03:5c:d0:32:fa:b8:2b:59:e8:5a:db

# Fingerprint (SHA1): 97:81:79:50:d8:1c:96:70:cc:34:d8:09:cf:79:44:31:36:7e:f4:74

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "GTE CyberTrust Global Root"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\227\201\171\120\330\034\226\160\314\064\330\011\317\171\104\061
\066\176\364\164
```

END

CKA\_CERT\_MD5\_HASH

MULTILINE\_OCTAL

```
\312\075\323\150\361\003\134\320\062\372\270\053\131\350\132\333
```

END

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\165\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\030\060\026\006\003\125\004\012\023\017\107\124\105\040\103\157
\162\160\157\162\141\164\151\157\156\061\047\060\045\006\003\125
\004\013\023\036\107\124\105\040\103\171\142\145\162\124\162\165
\163\164\040\123\157\154\165\164\151\157\156\163\054\040\111\156
\143\056\061\043\060\041\006\003\125\004\003\023\032\107\124\105
\040\103\171\142\145\162\124\162\165\163\164\040\107\154\157\142
\141\154\040\122\157\157\164
```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

```
\002\002\001\245
```

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST  
CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST  
CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR  
CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "Thawte Server CA"

# Issuer: 1.2.840.113549.1.9.1=server-certs@thawte.com,CN=Thawte

Server CA,OU=Certification Services Division,O=Thawte Consulting cc,L=Cape Town,ST=Western Cape,C=ZA

# Serial Number: 1 (0x1)

# Subject: 1.2.840.113549.1.9.1=server-certs@thawte.com,CN=Thawte Server CA,OU=Certification Services  
Division,O=Thawte Consulting cc,L=Cape Town,ST=Western Cape,C=ZA

# Not Valid Before: Thu Aug 01 00:00:00 1996

# Not Valid After: Thu Dec 31 23:59:59 2020

# Fingerprint (MD5): c5:70:c4:a2:ed:53:78:0c:c8:10:53:81:64:cb:d0:1d

# Fingerprint (SHA1): 23:e5:94:94:51:95:f2:41:48:03:b4:d5:64:d2:a3:a3:f5:d8:8b:8c

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Thawte Server CA"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\201\304\061\013\060\011\006\003\125\004\006\023\002\132\101  
\061\025\060\023\006\003\125\004\010\023\014\127\145\163\164\145  
\162\156\040\103\141\160\145\061\022\060\020\006\003\125\004\007  
\023\011\103\141\160\145\040\124\157\167\156\061\035\060\033\006  
\003\125\004\012\023\024\124\150\141\167\164\145\040\103\157\156  
\163\165\154\164\151\156\147\040\143\143\061\050\060\046\006\003  
\125\004\013\023\037\103\145\162\164\151\146\151\143\141\164\151  
\157\156\040\123\145\162\166\151\143\145\163\040\104\151\166\151  
\163\151\157\156\061\031\060\027\006\003\125\004\003\023\020\124  
\150\141\167\164\145\040\123\145\162\166\145\162\040\103\101\061  
\046\060\044\006\011\052\206\110\206\367\015\001\011\001\026\027  
\163\145\162\166\145\162\055\143\145\162\164\163\100\164\150\141  
\167\164\145\056\143\157\155

END

CKA\_ID

UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\304\061\013\060\011\006\003\125\004\006\023\002\132\101  
\061\025\060\023\006\003\125\004\010\023\014\127\145\163\164\145  
\162\156\040\103\141\160\145\061\022\060\020\006\003\125\004\007  
\023\011\103\141\160\145\040\124\157\167\156\061\035\060\033\006  
\003\125\004\012\023\024\124\150\141\167\164\145\040\103\157\156  
\163\165\154\164\151\156\147\040\143\143\061\050\060\046\006\003  
\125\004\013\023\037\103\145\162\164\151\146\151\143\141\164\151

\157\156\040\123\145\162\166\151\143\145\163\040\104\151\166\151  
\163\151\157\156\061\031\060\027\006\003\125\004\003\023\020\124  
\150\141\167\164\145\040\123\145\162\166\145\162\040\103\101\061  
\046\060\044\006\011\052\206\110\206\367\015\001\011\001\026\027  
\163\145\162\166\145\162\055\143\145\162\164\163\100\164\150\141  
\167\164\145\056\143\157\155

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\001\001

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\023\060\202\002\174\240\003\002\001\002\002\001\001  
\060\015\006\011\052\206\110\206\367\015\001\001\004\005\000\060  
\201\304\061\013\060\011\006\003\125\004\006\023\002\132\101\061  
\025\060\023\006\003\125\004\010\023\014\127\145\163\164\145\162  
\156\040\103\141\160\145\061\022\060\020\006\003\125\004\007\023  
\011\103\141\160\145\040\124\157\167\156\061\035\060\033\006\003  
\125\004\012\023\024\124\150\141\167\164\145\040\103\157\156\163  
\165\154\164\151\156\147\040\143\143\061\050\060\046\006\003\125  
\004\013\023\037\103\145\162\164\151\146\151\143\141\164\151\157  
\156\040\123\145\162\166\151\143\145\163\040\104\151\166\151\163  
\151\157\156\061\031\060\027\006\003\125\004\003\023\020\124\150  
\141\167\164\145\040\123\145\162\166\145\162\040\103\101\061\046  
\060\044\006\011\052\206\110\206\367\015\001\011\001\026\027\163  
\145\162\166\145\162\055\143\145\162\164\163\100\164\150\141\167  
\164\145\056\143\157\155\060\036\027\015\071\066\060\070\060\061  
\060\060\060\060\060\060\132\027\015\062\060\061\062\063\061\062  
\063\065\071\065\071\132\060\201\304\061\013\060\011\006\003\125  
\004\006\023\002\132\101\061\025\060\023\006\003\125\004\010\023  
\014\127\145\163\164\145\162\156\040\103\141\160\145\061\022\060  
\020\006\003\125\004\007\023\011\103\141\160\145\040\124\157\167  
\156\061\035\060\033\006\003\125\004\012\023\024\124\150\141\167  
\164\145\040\103\157\156\163\165\154\164\151\156\147\040\143\143  
\061\050\060\046\006\003\125\004\013\023\037\103\145\162\164\151  
\146\151\143\141\164\151\157\156\040\123\145\162\166\151\143\145  
\163\040\104\151\166\151\163\151\157\156\061\031\060\027\006\003  
\125\004\003\023\020\124\150\141\167\164\145\040\123\145\162\166  
\145\162\040\103\101\061\046\060\044\006\011\052\206\110\206\367  
\015\001\011\001\026\027\163\145\162\166\145\162\055\143\145\162  
\164\163\100\164\150\141\167\164\145\056\143\157\155\060\201\237  
\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003  
\201\215\000\060\201\211\002\201\201\000\323\244\120\156\310\377  
\126\153\346\317\135\266\352\014\150\165\107\242\252\302\332\204  
\045\374\250\364\107\121\332\205\265\040\164\224\206\036\017\165  
\311\351\010\141\365\006\155\060\156\025\031\002\351\122\300\142  
\333\115\231\236\342\152\014\104\070\315\376\276\343\144\011\160  
\305\376\261\153\051\266\057\111\310\073\324\047\004\045\020\227

```
\057\347\220\155\300\050\102\231\327\114\103\336\303\365\041\155
\124\237\135\303\130\341\300\344\331\133\260\270\334\264\173\337
\066\072\302\265\146\042\022\326\207\015\002\003\001\000\001\243
\023\060\021\060\017\006\003\125\035\023\001\001\377\004\005\060
\003\001\001\377\060\015\006\011\052\206\110\206\367\015\001\001
\004\005\000\003\201\201\000\007\372\114\151\134\373\225\314\106
\356\205\203\115\041\060\216\312\331\250\157\111\032\346\332\121
\343\140\160\154\204\141\021\241\032\310\110\076\131\103\175\117
\225\075\241\213\267\013\142\230\172\165\212\335\210\116\116\236
\100\333\250\314\062\164\271\157\015\306\343\263\104\013\331\212
\157\232\051\233\231\030\050\073\321\343\100\050\232\132\074\325
\265\347\040\033\213\312\244\253\215\351\121\331\342\114\054\131
\251\332\271\262\165\033\366\102\362\357\307\362\030\371\211\274
\243\377\212\043\056\160\107
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "Thawte Server CA"

# Issuer: 1.2.840.113549.1.9.1=server-certs@thawte.com,CN=Thawte

Server CA,OU=Certification Services Division,O=Thawte Consulting cc,L=Cape Town,ST=Western Cape,C=ZA

# Serial Number: 1 (0x1)

# Subject: 1.2.840.113549.1.9.1=server-certs@thawte.com,CN=Thawte Server CA,OU=Certification Services

Division,O=Thawte Consulting cc,L=Cape Town,ST=Western Cape,C=ZA

# Not Valid Before: Thu Aug 01 00:00:00 1996

# Not Valid After: Thu Dec 31 23:59:59 2020

# Fingerprint (MD5): c5:70:c4:a2:ed:53:78:0c:c8:10:53:81:64:cb:d0:1d

# Fingerprint (SHA1): 23:e5:94:94:51:95:f2:41:48:03:b4:d5:64:d2:a3:a3:f5:d8:8b:8c

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Thawte Server CA"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\043\345\224\224\121\225\362\101\110\003\264\325\144\322\243\243
\365\330\213\214
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\305\160\304\242\355\123\170\014\310\020\123\201\144\313\320\035
```

END

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\201\304\061\013\060\011\006\003\125\004\006\023\002\132\101
\061\025\060\023\006\003\125\004\010\023\014\127\145\163\164\145
\162\156\040\103\141\160\145\061\022\060\020\006\003\125\004\007
\023\011\103\141\160\145\040\124\157\167\156\061\035\060\033\006
```

```
\003\125\004\012\023\024\124\150\141\167\164\145\040\103\157\156
\163\165\154\164\151\156\147\040\143\143\061\050\060\046\006\003
\125\004\013\023\037\103\145\162\164\151\146\151\143\141\164\151
\157\156\040\123\145\162\166\151\143\145\163\040\104\151\166\151
\163\151\157\156\061\031\060\027\006\003\125\004\003\023\020\124
\150\141\167\164\145\040\123\145\162\166\145\162\040\103\101\061
\046\060\044\006\011\052\206\110\206\367\015\001\011\001\026\027
\163\145\162\166\145\162\055\143\145\162\164\163\100\164\150\141
\167\164\145\056\143\157\155
```

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

```
\002\001\001
```

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING

CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "Thawte Premium Server CA"

# Issuer: 1.2.840.113549.1.9.1=premium-server@thawte.com,CN=Thawte Premium Server CA,OU=Certification Services Division,O=Thawte Consulting cc,L=Cape Town,ST=Western Cape,C=ZA

# Serial Number: 1 (0x1)

# Subject: 1.2.840.113549.1.9.1=premium-server@thawte.com,CN=Thawte Premium Server CA,OU=Certification Services Division,O=Thawte Consulting cc,L=Cape Town,ST=Western Cape,C=ZA

# Not Valid Before: Thu Aug 01 00:00:00 1996

# Not Valid After: Thu Dec 31 23:59:59 2020

# Fingerprint (MD5): 06:9f:69:79:16:66:90:02:1b:8c:8c:a2:c3:07:6f:3a

# Fingerprint (SHA1): 62:7f:8d:78:27:65:63:99:d2:7d:7f:90:44:c9:fe:b3:f3:3e:fa:9a

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Thawte Premium Server CA"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT

MULTILINE\_OCTAL

```
\060\201\316\061\013\060\011\006\003\125\004\006\023\002\132\101
\061\025\060\023\006\003\125\004\010\023\014\127\145\163\164\145
\162\156\040\103\141\160\145\061\022\060\020\006\003\125\004\007
\023\011\103\141\160\145\040\124\157\167\156\061\035\060\033\006
\003\125\004\012\023\024\124\150\141\167\164\145\040\103\157\156
\163\165\154\164\151\156\147\040\143\143\061\050\060\046\006\003
\125\004\013\023\037\103\145\162\164\151\146\151\143\141\164\151
\157\156\040\123\145\162\166\151\143\145\163\040\104\151\166\151
\163\151\157\156\061\041\060\037\006\003\125\004\003\023\030\124
```

\150\141\167\164\145\040\120\162\145\155\151\165\155\040\123\145  
\162\166\145\162\040\103\101\061\050\060\046\006\011\052\206\110  
\206\367\015\001\011\001\026\031\160\162\145\155\151\165\155\055  
\163\145\162\166\145\162\100\164\150\141\167\164\145\056\143\157  
\155

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\316\061\013\060\011\006\003\125\004\006\023\002\132\101  
\061\025\060\023\006\003\125\004\010\023\014\127\145\163\164\145  
\162\156\040\103\141\160\145\061\022\060\020\006\003\125\004\007  
\023\011\103\141\160\145\040\124\157\167\156\061\035\060\033\006  
\003\125\004\012\023\024\124\150\141\167\164\145\040\103\157\156  
\163\165\154\164\151\156\147\040\143\143\061\050\060\046\006\003  
\125\004\013\023\037\103\145\162\164\151\146\151\143\141\164\151  
\157\156\040\123\145\162\166\151\143\145\163\040\104\151\166\151  
\163\151\157\156\061\041\060\037\006\003\125\004\003\023\030\124  
\150\141\167\164\145\040\120\162\145\155\151\165\155\040\123\145  
\162\166\145\162\040\103\101\061\050\060\046\006\011\052\206\110  
\206\367\015\001\011\001\026\031\160\162\145\155\151\165\155\055  
\163\145\162\166\145\162\100\164\150\141\167\164\145\056\143\157  
\155

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\001\001

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\047\060\202\002\220\240\003\002\001\002\002\001\001  
\060\015\006\011\052\206\110\206\367\015\001\001\004\005\000\060  
\201\316\061\013\060\011\006\003\125\004\006\023\002\132\101\061  
\025\060\023\006\003\125\004\010\023\014\127\145\163\164\145\162  
\156\040\103\141\160\145\061\022\060\020\006\003\125\004\007\023  
\011\103\141\160\145\040\124\157\167\156\061\035\060\033\006\003  
\125\004\012\023\024\124\150\141\167\164\145\040\103\157\156\163  
\165\154\164\151\156\147\040\143\143\061\050\060\046\006\003\125  
\004\013\023\037\103\145\162\164\151\146\151\143\141\164\151\157  
\156\040\123\145\162\166\151\143\145\163\040\104\151\166\151\163  
\151\157\156\061\041\060\037\006\003\125\004\003\023\030\124\150  
\141\167\164\145\040\120\162\145\155\151\165\155\040\123\145\162  
\166\145\162\040\103\101\061\050\060\046\006\011\052\206\110\206  
\367\015\001\011\001\026\031\160\162\145\155\151\165\155\055\163  
\145\162\166\145\162\100\164\150\141\167\164\145\056\143\157\155  
\060\036\027\015\071\066\060\070\060\061\060\060\060\060\060\060  
\132\027\015\062\060\061\062\063\061\062\063\065\071\065\071\132  
\060\201\316\061\013\060\011\006\003\125\004\006\023\002\132\101  
\061\025\060\023\006\003\125\004\010\023\014\127\145\163\164\145  
\162\156\040\103\141\160\145\061\022\060\020\006\003\125\004\007

\023\011\103\141\160\145\040\124\157\167\156\061\035\060\033\006  
\003\125\004\012\023\024\124\150\141\167\164\145\040\103\157\156  
\163\165\154\164\151\156\147\040\143\143\061\050\060\046\006\003  
\125\004\013\023\037\103\145\162\164\151\146\151\143\141\164\151  
\157\156\040\123\145\162\166\151\143\145\163\040\104\151\166\151  
\163\151\157\156\061\041\060\037\006\003\125\004\003\023\030\124  
\150\141\167\164\145\040\120\162\145\155\151\165\155\040\123\145  
\162\166\145\162\040\103\101\061\050\060\046\006\011\052\206\110  
\206\367\015\001\011\001\026\031\160\162\145\155\151\165\155\055  
\163\145\162\166\145\162\100\164\150\141\167\164\145\056\143\157  
\155\060\201\237\060\015\006\011\052\206\110\206\367\015\001\001  
\001\005\000\003\201\215\000\060\201\211\002\201\201\000\322\066  
\066\152\213\327\302\133\236\332\201\101\142\217\070\356\111\004  
\125\326\320\357\034\033\225\026\107\357\030\110\065\072\122\364  
\053\152\006\217\073\057\352\126\343\257\206\215\236\027\367\236  
\264\145\165\002\115\357\313\011\242\041\121\330\233\320\147\320  
\272\015\222\006\024\163\324\223\313\227\052\000\234\134\116\014  
\274\372\025\122\374\362\104\156\332\021\112\156\010\237\057\055  
\343\371\252\072\206\163\266\106\123\130\310\211\005\275\203\021  
\270\163\077\252\007\215\364\102\115\347\100\235\034\067\002\003  
\001\000\001\243\023\060\021\060\017\006\003\125\035\023\001\001  
\377\004\005\060\003\001\001\377\060\015\006\011\052\206\110\206  
\367\015\001\001\004\005\000\003\201\201\000\046\110\054\026\302  
\130\372\350\026\164\014\252\252\137\124\077\362\327\311\170\140  
\136\136\156\067\143\042\167\066\176\262\027\304\064\271\365\010  
\205\374\311\001\070\377\115\276\362\026\102\103\347\273\132\106  
\373\301\306\021\037\361\112\260\050\106\311\303\304\102\175\274  
\372\253\131\156\325\267\121\210\021\343\244\205\031\153\202\114  
\244\014\022\255\351\244\256\077\361\303\111\145\232\214\305\310  
\076\045\267\224\231\273\222\062\161\007\360\206\136\355\120\047  
\246\015\246\043\371\273\313\246\007\024\102

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "Thawte Premium Server CA"

# Issuer: 1.2.840.113549.1.9.1=premium-server@thawte.com,CN=Thawte Premium Server CA,OU=Certification  
Services Division,O=Thawte Consulting cc,L=Cape Town,ST=Western Cape,C=ZA

# Serial Number: 1 (0x1)

# Subject: 1.2.840.113549.1.9.1=premium-server@thawte.com,CN=Thawte Premium Server CA,OU=Certification  
Services Division,O=Thawte Consulting cc,L=Cape Town,ST=Western Cape,C=ZA

# Not Valid Before: Thu Aug 01 00:00:00 1996

# Not Valid After: Thu Dec 31 23:59:59 2020

# Fingerprint (MD5): 06:9f:69:79:16:66:90:02:1b:8c:8c:a2:c3:07:6f:3a

# Fingerprint (SHA1): 62:7f:8d:78:27:65:63:99:d2:7d:7f:90:44:c9:fe:b3:f3:3e:fa:9a



```

CKA_CLASS
CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Thawte Premium Server CA"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\142\177\215\170\047\145\143\231\322\175\177\220\104\311\376\263
\363\076\372\232
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\006\237\151\171\026\146\220\002\033\214\214\242\303\007\157\072
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\316\061\013\060\011\006\003\125\004\006\023\002\132\101
\061\025\060\023\006\003\125\004\010\023\014\127\145\163\164\145
\162\156\040\103\141\160\145\061\022\060\020\006\003\125\004\007
\023\011\103\141\160\145\040\124\157\167\156\061\035\060\033\006
\003\125\004\012\023\024\124\150\141\167\164\145\040\103\157\156
\163\165\154\164\151\156\147\040\143\143\061\050\060\046\006\003
\125\004\013\023\037\103\145\162\164\151\146\151\143\141\164\151
\157\156\040\123\145\162\166\151\143\145\163\040\104\151\166\151
\163\151\157\156\061\041\060\037\006\003\125\004\003\023\030\124
\150\141\167\164\145\040\120\162\145\155\151\165\155\040\123\145
\162\166\145\162\040\103\101\061\050\060\046\006\011\052\206\110
\206\367\015\001\011\001\026\031\160\162\145\155\151\165\155\055
\163\145\162\166\145\162\100\164\150\141\167\164\145\056\143\157
\155
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\001\001
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "Equifax Secure Global eBusiness CA-1"
# Issuer: CN=Equifax Secure Global eBusiness CA-1,O=Equifax Secure Inc.,C=US
# Serial Number: 1 (0x1)
# Subject: CN=Equifax Secure Global eBusiness CA-1,O=Equifax Secure Inc.,C=US
# Not Valid Before: Mon Jun 21 04:00:00 1999
# Not Valid After: Sun Jun 21 04:00:00 2020
# Fingerprint (MD5): 8f:5d:77:06:27:c4:98:3c:5b:93:78:e7:d7:7d:9b:cc
# Fingerprint

```

```
(SHA1): 7e:78:4a:10:1c:82:65:cc:2d:e1:f1:6d:47:b4:40:ca:d9:0a:19:45
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Equifax Secure Global eBusiness CA-1"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\132\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\034\060\032\006\003\125\004\012\023\023\105\161\165\151\146\141
\170\040\123\145\143\165\162\145\040\111\156\143\056\061\055\060
\053\006\003\125\004\003\023\044\105\161\165\151\146\141\170\040
\123\145\143\165\162\145\040\107\154\157\142\141\154\040\145\102
\165\163\151\156\145\163\163\040\103\101\055\061
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\132\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\034\060\032\006\003\125\004\012\023\023\105\161\165\151\146\141
\170\040\123\145\143\165\162\145\040\111\156\143\056\061\055\060
\053\006\003\125\004\003\023\044\105\161\165\151\146\141\170\040
\123\145\143\165\162\145\040\107\154\157\142\141\154\040\145\102
\165\163\151\156\145\163\163\040\103\101\055\061
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\001\001
END
CKA_VALUE MULTILINE_OCTAL
\060\202\002\220\060\202\001\371\240\003\002\001\002\002\001\001
\060\015\006\011\052\206\110\206\367\015\001\001\004\005\000\060
\132\061\013\060\011\006\003\125\004\006\023\002\125\123\061\034
\060\032\006\003\125\004\012\023\023\105\161\165\151\146\141\170
\040\123\145\143\165\162\145\040\111\156\143\056\061\055\060\053
\006\003\125\004\003\023\044\105\161\165\151\146\141\170\040\123
\145\143\165\162\145\040\107\154\157\142\141\154\040\145\102\165
\163\151\156\145\163\163\040\103\101\055\061\060\036\027\015\071
\071\060\066\062\061\060\064\060\060\060\060\132\027\015\062\060
\060\066\062\061\060\064\060\060\060\060\132\060\132\061\013\060
\011\006\003\125\004\006\023\002\125\123\061\034\060\032\006\003
\125\004\012\023\023\105\161\165\151\146\141\170\040\123\145\143
\165\162\145\040\111\156\143\056\061\055\060\053\006\003\125\004
\003\023\044\105\161\165\151\146\141\170\040\123\145\143\165\162
\145\040\107\154\157\142\141\154\040\145\102\165\163\151\156\145
\163\163\040\103\101\055\061\060\201\237\060\015\006\011\052\206
\110\206\367\015\001\001\001\005\000\003\201\215\000\060\201\211
\002\201\201\000\272\347\027\220\002\145\261\064\125\074\111\302
\121\325\337\247\321\067\217\321\347\201\163\101\122\140\233\235
```

\241\027\046\170\255\307\261\350\046\224\062\265\336\063\215\072  
\057\333\362\232\172\132\163\230\243\134\351\373\212\163\033\134  
\347\303\277\200\154\315\251\364\326\053\300\367\371\231\252\143  
\242\261\107\002\017\324\344\121\072\022\074\154\212\132\124\204  
\160\333\301\305\220\317\162\105\313\250\131\300\315\063\235\077  
\243\226\353\205\063\041\034\076\036\076\140\156\166\234\147\205  
\305\310\303\141\002\003\001\000\001\243\146\060\144\060\021\006  
\011\140\206\110\001\206\370\102\001\001\004\004\003\002\000\007  
\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001  
\377\060\037\006\003\125\035\043\004\030\060\026\200\024\276\250  
\240\164\162\120\153\104\267\311\043\330\373\250\377\263\127\153  
\150\154\060\035\006\003\125\035\016\004\026\004\024\276\250\240  
\164\162\120\153\104\267\311\043\330\373\250\377\263\127\153\150  
\154\060\015\006\011\052\206\110\206\367\015\001\001\004\005\000  
\003\201\201\000\060\342\001\121\252\307\352\137\332\271\320\145  
\017\060\326\076\332\015\024\111\156\221\223\047\024\061\357\304  
\367\055\105\370\354\307\277\242\101\015\043\264\222\371\031\000  
\147\275\001\257\315\340\161\374\132\317\144\304\340\226\230\320  
\243\100\342\001\212\357\047\007\361\145\001\212\104\055\006\145  
\165\122\300\206\020\040\041\137\154\153\017\154\256\011\034\257  
\362\242\030\064\304\165\244\163\034\361\215\334\357\255\371\263  
\166\264\222\277\334\225\020\036\276\313\310\073\132\204\140\031  
\126\224\251\125

END

CKA\_NSS\_Mozilla\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER

CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "Equifax Secure Global eBusiness CA-1"

# Issuer: CN=Equifax Secure Global eBusiness CA-1,O=Equifax Secure Inc.,C=US

# Serial Number: 1 (0x1)

# Subject: CN=Equifax Secure Global eBusiness CA-1,O=Equifax Secure Inc.,C=US

# Not Valid Before: Mon Jun 21 04:00:00 1999

# Not Valid After: Sun Jun 21 04:00:00 2020

# Fingerprint (MD5): 8f:5d:77:06:27:c4:98:3c:5b:93:78:e7:d7:7d:9b:cc

# Fingerprint (SHA1): 7e:78:4a:10:1c:82:65:cc:2d:e1:f1:6d:47:b4:40:ca:d9:0a:19:45

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Equifax Secure Global eBusiness CA-1"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\176\170\112\020\034\202\145\314\055\341\361\155\107\264\100\312  
\331\012\031\105

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\217\135\167\006\047\304\230\074\133\223\170\347\327\175\233\314
END
CKA_ISSUER MULTILINE_OCTAL
\060\132\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\034\060\032\006\003\125\004\012\023\023\105\161\165\151\146\141
\170\040\123\145\143\165\162\145\040\111\156\143\056\061\055\060
\053\006\003\125\004\003\023\044\105\161\165\151\146\141\170\040
\123\145\143\165\162\145\040\107\154\157\142\141\154\040\145\102
\165\163\151\156\145\163\163\040\103\101\055\061
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\001\001
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
# Microsoft Code Signing Only Certificate
# Certificate "Equifax"
# Issuer: OU=Equifax Secure Certificate Authority,O=Equifax,C=US
# Serial Number:35:de:f4:cf
# Subject: OU=Equifax Secure Certificate Authority,O=Equifax,C=US
# Not Valid Before: Sat Aug 22 16:41:51 1998
# Not Valid After: Wed Aug 22 16:41:51 2018
# Fingerprint (MD5): 67:cb:9d:c0:13:24:8a:82:9b:b2:17:1e:d1:1b:ec:d4
#
```

```
Fingerprint (SHA1): d2:32:09:ad:23:d3:14:23:21:74:e4:0d:7f:9d:62:13:97:86:63:3a
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Equifax"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\116\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\020\060\016\006\003\125\004\012\023\007\105\161\165\151\146\141
\170\061\055\060\053\006\003\125\004\013\023\044\105\161\165\151
\146\141\170\040\123\145\143\165\162\145\040\103\145\162\164\151
\146\151\143\141\164\145\040\101\165\164\150\157\162\151\164\171
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\116\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\020\060\016\006\003\125\004\012\023\007\105\161\165\151\146\141
\170\061\055\060\053\006\003\125\004\013\023\044\105\161\165\151
```

\146\141\170\040\123\145\143\165\162\145\040\103\145\162\164\151  
\146\151\143\141\164\145\040\101\165\164\150\157\162\151\164\171  
END  
CKA\_SERIAL\_NUMBER  
MULTILINE\_OCTAL  
\002\004\065\336\364\317  
END  
CKA\_VALUE MULTILINE\_OCTAL  
\060\202\003\040\060\202\002\211\240\003\002\001\002\002\004\065  
\336\364\317\060\015\006\011\052\206\110\206\367\015\001\001\005  
\005\000\060\116\061\013\060\011\006\003\125\004\006\023\002\125  
\123\061\020\060\016\006\003\125\004\012\023\007\105\161\165\151  
\146\141\170\061\055\060\053\006\003\125\004\013\023\044\105\161  
\165\151\146\141\170\040\123\145\143\165\162\145\040\103\145\162  
\164\151\146\151\143\141\164\145\040\101\165\164\150\157\162\151  
\164\171\060\036\027\015\071\070\060\070\062\062\061\066\064\061  
\065\061\132\027\015\061\070\060\070\062\062\061\066\064\061\065  
\061\132\060\116\061\013\060\011\006\003\125\004\006\023\002\125  
\123\061\020\060\016\006\003\125\004\012\023\007\105\161\165\151  
\146\141\170\061\055\060\053\006\003\125\004\013\023\044\105\161  
\165\151\146\141\170\040\123\145\143\165\162\145\040\103\145\162  
\164\151\146\151\143\141\164\145\040\101\165\164\150\157\162\151  
\164\171\060\201\237\060\015\006\011\052\206\110\206\367\015\001  
\001\001\005\000\003\201\215\000\060\201\211\002\201\201\000\301  
\135\261\130\147\010\142\356\240\232\055\037\010\155\221\024\150  
\230\012\036\376\332\004\157\023\204\142\041\303\321\174\316\237  
\005\340\270\001\360\116\064\354\342\212\225\004\144\254\361\153  
\123\137\005\263\313\147\200\277\102\002\216\376\335\001\011\354  
\341\000\024\117\374\373\360\014\335\103\272\133\053\341\037\200  
\160\231\025\127\223\026\361\017\227\152\267\302\150\043\034\314  
\115\131\060\254\121\036\073\257\053\326\356\143\105\173\305\331  
\137\120\322\343\120\017\072\210\347\277\024\375\340\307\271\002  
\003\001\000\001\243\202\001\011\060\202\001\005\060\160\006\003  
\125\035\037\004\151\060\147\060\145\240\143\240\141\244\137\060  
\135\061\013\060\011\006\003\125\004\006\023\002\125\123\061\020  
\060\016\006\003\125\004\012\023\007\105\161\165\151\146\141\170  
\061\055\060\053\006\003\125\004\013\023\044\105\161\165\151\146  
\141\170\040\123\145\143\165\162\145\040\103\145\162\164\151\146  
\151\143\141\164\145\040\101\165\164\150\157\162\151\164\171\061  
\015\060\013\006\003\125\004\003\023\004\103\122\114\061\060\032  
\006\003\125\035\020\004\023\060\021\201\017\062\060\061\070\060  
\070\062\062\061\066\064\061\065\061\132\060\013\006\003\125\035  
\017\004\004\003\002\001\006\060\037\006\003\125\035\043\004\030  
\060\026\200\024\110\346\150\371\053\322\262\225\327\107\330\043  
\040\020\117\063\230\220\237\324\060\035\006\003\125\035\016\004  
\026\004\024\110\346\150\371\053\322\262\225\327\107\330\043\040  
\020\117\063\230\220\237\324\060\014\006\003\125\035\023\004\005  
\060\003\001\001\377\060\032\006\011\052\206\110\206\366\175\007

```
\101\000\004\015\060\013\033\005\126\063\056\060\143\003\002\006
\300\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000
\003\201\201\000\130\316\051\352\374\367\336\265\316\002\271\027
\265\205\321\271\343\340\225\314\045\061\015\000\246\222\156\177
\266\222\143\236\120\225\321\232\157\344\021\336\143\205\156\230
\356\250\377\132\310\323\125\262\146\161\127\336\300\041\353\075
\052\247\043\111\001\004\206\102\173\374\356\177\242\026\122\265
\147\147\323\100\333\073\046\130\262\050\167\075\256\024\167\141
\326\372\052\146\047\240\015\372\247\163\134\352\160\361\224\041
\145\104\137\372\374\357\051\150\251\242\207\171\357\171\357\117
\254\007\167\070
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "Equifax"

# Issuer: OU=Equifax Secure Certificate Authority,O=Equifax,C=US

# Serial Number:35:de:f4:cf

# Subject: OU=Equifax Secure Certificate Authority,O=Equifax,C=US

# Not Valid Before: Sat Aug 22 16:41:51 1998

# Not Valid After: Wed Aug 22 16:41:51 2018

# Fingerprint (MD5): 67:cb:9d:c0:13:24:8a:82:9b:b2:17:1e:d1:1b:ec:d4

# Fingerprint (SHA1): d2:32:09:ad:23:d3:14:23:21:74:e4:0d:7f:9d:62:13:97:86:63:3a

CKA\_CLASS

CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Equifax"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\322\062\011\255\043\323\024\043\041\164\344\015\177\235\142\023
\227\206\143\072
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\147\313\235\300\023\044\212\202\233\262\027\036\321\033\354\324
```

END

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\116\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\020\060\016\006\003\125\004\012\023\007\105\161\165\151\146\141
\170\061\055\060\053\006\003\125\004\013\023\044\105\161\165\151
\146\141\170\040\123\145\143\165\162\145\040\103\145\162\164\151
\146\151\143\141\164\145\040\101\165\164\150\157\162\151\164\171
```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

```
\002\004\065\336\364\317
```

```
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED
CK_BBOOL CK_FALSE
```

```
# Microsoft Code Signing Only Certificate
# Certificate "Class 1 Primary CA"
# Issuer: CN=Class 1 Primary CA,O=Certplus,C=FR
# Serial Number:86:fe:1d:5f:c3:81:f8:47:d7:33:2c:73:94:75:7b:37
# Subject: CN=Class 1 Primary CA,O=Certplus,C=FR
# Not Valid Before: Wed Jul 07 17:01:00 1999
# Not Valid After: Mon Jul 06 23:59:59 2020
# Fingerprint (MD5): 21:24:a6:81:c1:d8:f2:19:af:49:98:e3:9d:fe:0b:f4
# Fingerprint (SHA1): 6a:17:45:70:a9:16:fb:e8:44:53:ee:d3:d0:70:a1:d8:da:44:28:29
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Class 1 Primary CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\075\061\013\060\011\006\003\125\004\006\023\002\106\122\061
\021\060\017\006\003\125\004\012\023\010\103\145\162\164\160\154
\165\163\061\033\060\031\006\003\125\004\003\023\022\103\154\141
\163\163\040\061\040\120\162\151\155\141\162\171\040\103\101
```

```
END
```

```
CKA_ID
UTF8 "0"
```

```
CKA_ISSUER MULTILINE_OCTAL
\060\075\061\013\060\011\006\003\125\004\006\023\002\106\122\061
\021\060\017\006\003\125\004\012\023\010\103\145\162\164\160\154
\165\163\061\033\060\031\006\003\125\004\003\023\022\103\154\141
\163\163\040\061\040\120\162\151\155\141\162\171\040\103\101
```

```
END
```

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\021\000\206\376\035\137\303\201\370\107\327\063\054\163\224
\165\173\067
```

```
END
```

```
CKA_VALUE MULTILINE_OCTAL
\060\202\003\222\060\202\002\172\240\003\002\001\002\002\021\000
\206\376\035\137\303\201\370\107\327\063\054\163\224\165\173\067
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060
\075\061\013\060\011\006\003\125\004\006\023\002\106\122\061\021
\060\017\006\003\125\004\012\023\010\103\145\162\164\160\154\165
\163\061\033\060\031\006\003\125\004\003\023\022\103\154\141\163
\163\040\061\040\120\162\151\155\141\162\171\040\103\101\060\036
```

\027\015\071\071\060\067\060\067\061\067\060\061\060\060\132\027  
\015\062\060\060\067\060\066\062\063\065\071\065\071\132\060\075  
\061\013\060\011\006\003\125\004\006\023\002\106\122\061\021\060  
\017\006\003\125\004\012\023\010\103\145\162\164\160\154\165\163  
\061\033\060\031\006\003\125\004\003\023\022\103\154\141\163\163  
\040\061\040\120\162\151\155\141\162\171\040\103\101\060\202\001  
\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000  
\003\202\001\017\000\060\202\001\012\002\202\001\001\000\303\153  
\051\310\056\307\256\174\122\005\351\223\211\126\012\132\171\311  
\314\334\045\357\207\212\055\005\330\201\027\004\033\072\105\370  
\171\016\015\111\324\201\101\310\253\105\373\165\310\025\362\342  
\320\274\331\141\154\204\244\023\031\247\331\371\362\111\334\114  
\017\306\175\127\264\023\334\036\011\161\051\066\235\200\130\364  
\033\330\211\024\353\323\322\223\113\052\361\167\347\152\145\275  
\031\345\252\375\014\112\143\341\302\231\264\017\004\266\132\033  
\066\074\067\074\277\305\345\136\361\137\127\016\037\307\375\054  
\347\344\157\152\233\142\226\071\021\233\146\360\054\266\122\334  
\341\047\377\333\155\376\353\253\143\024\035\143\210\143\342\026  
\014\371\040\124\017\233\335\025\152\166\203\117\275\047\213\123  
\246\067\322\207\362\107\120\122\073\146\351\321\170\032\033\262  
\073\151\360\131\074\070\133\321\052\114\063\136\016\312\126\245  
\355\055\133\202\203\115\326\070\116\212\126\266\152\057\044\153  
\022\060\246\052\336\257\014\273\252\104\022\034\023\305\145\017  
\343\375\330\032\061\113\344\077\014\174\105\350\026\063\002\003  
\001\000\001\243\201\214\060\201\211\060\017\006\003\125\035\023  
\004\010\060\006\001\001\377\002\001\012\060\013\006\003\125\035  
\017\004\004\003\002\001\006\060\035\006\003\125\035\016\004\026  
\004\024\043\056\337\351\201\264\320\204\375\216\273\251\335\371  
\014\243\343\363\111\123\060\021\006\011\140\206\110\001\206\370  
\102\001\001\004\004\003\002\001\006\060\067\006\003\125\035\037  
\004\060\060\056\060\054\240\052\240\050\206\046\150\164\164\160  
\072\057\057\167\167\167\056\143\145\162\164\160\154\165\163\056  
\143\157\155\057\103\122\114\057\143\154\141\163\163\061\056\143  
\162\154\060\015\006\011\052\206\110\206\367\015\001\001\005\005  
\000\003\202\001\001\000\276\046\123\326\136\237\220\077\001\224  
\002\354\010\301\210\232\320\247\372\120\015\332\374\224\035\250  
\324\120\043\320\237\034\213\141\261\262\252\104\017\254\330\023  
\015\325\326\241\350\061\170\320\357\036\203\100\232\345\375\101  
\351\222\375\356\243\225\220\363\300\270\157\176\367\064\245\241  
\337\074\363\336\126\262\307\337\207\046\104\307\342\203\271\023  
\157\060\105\161\051\042\025\253\304\333\077\117\363\167\371\231  
\030\064\365\163\222\175\067\146\147\111\156\063\232\115\051\224  
\213\275\120\071\143\145\017\020\347\173\020\152\321\107\371\236  
\045\014\047\051\302\333\010\210\347\252\211\072\105\252\237\111  
\262\175\352\150\212\100\376\221\301\302\111\377\041\321\147\016  
\032\022\035\112\056\034\373\224\371\155\073\171\062\371\036\051  
\221\012\102\226\105\361\357\312\130\017\162\235\014\251\203\274  
\062\335\230\004\321\131\341\144\027\275\314\201\243\003\136\226



```
\140\345\177\026\070\012\153\321\372\263\204\235\052\312\076\373
\102\370\117\350\247\133\050\031\030\255\340\246\146\036\260\051
\041\362\270\231\217\377
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "Class 1 Primary CA"

# Issuer: CN=Class 1 Primary CA,O=Certplus,C=FR

# Serial Number:86:fe:1d:5f:c3:81:f8:47:d7:33:2c:73:94:75:7b:37

# Subject: CN=Class 1 Primary CA,O=Certplus,C=FR

# Not Valid Before: Wed Jul 07 17:01:00 1999

# Not Valid After: Mon Jul 06 23:59:59 2020

# Fingerprint (MD5): 21:24:a6:81:c1:d8:f2:19:af:49:98:e3:9d:fe:0b:f4

# Fingerprint (SHA1): 6a:17:45:70:a9:16:fb:e8:44:53:ee:d3:d0:70:a1:d8:da:44:28:29

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Class 1 Primary CA"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\152\027\105\160\251\026\373\350\104\123\356\323\320\160\241\330
\332\104\050\051
```

END

CKA\_CERT\_MD5\_HASH

MULTILINE\_OCTAL

```
\041\044\246\201\301\330\362\031\257\111\230\343\235\376\013\364
```

END

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\075\061\013\060\011\006\003\125\004\006\023\002\106\122\061
\021\060\017\006\003\125\004\012\023\010\103\145\162\164\160\154
\165\163\061\033\060\031\006\003\125\004\003\023\022\103\154\141
\163\163\040\061\040\120\162\151\155\141\162\171\040\103\101
```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

```
\002\021\000\206\376\035\137\303\201\370\107\327\063\054\163\224
\165\173\067
```

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "UTN-USERFirst-Object"

```
# Issuer: CN=UTN-USERFirst-Object,OU=http://www.usertrust.com,O=The USERTRUST Network,L=Salt Lake
City,ST=UT,C=US
#
Serial Number:44:be:0c:8b:50:00:24:b4:11:d3:36:2d:e0:b3:5f:1b
# Subject: CN=UTN-USERFirst-Object,OU=http://www.usertrust.com,O=The USERTRUST Network,L=Salt Lake
City,ST=UT,C=US
# Not Valid Before: Fri Jul 09 18:31:20 1999
# Not Valid After: Tue Jul 09 18:40:36 2019
# Fingerprint (MD5): a7:f2:e4:16:06:41:11:50:30:6b:9c:e3:b4:9c:b0:c9
# Fingerprint (SHA1): e1:2d:fb:4b:41:d7:d9:c3:2b:30:51:4b:ac:1d:81:d8:38:5e:2d:46
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "UTN-USERFirst-Object"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\225\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\013\060\011\006\003\125\004\010\023\002\125\124\061\027\060
\025\006\003\125\004\007\023\016\123\141\154\164\040\114\141\153
\145\040\103\151\164\171\061\036\060\034\006\003\125\004\012\023
\025\124\150\145\040\125\123\105\122\124\122\125\123\124\040\116
\145\164\167\157\162\153\061\041\060\037\006\003\125\004\013\023
\030\150\164\164\160\072\057\057\167\167\167\056\165\163\145\162
\164\162\165\163\164\056\143\157\155\061\035\060\033\006\003\125
\004\003\023\024\125\124\116\055\125\123\105\122\106\151\162\163
\164\055\117\142\152\145\143\164
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\225\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\013\060\011\006\003\125\004\010\023\002\125\124\061\027\060
\025\006\003\125\004\007\023\016\123\141\154\164\040\114\141\153
\145\040\103\151\164\171\061\036\060\034\006\003\125\004\012\023
\025\124\150\145\040\125\123\105\122\124\122\125\123\124\040\116
\145\164\167\157\162\153\061\041\060\037\006\003\125\004\013\023
\030\150\164\164\160\072\057\057\167\167\167\056\165\163\145\162
\164\162\165\163\164\056\143\157\155\061\035\060\033\006\003\125
\004\003\023\024\125\124\116\055\125\123\105\122\106\151\162\163
\164\055\117\142\152\145\143\164
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\104\276\014\213\120\000\044\264\021\323\066\055\340\263
\137\033
END
CKA_VALUE
```

MULTILINE\_OCTAL

\060\202\004\146\060\202\003\116\240\003\002\001\002\002\020\104  
\276\014\213\120\000\044\264\021\323\066\055\340\263\137\033\060  
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\201  
\225\061\013\060\011\006\003\125\004\006\023\002\125\123\061\013  
\060\011\006\003\125\004\010\023\002\125\124\061\027\060\025\006  
\003\125\004\007\023\016\123\141\154\164\040\114\141\153\145\040  
\103\151\164\171\061\036\060\034\006\003\125\004\012\023\025\124  
\150\145\040\125\123\105\122\124\122\125\123\124\040\116\145\164  
\167\157\162\153\061\041\060\037\006\003\125\004\013\023\030\150  
\164\164\160\072\057\057\167\167\167\056\165\163\145\162\164\162  
\165\163\164\056\143\157\155\061\035\060\033\006\003\125\004\003  
\023\024\125\124\116\055\125\123\105\122\106\151\162\163\164\055  
\117\142\152\145\143\164\060\036\027\015\071\071\060\067\060\071  
\061\070\063\061\062\060\132\027\015\061\071\060\067\060\071\061  
\070\064\060\063\066\132\060\201\225\061\013\060\011\006\003\125  
\004\006\023\002\125\123\061\013\060\011\006\003\125\004\010\023  
\002\125\124\061\027\060\025\006\003\125\004\007\023\016\123\141  
\154\164\040\114\141\153\145\040\103\151\164\171\061\036\060\034  
\006\003\125\004\012\023\025\124\150\145\040\125\123\105\122\124  
\122\125\123\124\040\116\145\164\167\157\162\153\061\041\060\037  
\006\003\125\004\013\023\030\150\164\164\160\072\057\057\167\167  
\167\056\165\163\145\162\164\162\165\163\164\056\143\157\155\061  
\035\060\033\006\003\125\004\003\023\024\125\124\116\055\125\123  
\105\122\106\151\162\163\164\055\117\142\152\145\143\164\060\202  
\001\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005  
\000\003\202\001\017\000\060\202\001\012\002\202\001\001\000\316  
\252\201\077\243\243\141\170\252\061\000\125\225\021\236\047\017  
\037\034\337\072\233\202\150\060\300\112\141\035\361\057\016\372  
\276\171\367\245\043\357\125\121\226\204\315\333\343\271\156\076  
\061\330\012\040\147\307\364\331\277\224\353\107\004\076\002\316  
\052\242\135\207\004\011\366\060\235\030\212\227\262\252\034\374  
\101\322\241\066\313\373\075\221\272\347\331\160\065\372\344\347  
\220\303\233\243\233\323\074\365\022\231\167\261\267\011\340\150  
\346\034\270\363\224\143\210\152\152\376\013\166\311\276\364\042  
\344\147\271\253\032\136\167\301\205\007\335\015\154\277\356\006  
\307\167\152\101\236\247\017\327\373\356\224\027\267\374\205\276  
\244\253\304\034\061\335\327\266\321\344\360\357\337\026\217\262  
\122\223\327\241\324\211\241\007\056\277\341\001\022\102\036\032  
\341\330\225\064\333\144\171\050\377\272\056\021\302\345\350\133  
\222\110\373\107\013\302\154\332\255\062\203\101\363\245\345\101  
\160\375\145\220\155\372\372\121\304\371\275\226\053\031\004\054  
\323\155\247\334\360\177\157\203\145\342\152\253\207\206\165\002  
\003\001\000\001\243\201\257\060\201\254\060\013\006\003\125\035  
\017\004\004\003\002\001\306\060\017\006\003\125\035\023\001\001  
\377\004\005\060\003\001\001\377\060\035\006\003\125\035\016\004  
\026\004\024\332\355\144\164\024\234\024\074\253\335\231\251\275  
\133\050\115\213\074\311\330\060\102\006\003\125\035\037\004\073

\060\071\060\067\240\065\240\063\206\061\150\164\164\160\072\057  
\057\143\162\154\056\165\163\145\162\164\162\165\163\164\056\143  
\157\155\057\125\124\116\055\125\123\105\122\106\151\162\163\164  
\055\117\142\152\145\143\164\056\143\162\154\060\051\006\003\125  
\035\045\004\042\060\040\006\010\053\006\001\005\005\007\003\003  
\006\010\053\006\001\005\005\007\003\010\006\012\053\006\001\004  
\001\202\067\012\003\004\060\015\006\011\052\206\110\206\367\015  
\001\001\005\005\000\003\202\001\001\000\010\037\122\261\067\104  
\170\333\375\316\271\332\225\226\230\252\125\144\200\265\132\100  
\335\041\245\305\301\363\137\054\114\310\107\132\151\352\350\360  
\065\065\364\320\045\363\310\246\244\207\112\275\033\261\163\010  
\275\324\303\312\266\065\273\131\206\167\061\315\247\200\024\256  
\023\357\374\261\110\371\153\045\045\055\121\266\054\155\105\301  
\230\310\212\126\135\076\356\103\116\076\153\047\216\320\072\113  
\205\013\137\323\355\152\247\165\313\321\132\207\057\071\165\023  
\132\162\260\002\201\237\276\360\017\204\124\040\142\154\151\324  
\341\115\306\015\231\103\001\015\022\226\214\170\235\277\120\242  
\261\104\252\152\317\027\172\317\157\017\324\370\044\125\137\360  
\064\026\111\146\076\120\106\311\143\161\070\061\142\270\142\271  
\363\123\255\154\265\053\242\022\252\031\117\011\332\136\347\223  
\306\216\024\010\376\360\060\200\030\240\206\205\115\310\175\327  
\213\003\376\156\325\367\235\026\254\222\054\240\043\345\234\221  
\122\037\224\337\027\224\163\303\263\301\301\161\005\040\000\170  
\275\023\122\035\250\076\315\000\037\310

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "UTN-USERFirst-Object"

# Issuer: CN=UTN-USERFirst-Object,OU=http://www.usertrust.com,O=The USERTRUST Network,L=Salt  
Lake City,ST=UT,C=US

# Serial Number:44:be:0c:8b:50:00:24:b4:11:d3:36:2d:e0:b3:5f:1b

# Subject: CN=UTN-USERFirst-Object,OU=http://www.usertrust.com,O=The USERTRUST Network,L=Salt Lake  
City,ST=UT,C=US

# Not Valid Before: Fri Jul 09 18:31:20 1999

# Not Valid After: Tue Jul 09 18:40:36 2019

# Fingerprint (MD5): a7:f2:e4:16:06:41:11:50:30:6b:9c:e3:b4:9c:b0:c9

# Fingerprint (SHA1): e1:2d:fb:4b:41:d7:d9:c3:2b:30:51:4b:ac:1d:81:d8:38:5e:2d:46

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "UTN-USERFirst-Object"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\341\055\373\113\101\327\331\303\053\060\121\113\254\035\201\330

```

\070\136\055\106
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\247\362\344\026\006\101\021\120\060\153\234\343\264\234\260\311
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\225\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\013\060\011\006\003\125\004\010\023\002\125\124\061\027\060
\025\006\003\125\004\007\023\016\123\141\154\164\040\114\141\153
\145\040\103\151\164\171\061\036\060\034\006\003\125\004\012\023
\025\124\150\145\040\125\123\105\122\124\122\125\123\124\040\116
\145\164\167\157\162\153\061\041\060\037\006\003\125\004\013\023
\030\150\164\164\160\072\057\057\167\167\167\056\165\163\145\162
\164\162\165\163\164\056\143\157\155\061\035\060\033\006\003\125
\004\003\023\024\125\124\116\055\125\123\105\122\106\151\162\163
\164\055\117\142\152\145\143\164
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\104\276\014\213\120\000\044\264\021\323\066\055\340\263
\137\033
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "BYTE Root Certification Authority 001"
# Issuer: CN=BYTE Root Certification Authority 001,O=BYTE Computer S.A.,C=GR
#
Serial Number:71:8c:2f:39:7c:40:74:40
# Subject: CN=BYTE Root Certification Authority 001,O=BYTE Computer S.A.,C=GR
# Not Valid Before: Wed Sep 10 22:01:54 2014
# Not Valid After: Sat Sep 10 22:01:54 2039
# Fingerprint (MD5): fa:fb:82:6a:e5:b3:a2:83:50:9b:83:28:b6:41:42:03
# Fingerprint (SHA1): 3f:0f:eb:17:a7:ef:58:04:cf:d9:0a:77:b7:bb:02:1e:a6:9c:64:18
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "BYTE Root Certification Authority 001"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\132\061\013\060\011\006\003\125\004\006\023\002\107\122\061
\033\060\031\006\003\125\004\012\014\022\102\131\124\105\040\103
\157\155\160\165\164\145\162\040\123\056\101\056\061\056\060\054
\006\003\125\004\003\014\045\102\131\124\105\040\122\157\157\164

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\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101  
\165\164\150\157\162\151\164\171\040\060\060\061  
END  
CKA\_ID  
UTF8 "0"  
CKA\_ISSUER MULTILINE\_OCTAL  
\060\132\061\013\060\011\006\003\125\004\006\023\002\107\122\061  
\033\060\031\006\003\125\004\012\014\022\102\131\124\105\040\103  
\157\155\160\165\164\145\162\040\123\056\101\056\061\056\060\054  
\006\003\125\004\003\014\045\102\131\124\105\040\122\157\157\164  
\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101  
\165\164\150\157\162\151\164\171\040\060\060\061  
END  
CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL  
\002\010\161\214\057\071\174\100\164\100  
END  
CKA\_VALUE MULTILINE\_OCTAL  
\060\202\005\231\060\202\003\201\240\003\002\001\002\002\010\161  
\214\057\071\174\100\164\100\060\015\006\011\052\206\110\206\367  
\015\001\001\013\005\000\060\132\061\013\060\011\006\003\125\004  
\006\023\002\107\122\061\033\060\031\006\003\125\004\012\014\022  
\102\131\124\105\040\103\157\155\160\165\164\145\162\040\123\056  
\101\056\061\056\060\054\006\003\125\004\003\014\045\102\131\124  
\105\040\122\157\157\164\040\103\145\162\164\151\146\151\143\141  
\164\151\157\156\040\101\165\164\150\157\162\151\164\171\040\060  
\060\061\060\036\027\015\061\064\060\071\061\060\062\062\060\061  
\065\064\132\027\015\063\071\060\071\061\060\062\062\060\061\065  
\064\132\060\132\061\013\060\011\006\003\125\004\006\023\002\107  
\122\061\033\060\031\006\003\125\004\012\014\022\102\131\124\105  
\040\103\157\155\160\165\164\145\162\040\123\056\101\056\061\056  
\060\054\006\003\125\004\003\014\045\102\131\124\105\040\122\157  
\157\164\040\103\145\162\164\151\146\151\143\141\164\151\157\156  
\040\101\165\164\150\157\162\151\164\171\040\060\060\061\060\202  
\002\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005  
\000\003\202\002\017\000\060\202\002\012\002\202\002\001\000\355  
\022\056\027\163\236\157\364\363\231\350\236\010\127\011\064\044  
\021\100\037\214\041\176\033\257\070\303\321\307\346\024\345\372  
\033\272\136\146\365\045\151\367\355\315\156\202\160\257\272\102  
\360\261\031\134\053\374\105\204\030\054\172\027\117\141\205\106  
\031\174\316\301\215\237\124\236\167\045\146\017\340\366\370\222  
\312\051\316\047\127\025\052\154\202\070\155\047\346\276\115\163  
\016\163\257\343\161\075\274\011\102\017\325\015\241\355\175\153  
\256\367\301\360\154\315\302\227\241\130\375\065\025\226\027\114  
\237\277\365\361\071\113\160\267\347\112\154\034\077\301\160\133  
\317\326\213\353\357\157\060\350\137\310\106\167\041\142\026\136  
\306\124\105\071\365\164\272\147\044\150\245\161\133\076\301\373  
\011\223\353\042\231\370\322\365\173\002\154\217\130\342\253\357  
\335\164\041\344\044\151\224\100\326\301\004\030\016\330\102\360

\375\327\212\005\300\137\033\212\353\056\300\015\007\006\163\001  
\205\216\037\301\300\212\241\130\246\121\271\130\221\102\017\156  
\341\274\012\350\273\050\203\025\165\345\015\376\111\060\051\051  
\102\302\302\066\377\244\074\175\056\367\332\362\242\057\026\274  
\141\250\231\130\030\244\111\306\152\007\022\353\033\174\264\316  
\347\373\041\200\053\160\246\310\316\255\125\036\037\035\204\320  
\375\124\152\114\126\143\310\335\176\240\371\071\333\357\174\132  
\367\214\065\245\156\052\126\372\376\343\137\223\124\162\016\150  
\343\111\053\223\115\065\042\227\024\225\146\117\247\167\072\056  
\045\114\366\011\213\022\033\161\305\162\247\233\271\274\353\034  
\240\245\311\124\203\141\334\127\125\255\265\346\332\170\053\166  
\247\376\370\333\376\214\063\244\212\243\106\134\255\262\012\022  
\016\212\344\120\236\360\270\313\231\123\114\144\041\153\212\070  
\052\340\210\206\000\324\027\254\146\262\347\276\055\073\051\345  
\370\247\224\333\214\130\370\322\113\060\237\362\304\142\145\120  
\107\162\200\317\244\160\100\266\275\104\376\331\277\050\053\056  
\067\307\263\121\016\202\051\265\261\157\255\176\054\223\300\251  
\177\221\372\307\037\065\360\273\227\311\117\141\050\220\204\101  
\350\175\041\100\305\311\206\074\355\232\255\205\234\242\123\002  
\003\001\000\001\243\143\060\141\060\035\006\003\125\035\016\004  
\026\004\024\264\115\146\267\323\263\310\231\174\001\062\320\221  
\072\367\326\250\022\061\336\060\017\006\003\125\035\023\001\001  
\377\004\005\060\003\001\001\377\060\037\006\003\125\035\043\004  
\030\060\026\200\024\264\115\146\267\323\263\310\231\174\001\062  
\320\221\072\367\326\250\022\061\336\060\016\006\003\125\035\017  
\001\001\377\004\004\003\002\001\006\060\015\006\011\052\206\110  
\206\367\015\001\001\013\005\000\003\202\002\001\000\034\032\353  
\006\256\125\275\073\077\066\054\141\236\352\307\123\374\160\252  
\062\157\344\102\252\353\275\205\354\033\212\132\362\225\226\051  
\241\004\006\222\316\044\127\377\100\043\170\116\311\370\060\115  
\102\125\104\116\067\242\175\153\216\150\376\016\376\177\337\260  
\237\143\121\363\341\305\245\224\237\212\043\050\110\363\101\213  
\322\376\170\355\331\320\010\017\155\175\325\235\225\254\325\376  
\022\146\032\344\276\165\124\363\321\115\234\116\023\324\236\160  
\064\155\250\272\012\063\210\215\255\005\067\376\113\171\177\175  
\003\101\171\023\015\237\075\367\070\234\065\132\104\117\076\074  
\242\345\201\305\177\137\166\117\033\073\156\157\232\155\267\355  
\017\313\062\037\210\264\105\014\234\021\322\370\004\132\023\067  
\131\230\201\316\114\364\345\224\050\004\304\265\123\311\124\215  
\160\077\150\001\333\314\023\012\344\045\243\154\231\355\020\263  
\172\040\251\111\274\005\364\370\033\150\326\272\040\035\202\147  
\146\340\260\237\134\312\065\322\105\256\325\210\031\333\172\006  
\233\214\240\067\207\121\043\276\105\332\134\263\177\153\317\306  
\250\034\063\212\173\035\221\372\236\274\354\175\073\105\025\117  
\033\247\073\065\264\171\363\133\202\120\340\234\247\355\026\165  
\333\143\200\142\241\332\030\002\152\200\336\202\252\104\115\104  
\070\050\252\156\372\030\143\071\140\367\103\051\111\132\272\044  
\300\277\263\012\227\035\147\111\132\042\262\147\004\234\130\251

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\370\014\064\134\100\226\264\207\265\105\141\031\345\216\357\006
\336\221\025\300\270\212\312\224\311\012\165\175\161\073\130\201
\063\310\367\007\101\125\230\051\103\265\313\232\103\351\162\372
\317\360\213\061\274\347\357\271\152\343\101\235\041\076\015\025
\250\205\275\033\116\207\216\107\262\020\376\067\030\152\204\345
\211\034\024\143\350\271\203\251\265\273\350\143\232\172\031\214
\313\164\367\370\027\010\361\213\031\330\264\354\036\156\111\163
\077\134\040\335\065\052\226\167\351\106\157\026\073\313\251\357
\233\012\041\021\310\303\244\311\043\105\155\077\142\225\235\323
\050\307\235\017\263\376\067\215\035\110\262\120\346\045\271\116
\063\141\066\326\026\034\312\062\067\040\166\034\054
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "BYTE Root Certification Authority 001"

# Issuer: CN=BYTE Root Certification Authority 001,O=BYTE Computer S.A.,C=GR

# Serial Number:71:8c:2f:39:7c:40:74:40

# Subject: CN=BYTE Root Certification Authority 001,O=BYTE Computer S.A.,C=GR

# Not Valid Before: Wed Sep 10 22:01:54 2014

# Not Valid After: Sat Sep 10 22:01:54 2039

# Fingerprint (MD5): fa:fb:82:6a:e5:b3:a2:83:50:9b:83:28:b6:41:42:03

# Fingerprint (SHA1): 3f:0f:eb:17:a7:ef:58:04:cf:d9:0a:77:b7:bb:02:1e:a6:9c:64:18

CKA\_CLASS

CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "BYTE Root Certification Authority 001"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\077\017\353\027\247\357\130\004\317\331\012\167\267\273\002\036
\246\234\144\030
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\372\373\202\152\345\263\242\203\120\233\203\050\266\101\102\003
```

END

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\132\061\013\060\011\006\003\125\004\006\023\002\107\122\061
\033\060\031\006\003\125\004\012\014\022\102\131\124\105\040\103
\157\155\160\165\164\145\162\040\123\056\101\056\061\056\060\054
\006\003\125\004\003\014\045\102\131\124\105\040\122\157\157\164
\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101
\165\164\150\157\162\151\164\171\040\060\060\061
```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL



```

\002\010\161\214\057\071\174\100\164\100
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION
CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "CISRCA1"
# Issuer: CN=CISRCA1,OU=Certification Authorities,O=Carillon Information Security Inc.,C=CA
# Serial Number:0b:82:dc:94:33:76
# Subject: CN=CISRCA1,OU=Certification Authorities,O=Carillon Information Security Inc.,C=CA
# Not Valid Before: Tue Oct 16 18:28:33 2012
# Not Valid After: Sat Oct 16 18:28:33 2032
# Fingerprint (MD5): 21:48:4b:8f:d5:50:78:27:86:80:c9:86:93:ad:b1:38
# Fingerprint (SHA1): a6:9e:03:36:c4:e5:90:23:ff:65:3c:71:f9:28:eb:73:f2:1c:00:f0
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "CISRCA1"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\160\061\013\060\011\006\003\125\004\006\023\002\103\101\061
\053\060\051\006\003\125\004\012\023\042\103\141\162\151\154\154
\157\156\040\111\156\146\157\162\155\141\164\151\157\156\040\123
\145\143\165\162\151\164\171\040\111\156\143\056\061\042\060\040
\006\003\125\004\013\023\031\103\145\162\164\151\146\151\143\141
\164\151\157\156\040\101\165\164\150\157\162\151\164\151\145\163
\061\020\060\016\006\003\125\004\003\023\007\103\111\123\122\103
\101\061
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\160\061\013\060\011\006\003\125\004\006\023\002\103\101\061
\053\060\051\006\003\125\004\012\023\042\103\141\162\151\154\154
\157\156\040\111\156\146\157\162\155\141\164\151\157\156\040\123
\145\143\165\162\151\164\171\040\111\156\143\056\061\042\060\040
\006\003\125\004\013\023\031\103\145\162\164\151\146\151\143\141
\164\151\157\156\040\101\165\164\150\157\162\151\164\151\145\163
\061\020\060\016\006\003\125\004\003\023\007\103\111\123\122\103
\101\061
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\006\013\202\334\224\063\166
END

```

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\242\060\202\003\212\240\003\002\001\002\002\006\013  
\202\334\224\063\166\060\015\006\011\052\206\110\206\367\015\001  
\001\013\005\000\060\160\061\013\060\011\006\003\125\004\006\023  
\002\103\101\061\053\060\051\006\003\125\004\012\023\042\103\141  
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\305\316\173\343\344\035\155\227\242\351\313\046\036\153\264\334  
\076\203\166\057\136\115\250\150\211\124\375\116\322\106\250\100  
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\202\337\170\170\115\046\112\107\151\255\157\063\037\003\036\042  
\116\331\006\131\236\106\374\120\065\137\306\205\033\344\033\370  
\000\311\340\323\072\253\046\103\315\107\372\132\370\205\013\307  
\062\332\265\015\055\060\051\072\171\263\024\351\245\017\160\045  
\321\215\011\120\224\355\115\222\236\060\067\100\333\132\170\111  
\217\017\071\057\275\056\327\253\010\224\311\051\212\367\335\214  
\275\202\174\060\133\142\350\065\106\126\070\135\221\366\016\157  
\214\356\225\237\375\164\235\355\355\020\253\316\213\217\267\255  
\177\115\151\111\360\307\021\125\233\232\202\367\242\372\063\362  
\104\021\372\025\113\106\251\233\153\227\102\326\264\267\011\021  
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\172\200\165\163\002\113\342\372\106\224\175\063\024\015\102\126  
\271\240\346\057\205\110\221\237\104\272\241\050\251\261\037\211  
\172\046\012\123\134\205\271\174\204\230\214\050\140\245\266\172  
\215\075\240\000\075\334\177\252\110\351\250\056\254\137\336\207  
\055\134\244\153\026\352\275\350\225\265\316\170\011\370\161\066  
\345\220\150\322\007\226\272\274\000\213\016\230\155\115\160\123  
\300\303\314\033\023\234\110\232\231\075\022\300\047\216\141\222  
\114\150\122\157\215\003\034\211\365\323\206\300\377\161\111\117  
\040\153\375\321\157\221\044\365\361\107\043\115\131\337\320\275  
\111\102\375\100\070\076\342\361\005\134\045\350\020\344\132\002  
\003\343\273\174\045\052

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

#

Microsoft Code Signing Only Certificate

# Trust for "CISRCA1"

# Issuer: CN=CISRCA1,OU=Certification Authorities,O=Carillon Information Security Inc.,C=CA

# Serial Number:0b:82:dc:94:33:76

# Subject: CN=CISRCA1,OU=Certification Authorities,O=Carillon Information Security Inc.,C=CA

# Not Valid Before: Tue Oct 16 18:28:33 2012

# Not Valid After: Sat Oct 16 18:28:33 2032

# Fingerprint (MD5): 21:48:4b:8f:d5:50:78:27:86:80:c9:86:93:ad:b1:38

# Fingerprint (SHA1): a6:9e:03:36:c4:e5:90:23:ff:65:3c:71:f9:28:eb:73:f2:1c:00:f0

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "CISRCA1"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\246\236\003\066\304\345\220\043\377\145\074\161\371\050\353\163

\362\034\000\360

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\041\110\113\217\325\120\170\047\206\200\311\206\223\255\261\070

END

CKA\_ISSUER MULTILINE\_OCTAL

\060\160\061\013\060\011\006\003\125\004\006\023\002\103\101\061

\053\060\051\006\003\125\004\012\023\042\103\141\162\151\154\154

\157\156\040\111\156\146\157\162\155\141\164\151\157\156\040\123

\145\143\165\162\151\164\171\040\111\156\143\056\061\042\060\040

\006\003\125\004\013\023\031\103\145\162\164\151\146\151\143\141

\164\151\157\156\040\101\165\164\150\157\162\151\164\151\145\163

\061\020\060\016\006\003\125\004\003\023\007\103\111\123\122\103

\101\061

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\006\013\202\334\224\063\166

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "ePKI Root Certification Authority - G2"

# Issuer: CN=ePKI Root Certification Authority - G2,O=Chunghwa Telecom Co., Ltd.,C=TW

# Serial Number:d6:96:2e:c1:0a:15:93:12:af:8f:63:bc:d4:44:c9:5b

# Subject: CN=ePKI Root Certification Authority - G2,O=Chunghwa

```
Telecom Co., Ltd.,C=TW
# Not Valid Before: Tue Nov 17 08:23:42 2015
# Not Valid After: Thu Dec 31 15:59:59 2037
# Fingerprint (MD5): 7d:f0:01:73:ed:fc:31:9d:16:86:7b:35:c7:26:dd:72
# Fingerprint (SHA1): d9:9b:10:42:98:59:47:63:f0:b9:a9:27:b7:92:69:cb:47:dd:15:8b
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "ePKI Root Certification Authority - G2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\143\061\013\060\011\006\003\125\004\006\023\002\124\127\061
\043\060\041\006\003\125\004\012\014\032\103\150\165\156\147\150
\167\141\040\124\145\154\145\143\157\155\040\103\157\056\054\040
\114\164\144\056\061\057\060\055\006\003\125\004\003\014\046\145
\120\113\111\040\122\157\157\164\040\103\145\162\164\151\146\151
\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171
\040\055\040\107\062
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\143\061\013\060\011\006\003\125\004\006\023\002\124\127\061
\043\060\041\006\003\125\004\012\014\032\103\150\165\156\147\150
\167\141\040\124\145\154\145\143\157\155\040\103\157\056\054\040
\114\164\144\056\061\057\060\055\006\003\125\004\003\014\046\145
\120\113\111\040\122\157\157\164\040\103\145\162\164\151\146\151
\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171
\040\055\040\107\062
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
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\104\311\133
END
CKA_VALUE MULTILINE_OCTAL
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\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060
\143\061\013\060\011\006\003\125\004\006\023\002\124\127\061\043
\060\041\006\003\125\004\012\014\032\103\150\165\156\147\150\167
\141\040\124\145\154\145\143\157\155\040\103\157\056\054\040\114
\164\144\056\061\057\060\055\006\003\125\004\003\014\046\145\120
\113\111\040\122\157\157\164\040\103\145\162\164\151\146\151\143
\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171\040
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\062\063\064\062\132\027\015\063\067\061\062\063\061\061\065\065
\071\065\071\132\060\143\061\013\060\011\006\003\125\004\006\023
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\011\052\206\110\206\367\015\001\001\001\005\000\003\202\002\017  
\000\060\202\002\012\002\202\002\001\000\244\131\037\240\057\337  
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\147\374\246\333\100\057\005\345\305\213\172\052\172\360\260\066  
\233\014\030\366\067\351\101\241\375\261\050\371\157\153\275\353  
\037\114\143\161\173\120\335\051\362\377\356\367\307\105\137\350  
\066\012\350\154\133\042\303\350\300\347\046\334\343\250\225\200  
\345\271\072\023\333\000\113\032\375\256\063\107\176\170\224\343  
\261\135\053\265\126\265\102\213\237\201\305\374\223\114\020\265  
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\322\121\327\205\315\175\157\103\217\131\150\345\061\126\021\161  
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\126\166\020\071\126\163\146\303\321\111\331\276\127\117\077\026  
\175\152\170\267\250\202\270\133\316\256\205\212\012\102\014\003  
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\351\056\334\157\272\220\222\356\145\260\120\064\323\007\332\001  
\227\017\274\347\163\202\173

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "ePKI Root Certification Authority - G2"

# Issuer: CN=ePKI Root Certification Authority - G2,O=Chunghwa Telecom Co., Ltd.,C=TW

# Serial Number:d6:96:2e:c1:0a:15:93:12:af:8f:63:bc:d4:44:c9:5b

# Subject: CN=ePKI Root Certification Authority - G2,O=Chunghwa Telecom Co., Ltd.,C=TW

# Not Valid Before: Tue Nov 17 08:23:42 2015

# Not Valid After: Thu Dec 31 15:59:59 2037

# Fingerprint (MD5): 7d:f0:01:73:ed:fc:31:9d:16:86:7b:35:c7:26:dd:72

#

Fingerprint (SHA1): d9:9b:10:42:98:59:47:63:f0:b9:a9:27:b7:92:69:cb:47:dd:15:8b

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

```

CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "ePKI Root Certification Authority - G2"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\331\233\020\102\230\131\107\143\360\271\251\047\267\222\151\313
\107\335\025\213
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\175\360\001\163\355\374\061\235\026\206\173\065\307\046\335\162
END
CKA_ISSUER MULTILINE_OCTAL
\060\143\061\013\060\011\006\003\125\004\006\023\002\124\127\061
\043\060\041\006\003\125\004\012\014\032\103\150\165\156\147\150
\167\141\040\124\145\154\145\143\157\155\040\103\157\056\054\040
\114\164\144\056\061\057\060\055\006\003\125\004\003\014\046\145
\120\113\111\040\122\157\157\164\040\103\145\162\164\151\146\151
\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171
\040\055\040\107\062
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\021\000\326\226\056\301\012\025\223\022\257\217\143\274\324
\104\311\133
END
CKA_TRUST_SERVER_AUTH
CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "SSL.com EV Root Certification Authority RSA"
# Issuer: CN=SSL.com EV Root Certification Authority RSA,O=SSL Corporation,L=Houston,ST=Texas,C=US
# Serial Number:1d:6c:11:eb:6f:da:39:9d
# Subject: CN=SSL.com EV Root Certification Authority RSA,O=SSL Corporation,L=Houston,ST=Texas,C=US
# Not Valid Before: Fri Feb 12 17:50:48 2016
# Not Valid After: Tue Feb 12 17:50:48 2041
# Fingerprint (MD5): ad:b7:7b:b6:c4:5a:d9:dd:9f:eb:b3:ef:3f:c6:31:31
# Fingerprint (SHA1): 1c:b7:ed:e1:76:bc:df:ef:0c:86:6f:46:fb:f9:80:e9:01:e5:ce:35
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL
UTF8 "SSL.com EV Root Certification Authority RSA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\177\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\016\060\014\006\003\125\004\010\014\005\124\145\170\141\163\061

```



\020\060\016\006\003\125\004\007\014\007\110\157\165\163\164\157  
\156\061\030\060\026\006\003\125\004\012\014\017\123\123\114\040  
\103\157\162\160\157\162\141\164\151\157\156\061\064\060\062\006  
\003\125\004\003\014\053\123\123\114\056\143\157\155\040\105\126  
\040\122\157\157\164\040\103\145\162\164\151\146\151\143\141\164  
\151\157\156\040\101\165\164\150\157\162\151\164\171\040\122\123  
\101

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\177\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\016\060\014\006\003\125\004\010\014\005\124\145\170\141\163\061  
\020\060\016\006\003\125\004\007\014\007\110\157\165\163\164\157  
\156\061\030\060\026\006\003\125\004\012\014\017\123\123\114\040  
\103\157\162\160\157\162\141\164\151\157\156\061\064\060\062\006  
\003\125\004\003\014\053\123\123\114\056\143\157\155\040\105\126  
\040\122\157\157\164\040\103\145\162\164\151\146\151\143\141\164  
\151\157\156\040\101\165\164\150\157\162\151\164\171\040\122\123  
\101

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\010\035\154\021\353\157\332\071\235

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\343\060\202\003\313\240\003\002\001\002\002\010\035  
\154\021\353\157\332\071\235\060\015\006\011\052\206\110\206\367  
\015\001\001\013\005\000\060\177\061\013\060\011\006\003\125\004  
\006\023\002\125\123\061\016\060\014\006\003\125\004\010\014\005  
\124\145\170\141\163\061\020\060\016\006\003\125\004\007\014\007  
\110\157\165\163\164\157\156\061\030\060\026\006\003\125\004\012  
\014\017\123\123\114\040\103\157\162\160\157\162\141\164\151\157  
\156\061\064\060\062\006\003\125\004\003\014\053\123\123\114\056  
\143\157\155\040\105\126\040\122\157\157\164\040\103\145\162\164  
\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162  
\151\164\171\040\122\123\101\060\036\027\015\061\066\060\062\061  
\062\061\067\065\060\064\070\132\027\015\064\061\060\062\061\062  
\061\067\065\060\064\070\132\060\177\061\013\060\011\006\003\125  
\004\006\023\002\125\123\061\016\060\014\006\003\125\004\010\014  
\005\124\145\170\141\163\061\020\060\016\006\003\125\004\007\014  
\007\110\157\165\163\164\157\156\061\030\060\026\006\003\125\004  
\012\014\017\123\123\114\040\103\157\162\160\157\162\141\164\151  
\157\156\061\064\060\062\006\003\125\004\003\014\053\123\123\114  
\056\143\157\155\040\105\126\040\122\157\157\164\040\103\145\162  
\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157  
\162\151\164\171\040\122\123\101\060\202\002\042\060\015\006\011  
\052\206\110\206\367\015\001\001\001\005\000\003\202\002\017\000  
\060\202\002\012\002\202\002\001\000\306\067\174\023\157\317\017

\331\120\317\346\327\252\150\057\134\121\324\277\315\114\246\325  
\067\061\100\020\064\101\172\375\313\224\215\142\177\270\220\315  
\316\151\226\072\304\377\331\327\143\346\320\204\045\200\021\277  
\321\355\060\350\204\006\341\240\227\270\125\220\035\255\363\244  
\232\033\116\234\021\367\365\331\326\217\140\052\076\067\370\165  
\354\200\243\125\240\364\047\101\302\252\071\344\122\337\020\371  
\365\145\071\077\214\235\314\173\047\317\006\024\167\116\075\122  
\347\204\201\061\154\022\062\254\204\132\027\152\304\301\134\200  
\061\302\332\107\173\166\017\102\350\347\042\024\323\215\304\133  
\217\213\145\130\051\054\217\016\216\111\324\324\330\012\132\323  
\046\323\011\216\330\103\262\224\117\322\300\034\335\164\142\021  
\151\274\124\042\350\072\036\320\125\126\105\217\160\160\215\057  
\357\302\135\275\136\124\335\056\173\351\030\213\212\111\331\117  
\215\020\363\245\127\341\153\253\030\113\216\256\056\361\362\272  
\365\135\101\367\071\330\243\302\135\336\237\132\261\057\104\223  
\076\077\361\042\071\224\100\155\047\306\314\015\170\014\013\275  
\052\126\046\255\051\127\270\161\344\177\353\023\262\310\175\365  
\153\135\363\362\000\060\063\372\133\313\022\152\172\101\157\157  
\011\114\267\151\015\017\171\043\043\032\146\215\131\066\143\226  
\200\173\030\042\153\036\042\030\055\344\245\165\012\020\131\373  
\243\176\046\020\123\306\310\031\056\036\047\030\373\060\005\075  
\221\004\172\256\160\306\314\017\240\064\323\044\026\030\001\005  
\147\151\345\105\321\126\250\233\277\257\372\254\125\010\014\002  
\176\113\167\254\067\301\330\355\231\064\240\101\263\065\072\353  
\061\064\311\073\337\304\075\051\105\065\124\270\177\226\317\010  
\017\351\261\236\125\312\147\204\240\047\140\253\372\120\061\071  
\325\173\312\266\232\355\221\214\170\036\371\356\340\342\131\101  
\324\037\102\200\171\365\364\203\120\010\255\363\107\101\137\120  
\243\237\211\363\264\047\052\124\271\032\131\153\011\234\121\300  
\050\153\133\270\050\322\157\065\176\325\223\003\156\164\045\145  
\352\026\005\221\001\361\007\143\117\253\204\305\162\331\315\150  
\233\115\054\176\004\070\360\352\107\002\003\001\000\001\243\143  
\060\141\060\035\006\003\125\035\016\004\026\004\024\331\132\052  
\377\245\316\235\241\221\175\377\207\135\253\152\065\022\331\311  
\114\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001  
\001\377\060\037\006\003\125\035\043\004\030\060\026\200\024\331  
\132\052\377\245\316\235\241\221\175\377\207\135\253\152\065\022  
\331\311\114\060\016\006\003\125\035\017\001\001\377\004\004\003  
\002\001\206\060\015\006\011\052\206\110\206\367\015\001\001\013  
\005\000\003\202\002\001\000\274\214\317\043\372\275\063\127\226  
\037\320\202\360\022\256\064\104\352\361\274\041\327\365\211\306  
\064\036\170\246\342\121\337\335\170\200\325\352\155\306\252\157  
\011\002\214\247\346\313\310\211\132\224\172\112\263\126\357\335  
\335\123\062\143\360\151\357\335\100\271\220\242\056\003\167\226  
\265\051\000\122\356\373\016\247\224\150\305\074\003\055\351\153  
\252\235\356\247\330\147\222\342\021\132\070\337\230\146\243\240  
\216\313\014\102\066\114\305\126\133\237\165\360\100\321\350\073  
\052\010\233\122\303\034\137\220\064\127\373\306\371\035\161\374

\045\174\317\172\175\036\151\306\273\364\024\376\035\035\347\227  
\242\206\233\362\337\127\222\006\122\144\223\051\131\012\057\241  
\027\334\273\356\255\073\263\000\145\070\331\250\234\201\255\315  
\065\234\213\351\342\364\204\217\016\317\215\161\155\000\200\071  
\157\263\004\065\240\070\141\251\362\057\364\065\215\330\337\336  
\244\151\060\372\240\046\174\132\042\171\360\150\376\313\315\274  
\357\225\214\047\345\204\371\375\204\102\306\272\375\271\311\306  
\132\161\060\166\066\002\037\320\174\251\023\016\341\040\331\122  
\014\254\036\210\167\240\051\206\072\210\146\123\257\303\245\311  
\333\124\261\244\350\356\114\156\077\271\173\060\243\102\350\002  
\246\275\204\155\052\174\375\364\355\105\267\060\372\154\134\043  
\126\132\074\141\052\307\233\346\305\362\104\267\007\277\166\235  
\102\344\134\360\356\271\076\020\363\317\122\322\315\316\122\030  
\177\140\366\056\225\114\065\000\114\106\326\020\354\064\313\130  
\173\152\015\344\143\125\314\130\331\117\143\147\061\302\122\241  
\171\017\052\317\311\116\314\022\313\215\032\132\252\106\061\023  
\073\015\351\127\150\132\013\204\004\066\057\237\021\274\074\172  
\255\132\277\106\343\267\040\211\035\334\007\174\334\172\353\351  
\166\311\000\015\160\267\237\227\032\142\357\030\346\144\276\010  
\247\244\231\273\177\214\150\232\230\311\206\142\366\241\230\066  
\071\243\363\226\127\244\002\143\371\125\076\260\214\237\277\251  
\172\113\074\331\271\256\017\212\364\272\034\045\253\125\131\241  
\126\302\063\271\072\304\100\317\213\032\367\003\016\275\033\140  
\143\175\045\324\251\276\345

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "SSL.com EV Root Certification Authority RSA"

# Issuer: CN=SSL.com EV Root Certification Authority RSA,O=SSL Corporation,L=Houston,ST=Texas,C=US

# Serial Number: 1d:6c:11:eb:6f:da:39:9d

# Subject: CN=SSL.com EV Root Certification Authority RSA,O=SSL Corporation,L=Houston,ST=Texas,C=US

# Not Valid Before: Fri Feb 12 17:50:48

2016

# Not Valid After: Tue Feb 12 17:50:48 2041

# Fingerprint (MD5): ad:b7:7b:b6:c4:5a:d9:dd:9f:eb:b3:ef:3f:c6:31:31

# Fingerprint (SHA1): 1c:b7:ed:e1:76:bc:df:ef:0c:86:6f:46:fb:f9:80:e9:01:e5:ce:35

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "SSL.com EV Root Certification Authority RSA"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\034\267\355\341\166\274\337\357\014\206\157\106\373\371\200\351

\001\345\316\065

```

END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\255\267\173\266\304\132\331\335\237\353\263\357\077\306\061\061
END
CKA_ISSUER MULTILINE_OCTAL
\060\177\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\016\060\014\006\003\125\004\010\014\005\124\145\170\141\163\061
\020\060\016\006\003\125\004\007\014\007\110\157\165\163\164\157
\156\061\030\060\026\006\003\125\004\012\014\017\123\123\114\040
\103\157\162\160\157\162\141\164\151\157\156\061\064\060\062\006
\003\125\004\003\014\053\123\123\114\056\143\157\155\040\105\126
\040\122\157\157\164\040\103\145\162\164\151\146\151\143\141\164
\151\157\156\040\101\165\164\150\157\162\151\164\171\040\122\123
\101
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\010\035\154\021\353\157\332\071\235
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "LuxTrust Global Root 2"
# Issuer: CN=LuxTrust Global Root 2,O=LuxTrust S.A.,C=LU
# Serial Number:0a:7e:a6:df:4b:44:9e:da:6a:24:85:9e:e6:b8:15:d3:16:7f:bb:b1
# Subject: CN=LuxTrust Global Root 2,O=LuxTrust S.A.,C=LU
# Not Valid Before: Thu Mar 05 13:21:57 2015
# Not Valid After: Mon Mar 05 13:21:57 2035
# Fingerprint (MD5): b2:e1:09:00:61:af:f7:f1:91:6f:c4:ad:8d:5e:3b:7c
# Fingerprint (SHA1): 1e:0e:56:19:0a:d1:8b:25:98:b2:04:44:ff:66:8a:04:17:99:5f:3f
CKA_CLASS CK_OBJECT_CLASS
CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "LuxTrust Global Root 2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\106\061\013\060\011\006\003\125\004\006\023\002\114\125\061
\026\060\024\006\003\125\004\012\014\015\114\165\170\124\162\165
\163\164\040\123\056\101\056\061\037\060\035\006\003\125\004\003
\014\026\114\165\170\124\162\165\163\164\040\107\154\157\142\141
\154\040\122\157\157\164\040\062
END
CKA_ID UTF8 "0"

```

CKA\_ISSUER MULTILINE\_OCTAL

\060\106\061\013\060\011\006\003\125\004\006\023\002\114\125\061  
\026\060\024\006\003\125\004\012\014\015\114\165\170\124\162\165  
\163\164\040\123\056\101\056\061\037\060\035\006\003\125\004\003  
\014\026\114\165\170\124\162\165\163\164\040\107\154\157\142\141  
\154\040\122\157\157\164\040\062

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\024\012\176\246\337\113\104\236\332\152\044\205\236\346\270  
\025\323\026\177\273\261

END

CKA\_VALUE

MULTILINE\_OCTAL

\060\202\005\303\060\202\003\253\240\003\002\001\002\002\024\012  
\176\246\337\113\104\236\332\152\044\205\236\346\270\025\323\026  
\177\273\261\060\015\006\011\052\206\110\206\367\015\001\001\013  
\005\000\060\106\061\013\060\011\006\003\125\004\006\023\002\114  
\125\061\026\060\024\006\003\125\004\012\014\015\114\165\170\124  
\162\165\163\164\040\123\056\101\056\061\037\060\035\006\003\125  
\004\003\014\026\114\165\170\124\162\165\163\164\040\107\154\157  
\142\141\154\040\122\157\157\164\040\062\060\036\027\015\061\065  
\060\063\060\065\061\063\062\061\065\067\132\027\015\063\065\060  
\063\060\065\061\063\062\061\065\067\132\060\106\061\013\060\011  
\006\003\125\004\006\023\002\114\125\061\026\060\024\006\003\125  
\004\012\014\015\114\165\170\124\162\165\163\164\040\123\056\101  
\056\061\037\060\035\006\003\125\004\003\014\026\114\165\170\124  
\162\165\163\164\040\107\154\157\142\141\154\040\122\157\157\164  
\040\062\060\202\002\042\060\015\006\011\052\206\110\206\367\015  
\001\001\001\005\000\003\202\002\017\000\060\202\002\012\002\202  
\002\001\000\327\205\227\277\021\230\351\360\142\203\114\074\207  
\371\123\152\067\013\362\017\074\207\316\157\334\046\051\275\305  
\211\272\311\203\075\367\356\312\133\306\155\111\163\264\311\106  
\243\033\064\023\077\301\211\105\127\364\331\261\373\066\145\113  
\373\010\342\110\161\021\310\156\073\236\235\337\211\145\067\246  
\205\366\073\104\030\266\306\067\060\142\104\222\227\151\175\102  
\060\044\344\015\014\211\153\143\336\305\341\337\116\251\024\154  
\123\340\141\316\366\027\057\035\074\275\346\042\114\035\223\365  
\020\304\241\166\354\152\336\305\154\337\226\264\126\100\102\300  
\142\222\060\241\055\025\224\240\322\040\006\011\156\152\155\345  
\353\267\276\324\360\361\025\174\213\346\116\272\023\314\113\047  
\136\231\074\027\135\217\201\177\063\075\117\323\077\033\354\134  
\077\360\074\114\165\156\362\246\325\235\332\055\007\143\002\306  
\162\351\224\274\114\111\225\117\210\122\310\333\350\151\202\370  
\314\064\133\042\360\206\247\211\275\110\012\155\146\201\155\310  
\310\144\373\001\341\364\341\336\331\236\335\333\133\324\052\231  
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\014\106\277\153\207\233\263\052\146\102\065\106\154\252\272\255  
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\130\276\127\000\032\362\065\372\353\173\061\135\302\301\022\075  
\226\201\210\226\211\301\131\134\172\346\177\160\064\347\203\342  
\261\341\341\270\130\357\324\225\344\140\234\360\226\227\162\214  
\353\204\002\056\145\217\244\267\322\177\147\335\310\323\236\134  
\252\251\244\240\045\024\006\233\354\117\176\055\013\177\035\165  
\361\063\330\355\316\270\165\155\076\133\271\230\035\061\015\126  
\330\103\017\060\221\262\004\153\335\126\276\225\200\125\147\276  
\330\315\203\331\030\356\056\017\206\055\222\236\160\023\354\336  
\121\311\103\170\002\245\115\310\371\137\304\221\130\106\026\167  
\132\164\252\100\274\007\237\060\271\261\367\022\027\335\343\377  
\044\100\035\172\152\321\117\030\012\252\220\035\353\100\036\337  
\241\036\104\222\020\232\362\215\341\321\113\106\236\350\105\102  
\227\352\105\231\363\354\146\325\002\372\362\246\112\044\252\336  
\316\271\312\371\077\223\157\371\243\272\352\245\076\231\255\375  
\377\173\231\365\145\356\360\131\050\147\327\220\225\244\023\204

```
\251\204\301\350\316\316\165\223\143\032\274\074\352\325\144\037
\055\052\022\071\306\303\132\062\355\107\221\026\016\274\070\301
\120\336\217\312\052\220\064\034\356\101\224\234\136\031\056\370
\105\111\231\164\221\260\004\157\343\004\132\261\253\052\253\376
\307\320\226\266\332\341\112\144\006\156\140\115\275\102\116\377
\170\332\044\312\033\264\327\226\071\154\256\361\016\252\247\175
\110\213\040\114\317\144\326\270\227\106\260\116\321\052\126\072
\240\223\275\257\200\044\340\012\176\347\312\325\312\350\205\125
\334\066\052\341\224\150\223\307\146\162\104\017\200\041\062\154
\045\307\043\200\203\012\353
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "LuxTrust Global Root 2"

# Issuer: CN=LuxTrust Global Root 2,O=LuxTrust S.A.,C=LU

# Serial Number:0a:7e:a6:df:4b:44:9e:da:6a:24:85:9e:e6:b8:15:d3:16:7f:bb:b1

# Subject: CN=LuxTrust Global Root 2,O=LuxTrust S.A.,C=LU

# Not Valid Before: Thu Mar 05 13:21:57 2015

# Not Valid After: Mon Mar 05 13:21:57 2035

# Fingerprint (MD5): b2:e1:09:00:61:af:f7:f1:91:6f:c4:ad:8d:5e:3b:7c

# Fingerprint (SHA1): 1e:0e:56:19:0a:d1:8b:25:98:b2:04:44:ff:66:8a:04:17:99:5f:3f

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "LuxTrust Global Root 2"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\036\016\126\031\012\321\213\045\230\262\004\104\377\146\212\004
\027\231\137\077
```

END

CKA\_CERT\_MD5\_HASH

MULTILINE\_OCTAL

```
\262\341\011\000\141\257\367\361\221\157\304\255\215\136\073\174
```

END

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\106\061\013\060\011\006\003\125\004\006\023\002\114\125\061
\026\060\024\006\003\125\004\012\014\015\114\165\170\124\162\165
\163\164\040\123\056\101\056\061\037\060\035\006\003\125\004\003
\014\026\114\165\170\124\162\165\163\164\040\107\154\157\142\141
\154\040\122\157\157\164\040\062
```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

```
\002\024\012\176\246\337\113\104\236\332\152\044\205\236\346\270
\025\323\026\177\273\261
```

```

END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "ACA ROOT"
# Issuer: CN=ACA ROOT,O=CONSEJO GENERAL DE LA ABOGACIA,2.5.4.5=Q2863006I,C=ES
# Serial Number:47:43:91:24:3f:ce:c3:0d:57:48:28:6b:ee:80:5d:ab
# Subject: CN=ACA ROOT,O=CONSEJO
GENERAL DE LA ABOGACIA,2.5.4.5=Q2863006I,C=ES
# Not Valid Before: Fri May 27 10:58:51 2016
# Not Valid After: Mon May 27 10:58:51 2041
# Fingerprint (MD5): cc:49:10:f6:2f:f5:db:be:2f:8c:51:f3:8f:74:7c:12
# Fingerprint (SHA1): d4:96:59:2b:30:57:07:38:6c:c5:f3:cd:b2:59:ae:66:d7:66:1f:ca
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "ACA ROOT"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\135\061\013\060\011\006\003\125\004\006\023\002\105\123\061
\022\060\020\006\003\125\004\005\023\011\121\062\070\066\063\060
\060\066\111\061\047\060\045\006\003\125\004\012\014\036\103\117
\116\123\105\112\117\040\107\105\116\105\122\101\114\040\104\105
\040\114\101\040\101\102\117\107\101\103\111\101\061\021\060\017
\006\003\125\004\003\014\010\101\103\101\040\122\117\117\124
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\135\061\013\060\011\006\003\125\004\006\023\002\105\123\061
\022\060\020\006\003\125\004\005\023\011\121\062\070\066\063\060
\060\066\111\061\047\060\045\006\003\125\004\012\014\036\103\117
\116\123\105\112\117\040\107\105\116\105\122\101\114\040\104\105
\040\114\101\040\101\102\117\107\101\103\111\101\061\021\060\017
\006\003\125\004\003\014\010\101\103\101\040\122\117\117\124
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\107\103\221\044\077\316\303\015\127\110\050\153\356\200
\135\253
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\310\060\202\003\260\240\003\002\001\002\002\020\107
\103\221\044\077\316\303\015\127\110\050\153\356\200\135\253\060
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\135

```



\061\013\060\011\006\003\125\004\006\023\002\105\123\061\022\060  
\020\006\003\125\004\005\023\011\121\062\070\066\063\060\060\066  
\111\061\047\060\045\006\003\125\004\012\014\036\103\117\116\123  
\105\112\117\040\107\105\116\105\122\101\114\040\104\105\040\114  
\101\040\101\102\117\107\101\103\111\101\061\021\060\017\006\003  
\125\004\003\014\010\101\103\101\040\122\117\117\124\060\036\027  
\015\061\066\060\065\062\067\061\060\065\070\065\061\132\027\015  
\064\061\060\065\062\067\061\060\065\070\065\061\132\060\135\061  
\013\060\011\006\003\125\004\006\023\002\105\123\061\022\060\020  
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\214\346\135\271\331\150\276\221\033\272\151\003\030\255\030\116  
\066\242\254\106\253\040\370\003\152\252\255\171\325\337\035\301  
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\316\355\251\037\021\123\036\245\023\333\141\360\365\252\200\336  
\164\171\035\244\343\051\326\373\340\374\227\332\242\270\253\042  
\076\145\260\041\304\345\305\020\104\207\262\343\340\052\202\056  
\175\346\364\270\244\023\045\363\167\140\137\143\123\256\056\261  
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\064\022\330\060\213\266\214\002\312\344\110\354\070\052\062\114  
\155\312\166\050\132\206\012\272\324\040\216\257\240\137\040\055  
\142\234\210\371\361\025\155\133\275\261\003\120\300\077\066\327  
\256\077\121\321\312\343\130\146\104\346\243\233\167\056\061\372  
\331\177\042\304\005\114\353\164\033\134\143\172\246\002\223\176  
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\036\114\227\046\013\064\273\266\224\361\054\144\161\137\211\362  
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\236\073\220\235\232\012\051\015\052\102\301\075\133\153\100\202  
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\123\262\203\001\373\262\175\331\203\164\172\065\320\301\135\217  
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\155\375\321\262\275\076\171\127\206\036\104\034\007\115\364\302  
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\007\111\321\270\026\311\171\235\314\256\013\005\107\172\375\230  
\254\061\241\220\132\207\142\371\370\253\142\132\340\041\166\320  
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\314\316\036\224\267\136\056\043\006\225\221\034\070\107\034\355  
\304\170\016\244\017\374\033\174\326\362\153\320\212\133\352\226  
\363\061\324\136\152\304\224\270\060\237\225\341\007\211\270\210  
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\277\120\240\312\161\242\154\256\157\337\331\203\202\146\334\123  
\135\257\372\124\367\203\377\253\077\211\225\247\264\155\363\017  
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\230\066\377\357\205\062\253\142\234\023\321\042\207\261\276\230  
\333\164\232\217\352\302\326\223\171\105\040\303

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

```

# Microsoft Code Signing Only Certificate
# Trust for "ACA ROOT"
# Issuer: CN=ACA ROOT,O=CONSEJO GENERAL DE LA ABOGACIA,2.5.4.5=Q2863006I,C=ES
# Serial Number:47:43:91:24:3f:ce:c3:0d:57:48:28:6b:ee:80:5d:ab
# Subject: CN=ACA ROOT,O=CONSEJO GENERAL DE LA ABOGACIA,2.5.4.5=Q2863006I,C=ES
# Not Valid Before: Fri May 27 10:58:51 2016
# Not Valid
  After: Mon May 27 10:58:51 2041
# Fingerprint (MD5): cc:49:10:f6:2f:f5:db:be:2f:8c:51:f3:8f:74:7c:12
# Fingerprint (SHA1): d4:96:59:2b:30:57:07:38:6c:c5:f3:cd:b2:59:ae:66:d7:66:1f:ca
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "ACA ROOT"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\324\226\131\053\060\127\007\070\154\305\363\315\262\131\256\146
\327\146\037\312
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\314\111\020\366\057\365\333\276\057\214\121\363\217\164\174\022
END
CKA_ISSUER MULTILINE_OCTAL
\060\135\061\013\060\011\006\003\125\004\006\023\002\105\123\061
\022\060\020\006\003\125\004\005\023\011\121\062\070\066\063\060
\060\066\111\061\047\060\045\006\003\125\004\012\014\036\103\117
\116\123\105\112\117\040\107\105\116\105\122\101\114\040\104\105
\040\114\101\040\101\102\117\107\101\103\111\101\061\021\060\017
\006\003\125\004\003\014\010\101\103\101\040\122\117\117\124
END
CKA_SERIAL_NUMBER
  MULTILINE_OCTAL
\002\020\107\103\221\044\077\316\303\015\127\110\050\153\356\200
\135\253
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

```

```

# Microsoft Code Signing Only Certificate
# Certificate "CHAMBERS OF COMMERCE ROOT - 2016"
# Issuer: CN=CHAMBERS OF COMMERCE ROOT - 2016,O=AC CAMERFIRMA S.A.,2.5.4.97=VATES-
A82743287,2.5.4.5=A82743287,OU=CHAMBERS OF COMMERCE ROOT - 2016,OU=see current address at
www.camerfirma.com/address,L=MADRID,ST=MADRID,C=ES
# Serial Number:34:9a:2d:a1:82:06:b2:b3
# Subject: CN=CHAMBERS OF COMMERCE ROOT - 2016,O=AC CAMERFIRMA S.A.,2.5.4.97=VATES-
A82743287,2.5.4.5=A82743287,OU=CHAMBERS OF COMMERCE ROOT - 2016,OU=see current address at

```

```
www.camerfirma.com/address,L=MADRID,ST=MADRID,C=ES
# Not Valid Before: Thu Apr 14 07:35:48 2016
# Not Valid After: Sun Apr 08 07:35:48 2040
# Fingerprint (MD5):
d9:84:45:a4:8b:62:ec:c1:fc:51:54:8a:d1:58:8d:e8
# Fingerprint (SHA1): 2d:e1:6a:56:77:ba:ca:39:e1:d6:8c:30:dc:b1:4a:be:22:a6:17:9b
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "CHAMBERS OF COMMERCE ROOT - 2016"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\202\001\014\061\013\060\011\006\003\125\004\006\023\002\105
\123\061\017\060\015\006\003\125\004\010\014\006\115\101\104\122
\111\104\061\017\060\015\006\003\125\004\007\014\006\115\101\104
\122\111\104\061\072\060\070\006\003\125\004\013\014\061\163\145
\145\040\143\165\162\162\145\156\164\040\141\144\144\162\145\163
\163\040\141\164\040\167\167\167\056\143\141\155\145\162\146\151
\162\155\141\056\143\157\155\057\141\144\144\162\145\163\163\061
\051\060\047\006\003\125\004\013\014\040\103\110\101\115\102\105
\122\123\040\117\106\040\103\117\115\115\105\122\103\105\040\122
\117\117\124\040\055\040\062\060\061\066\061\022\060\020\006\003
\125\004\005\023\011\101\070\062\067\064\063\062\070\067\061\030
\060\026\006\003\125\004\141\014\017\126\101\124\105\123\055\101
\070\062\067\064\063\062\070\067\061\033\060\031\006\003\125\004
\012\014\022\101\103\040\103\101\115\105\122\106\111\122\115\101
\040\123\056\101\056\061\051\060\047\006\003\125\004\003\014\040
\103\110\101\115\102\105\122\123\040\117\106\040\103\117\115\115
\105\122\103\105\040\122\117\117\124\040\055\040\062\060\061\066
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\202\001\014\061\013\060\011\006\003\125\004\006\023\002\105
\123\061\017\060\015\006\003\125\004\010\014\006\115\101\104\122
\111\104\061\017\060\015\006\003\125\004\007\014\006\115\101\104
\122\111\104\061\072\060\070\006\003\125\004\013\014\061\163\145
\145\040\143\165\162\162\145\156\164\040\141\144\144\162\145\163
\163\040\141\164\040\167\167\167\056\143\141\155\145\162\146\151
\162\155\141\056\143\157\155\057\141\144\144\162\145\163\163\061
\051\060\047\006\003\125\004\013\014\040\103\110\101\115\102\105
\122\123\040\117\106\040\103\117\115\115\105\122\103\105\040\122
\117\117\124\040\055\040\062\060\061\066\061\022\060\020\006\003
\125\004\005\023\011\101\070\062\067\064\063\062\070\067\061\030
\060\026\006\003\125\004\141\014\017\126\101\124\105\123\055\101
\070\062\067\064\063\062\070\067\061\033\060\031\006\003\125\004
\012\014\022\101\103\040\103\101\115\105\122\106\111\122\115\101
```

\040\123\056\101\056\061\051\060\047\006\003\125\004\003\014\040  
\103\110\101\115\102\105\122\123\040\117\106\040\103\117\115\115  
\105\122\103\105\040\122\117\117\124\040\055\040\062\060\061\066  
END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\010\064\232\055\241\202\006\262\263

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\006\340\060\202\004\310\240\003\002\001\002\002\010\064  
\232\055\241\202\006\262\263\060\015\006\011\052\206\110\206\367  
\015\001\001\013\005\000\060\202\001\014\061\013\060\011\006\003  
\125\004\006\023\002\105\123\061\017\060\015\006\003\125\004\010  
\014\006\115\101\104\122\111\104\061\017\060\015\006\003\125\004  
\007\014\006\115\101\104\122\111\104\061\072\060\070\006\003\125  
\004\013\014\061\163\145\145\040\143\165\162\162\145\156\164\040  
\141\144\144\162\145\163\163\040\141\164\040\167\167\167\056\143  
\141\155\145\162\146\151\162\155\141\056\143\157\155\057\141\144  
\144\162\145\163\163\061\051\060\047\006\003\125\004\013\014\040  
\103\110\101\115\102\105\122\123\040\117\106\040\103\117\115\115  
\105\122\103\105\040\122\117\117\124\040\055\040\062\060\061\066  
\061\022\060\020\006\003\125\004\005\023\011\101\070\062\067\064  
\063\062\070\067\061\030\060\026\006\003\125\004\141\014\017\126  
\101\124\105\123\055\101\070\062\067\064\063\062\070\067\061\033  
\060\031\006\003\125\004\012\014\022\101\103\040\103\101\115\105  
\122\106\111\122\115\101\040\123\056\101\056\061\051\060\047\006  
\003\125\004\003\014\040\103\110\101\115\102\105\122\123\040\117  
\106\040\103\117\115\115\105\122\103\105\040\122\117\117\124\040  
\055\040\062\060\061\066\060\036\027\015\061\066\060\064\061\064  
\060\067\063\065\064\070\132\027\015\064\060\060\064\060\070\060  
\067\063\065\064\070\132\060\202\001\014\061\013\060\011\006\003  
\125\004\006\023\002\105\123\061\017\060\015\006\003\125\004\010  
\014\006\115\101\104\122\111\104\061\017\060\015\006\003\125\004  
\007\014\006\115\101\104\122\111\104\061\072\060\070\006\003\125  
\004\013\014\061\163\145\145\040\143\165\162\162\145\156\164\040  
\141\144\144\162\145\163\163\040\141\164\040\167\167\167\056\143  
\141\155\145\162\146\151\162\155\141\056\143\157\155\057\141\144  
\144\162\145\163\163\061\051\060\047\006\003\125\004\013\014\040  
\103\110\101\115\102\105\122\123\040\117\106\040\103\117\115\115  
\105\122\103\105\040\122\117\117\124\040\055\040\062\060\061\066  
\061\022\060\020\006\003\125\004\005\023\011\101\070\062\067\064  
\063\062\070\067\061\030\060\026\006\003\125\004\141\014\017\126  
\101\124\105\123\055\101\070\062\067\064\063\062\070\067\061\033  
\060\031\006\003\125\004\012\014\022\101\103\040\103\101\115\105  
\122\106\111\122\115\101\040\123\056\101\056\061\051\060\047\006  
\003\125\004\003\014\040\103\110\101\115\102\105\122\123\040\117  
\106\040\103\117\115\115\105\122\103\105\040\122\117\117\124\040  
\055\040\062\060\061\066\060\202\002\042\060\015\006\011\052\206

\110\206\367\015\001\001\001\005\000\003\202\002\017\000\060\202  
\002\012\002\202\002\001\000\352\306\244\241\324\255\231\226\311  
\237\365\274\120\000\364\054\317\362\170\350\362\054\002\047\326  
\203\214\004\253\323\016\173\127\040\311\324\257\145\364\207\335  
\060\010\327\316\101\243\166\012\333\212\106\344\246\375\355\010  
\316\160\077\372\020\140\171\114\153\201\124\200\125\344\347\172  
\041\266\165\232\334\136\366\016\231\374\370\302\337\101\216\057  
\253\307\133\155\034\120\131\300\355\350\254\202\102\376\271\257  
\057\014\101\121\234\275\000\156\144\121\262\073\345\066\253\225  
\221\022\373\061\307\163\254\034\330\145\166\073\316\033\114\116  
\260\037\040\006\373\120\264\373\233\241\171\216\026\225\343\237  
\353\030\113\204\253\071\223\315\067\203\320\351\174\013\047\217  
\355\102\010\351\206\106\062\254\232\046\151\160\141\055\030\275  
\077\120\360\236\366\150\120\116\151\225\160\301\355\223\251\227  
\116\051\242\272\335\302\237\156\111\010\053\243\372\043\361\051  
\136\260\175\061\131\233\355\214\315\246\156\370\370\367\330\030  
\350\332\126\351\110\362\100\164\176\236\315\040\257\024\044\131  
\356\167\065\205\277\112\231\112\251\165\335\263\046\343\006\316  
\175\157\113\144\243\166\064\031\076\024\157\205\124\070\342\213  
\055\100\265\144\146\037\127\063\034\160\315\303\264\050\132\024  
\043\134\374\270\275\263\376\073\022\137\366\271\214\035\310\224  
\012\126\333\162\176\357\047\007\015\000\264\277\175\231\077\115  
\105\263\233\367\035\031\320\117\004\372\307\163\224\210\175\213  
\024\052\231\340\351\231\222\011\306\326\001\153\267\360\333\103  
\127\142\033\307\104\122\342\227\143\272\317\352\316\140\346\012  
\345\030\150\055\063\200\165\240\060\007\150\366\325\367\023\054  
\072\260\236\350\130\125\156\214\126\104\115\103\027\101\002\314  
\167\334\137\105\005\131\317\315\140\323\277\322\366\342\364\325  
\334\207\161\063\007\032\365\157\264\177\075\227\373\137\144\364  
\116\016\000\104\011\351\353\354\076\161\031\004\027\071\110\140  
\270\113\377\136\310\145\231\053\246\062\362\133\206\250\235\350  
\043\164\020\170\357\313\047\235\061\272\140\213\116\006\120\342  
\120\035\007\140\302\101\214\025\264\133\067\034\012\345\011\031  
\162\004\212\074\343\001\333\002\003\001\000\001\243\102\060\100  
\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001  
\377\060\035\006\003\125\035\016\004\026\004\024\236\056\145\117  
\076\127\365\253\175\226\306\213\337\263\065\155\112\350\236\213  
\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001\006  
\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\003  
\202\002\001\000\005\151\052\205\227\046\120\272\102\071\034\223  
\054\322\117\133\321\135\104\046\332\157\151\053\265\173\236\320  
\364\112\056\110\307\354\177\237\312\131\172\271\104\367\076\275  
\367\120\153\121\237\164\377\220\032\100\320\223\171\222\017\212  
\043\136\213\257\201\013\320\213\255\146\340\052\334\232\051\275  
\065\330\154\100\024\111\102\075\211\057\272\233\053\070\274\032  
\243\013\267\210\327\255\306\024\014\356\174\111\254\256\354\362  
\075\030\117\214\155\024\135\016\252\267\337\167\253\073\217\142  
\116\213\014\145\306\031\216\315\300\014\241\167\252\264\335\172

\247\023\005\346\071\030\307\225\144\176\003\266\213\220\301\345  
\137\000\043\230\346\163\332\021\322\020\377\036\123\042\047\307  
\323\001\311\057\305\073\062\156\360\303\070\312\022\147\274\272  
\043\051\273\304\225\111\132\006\335\324\132\220\324\023\155\347  
\325\302\174\342\130\004\300\354\304\275\242\074\176\306\043\201  
\165\174\253\160\137\064\204\225\367\263\325\107\226\117\161\312  
\170\062\010\040\264\102\244\102\153\325\045\234\262\047\353\301  
\016\107\104\011\341\053\017\320\043\066\156\034\271\272\116\254  
\314\360\014\224\316\101\017\153\335\017\325\310\340\027\213\336  
\072\135\122\276\351\165\045\035\272\005\007\332\126\031\074\215  
\321\327\361\121\066\331\222\357\242\170\121\005\130\275\122\314  
\012\136\157\257\332\320\345\014\333\154\301\043\357\071\061\167  
\027\007\000\214\366\272\017\160\371\274\276\341\344\175\341\314  
\104\172\244\041\354\107\077\250\326\025\245\354\001\251\310\160  
\350\230\147\035\275\131\124\176\241\127\025\065\007\305\162\311  
\076\267\051\206\215\237\332\062\171\062\334\333\250\345\011\377  
\357\126\052\376\223\261\216\052\023\355\255\242\053\153\057\004  
\336\315\057\222\222\326\076\140\265\170\001\225\007\010\251\154  
\343\034\332\373\345\233\043\126\040\133\351\320\134\306\112\044  
\073\274\343\266\042\026\052\204\222\377\250\376\227\277\243\235  
\333\141\136\356\031\052\054\327\353\015\166\126\070\165\176\111  
\000\223\127\311\374\043\132\374\364\361\337\052\235\260\214\151  
\364\020\243\125\235\160\074\042\377\007\326\053\266\231\300\227  
\320\364\052\240

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER

CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "CHAMBERS OF COMMERCE ROOT - 2016"

# Issuer: CN=CHAMBERS OF COMMERCE ROOT - 2016,O=AC CAMERFIRMA S.A.,2.5.4.97=VATES-A82743287,2.5.4.5=A82743287,OU=CHAMBERS OF COMMERCE ROOT - 2016,OU=see current address at www.camerfirma.com/address,L=MADRID,ST=MADRID,C=ES

# Serial Number:34:9a:2d:a1:82:06:b2:b3

# Subject: CN=CHAMBERS OF COMMERCE ROOT - 2016,O=AC CAMERFIRMA S.A.,2.5.4.97=VATES-A82743287,2.5.4.5=A82743287,OU=CHAMBERS OF COMMERCE ROOT - 2016,OU=see current address at www.camerfirma.com/address,L=MADRID,ST=MADRID,C=ES

# Not Valid Before: Thu Apr 14 07:35:48 2016

# Not Valid After: Sun Apr 08 07:35:48 2040

# Fingerprint (MD5): d9:84:45:a4:8b:62:ec:c1:fc:51:54:8a:d1:58:8d:e8

# Fingerprint (SHA1): 2d:e1:6a:56:77:ba:ca:39:e1:d6:8c:30:dc:b1:4a:be:22:a6:17:9b

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE

```

CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "CHAMBERS OF COMMERCE ROOT - 2016"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\055\341\152\126\167\272\312\071\341\326\214\060\334\261\112\276
\042\246\027\233
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\331\204\105\244\213\142\354\301\374\121\124\212\321\130\215\350
END
CKA_ISSUER MULTILINE_OCTAL
\060\202\001\014\061\013\060\011\006\003\125\004\006\023\002\105
\123\061\017\060\015\006\003\125\004\010\014\006\115\101\104\122
\111\104\061\017\060\015\006\003\125\004\007\014\006\115\101\104
\122\111\104\061\072\060\070\006\003\125\004\013\014\061\163\145
\145\040\143\165\162\162\145\156\164\040\141\144\144\162\145\163
\163\040\141\164\040\167\167\167\056\143\141\155\145\162\146\151
\162\155\141\056\143\157\155\057\141\144\144\162\145\163\163\061
\051\060\047\006\003\125\004\013\014\040\103\110\101\115\102\105
\122\123\040\117\106\040\103\117\115\115\105\122\103\105\040\122
\117\117\124\040\055\040\062\060\061\066\061\022\060\020\006\003
\125\004\005\023\011\101\070\062\067\064\063\062\070\067\061\030
\060\026\006\003\125\004\141\014\017\126\101\124\105\123\055\101
\070\062\067\064\063\062\070\067\061\033\060\031\006\003\125\004
\012\014\022\101\103\040\103\101\115\105\122\106\111\122\115\101
\040\123\056\101\056\061\051\060\047\006\003\125\004\003\014\040
\103\110\101\115\102\105\122\123\040\117\106\040\103\117\115\115
\105\122\103\105\040\122\117\117\124\040\055\040\062\060\061\066
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\010\064\232\055\241\202\006\262\263
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

```

```

# Microsoft Code Signing Only Certificate
# Certificate "Network Solutions RSA Certificate Authority"
# Issuer: CN=Network Solutions RSA Certificate Authority,O=Network Solutions
L.L.C.,L=Jacksonville,ST=FL,C=US
# Serial Number:4c:03:4b:ac:67:18:4c:7f:af:44:08:4d:82:96:c7:b2
#
Subject: CN=Network Solutions RSA Certificate Authority,O=Network Solutions
L.L.C.,L=Jacksonville,ST=FL,C=US
# Not Valid Before: Wed Nov 18 00:00:00 2015
# Not Valid After: Mon Jan 18 23:59:59 2038
# Fingerprint (MD5): 5a:2f:58:bc:83:2c:2d:99:b4:9b:78:24:d4:8f:f9:67

```



# Fingerprint (SHA1): 8e:92:8c:0f:c2:7b:b7:ab:a3:4e:6b:c0:ca:12:50:cb:57:b6:0f:84

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE  
CKA\_TOKEN CK\_BBOOL CK\_TRUE  
CKA\_PRIVATE CK\_BBOOL CK\_FALSE  
CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE  
CKA\_LABEL UTF8 "Network Solutions RSA Certificate Authority"  
CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509  
CKA\_SUBJECT MULTILINE\_OCTAL  
\060\201\212\061\013\060\011\006\003\125\004\006\023\002\125\123  
\061\013\060\011\006\003\125\004\010\023\002\106\114\061\025\060  
\023\006\003\125\004\007\023\014\112\141\143\153\163\157\156\166  
\151\154\154\145\061\041\060\037\006\003\125\004\012\023\030\116  
\145\164\167\157\162\153\040\123\157\154\165\164\151\157\156\163  
\040\114\056\114\056\103\056\061\064\060\062\006\003\125\004\003  
\023\053\116\145\164\167\157\162\153\040\123\157\154\165\164\151  
\157\156\163\040\122\123\101\040\103\145\162\164\151\146\151\143  
\141\164\145\040\101\165\164\150\157\162\151\164\171

END

CKA\_ID

UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL  
\060\201\212\061\013\060\011\006\003\125\004\006\023\002\125\123  
\061\013\060\011\006\003\125\004\010\023\002\106\114\061\025\060  
\023\006\003\125\004\007\023\014\112\141\143\153\163\157\156\166  
\151\154\154\145\061\041\060\037\006\003\125\004\012\023\030\116  
\145\164\167\157\162\153\040\123\157\154\165\164\151\157\156\163  
\040\114\056\114\056\103\056\061\064\060\062\006\003\125\004\003  
\023\053\116\145\164\167\157\162\153\040\123\157\154\165\164\151  
\157\156\163\040\122\123\101\040\103\145\162\164\151\146\151\143  
\141\164\145\040\101\165\164\150\157\162\151\164\171

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\114\003\113\254\147\030\114\177\257\104\010\115\202\226  
\307\262

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\342\060\202\003\312\240\003\002\001\002\002\020\114  
\003\113\254\147\030\114\177\257\104\010\115\202\226\307\262\060  
\015\006\011\052\206\110\206\367\015\001\001\014\005\000\060\201  
\212\061\013\060\011\006\003\125\004\006\023\002\125\123\061\013  
\060\011\006\003\125\004\010\023\002\106\114\061\025\060\023\006  
\003\125\004\007\023\014\112\141\143\153\163\157\156\166\151\154  
\154\145\061\041\060\037\006\003\125\004\012\023\030\116\145\164  
\167\157\162\153\040\123\157\154\165\164\151\157\156\163\040\114  
\056\114\056\103\056\061\064\060\062\006\003\125\004\003\023\053  
\116\145\164\167\157\162\153\040\123\157\154\165\164\151\157\156  
\163\040\122\123\101\040\103\145\162\164\151\146\151\143\141\164  
\145\040\101\165\164\150\157\162\151\164\171\060\036\027\015\061

\065\061\061\061\070\060\060\060\060\060\060\132\027\015\063\070  
\060\061\061\070\062\063\065\071\065\071\132\060\201\212\061\013  
\060\011\006\003\125\004\006\023\002\125\123\061\013\060\011\006  
\003\125\004\010\023\002\106\114\061\025\060\023\006\003\125\004  
\007\023\014\112\141\143\153\163\157\156\166\151\154\154\145\061  
\041\060\037\006\003\125\004\012\023\030\116\145\164\167\157\162  
\153\040\123\157\154\165\164\151\157\156\163\040\114\056\114\056  
\103\056\061\064\060\062\006\003\125\004\003\023\053\116\145\164  
\167\157\162\153\040\123\157\154\165\164\151\157\156\163\040\122  
\123\101\040\103\145\162\164\151\146\151\143\141\164\145\040\101  
\165\164\150\157\162\151\164\171\060\202\002\042\060\015\006\011  
\052\206\110\206\367\015\001\001\001\005\000\003\202\002\017\000  
\060\202\002\012\002\202\002\001\000\204\337\250\246\243\214\013  
\170\036\310\115\031\225\335\051\220\222\040\065\220\052\224\215  
\202\063\055\160\022\130\245\010\212\236\301\010\363\223\326\150  
\300\057\024\276\171\244\374\175\314\325\274\076\217\355\234\112  
\002\141\131\075\252\303\157\164\000\322\370\032\064\324\124\236  
\152\164\107\232\057\340\322\367\017\367\303\335\077\245\277\301  
\372\175\102\151\140\000\200\354\074\346\273\201\067\244\036\006  
\024\075\127\217\220\244\065\112\064\163\207\266\032\303\135\220  
\357\006\115\160\166\066\074\202\211\355\317\144\031\203\045\103  
\116\034\342\361\152\122\206\376\121\344\176\070\337\025\215\114  
\154\140\101\112\117\260\100\125\106\071\165\311\201\071\000\163  
\212\142\352\017\145\267\217\117\227\100\316\317\356\301\152\050  
\240\161\251\231\047\321\075\311\065\163\172\200\231\370\175\206  
\271\235\171\072\355\323\052\372\176\246\270\377\127\052\163\262  
\246\277\332\211\272\006\033\332\145\240\346\276\140\224\210\366  
\337\146\341\047\152\033\376\320\136\251\215\040\213\012\304\037  
\176\210\101\057\262\301\320\363\266\150\355\310\073\361\357\252  
\007\336\176\327\042\340\201\366\245\352\173\026\364\102\124\235  
\226\176\366\142\026\123\315\375\012\253\262\102\241\116\052\210  
\102\165\203\275\214\345\115\172\347\035\343\114\270\336\343\253  
\140\070\055\147\051\376\344\137\256\302\250\350\277\256\154\371  
\353\263\122\361\177\351\354\302\057\331\235\312\027\236\102\372  
\073\130\301\076\210\142\117\137\223\301\227\155\146\217\034\042  
\363\232\301\364\355\271\153\032\176\066\204\310\061\270\360\136  
\053\176\225\344\171\317\165\114\302\330\004\277\070\216\050\263  
\335\133\266\330\117\043\156\222\350\067\225\256\203\256\326\374  
\071\052\106\006\037\361\204\165\041\326\270\116\246\052\227\130  
\145\365\232\030\001\327\365\303\177\051\311\020\356\163\112\103  
\166\173\321\246\060\121\377\326\053\035\036\142\204\276\371\276  
\151\227\231\307\015\347\174\044\120\165\027\375\244\040\347\065  
\150\003\140\224\247\331\015\306\032\054\345\342\116\325\314\016  
\300\172\060\126\357\140\222\276\331\056\365\307\360\350\105\317  
\332\206\256\357\330\167\251\022\047\002\003\001\000\001\243\102  
\060\100\060\035\006\003\125\035\016\004\026\004\024\017\361\112  
\112\165\164\005\021\014\035\330\133\231\353\277\376\252\175\136  
\327\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001

\206\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001  
\001\377\060\015\006\011\052\206\110\206\367\015\001\001\014\005  
\000\003\202\002\001\000\075\313\322\106\170\365\366\072\027\350  
\303\173\144\321\305\273\220\170\215\365\117\271\304\055\227\373  
\013\346\305\270\361\266\352\350\130\113\064\255\167\171\054\065  
\037\162\175\002\076\356\265\320\026\212\006\067\226\265\357\103  
\320\011\020\054\227\146\307\201\037\036\346\047\305\202\221\130  
\136\363\310\133\101\150\200\203\221\271\234\201\370\047\372\105  
\337\356\171\362\134\155\160\002\124\356\300\123\330\103\353\005  
\172\314\364\121\335\251\324\042\175\152\073\362\376\210\324\122  
\111\072\205\222\144\123\370\152\123\140\210\217\362\133\324\256  
\053\122\340\352\377\124\176\241\344\357\206\033\247\203\013\006  
\146\136\060\200\214\125\240\107\063\377\153\036\104\110\113\141  
\252\036\076\350\114\144\307\330\155\175\016\256\074\074\102\075  
\312\044\032\160\361\141\024\234\072\030\325\360\006\051\221\042  
\262\072\072\241\026\124\143\032\371\063\225\104\237\044\243\041  
\144\004\010\342\233\325\336\010\122\034\142\034\123\026\107\065  
\102\046\307\247\014\375\363\133\023\167\002\214\134\342\026\360  
\030\037\331\175\365\337\002\044\210\172\363\136\377\027\016\263  
\142\147\241\253\261\027\216\075\072\106\260\365\106\214\253\204  
\330\365\016\241\040\353\302\360\231\164\075\216\263\003\330\044  
\305\154\353\153\014\123\277\140\151\335\214\050\305\157\317\273  
\322\201\167\053\306\174\261\304\112\154\025\020\067\051\135\256  
\370\261\021\005\304\024\215\354\023\243\104\375\115\213\150\270  
\301\377\235\325\067\056\110\370\050\174\334\371\163\123\331\266  
\001\165\102\172\277\013\337\121\120\270\123\262\341\356\164\220  
\313\274\252\320\161\203\242\253\116\311\020\266\075\034\357\100  
\327\117\103\220\063\271\001\226\124\135\052\325\006\133\222\206  
\270\006\020\201\006\310\221\333\051\040\262\123\275\363\113\133  
\114\333\151\037\211\156\124\077\327\211\135\347\265\315\014\276  
\077\175\170\070\001\322\266\147\246\317\130\110\224\032\105\375  
\220\163\111\312\265\103\240\041\142\215\111\004\046\252\370\037  
\056\077\362\056\241\362\253\364\006\036\260\055\304\301\160\102  
\075\375\303\121\111\210\000\016\312\202\015\233\171\002\342\300  
\056\223\337\344\362\361

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "Network Solutions RSA Certificate Authority"

# Issuer: CN=Network Solutions RSA Certificate Authority,O=Network Solutions  
L.L.C.,L=Jacksonville,ST=FL,C=US

# Serial Number:4c:03:4b:ac:67:18:4c:7f:af:44:08:4d:82:96:c7:b2

# Subject: CN=Network Solutions RSA Certificate Authority,O=Network Solutions  
L.L.C.,L=Jacksonville,ST=FL,C=US

```
# Not Valid Before: Wed Nov 18 00:00:00 2015
# Not Valid After: Mon Jan 18 23:59:59 2038
# Fingerprint (MD5): 5a:2f:58:bc:83:2c:2d:99:b4:9b:78:24:d4:8f:f9:67
# Fingerprint (SHA1): 8e:92:8c:0f:c2:7b:b7:ab:a3:4e:6b:c0:ca:12:50:cb:57:b6:0f:84
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL
  UTF8 "Network Solutions RSA Certificate Authority"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\216\222\214\017\302\173\267\253\243\116\153\300\312\022\120\313
\127\266\017\204
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\132\057\130\274\203\054\055\231\264\233\170\044\324\217\371\147
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\212\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\013\060\011\006\003\125\004\010\023\002\106\114\061\025\060
\023\006\003\125\004\007\023\014\112\141\143\153\163\157\156\166
\151\154\154\145\061\041\060\037\006\003\125\004\012\023\030\116
\145\164\167\157\162\153\040\123\157\154\165\164\151\157\156\163
\040\114\056\114\056\103\056\061\064\060\062\006\003\125\004\003
\023\053\116\145\164\167\157\162\153\040\123\157\154\165\164\151
\157\156\163\040\122\123\101\040\103\145\162\164\151\146\151\143
\141\164\145\040\101\165\164\150\157\162\151\164\171
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\114\003\113\254\147\030\114\177\257\104\010\115\202\226
\307\262
END
CKA_TRUST_SERVER_AUTH
  CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
# Microsoft Code Signing Only Certificate
# Certificate "Network Solutions ECC Certificate Authority"
# Issuer: CN=Network Solutions ECC Certificate Authority,O=Network Solutions
L.L.C.,L=Jacksonville,ST=FL,C=US
# Serial Number:79:38:4b:b4:19:1a:8d:74:22:cc:ff:85:32:f2:e4:ba
# Subject: CN=Network Solutions ECC Certificate Authority,O=Network Solutions
L.L.C.,L=Jacksonville,ST=FL,C=US
# Not Valid Before: Wed Nov 18 00:00:00 2015
# Not Valid After: Mon Jan 18 23:59:59 2038
# Fingerprint (MD5): a5:a8:cc:e3:1c:41:11:8c:6a:8c:38:bd:a2:47:fe:b2
```

# Fingerprint (SHA1): 80:f9:5b:74:1c:38:39:94:95:c3:4f:20:c2:3e:73:36:31:4d:3c:6b

```
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Network
Solutions ECC Certificate Authority"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\212\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\013\060\011\006\003\125\004\010\023\002\106\114\061\025\060
\023\006\003\125\004\007\023\014\112\141\143\153\163\157\156\166
\151\154\154\145\061\041\060\037\006\003\125\004\012\023\030\116
\145\164\167\157\162\153\040\123\157\154\165\164\151\157\156\163
\040\114\056\114\056\103\056\061\064\060\062\006\003\125\004\003
\023\053\116\145\164\167\157\162\153\040\123\157\154\165\164\151
\157\156\163\040\105\103\103\040\103\145\162\164\151\146\151\143
\141\164\145\040\101\165\164\150\157\162\151\164\171
END
```

```
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\212\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\013\060\011\006\003\125\004\010\023\002\106\114\061\025\060
\023\006\003\125\004\007\023\014\112\141\143\153\163\157\156\166
\151\154\154\145\061\041\060\037\006\003\125\004\012\023\030\116
\145\164\167\157\162\153\040\123\157\154\165\164\151\157\156\163
\040\114\056\114\056\103\056\061\064\060\062\006\003\125\004\003
\023\053\116\145\164\167\157\162\153\040\123\157\154\165\164\151
\157\156\163\040\105\103\103\040\103\145\162\164\151\146\151\143
\141\164\145\040\101\165\164\150\157\162\151\164\171
END
```

```
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\171\070\113\264\031\032\215\164\042\314\377\205\062\362
\344\272
END
```

```
CKA_VALUE MULTILINE_OCTAL
\060\202\002\224\060\202\002\031\240\003\002\001\002\002\020\171
\070\113\264\031\032\215\164\042\314\377\205\062\362\344\272\060
\012\006\010\052\206\110\316\075\004\003\003\060\201\212\061\013
\060\011\006\003\125\004\006\023\002\125\123\061\013\060\011\006
\003\125\004\010\023\002\106\114\061\025\060\023\006\003\125\004
\007\023\014\112\141\143\153\163\157\156\166\151\154\154\145\061
\041\060\037\006\003\125\004\012\023\030\116\145\164\167\157\162
\153\040\123\157\154\165\164\151\157\156\163\040\114\056\114\056
\103\056\061\064\060\062\006\003\125\004\003\023\053\116\145\164
\167\157\162\153\040\123\157\154\165\164\151\157\156\163\040\105
\103\103\040\103\145\162\164\151\146\151\143\141\164\145\040\101
```

\165\164\150\157\162\151\164\171\060\036\027\015\061\065\061\061  
\061\070\060\060\060\060\060\060\132\027\015\063\070\060\061\061  
\070\062\063\065\071\065\071\132\060\201\212\061\013\060\011\006  
\003\125\004\006\023\002\125\123\061\013\060\011\006\003\125\004  
\010\023\002\106\114\061\025\060\023\006\003\125\004\007\023\014  
\112\141\143\153\163\157\156\166\151\154\154\145\061\041\060\037  
\006\003\125\004\012\023\030\116\145\164\167\157\162\153\040\123  
\157\154\165\164\151\157\156\163\040\114\056\114\056\103\056\061  
\064\060\062\006\003\125\004\003\023\053\116\145\164\167\157\162  
\153\040\123\157\154\165\164\151\157\156\163\040\105\103\103\040  
\103\145\162\164\151\146\151\143\141\164\145\040\101\165\164\150  
\157\162\151\164\171\060\166\060\020\006\007\052\206\110\316\075  
\002\001\006\005\053\201\004\000\042\003\142\000\004\024\341\003  
\013\145\157\255\131\326\036\356\311\277\264\114\305\306\134\057  
\060\307\237\122\333\150\141\300\151\020\342\222\172\032\303\277  
\222\250\211\071\212\373\347\240\273\161\244\240\303\337\167\326  
\224\067\023\137\176\123\135\120\272\343\114\010\307\145\342\101  
\260\346\131\362\234\370\300\262\167\301\012\221\046\167\362\151  
\266\273\320\101\074\052\210\032\224\221\026\306\076\243\102\060  
\100\060\035\006\003\125\035\016\004\026\004\024\233\173\353\310  
\377\203\362\122\230\107\060\012\126\370\070\276\343\353\000\316  
\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001\206  
\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001  
\377\060\012\006\010\052\206\110\316\075\004\003\003\003\151\000  
\060\146\002\061\000\251\144\130\367\234\271\023\146\042\111\177  
\262\321\002\351\023\374\034\373\244\064\222\344\312\007\015\267  
\261\122\170\050\064\313\362\041\126\221\206\206\310\212\013\257  
\062\204\124\145\211\002\061\000\354\171\015\235\211\360\014\030  
\352\173\127\122\255\013\346\324\171\133\313\233\342\006\105\165  
\030\275\320\374\247\335\307\341\307\042\266\343\101\044\135\043  
\346\250\237\000\152\120\062\045

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "Network Solutions ECC Certificate Authority"

# Issuer: CN=Network Solutions ECC Certificate Authority,O=Network Solutions  
L.L.C.,L=Jacksonville,ST=FL,C=US

# Serial Number: 79:38:4b:b4:19:1a:8d:74:22:cc:ff:85:32:f2:e4:ba

# Subject: CN=Network Solutions ECC Certificate Authority,O=Network Solutions  
L.L.C.,L=Jacksonville,ST=FL,C=US

# Not Valid Before: Wed Nov 18 00:00:00 2015

# Not Valid After: Mon Jan 18 23:59:59 2038

# Fingerprint (MD5): a5:a8:cc:e3:1c:41:11:8c:6a:8c:38:bd:a2:47:fe:b2

# Fingerprint (SHA1): 80:f9:5b:74:1c:38:39:94:95:c3:4f:20:c2:3e:73:36:31:4d:3c:6b

```

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE
CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Network Solutions ECC Certificate Authority"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\200\371\133\164\034\070\071\224\225\303\117\040\302\076\163\066
\061\115\074\153
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\245\250\314\343\034\101\021\214\152\214\070\275\242\107\376\262
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\212\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\013\060\011\006\003\125\004\010\023\002\106\114\061\025\060
\023\006\003\125\004\007\023\014\112\141\143\153\163\157\156\166
\151\154\154\145\061\041\060\037\006\003\125\004\012\023\030\116
\145\164\167\157\162\153\040\123\157\154\165\164\151\157\156\163
\040\114\056\114\056\103\056\061\064\060\062\006\003\125\004\003
\023\053\116\145\164\167\157\162\153\040\123\157\154\165\164\151
\157\156\163\040\105\103\103\040\103\145\162\164\151\146\151\143
\141\164\145\040\101\165\164\150\157\162\151\164\171
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\171\070\113\264\031\032\215\164\042\314\377\205\062\362
\344\272
END
CKA_TRUST_SERVER_AUTH
CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "Australian Defence Public Root CA"
# Issuer: CN=Australian Defence Public Root CA,OU=CAs,OU=PKI,OU=DoD,O=GOV,C=AU
# Serial Number:29:eb:92:33:46:4f:32:41:ff:83:19:00:a9:ad:c4:d9:f8:e3:e2:7f
# Subject: CN=Australian Defence Public Root CA,OU=CAs,OU=PKI,OU=DoD,O=GOV,C=AU
# Not Valid Before: Mon Nov 28 22:25:28 2016
# Not Valid After: Fri Nov 28 22:13:48 2036
# Fingerprint (MD5): a2:6b:fb:f8:f3:14:59:bf:16:d7:3c:ce:f3:20:0a:97
# Fingerprint (SHA1): a9:ca:fe:9d:fd:67:f4:14:5a:d3:97:d0:e2:f3:05:0d:19:8d:e6:ee
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Australian

```

Defence Public Root CA"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\161\061\013\060\011\006\003\125\004\006\023\002\101\125\061  
\014\060\012\006\003\125\004\012\023\003\107\117\126\061\014\060  
\012\006\003\125\004\013\023\003\104\157\104\061\014\060\012\006  
\003\125\004\013\023\003\120\113\111\061\014\060\012\006\003\125  
\004\013\023\003\103\101\163\061\052\060\050\006\003\125\004\003  
\023\041\101\165\163\164\162\141\154\151\141\156\040\104\145\146  
\145\156\143\145\040\120\165\142\154\151\143\040\122\157\157\164  
\040\103\101

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\161\061\013\060\011\006\003\125\004\006\023\002\101\125\061  
\014\060\012\006\003\125\004\012\023\003\107\117\126\061\014\060  
\012\006\003\125\004\013\023\003\104\157\104\061\014\060\012\006  
\003\125\004\013\023\003\120\113\111\061\014\060\012\006\003\125  
\004\013\023\003\103\101\163\061\052\060\050\006\003\125\004\003  
\023\041\101\165\163\164\162\141\154\151\141\156\040\104\145\146  
\145\156\143\145\040\120\165\142\154\151\143\040\122\157\157\164  
\040\103\101

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\024\051\353\222\063\106\117\062\101\377\203\031\000\251\255  
\304\331\370\343\342\177

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\004\042\060\202\003\012\240\003\002\001\002\002\024\051  
\353\222\063\106\117\062\101\377\203\031\000\251\255\304\331\370  
\343\342\177\060\015\006\011\052\206\110\206\367\015\001\001\013  
\005\000\060\161\061\013\060\011\006\003\125\004\006\023\002\101  
\125\061\014\060\012\006\003\125\004\012\023\003\107\117\126\061  
\014\060\012\006\003\125\004\013\023\003\104\157\104\061\014\060  
\012\006\003\125\004\013\023\003\120\113\111\061\014\060\012\006  
\003\125\004\013\023\003\103\101\163\061\052\060\050\006\003\125  
\004\003\023\041\101\165\163\164\162\141\154\151\141\156\040\104  
\145\146\145\156\143\145\040\120\165\142\154\151\143\040\122\157  
\157\164\040\103\101\060\036\027\015\061\066\061\061\062\070\062  
\062\062\065\062\070\132\027\015\063\066\061\061\062\070\062\062  
\061\063\064\070\132\060\161\061\013\060\011\006\003\125\004\006  
\023\002\101\125\061\014\060\012\006\003\125\004\012\023\003\107  
\117\126\061\014\060\012\006\003\125\004\013\023\003\104\157\104  
\061\014\060\012\006\003\125\004\013\023\003\120\113\111\061\014  
\060\012\006\003\125\004\013\023\003\103\101\163\061\052\060\050  
\006\003\125\004\003\023\041\101\165\163\164\162\141\154\151\141  
\156\040\104\145\146\145\156\143\145\040\120\165\142\154\151\143



\040\122\157\157\164\040\103\101\060\202\001\042\060\015\006\011  
\052\206\110\206\367\015\001\001\001\005\000\003\202\001\017\000  
\060\202\001\012\002\202\001\001\000\323\116\124\004\033\320\364  
\233\235\270\043\207\340\040\307\236\230\261\161\172\006\220\056  
\342\255\110\376\223\005\154\354\206\277\050\100\205\263\114\171  
\357\107\123\230\020\036\124\356\175\170\270\030\023\014\104\122  
\375\320\201\252\223\010\043\071\276\137\017\153\335\045\227\363  
\001\102\337\324\201\000\304\120\276\172\211\055\031\257\163\112  
\077\314\072\300\277\242\250\305\025\367\076\174\101\164\202\153  
\056\167\146\342\152\245\221\210\156\006\061\247\257\013\346\132  
\340\256\175\132\257\057\107\320\362\373\204\163\234\106\241\036  
\204\104\121\304\137\056\332\220\002\137\201\337\021\016\322\373  
\273\072\027\163\243\362\215\143\252\117\377\162\172\145\142\203  
\132\052\074\362\315\054\043\215\317\353\041\037\277\324\003\127  
\365\067\026\014\136\345\127\021\302\250\372\377\154\071\362\075  
\122\346\265\171\300\133\342\262\352\143\040\014\016\245\052\136  
\022\341\346\257\137\213\174\240\255\071\065\065\230\137\361\257  
\070\320\046\323\115\275\142\167\165\075\257\153\024\206\173\132  
\366\041\217\326\352\342\247\016\255\002\003\001\000\001\243\201  
\261\060\201\256\060\017\006\003\125\035\023\001\001\377\004\005  
\060\003\001\001\377\060\113\006\003\125\035\040\004\104\060\102  
\060\006\006\004\125\035\040\000\060\070\006\011\052\044\001\202  
\116\001\001\001\007\060\053\060\051\006\010\053\006\001\005\005  
\007\002\001\026\035\150\164\164\160\072\057\057\143\162\154\056  
\144\145\146\145\156\143\145\056\147\157\166\056\141\165\057\160  
\153\151\060\016\006\003\125\035\017\001\001\377\004\004\003\002  
\001\306\060\037\006\003\125\035\043\004\030\060\026\200\024\254  
\231\341\002\057\350\134\113\101\267\064\270\036\351\233\203\066  
\015\224\264\060\035\006\003\125\035\016\004\026\004\024\254\231  
\341\002\057\350\134\113\101\267\064\270\036\351\233\203\066\015  
\224\264\060\015\006\011\052\206\110\206\367\015\001\001\013\005  
\000\003\202\001\001\000\170\274\201\112\330\072\127\273\275\046  
\277\352\052\050\360\210\212\362\120\114\220\147\332\113\365\270  
\024\010\272\333\177\162\250\232\131\274\361\034\211\250\364\072  
\003\020\124\023\172\135\306\332\272\076\017\210\325\152\323\033  
\227\055\142\141\072\157\371\000\257\162\006\163\354\020\300\141  
\036\314\134\117\031\062\106\070\301\335\077\322\067\032\245\216  
\206\240\360\011\314\065\326\031\002\174\315\071\374\367\371\037  
\347\224\171\116\075\267\370\227\116\073\104\152\315\224\260\271  
\367\176\342\343\371\231\177\305\323\246\120\264\111\373\026\176  
\116\101\054\317\076\307\171\100\272\201\030\046\010\371\305\235  
\343\330\361\157\034\150\077\152\133\167\027\122\243\006\336\031  
\302\113\156\242\225\374\325\010\277\054\265\151\065\121\343\343  
\337\117\032\051\155\203\170\075\070\044\312\002\077\124\020\341  
\263\144\341\325\232\336\363\067\366\063\020\265\166\263\253\327  
\311\037\123\072\255\125\101\034\110\311\066\236\207\377\165\334  
\151\320\257\331\172\127\306\312\261\103\374\071\201\374\334\172  
\243\232\245\230\120\124

```

END
CKA_NSS_MOZILLA_CA_POLICY
CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Trust for "Australian Defence Public Root CA"
# Issuer: CN=Australian Defence Public Root CA,OU=CAs,OU=PKI,OU=DoD,O=GOV,C=AU
# Serial Number:29:eb:92:33:46:4f:32:41:ff:83:19:00:a9:ad:c4:d9:f8:e3:e2:7f
# Subject: CN=Australian Defence Public Root CA,OU=CAs,OU=PKI,OU=DoD,O=GOV,C=AU
#
Not Valid Before: Mon Nov 28 22:25:28 2016
# Not Valid After: Fri Nov 28 22:13:48 2036
# Fingerprint (MD5): a2:6b:fb:f8:f3:14:59:bf:16:d7:3c:ce:f3:20:0a:97
# Fingerprint (SHA1): a9:ca:fe:9d:fd:67:f4:14:5a:d3:97:d0:e2:f3:05:0d:19:8d:e6:ee
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Australian Defence Public Root CA"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\251\312\376\235\375\147\364\024\132\323\227\320\342\363\005\015
\031\215\346\356
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\242\153\373\370\363\024\131\277\026\327\074\316\363\040\012\227
END
CKA_ISSUER MULTILINE_OCTAL
\060\161\061\013\060\011\006\003\125\004\006\023\002\101\125\061
\014\060\012\006\003\125\004\012\023\003\107\117\126\061\014\060
\012\006\003\125\004\013\023\003\104\157\104\061\014\060\012\006
\003\125\004\013\023\003\120\113\111\061\014\060\012\006\003\125
\004\013\023\003\103\101\163\061\052\060\050\006\003\125\004\003
\023\041\101\165\163\164\162\141\154\151\141\156\040\104\145\146
\145\156\143\145\040\120\165\142\154\151\143\040\122\157\157\164
\040\103\101
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\024\051\353\222\063\106\117\062\101\377\203\031\000\251\255
\304\331\370\343\342\177
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

```

```
# Microsoft Code Signing Only Certificate
# Certificate "SI-TRUST Root"
# Issuer: CN=SI-TRUST Root,2.5.4.97=VATSI-17659957,O=Republika Slovenija,C=SI
# Serial Number:90:ae:77:76:00:00:00:00:57:1d:d0:6f
# Subject: CN=SI-TRUST Root,2.5.4.97=VATSI-17659957,O=Republika Slovenija,C=SI
# Not Valid Before: Mon Apr 25 07:38:17 2016
# Not Valid After: Fri Dec 25 08:08:17 2037
# Fingerprint (MD5): 3a:ba:c6:f3:c7:d1:b7:8a:86:22:7d:ee:99:81:fc:90
# Fingerprint (SHA1): 3a:49:79:b4:0f:a8:41:48:82:00:b5:82:fb:ee:b6:3a:ab:99:19:ae
CKA_CLASS
  CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "SI-TRUST Root"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\134\061\013\060\011\006\003\125\004\006\023\002\123\111\061
\034\060\032\006\003\125\004\012\023\023\122\145\160\165\142\154
\151\153\141\040\123\154\157\166\145\156\151\152\141\061\027\060
\025\006\003\125\004\141\023\016\126\101\124\123\111\055\061\067
\066\065\071\071\065\067\061\026\060\024\006\003\125\004\003\023
\015\123\111\055\124\122\125\123\124\040\122\157\157\164
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\134\061\013\060\011\006\003\125\004\006\023\002\123\111\061
\034\060\032\006\003\125\004\012\023\023\122\145\160\165\142\154
\151\153\141\040\123\154\157\166\145\156\151\152\141\061\027\060
\025\006\003\125\004\141\023\016\126\101\124\123\111\055\061\067
\066\065\071\071\065\067\061\026\060\024\006\003\125\004\003\023
\015\123\111\055\124\122\125\123\124\040\122\157\157\164
END
CKA_SERIAL_NUMBER
  MULTILINE_OCTAL
\002\015\000\220\256\167\166\000\000\000\000\127\035\320\157
END
CKA_VALUE MULTILINE_OCTAL
\060\202\004\212\060\202\002\362\240\003\002\001\002\002\015\000
\220\256\167\166\000\000\000\000\127\035\320\157\060\015\006\011
\052\206\110\206\367\015\001\001\013\005\000\060\134\061\013\060
\011\006\003\125\004\006\023\002\123\111\061\034\060\032\006\003
\125\004\012\023\023\122\145\160\165\142\154\151\153\141\040\123
\154\157\166\145\156\151\152\141\061\027\060\025\006\003\125\004
\141\023\016\126\101\124\123\111\055\061\067\066\065\071\071\065
\067\061\026\060\024\006\003\125\004\003\023\015\123\111\055\124
\122\125\123\124\040\122\157\157\164\060\036\027\015\061\066\060
\064\062\065\060\067\063\070\061\067\132\027\015\063\067\061\062
```

\062\065\060\070\060\070\061\067\132\060\134\061\013\060\011\006  
\003\125\004\006\023\002\123\111\061\034\060\032\006\003\125\004  
\012\023\023\122\145\160\165\142\154\151\153\141\040\123\154\157  
\166\145\156\151\152\141\061\027\060\025\006\003\125\004\141\023  
\016\126\101\124\123\111\055\061\067\066\065\071\071\065\067\061  
\026\060\024\006\003\125\004\003\023\015\123\111\055\124\122\125  
\123\124\040\122\157\157\164\060\202\001\242\060\015\006\011\052  
\206\110\206\367\015\001\001\001\005\000\003\202\001\217\000\060  
\202\001\212\002\202\001\201\000\323\313\234\055\302\340\060\103  
\145\061\044\377\113\260\070\331\251\123\327\065\321\333\267\113  
\223\264\162\215\361\313\225\322\123\053\164\233\062\232\244\057  
\076\002\006\335\257\160\025\241\252\317\021\207\212\146\173\313  
\314\035\160\104\134\217\254\312\346\303\133\047\264\215\243\216  
\020\277\156\124\164\010\160\212\043\350\312\307\164\304\146\221  
\040\335\113\350\245\204\165\245\230\225\202\213\033\341\040\044  
\007\106\253\014\145\066\100\147\213\165\356\251\331\221\051\033  
\355\157\055\105\302\326\342\140\001\261\363\116\071\053\073\157  
\077\205\276\010\366\123\053\173\242\311\105\241\104\201\200\146  
\232\140\072\033\304\276\014\314\060\020\177\021\066\070\112\346  
\233\241\226\123\234\224\314\021\306\004\114\242\125\113\377\200  
\341\257\214\034\065\374\271\223\067\337\371\135\075\334\353\015  
\047\154\104\311\131\146\053\126\157\377\004\033\367\365\151\303  
\135\303\030\376\275\247\331\144\057\242\237\140\331\162\154\075  
\074\165\362\045\047\230\056\072\270\311\335\115\165\275\253\260  
\042\141\130\001\067\050\246\040\235\056\140\134\373\220\274\106  
\103\270\376\155\330\300\146\042\044\153\064\170\042\345\271\342  
\130\351\110\070\356\114\275\001\173\156\076\100\352\321\302\012  
\102\223\147\303\046\057\077\007\133\317\257\343\035\350\072\342  
\145\341\204\221\077\365\146\000\375\252\063\106\102\354\026\076  
\322\023\145\057\016\011\123\366\344\052\165\024\234\031\063\026  
\232\105\341\333\127\317\317\070\324\247\367\355\130\103\344\016  
\230\134\304\340\061\077\224\244\157\113\112\242\325\112\215\046  
\251\035\144\045\010\065\015\347\002\003\001\000\001\243\113\060  
\111\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001  
\001\377\060\016\006\003\125\035\017\001\001\377\004\004\003\002  
\001\006\060\023\006\003\125\035\043\004\014\060\012\200\010\114  
\243\303\150\136\010\002\143\060\021\006\003\125\035\016\004\012  
\004\010\114\243\303\150\136\010\002\143\060\015\006\011\052\206  
\110\206\367\015\001\001\013\005\000\003\202\001\201\000\046\043  
\205\273\135\101\031\156\222\203\212\356\001\213\004\065\031\177  
\253\217\334\326\063\301\371\171\226\136\043\365\360\316\335\352  
\333\141\073\132\257\335\130\351\102\211\100\357\371\331\147\021  
\177\115\361\355\351\021\173\261\101\017\355\244\322\026\266\357  
\301\375\213\366\021\053\054\357\374\007\006\106\014\317\002\013  
\355\073\336\217\011\271\063\253\046\200\124\104\102\145\327\347  
\257\315\120\016\312\310\210\241\022\234\052\225\073\076\124\074  
\110\163\366\174\170\324\233\377\223\367\105\344\051\204\143\374  
\372\176\032\347\134\340\162\127\260\057\170\035\060\306\023\375

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\210\137\261\145\210\332\136\227\023\201\173\376\036\317\173\277
\127\060\301\160\222\103\246\231\360\125\237\230\305\043\102\275
\164\034\061\216\022\245\331\105\152\052\132\310\130\315\275\326
\335\076\065\013\031\177\003\034\316\007\017\207\105\223\025\241
\153\275\064\034\340\336\365\324\270\345\221\034\113\005\265\047
\046\274\317\321\011\230\026\306\341\361\125\113\072\173\155\336
\306\147\266\301\067\055\237\250\216\131\307\267\246\305\357\337
\026\342\355\336\262\267\363\242\066\244\050\062\072\012\224\313
\077\136\376\156\131\355\272\066\262\223\326\306\303\031\376\365
\231\170\353\107\107\345\255\102\172\354\274\173\311\056\101\116
\115\017\004\016\212\113\063\207\334\361\166\174\132\030\214\234
\012\022\327\242\263\302\205\207\256\155\061\120\142\062\041\240
\150\026\137\224\065\164\125\051\322\161\201\010\112\341\327\135
\252\124\001\263\033\174\131\256\276\254\014\312\270\100\144\147
\133\235\352\006\006\021\326\320\060\163\036\343\274\053
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL

CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "SI-TRUST Root"

# Issuer: CN=SI-TRUST Root,2.5.4.97=VATSI-17659957,O=Republika Slovenija,C=SI

# Serial Number:90:ae:77:76:00:00:00:00:57:1d:d0:6f

# Subject: CN=SI-TRUST Root,2.5.4.97=VATSI-17659957,O=Republika Slovenija,C=SI

# Not Valid Before: Mon Apr 25 07:38:17 2016

# Not Valid After: Fri Dec 25 08:08:17 2037

# Fingerprint (MD5): 3a:ba:c6:f3:c7:d1:b7:8a:86:22:7d:ee:99:81:fc:90

# Fingerprint (SHA1): 3a:49:79:b4:0f:a8:41:48:82:00:b5:82:fb:ee:b6:3a:ab:99:19:ae

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "SI-TRUST Root"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\072\111\171\264\017\250\101\110\202\000\265\202\373\356\266\072
\253\231\031\256
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\072\272\306\363\307\321\267\212\206\042\175\356\231\201\374\220
```

END

CKA\_ISSUER

MULTILINE\_OCTAL

```
\060\134\061\013\060\011\006\003\125\004\006\023\002\123\111\061
\034\060\032\006\003\125\004\012\023\023\122\145\160\165\142\154
\151\153\141\040\123\154\157\166\145\156\151\152\141\061\027\060
```

```
\025\006\003\125\004\141\023\016\126\101\124\123\111\055\061\067
\066\065\071\071\065\067\061\026\060\024\006\003\125\004\003\023
\015\123\111\055\124\122\125\123\124\040\122\157\157\164
```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

```
\002\015\000\220\256\167\166\000\000\000\000\127\035\320\157
```

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "Swiss Government Root CA III"

# Issuer: CN=Swiss Government Root CA III,OU=www.pki.admin.ch,O=Swiss Government PKI,C=CH

# Serial Number:fb:1f:0b:42:2b:a8:41:3e:57:d1:ee:2a:6e:5a:4f:bb

# Subject:

CN=Swiss Government Root CA III,OU=www.pki.admin.ch,O=Swiss Government PKI,C=CH

# Not Valid Before: Fri Apr 15 07:00:00 2016

# Not Valid After: Mon Apr 15 06:59:59 2041

# Fingerprint (MD5): 56:83:cb:f2:76:2c:93:dc:11:3b:ea:c2:09:19:17:46

# Fingerprint (SHA1): cc:ea:e3:24:45:cd:42:18:dd:18:8e:ad:ce:b3:13:3c:7f:b3:40:ad

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Swiss Government Root CA III"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

```
\060\156\061\013\060\011\006\003\125\004\006\023\002\103\110\061
\035\060\033\006\003\125\004\012\023\024\123\167\151\163\163\040
\107\157\166\145\162\156\155\145\156\164\040\120\113\111\061\031
\060\027\006\003\125\004\013\023\020\167\167\167\056\160\153\151
\056\141\144\155\151\156\056\143\150\061\045\060\043\006\003\125
\004\003\023\034\123\167\151\163\163\040\107\157\166\145\162\156
\155\145\156\164\040\122\157\157\164\040\103\101\040\111\111\111
```

END

CKA\_ID

UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\156\061\013\060\011\006\003\125\004\006\023\002\103\110\061
\035\060\033\006\003\125\004\012\023\024\123\167\151\163\163\040
\107\157\166\145\162\156\155\145\156\164\040\120\113\111\061\031
\060\027\006\003\125\004\013\023\020\167\167\167\056\160\153\151
\056\141\144\155\151\156\056\143\150\061\045\060\043\006\003\125
\004\003\023\034\123\167\151\163\163\040\107\157\166\145\162\156
\155\145\156\164\040\122\157\157\164\040\103\101\040\111\111\111
```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\021\000\373\037\013\102\053\250\101\076\127\321\356\052\156  
\132\117\273

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\006\126\060\202\004\076\240\003\002\001\002\002\021\000  
\373\037\013\102\053\250\101\076\127\321\356\052\156\132\117\273  
\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060  
\156\061\013\060\011\006\003\125\004\006\023\002\103\110\061\035  
\060\033\006\003\125\004\012\023\024\123\167\151\163\163\040\107  
\157\166\145\162\156\155\145\156\164\040\120\113\111\061\031\060  
\027\006\003\125\004\013\023\020\167\167\167\056\160\153\151\056  
\141\144\155\151\156\056\143\150\061\045\060\043\006\003\125\004  
\003\023\034\123\167\151\163\163\040\107\157\166\145\162\156\155  
\145\156\164\040\122\157\157\164\040\103\101\040\111\111\111\060  
\036\027\015\061\066\060\064\061\065\060\066\065\071\065\071\132\060  
\027\015\064\061\060\064\061\065\060\066\065\071\065\071\132\060  
\156\061\013\060\011\006\003\125\004\006\023\002\103\110\061\035  
\060\033\006\003\125\004\012\023\024\123\167\151\163\163\040\107  
\157\166\145\162\156\155\145\156\164\040\120\113\111\061\031\060  
\027\006\003\125\004\013\023\020\167\167\167\056\160\153\151\056  
\141\144\155\151\156\056\143\150\061\045\060\043\006\003\125\004  
\003\023\034\123\167\151\163\163\040\107\157\166\145\162\156\155  
\145\156\164\040\122\157\157\164\040\103\101\040\111\111\111\060  
\202\002\042\060\015\006\011\052\206\110\206\367\015\001\001\001  
\005\000\003\202\002\017\000\060\202\002\012\002\202\002\001\000  
\341\103\206\216\117\030\224\272\323\302\071\160\155\135\151\121  
\204\131\274\273\310\177\057\375\027\243\170\234\275\330\222\343  
\330\170\041\076\273\232\137\373\262\145\120\162\266\247\354\245  
\347\301\305\000\004\343\314\263\002\112\371\000\333\157\155\273  
\223\027\104\371\043\302\126\072\060\037\201\171\373\144\277\365  
\124\205\277\073\053\157\225\004\006\135\150\012\303\217\270\053  
\146\022\276\242\330\132\224\005\175\257\301\023\006\246\221\072  
\077\031\013\205\203\300\226\135\363\201\310\023\212\365\020\113  
\240\165\072\133\243\100\007\275\241\146\030\145\204\124\171\221  
\232\323\162\204\146\325\015\346\073\132\352\372\333\241\124\375  
\000\043\131\350\127\352\234\267\364\217\101\013\151\261\107\260  
\232\057\142\332\232\031\255\240\225\060\315\056\255\147\273\155  
\371\066\103\267\224\171\311\220\011\000\151\137\227\246\323\157  
\045\350\357\142\207\167\327\246\331\116\034\137\141\146\320\261  
\160\325\340\142\040\066\330\226\100\370\136\061\336\101\231\151  
\020\326\240\356\075\255\023\056\322\224\112\215\200\035\334\214  
\106\041\126\213\111\133\336\241\330\003\312\316\330\145\264\260  
\005\075\046\151\112\155\245\214\171\057\244\217\022\170\020\351  
\262\011\010\103\303\306\004\273\063\076\107\065\245\134\040\040  
\012\342\066\370\143\206\344\015\364\076\024\171\276\105\007\264  
\213\011\223\365\366\052\046\241\275\104\307\363\120\015\015\141  
\233\073\021\337\250\203\352\042\054\225\104\015\071\101\143\115

\250\053\155\150\245\113\237\100\207\152\074\105\012\276\162\247  
\210\276\360\071\052\133\357\131\244\040\357\264\334\303\332\101  
\333\101\245\272\042\137\227\243\310\143\241\044\055\116\045\240  
\303\027\050\305\210\101\223\226\144\146\067\103\005\233\025\174  
\266\276\236\373\033\310\146\030\272\024\357\271\030\317\204\151  
\233\237\275\202\007\022\155\033\031\277\060\176\361\222\016\300  
\114\026\377\321\076\157\370\253\262\141\232\150\103\342\012\124  
\307\001\243\127\216\363\104\006\042\303\160\246\273\245\263\314  
\202\030\330\100\216\275\352\160\101\157\224\127\014\276\007\164  
\156\216\223\172\031\217\306\150\374\033\245\105\263\271\205\251  
\002\003\001\000\001\243\201\356\060\201\353\060\017\006\003\125  
\035\023\001\001\377\004\005\060\003\001\001\377\060\035\006\003  
\125\035\016\004\026\004\024\007\353\216\252\161\313\047\245\273  
\307\061\140\276\355\037\317\240\063\304\346\060\201\250\006\003  
\125\035\043\004\201\240\060\201\235\200\024\007\353\216\252\161  
\313\047\245\273\307\061\140\276\355\037\317\240\063\304\346\241  
\162\244\160\060\156\061\013\060\011\006\003\125\004\006\023\002  
\103\110\061\035\060\033\006\003\125\004\012\023\024\123\167\151  
\163\163\040\107\157\166\145\162\156\155\145\156\164\040\120\113  
\111\061\031\060\027\006\003\125\004\013\023\020\167\167\167\056  
\160\153\151\056\141\144\155\151\156\056\143\150\061\045\060\043  
\006\003\125\004\003\023\034\123\167\151\163\163\040\107\157\166  
\145\162\156\155\145\156\164\040\122\157\157\164\040\103\101\040  
\111\111\111\202\021\000\373\037\013\102\053\250\101\076\127\321  
\356\052\156\132\117\273\060\016\006\003\125\035\017\001\001\377  
\004\004\003\002\001\006\060\015\006\011\052\206\110\206\367\015  
\001\001\013\005\000\003\202\002\001\000\263\117\146\274\336\351  
\214\145\374\267\123\020\056\374\374\335\211\032\021\100\160\224  
\061\211\225\166\306\326\052\314\075\247\243\301\270\316\022\153  
\064\120\301\165\052\057\347\141\046\357\113\077\336\215\043\237  
\015\230\076\037\073\326\152\316\074\361\337\321\113\167\214\250  
\117\362\120\345\050\251\301\152\352\126\157\107\264\202\053\246  
\047\262\045\360\335\043\012\077\351\075\214\045\354\303\265\117  
\067\372\123\012\351\070\230\153\051\354\123\065\327\206\220\232  
\372\143\272\166\124\343\120\117\312\326\347\300\161\320\322\347  
\352\150\124\255\223\344\062\374\172\161\100\207\005\050\270\352  
\270\302\074\215\000\136\301\116\050\126\345\303\154\265\365\252  
\215\357\147\026\007\320\216\305\362\132\031\073\273\301\213\263  
\104\237\014\245\307\313\336\323\104\140\247\275\033\151\332\016  
\232\377\227\105\206\155\372\261\144\212\037\354\337\121\130\122  
\115\326\352\272\006\366\123\161\133\336\351\125\365\054\023\162  
\006\114\123\226\372\312\133\364\077\034\247\337\122\375\313\116  
\175\237\020\100\224\247\241\125\272\163\076\164\164\060\370\243  
\340\237\252\137\037\135\300\337\101\317\001\201\041\333\250\256  
\263\063\255\106\023\167\233\073\060\264\244\340\027\202\300\212  
\265\064\024\034\005\213\256\340\075\332\305\174\253\046\010\114  
\275\112\140\351\160\354\250\130\210\165\147\361\030\227\166\015  
\154\013\175\031\055\002\265\202\231\167\317\142\372\235\022\001



```
\053\331\365\264\127\261\072\353\325\051\360\214\323\102\247\065
\110\214\142\203\076\012\076\141\335\261\363\007\241\307\163\260
\211\360\266\131\173\243\043\330\067\003\065\210\253\105\167\143
\114\377\160\353\216\152\007\321\042\340\062\221\313\025\161\132
\053\305\204\076\221\315\335\264\231\147\215\264\252\214\145\027
\246\254\234\136\126\230\247\364\342\100\022\325\101\227\265\063
\361\355\027\241\245\002\020\341\144\265\100\332\036\255\321\246
\356\254\036\307\021\333\027\161\172\331\232\036\306\116\233\364
\250\263\224\237\011\212\177\114\233\376\010\013\054\253\120\320
\067\262\111\065\032\267\036\051\041\166\341\233\360\241\252\130
\147\044\003\341\031\244\321\023\152\361
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "Swiss Government Root CA III"

# Issuer: CN=Swiss Government Root CA III,OU=www.pki.admin.ch,O=Swiss Government PKI,C=CH

# Serial Number:fb:1f:0b:42:2b:a8:41:3e:57:d1:ee:2a:6e:5a:4f:bb

# Subject: CN=Swiss Government Root CA III,OU=www.pki.admin.ch,O=Swiss Government PKI,C=CH

# Not Valid Before: Fri Apr 15 07:00:00 2016

# Not Valid After: Mon Apr 15 06:59:59 2041

# Fingerprint (MD5): 56:83:cb:f2:76:2c:93:dc:11:3b:ea:c2:09:19:17:46

# Fingerprint (SHA1): cc:ea:e3:24:45:cd:42:18:dd:18:8e:ad:ce:b3:13:3c:7f:b3:40:ad

CKA\_CLASS

CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Swiss Government Root CA III"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\314\352\343\044\105\315\102\030\335\030\216\255\316\263\023\074
\177\263\100\255
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\126\203\313\362\166\054\223\334\021\073\352\302\011\031\027\106
\177\263\100\255
```

END

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\156\061\013\060\011\006\003\125\004\006\023\002\103\110\061
\035\060\033\006\003\125\004\012\023\024\123\167\151\163\163\040
\107\157\166\145\162\156\155\145\156\164\040\120\113\111\061\031
\060\027\006\003\125\004\013\023\020\167\167\167\056\160\153\151
\056\141\144\155\151\156\056\143\150\061\045\060\043\006\003\125
\004\003\023\034\123\167\151\163\163\040\107\157\166\145\162\156
\155\145\156\164\040\122\157\157\164\040\103\101\040\111\111\111
```

END

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\021\000\373\037\013\102\053\250\101\076\127\321\356\052\156
\132\117\273
END
CKA_TRUST_SERVER_AUTH
CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
# Microsoft Code Signing Only Certificate
# Certificate "Application CA G4 Root"
# Issuer: CN=Application CA G4 Root,O=LGPKI,C=JP
# Serial Number:31:a5:f3:ca:90:ea:23:ac:d2:9e:bd
# Subject: CN=Application CA G4 Root,O=LGPKI,C=JP
# Not Valid Before: Wed Feb 15 15:00:00 2017
# Not Valid After: Sun Feb 15 14:59:59 2037
# Fingerprint (MD5): 80:88:87:a3:29:65:03:a4:53:f1:23:08:41:e6:6b:66
# Fingerprint (SHA1): 21:da:ce:4c:2c:34:e6:64:68:ee:06:31:4d:b0:55:a0:a8:9d:4c:1d
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Application CA G4 Root"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\076\061\013\060\011\006\003\125\004\006\023\002\112\120\061
\016\060\014\006\003\125\004\012\023\005\114\107\120\113\111\061
\037\060\035\006\003\125\004\003\023\026\101\160\160\154\151\143
\141\164\151\157\156\040\103\101\040\107\064\040\122\157\157\164
END
```

```
CKA_ID
UTF8 "0"
```

```
CKA_ISSUER MULTILINE_OCTAL
\060\076\061\013\060\011\006\003\125\004\006\023\002\112\120\061
\016\060\014\006\003\125\004\012\023\005\114\107\120\113\111\061
\037\060\035\006\003\125\004\003\023\026\101\160\160\154\151\143
\141\164\151\157\156\040\103\101\040\107\064\040\122\157\157\164
END
```

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\013\061\245\363\312\220\352\043\254\322\236\275
END
```

```
CKA_VALUE MULTILINE_OCTAL
\060\202\003\144\060\202\002\114\240\003\002\001\002\002\013\061
\245\363\312\220\352\043\254\322\236\275\060\015\006\011\052\206
\110\206\367\015\001\001\013\005\000\060\076\061\013\060\011\006
\003\125\004\006\023\002\112\120\061\016\060\014\006\003\125\004
\012\023\005\114\107\120\113\111\061\037\060\035\006\003\125\004
```

\003\023\026\101\160\160\154\151\143\141\164\151\157\156\040\103  
\101\040\107\064\040\122\157\157\164\060\036\027\015\061\067\060  
\062\061\065\061\065\060\060\060\060\132\027\015\063\067\060\062  
\061\065\061\064\065\071\065\071\132\060\076\061\013\060\011\006  
\003\125\004\006\023\002\112\120\061\016\060\014\006\003\125\004  
\012\023\005\114\107\120\113\111\061\037\060\035\006\003\125\004  
\003\023\026\101\160\160\154\151\143\141\164\151\157\156\040\103  
\101\040\107\064\040\122\157\157\164\060\202\001\042\060\015\006  
\011\052\206\110\206\367\015\001\001\001\005\000\003\202\001\017  
\000\060\202\001\012\002\202\001\001\000\257\253\307\345\214\246  
\130\236\057\326\005\311\221\167\060\276\336\032\324\016\143\142  
\321\314\055\261\321\206\070\215\035\205\146\123\237\252\101\145  
\340\130\322\345\051\276\224\250\225\223\074\137\152\305\233\237  
\064\350\155\301\306\323\247\345\103\240\022\060\300\071\064\140  
\014\213\364\150\365\110\337\351\216\034\256\110\247\273\252\075  
\170\267\342\111\273\301\043\004\132\033\220\001\305\175\253\112  
\001\241\302\223\152\322\205\263\266\347\166\353\153\157\070\353  
\040\122\060\225\010\365\371\054\356\310\300\165\271\001\355\301  
\067\126\060\134\235\177\144\302\312\100\040\271\225\205\274\245  
\007\175\014\276\056\241\335\306\046\351\052\051\154\237\050\230  
\051\121\350\166\023\033\357\056\013\067\132\063\236\300\045\147  
\252\017\055\250\324\222\046\070\001\247\320\142\030\056\042\070  
\070\170\013\272\122\231\241\174\046\002\261\342\305\342\336\316  
\212\002\104\204\242\243\351\213\210\143\061\311\057\070\000\351  
\304\002\115\036\043\047\022\110\334\021\261\360\322\342\016\060  
\031\257\003\241\007\263\065\224\042\245\002\003\001\000\001\243  
\143\060\141\060\035\006\003\125\035\016\004\026\004\024\156\334  
\012\065\037\040\302\350\241\323\175\005\116\117\114\140\345\244  
\304\147\060\016\006\003\125\035\017\001\001\377\004\004\003\002  
\001\006\060\017\006\003\125\035\023\001\001\377\004\005\060\003  
\001\001\377\060\037\006\003\125\035\043\004\030\060\026\200\024  
\156\334\012\065\037\040\302\350\241\323\175\005\116\117\114\140  
\345\244\304\147\060\015\006\011\052\206\110\206\367\015\001\001  
\013\005\000\003\202\001\001\000\125\063\325\100\267\032\176\117  
\334\164\203\016\104\272\077\275\122\225\310\223\226\043\362\001  
\271\024\353\312\022\164\315\141\210\064\257\115\136\364\131\212  
\253\036\330\343\131\301\036\370\060\265\100\306\273\270\257\321  
\355\077\154\252\163\230\202\344\230\064\256\222\101\016\131\066  
\032\272\120\034\026\364\027\072\054\033\342\227\157\262\257\321  
\332\336\024\122\337\200\074\307\117\075\207\236\272\225\275\170  
\274\125\074\211\366\056\046\325\025\345\320\100\022\305\263\161  
\077\154\146\037\243\374\113\265\116\342\156\334\200\007\303\371  
\050\024\173\367\136\026\152\103\247\256\221\001\037\117\145\251  
\110\263\316\156\032\006\041\244\323\061\210\210\245\111\021\202  
\153\353\271\235\140\376\237\376\305\367\370\177\253\067\356\257  
\347\130\106\272\011\344\135\071\247\113\004\330\003\002\311\140  
\052\136\125\151\021\013\140\170\201\172\364\161\365\217\106\256  
\217\004\250\227\034\200\211\043\143\333\376\353\246\027\016\131

\266\056\271\206\353\137\136\154\335\201\347\253\060\201\043\220  
\047\261\367\053\220\071\013\270

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "Application CA G4 Root"

# Issuer: CN=Application CA G4 Root,O=LGPKI,C=JP

# Serial Number:31:a5:f3:ca:90:ea:23:ac:d2:9e:bd

# Subject: CN=Application CA G4 Root,O=LGPKI,C=JP

# Not Valid Before: Wed Feb 15 15:00:00 2017

# Not Valid After: Sun Feb 15 14:59:59 2037

# Fingerprint (MD5): 80:88:87:a3:29:65:03:a4:53:f1:23:08:41:e6:6b:66

# Fingerprint (SHA1): 21:da:ce:4c:2c:34:e6:64:68:ee:06:31:4d:b0:55:a0:a8:9d:4c:1d

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Application CA G4 Root"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\041\332\316\114\054\064\346\144\150\356\006\061\115\260\125\240

\250\235\114\035

END

CKA\_CERT\_MD5\_HASH

MULTILINE\_OCTAL

\200\210\207\243\051\145\003\244\123\361\043\010\101\346\153\146

END

CKA\_ISSUER MULTILINE\_OCTAL

\060\076\061\013\060\011\006\003\125\004\006\023\002\112\120\061

\016\060\014\006\003\125\004\012\023\005\114\107\120\113\111\061

\037\060\035\006\003\125\004\003\023\026\101\160\160\154\151\143

\141\164\151\157\156\040\103\101\040\107\064\040\122\157\157\164

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\013\061\245\363\312\220\352\043\254\322\236\275

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "SSC GDL CA Root A"

# Issuer: CN=SSC GDL CA Root A,OU=CA ROOT Services,O=Skaitmeninio sertifikavimo centras,C=LT

# Serial Number:50:96:6e:72:bd:10:d6:8c:4f:6b:c7:62:3f:9c:70:38

```
#
Subject: CN=SSC GDL CA Root A,OU=CA ROOT Services,O=Skaitmeninio sertifikavimo centras,C=LT
# Not Valid Before: Tue Jun 04 13:00:47 2013
# Not Valid After: Sat Jun 04 13:00:47 2033
# Fingerprint (MD5): 59:3f:bc:3d:18:77:a4:ae:1c:d8:a2:25:cd:c3:44:3e
# Fingerprint (SHA1): 0c:20:09:a4:a8:8d:8b:42:02:18:52:50:54:0c:c4:2b:df:b5:b0:89
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "SSC GDL CA Root A"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\161\061\013\060\011\006\003\125\004\006\023\002\114\124\061
\053\060\051\006\003\125\004\012\023\042\123\153\141\151\164\155
\145\156\151\156\151\157\040\163\145\162\164\151\146\151\153\141
\166\151\155\157\040\143\145\156\164\162\141\163\061\031\060\027
\006\003\125\004\013\023\020\103\101\040\122\117\117\124\040\123
\145\162\166\151\143\145\163\061\032\060\030\006\003\125\004\003
\023\021\123\123\103\040\107\104\114\040\103\101\040\122\157\157
\164\040\101
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\161\061\013\060\011\006\003\125\004\006\023\002\114\124\061
\053\060\051\006\003\125\004\012\023\042\123\153\141\151\164\155
\145\156\151\156\151\157\040\163\145\162\164\151\146\151\153\141
\166\151\155\157\040\143\145\156\164\162\141\163\061\031\060\027
\006\003\125\004\013\023\020\103\101\040\122\117\117\124\040\123
\145\162\166\151\143\145\163\061\032\060\030\006\003\125\004\003
\023\021\123\123\103\040\107\104\114\040\103\101\040\122\157\157
\164\040\101
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\120\226\156\162\275\020\326\214\117\153\307\142\077\234
\160\070
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\256\060\202\003\226\240\003\002\001\002\002\020\120
\226\156\162\275\020\326\214\117\153\307\142\077\234\160\070\060
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\161
\061\013\060\011\006\003\125\004\006\023\002\114\124\061\053\060
\051\006\003\125\004\012\023\042\123\153\141\151\164\155\145\156
\151\156\151\157\040\163\145\162\164\151\146\151\153\141\166\151
\155\157\040\143\145\156\164\162\141\163\061\031\060\027\006\003
\125\004\013\023\020\103\101\040\122\117\117\124\040\123\145\162
\166\151\143\145\163\061\032\060\030\006\003\125\004\003\023\021
```

\123\123\103\040\107\104\114\040\103\101\040\122\157\157\164\040  
\101\060\036\027\015\061\063\060\066\060\064\061\063\060\060\064  
\067\132\027\015\063\063\060\066\060\064\061\063\060\060\064\067  
\132\060\161\061\013\060\011\006\003\125\004\006\023\002\114\124  
\061\053\060\051\006\003\125\004\012\023\042\123\153\141\151\164  
\155\145\156\151\156\151\157\040\163\145\162\164\151\146\151\153  
\141\166\151\155\157\040\143\145\156\164\162\141\163\061\031\060  
\027\006\003\125\004\013\023\020\103\101\040\122\117\117\124\040  
\123\145\162\166\151\143\145\163\061\032\060\030\006\003\125\004  
\003\023\021\123\123\103\040\107\104\114\040\103\101\040\122\157  
\157\164\040\101\060\202\002\042\060\015\006\011\052\206\110\206  
\367\015\001\001\001\005\000\003\202\002\017\000\060\202\002\012  
\002\202\002\001\000\237\134\112\374\034\153\267\031\227\331\001  
\067\076\012\351\030\206\323\005\352\242\332\337\011\202\127\356  
\155\053\215\232\026\075\125\076\211\327\311\276\341\001\243\200  
\065\243\106\354\341\021\355\250\074\225\345\072\122\201\312\116  
\230\010\052\017\204\334\273\351\244\371\171\266\111\302\025\236  
\240\225\350\017\110\367\120\327\371\246\103\324\007\013\060\101  
\311\066\022\142\267\154\170\013\006\077\056\263\236\352\060\375  
\101\143\117\204\054\067\316\007\246\071\144\173\161\025\133\053  
\001\362\327\175\230\015\030\076\333\205\232\340\001\120\041\044  
\270\033\243\143\103\323\201\133\115\014\201\116\070\153\316\140  
\305\352\007\342\047\342\353\366\303\124\232\310\311\263\321\053  
\062\067\002\274\155\173\236\220\167\043\215\223\023\046\073\207  
\127\243\145\117\046\130\024\152\143\045\232\345\141\372\034\127  
\375\015\054\151\017\306\012\360\046\071\027\002\243\326\163\201  
\102\303\102\061\203\213\340\372\113\116\130\141\061\050\222\074  
\306\311\020\010\311\014\133\104\254\143\302\327\142\031\362\161  
\356\040\267\111\203\031\236\107\332\126\305\034\254\244\071\150  
\027\137\021\032\154\252\245\222\217\275\033\313\305\340\002\200  
\125\323\160\123\345\213\052\376\102\352\275\073\134\343\122\000  
\175\170\077\046\314\021\256\064\321\062\014\370\173\240\321\175  
\075\343\212\274\276\036\036\222\077\070\262\137\062\136\065\304  
\176\302\222\015\235\266\313\131\325\353\022\152\335\162\041\121  
\021\260\163\345\062\351\326\314\016\335\263\071\132\042\357\344  
\365\351\006\151\206\052\174\163\257\030\042\163\054\066\045\334  
\125\251\122\061\263\212\216\025\175\262\116\020\173\120\212\000  
\114\272\207\342\105\123\167\176\115\145\002\153\214\223\266\153  
\165\355\357\226\267\110\216\250\340\272\271\202\262\122\155\041  
\377\222\272\321\076\260\134\261\253\031\016\031\163\106\053\323  
\122\110\145\064\332\004\065\322\170\076\317\143\065\244\123\346  
\113\343\120\203\275\363\233\207\262\041\332\110\241\172\113\354  
\262\342\361\324\045\005\224\123\026\114\053\146\044\020\310\340  
\327\234\022\244\224\302\001\043\223\241\000\246\340\156\273\071  
\342\365\172\150\251\002\003\001\000\001\243\102\060\100\060\016  
\006\003\125\035\017\001\001\377\004\004\003\002\001\006\060\017  
\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060  
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\144\121\073\022\071\172\154\335\111\223\371\375\300\134\060\015  
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\062\074\177\203\217\012\014\345\124\346\251\276\270\256\227\126  
\346\267\015\031\174\275\227\054\152\052\245\126\163\202\336\116  
\230\213\075\034\304\320\053\053\273\305\014\370\116\376\055\256  
\277\251\147\177\127\263\157\355\377\213\323\126\014\357\060\214  
\301\136\246\351\131\212\074\056\334\107\317\314\224\136\203\254  
\024\166\372\176\274\014\243\016\134\033\210\354\053\033\065\150  
\210\261\365\173\305\363\263\305\032\274\373\357\265\136\337\360  
\071\036\165\150\355\104\302\113\042\160\076\134\153\224\311\020  
\254\360\375\310\057\176\043\342\201\247\033\316\014\272\105\062  
\047\120\105\071\254\340\376\000\264\052\165\007\014\147\033\273  
\161\300\202\343\227\126\227\320\344\167\131\271\377\174\147\134  
\204\145\273\010\066\250\113\116\221\302\151\376\035\354\232\023  
\037\165\063\054\051\306\351\260\150\220\043\377\043\137\177\306  
\073\247\050\020\270\037\242\210\315\144\026\045\117\343\200\267  
\300\112\200\127\360\220\333\072\262\002\062\040\325\153\310\330  
\024\100\311\331\070\031\124\070\353\350\145\073\157\134\325\105  
\172\257\333\331\330\225\236\266\247\225\315\034\011\035\002\036  
\001\351\004\225\135\205\227\070\025\275\250\307\231\336\323\104  
\102\135\206\203\101\044\174\121\211\252\103\011\047\064\350\361  
\012\265\226\113\264\363\240\376\362\000\215\152\073\164\271\103  
\271\146\271\317\352\353\067\316\377\233\351\043\370\154\323\043  
\375\350\351\340\156\370\373\015\122\100\212\254\200\153\040\020  
\135\320\250\375\252\075\071\021\053\057\377\122\221\072\240\334  
\212\307\166\066\021\131\205\273\060\212\244\110\060\234\141\103  
\253\324\257\166\355\300\277\027\224\170\065\333\110\067\010\324  
\216\152\000\351\042\335\312\360\323\022\070\074\230\237\140\114  
\155\077\102\375\357\214\232\267\036\161\172\032\111\324\140\311  
\353\217\364\351\306\277\160\124\210\322\307\127\073\126\315\327  
\156\334\355\015\164\176\345\165\101\221\127\223\064\175\251\365  
\275\207

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "SSC GDL CA Root A"

# Issuer: CN=SSC GDL CA Root A,OU=CA ROOT Services,O=Skaitmeninio sertifikavimo centras,C=LT

# Serial Number:50:96:6e:72:bd:10:d6:8c:4f:6b:c7:62:3f:9c:70:38

#

Subject: CN=SSC GDL CA Root A,OU=CA ROOT Services,O=Skaitmeninio sertifikavimo centras,C=LT

# Not Valid Before: Tue Jun 04 13:00:47 2013

```

# Not Valid After: Sat Jun 04 13:00:47 2033
# Fingerprint (MD5): 59:3f:bc:3d:18:77:a4:ae:1c:d8:a2:25:cd:c3:44:3e
# Fingerprint (SHA1): 0c:20:09:a4:a8:8d:8b:42:02:18:52:50:54:0c:c4:2b:df:b5:b0:89
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "SSC GDL CA Root A"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\014\040\011\244\250\215\213\102\002\030\122\120\124\014\304\053
\337\265\260\211
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\131\077\274\075\030\167\244\256\034\330\242\045\315\303\104\076
END
CKA_ISSUER MULTILINE_OCTAL
\060\161\061\013\060\011\006\003\125\004\006\023\002\114\124\061
\053\060\051\006\003\125\004\012\023\042\123\153\141\151\164\155
\145\156\151\156\151\157\040\163\145\162\164\151\146\151\153\141
\166\151\155\157\040\143\145\156\164\162\141\163\061\031\060\027
\006\003\125\004\013\023\020\103\101\040\122\117\117\124\040\123
\145\162\166\151\143\145\163\061\032\060\030\006\003\125\004\003
\023\021\123\123\103\040\107\104\114\040\103\101\040\122\157\157
\164\040\101
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\120\226\156\162\275\020\326\214\117\153\307\142\077\234
\160\070
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

```

```

# Microsoft Code Signing Only Certificate
# Certificate "Halcom Root Certificate Authority"
# Issuer: CN=Halcom Root Certificate Authority,2.5.4.97=VATSI-43353126,O=Halcom d.d.,C=SI
# Serial Number: 843675 (0xcd9b)
# Subject: CN=Halcom Root Certificate Authority,2.5.4.97=VATSI-43353126,O=Halcom d.d.,C=SI
# Not Valid Before: Fri Jun 10 07:07:50 2016
# Not Valid After: Tue Jun 10 07:07:50 2036
# Fingerprint (MD5):
69:16:83:a1:f7:27:b9:ec:7c:d2:c6:b3:79:b2:a3:61
# Fingerprint (SHA1): 23:d7:31:fe:dc:5c:8b:b9:7d:e6:dc:8e:13:b4:11:bd:4f:24:00:4f
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE

```



```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Halcom Root Certificate Authority"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\150\061\013\060\011\006\003\125\004\006\023\002\123\111\061
\024\060\022\006\003\125\004\012\023\013\110\141\154\143\157\155
\040\144\056\144\056\061\027\060\025\006\003\125\004\141\023\016
\126\101\124\123\111\055\064\063\063\065\063\061\062\066\061\052
\060\050\006\003\125\004\003\023\041\110\141\154\143\157\155\040
\122\157\157\164\040\103\145\162\164\151\146\151\143\141\164\145
\040\101\165\164\150\157\162\151\164\171
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\150\061\013\060\011\006\003\125\004\006\023\002\123\111\061
\024\060\022\006\003\125\004\012\023\013\110\141\154\143\157\155
\040\144\056\144\056\061\027\060\025\006\003\125\004\141\023\016
\126\101\124\123\111\055\064\063\063\065\063\061\062\066\061\052
\060\050\006\003\125\004\003\023\041\110\141\154\143\157\155\040
\122\157\157\164\040\103\145\162\164\151\146\151\143\141\164\145
\040\101\165\164\150\157\162\151\164\171
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\003\014\337\233
END
CKA_VALUE MULTILINE_OCTAL
\060\202\003\200\060\202\002\150\240\003\002\001\002\002\003\014
\337\233\060\015\006\011\052\206\110\206\367\015\001\001\013\005
\000\060\150\061\013\060\011\006\003\125\004\006\023\002\123\111
\061\024\060\022\006\003\125\004\012\023\013\110\141\154\143\157
\155\040\144\056\144\056\061\027\060\025\006\003\125\004\141\023
\016\126\101\124\123\111\055\064\063\063\065\063\061\062\066\061
\052\060\050\006\003\125\004\003\023\041\110\141\154\143\157\155
\040\122\157\157\164\040\103\145\162\164\151\146\151\143\141\164
\145\040\101\165\164\150\157\162\151\164\171\060\036\027\015\061
\066\060\066\061\060\060\067\060\067\065\060\132\027\015\063\066
\060\066\061\060\060\067\060\067\065\060\132\060\150\061\013\060
\011\006\003\125\004\006\023\002\123\111\061\024\060\022\006\003
\125\004\012\023\013\110\141\154\143\157\155\040\144\056\144\056
\061\027\060\025\006\003\125\004\141\023\016\126\101\124\123\111
\055\064\063\063\065\063\061\062\066\061\052\060\050\006\003\125
\004\003\023\041\110\141\154\143\157\155\040\122\157\157\164\040
\103\145\162\164\151\146\151\143\141\164\145\040\101\165\164\150
\157\162\151\164\171\060\202\001\042\060\015\006\011\052\206\110
\206\367\015\001\001\001\005\000\003\202\001\017\000\060\202\001
\012\002\202\001\001\000\351\122\246\306\032\357\143\273\255\201
\364\220\262\132\217\015\325\026\063\264\034\030\373\313\211\052
```

\060\273\145\201\304\341\373\002\251\224\007\166\345\327\025\344  
\172\144\020\200\352\074\320\263\242\255\256\034\037\352\273\201  
\141\230\324\371\215\151\225\304\105\056\003\011\312\206\372\134  
\132\021\027\100\060\076\360\306\143\011\311\361\215\101\245\126  
\015\005\144\151\113\130\254\052\051\226\273\100\063\026\064\113  
\147\154\327\361\264\106\245\352\131\250\103\150\017\214\070\052  
\252\074\366\104\003\206\370\212\333\105\041\053\051\036\022\267  
\372\245\145\101\336\006\010\130\160\225\076\364\114\331\353\017  
\051\251\221\212\236\255\312\022\365\345\225\346\070\331\032\246  
\213\234\117\246\110\023\020\245\171\104\275\152\073\051\365\026  
\167\100\313\176\233\134\337\276\213\353\347\240\031\157\237\025  
\077\047\236\051\261\365\015\374\137\107\242\074\335\056\013\002  
\373\364\215\352\354\014\261\371\264\005\254\371\217\251\075\156  
\054\035\071\237\320\116\237\116\310\152\236\200\003\141\334\317  
\370\155\224\313\017\317\002\003\001\000\001\243\063\060\061\060  
\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377  
\060\021\006\003\125\035\016\004\012\004\010\102\256\246\103\307  
\230\050\260\060\013\006\003\125\035\017\004\004\003\002\001\006  
\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\003  
\202\001\001\000\122\271\171\320\333\143\376\031\201\373\014\371  
\301\345\120\131\312\235\262\373\134\063\320\070\250\253\265\032  
\116\123\045\165\042\323\111\277\312\201\317\323\341\173\243\221  
\106\165\312\032\353\331\365\135\274\173\206\065\375\201\227\234  
\204\327\046\230\042\374\261\065\320\251\225\266\174\377\344\227  
\264\100\176\111\135\150\310\342\324\071\165\047\117\003\221\262  
\061\127\277\206\327\155\312\161\000\042\067\320\073\130\044\120  
\240\234\214\232\211\216\365\050\106\154\347\026\355\260\201\253  
\364\106\046\257\246\350\032\105\167\160\026\222\262\173\161\161  
\334\367\337\111\147\300\063\010\016\056\123\301\167\253\307\112  
\221\114\022\357\347\016\011\345\165\061\040\256\156\374\132\212  
\200\234\020\260\333\250\112\314\363\053\334\066\064\246\367\251  
\013\147\235\220\313\075\046\237\165\315\114\311\035\006\012\165  
\213\122\300\201\360\321\046\254\314\222\246\024\234\134\074\026  
\102\373\223\314\002\250\023\363\332\256\012\303\270\025\364\260  
\320\324\340\026\040\117\254\120\230\170\046\224\036\150\353\224  
\162\376\367\213

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "Halcom Root Certificate Authority"

# Issuer: CN=Halcom Root Certificate Authority,2.5.4.97=VATSI-43353126,O=Halcom d.d.,C=SI

# Serial Number: 843675 (0xcdf9b)

# Subject: CN=Halcom Root Certificate Authority,2.5.4.97=VATSI-43353126,O=Halcom d.d.,C=SI

# Not Valid Before: Fri Jun 10 07:07:50 2016

```
# Not Valid After: Tue Jun 10 07:07:50 2036
# Fingerprint (MD5): 69:16:83:a1:f7:27:b9:ec:7c:d2:c6:b3:79:b2:a3:61
# Fingerprint (SHA1): 23:d7:31:fe:dc:5c:8b:b9:7d:e6:dc:8e:13:b4:11:bd:4f:24:00:4f
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Halcom Root Certificate Authority"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\043\327\061\376\334\134\213\271\175\346\334\216\023\264\021\275
\117\044\000\117
END
CKA_CERT_MD5_HASH
MULTILINE_OCTAL
\151\026\203\241\367\047\271\354\174\322\306\263\171\262\243\141
END
CKA_ISSUER MULTILINE_OCTAL
\060\150\061\013\060\011\006\003\125\004\006\023\002\123\111\061
\024\060\022\006\003\125\004\012\023\013\110\141\154\143\157\155
\040\144\056\144\056\061\027\060\025\006\003\125\004\141\023\016
\126\101\124\123\111\055\064\063\063\065\063\061\062\066\061\052
\060\050\006\003\125\004\003\023\041\110\141\154\143\157\155\040
\122\157\157\164\040\103\145\162\164\151\146\151\143\141\164\145
\040\101\165\164\150\157\162\151\164\171
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\003\014\337\233
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
# Microsoft Code Signing Only Certificate
# Certificate "Application CA G3 Root"
# Issuer: CN=Application CA G3 Root,O=LGPKI,C=JP
#
Serial Number: 49 (0x31)
# Subject: CN=Application CA G3 Root,O=LGPKI,C=JP
# Not Valid Before: Tue Jun 03 15:00:00 2014
# Not Valid After: Sat Jun 03 14:59:59 2034
# Fingerprint (MD5): 47:5e:d1:73:5a:e8:95:77:04:01:a3:3f:33:02:5c:20
# Fingerprint (SHA1): 6f:38:84:56:8e:99:c8:c6:ac:0e:5d:de:2d:b2:02:dd:00:2e:36:63
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Application CA G3 Root"
```

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\076\061\013\060\011\006\003\125\004\006\023\002\112\120\061  
\016\060\014\006\003\125\004\012\023\005\114\107\120\113\111\061  
\037\060\035\006\003\125\004\003\023\026\101\160\160\154\151\143  
\141\164\151\157\156\040\103\101\040\107\063\040\122\157\157\164  
END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\076\061\013\060\011\006\003\125\004\006\023\002\112\120\061  
\016\060\014\006\003\125\004\012\023\005\114\107\120\113\111\061  
\037\060\035\006\003\125\004\003\023\026\101\160\160\154\151\143  
\141\164\151\157\156\040\103\101\040\107\063\040\122\157\157\164  
END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\001\061

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\132\060\202\002\102\240\003\002\001\002\002\001\061  
\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060  
\076\061\013\060\011\006\003\125\004\006\023\002\112\120\061\016  
\060\014\006\003\125\004\012\023\005\114\107\120\113\111\061\037  
\060\035\006\003\125\004\003\023\026\101\160\160\154\151\143\141  
\164\151\157\156\040\103\101\040\107\063\040\122\157\157\164\060  
\036\027\015\061\064\060\066\060\063\061\064\065\071\065\071\132\060  
\027\015\063\064\060\066\060\063\061\064\065\071\065\071\132\060  
\076\061\013\060\011\006\003\125\004\006\023\002\112\120\061\016  
\060\014\006\003\125\004\012\023\005\114\107\120\113\111\061\037  
\060\035\006\003\125\004\003\023\026\101\160\160\154\151\143\141  
\164\151\157\156\040\103\101\040\107\063\040\122\157\157\164\060  
\202\001\042\060\015\006\011\052\206\110\206\367\015\001\001\001  
\005\000\003\202\001\017\000\060\202\001\012\002\202\001\001\000  
\315\105\076\367\321\226\042\134\221\057\076\012\000\003\314\266  
\367\154\124\374\050\067\324\004\030\354\255\230\311\257\323\245  
\271\347\331\277\116\346\243\231\074\231\156\241\040\036\106\033  
\342\165\125\274\322\354\366\210\032\354\064\105\113\203\235\323  
\262\346\335\007\211\301\010\331\370\073\213\222\144\162\135\232  
\073\314\255\067\211\307\334\140\171\010\340\160\254\367\053\355  
\237\003\111\037\216\076\203\250\156\342\222\134\124\321\171\337  
\354\030\072\175\270\155\217\326\243\045\115\255\037\100\246\137  
\324\252\116\261\160\030\131\231\362\013\124\151\076\171\050\104  
\210\367\161\227\315\177\005\334\312\334\166\112\220\114\153\140  
\350\372\046\061\330\265\370\347\374\155\213\044\152\266\357\102  
\327\043\124\305\032\143\212\073\307\374\252\155\074\217\313\154  
\332\040\260\362\274\145\034\001\114\042\225\015\034\043\037\254  
\325\371\316\165\133\352\060\275\114\001\044\037\165\324\141\111  
\303\033\231\145\216\010\134\071\070\315\051\303\070\105\315\144

```
\171\267\233\115\107\352\130\062\372\246\366\222\360\301\267\137
\002\003\001\000\001\243\143\060\141\060\035\006\003\125\035\016
\004\026\004\024\251\065\052\110\276\054\067\355\206\333\174\125
\207\000\046\276\030\055\134\056\060\016\006\003\125\035\017\001
\001\377\004\004\003\002\001\006\060\017\006\003\125\035\023\001
\001\377\004\005\060\003\001\001\377\060\037\006\003\125\035\043
\004\030\060\026\200\024\251\065\052\110\276\054\067\355\206\333
\174\125\207\000\046\276\030\055\134\056\060\015\006\011\052\206
\110\206\367\015\001\001\013\005\000\003\202\001\001\000\266\202
\275\305\106\320\161\213\245\221\075\176\055\132\371\234\204\175
\007\047\225\035\347\115\310\174\354\346\223\350\126\032\172\060
\110\073\014\372\116\365\011\262\257\210\255\224\354\375\262\255
\057\346\005\164\041\033\204\213\070\052\303\355\357\106\150\265
\335\122\372\160\302\165\117\377\243\101\056\074\027\224\114\011
\042\264\216\301\177\304\246\254\355\203\150\317\145\136\354\172
\275\305\146\356\320\243\177\362\127\261\010\302\171\160\353\162
\177\101\131\011\171\165\361\274\261\041\376\203\263\104\075\211
\243\276\261\172\330\235\303\037\346\304\124\341\215\345\330\120
\334\344\126\067\173\276\050\000\363\054\167\332\043\177\140\230
\075\005\026\362\170\151\255\231\303\072\164\154\076\232\262\224
\355\217\252\366\123\153\347\310\267\350\074\214\373\307\174\117
\031\135\244\146\025\351\177\207\240\320\325\255\040\244\106\011
\105\254\345\310\145\207\273\006\337\374\327\150\126\103\163\242
\000\231\062\222\302\016\240\034\016\221\275\225\130\274\223\237
\204\302\245\146\347\145\315\051\342\142\362\005\222\140
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "Application CA G3 Root"

# Issuer: CN=Application CA G3 Root,O=LGPKI,C=JP

#

Serial Number: 49 (0x31)

# Subject: CN=Application CA G3 Root,O=LGPKI,C=JP

# Not Valid Before: Tue Jun 03 15:00:00 2014

# Not Valid After: Sat Jun 03 14:59:59 2034

# Fingerprint (MD5): 47:5e:d1:73:5a:e8:95:77:04:01:a3:3f:33:02:5c:20

# Fingerprint (SHA1): 6f:38:84:56:8e:99:c8:c6:ac:0e:5d:de:2d:b2:02:dd:00:2e:36:63

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Application CA G3 Root"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\157\070\204\126\216\231\310\306\254\016\135\336\055\262\002\335
```

```

\000\056\066\143
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\107\136\321\163\132\350\225\167\004\001\243\077\063\002\134\040
END
CKA_ISSUER MULTILINE_OCTAL
\060\076\061\013\060\011\006\003\125\004\006\023\002\112\120\061
\016\060\014\006\003\125\004\012\023\005\114\107\120\113\111\061
\037\060\035\006\003\125\004\003\023\026\101\160\160\154\151\143
\141\164\151\157\156\040\103\101\040\107\063\040\122\157\157\164
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\001\061
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "GLOBALTRUST 2015"
# Issuer: CN=GLOBALTRUST 2015,OU=GLOBALTRUST Certification Service,O=e-commerce monitoring
GmbH,L=Wien,ST=Wien,C=AT
# Serial Number: 0 (0x0)
# Subject: CN=GLOBALTRUST 2015,OU=GLOBALTRUST Certification Service,O=e-commerce monitoring
GmbH,L=Wien,ST=Wien,C=AT
# Not Valid Before: Thu Jun 11 00:00:00 2015
# Not Valid After: Sun Jun 10 00:00:00 2040
# Fingerprint (MD5): da:5a:b9:da:8e:0a:38:d4:82:63:03:9d:6c:96:6c:ed
# Fingerprint (SHA1): 46:5b:26:be:be:71:06:dd:85:44:c1:13:9d:9f:a2:57:00:c1:d7:bd
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8
"GLOBALTRUST 2015"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\227\061\013\060\011\006\003\125\004\006\023\002\101\124
\061\015\060\013\006\003\125\004\010\023\004\127\151\145\156\061
\015\060\013\006\003\125\004\007\023\004\127\151\145\156\061\043
\060\041\006\003\125\004\012\023\032\145\055\143\157\155\155\145
\162\143\145\040\155\157\156\151\164\157\162\151\156\147\040\107
\155\142\110\061\052\060\050\006\003\125\004\013\023\041\107\114
\117\102\101\114\124\122\125\123\124\040\103\145\162\164\151\146
\151\143\141\164\151\157\156\040\123\145\162\166\151\143\145\061
\031\060\027\006\003\125\004\003\023\020\107\114\117\102\101\114

```

```
\124\122\125\123\124\040\062\060\061\065
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\227\061\013\060\011\006\003\125\004\006\023\002\101\124
\061\015\060\013\006\003\125\004\010\023\004\127\151\145\156\061
\015\060\013\006\003\125\004\007\023\004\127\151\145\156\061\043
\060\041\006\003\125\004\012\023\032\145\055\143\157\155\155\145
\162\143\145\040\155\157\156\151\164\157\162\151\156\147\040\107
\155\142\110\061\052\060\050\006\003\125\004\013\023\041\107\114
\117\102\101\114\124\122\125\123\124\040\103\145\162\164\151\146
\151\143\141\164\151\157\156\040\123\145\162\166\151\143\145\061
\031\060\027\006\003\125\004\003\023\020\107\114\117\102\101\114
\124\122\125\123\124\040\062\060\061\065
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\001\000
END
CKA_VALUE MULTILINE_OCTAL
\060\202\006\014\060\202\003\364\240\003\002\001\002\002\001\000
\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060
\201\227\061\013\060\011\006\003\125\004\006\023\002\101\124\061
\015\060\013\006\003\125\004\010\023\004\127\151\145\156\061\015
\060\013\006\003\125\004\007\023\004\127\151\145\156\061\043\060
\041\006\003\125\004\012\023\032\145\055\143\157\155\155\145\162
\143\145\040\155\157\156\151\164\157\162\151\156\147\040\107\155
\142\110\061\052\060\050\006\003\125\004\013\023\041\107\114\117
\102\101\114\124\122\125\123\124\040\103\145\162\164\151\146\151
\143\141\164\151\157\156\040\123\145\162\166\151\143\145\061\031
\060\027\006\003\125\004\003\023\020\107\114\117\102\101\114\124
\122\125\123\124\040\062\060\061\065\060\036\027\015\061\065\060
\066\061\061\060\060\060\060\060\060\132\027\015\064\060\060\066
\061\060\060\060\060\060\060\060\132\060\201\227\061\013\060\011
\006\003\125\004\006\023\002\101\124\061\015\060\013\006\003\125
\004\010\023\004\127\151\145\156\061\015\060\013\006\003\125\004
\007\023\004\127\151\145\156\061\043\060\041\006\003\125\004\012
\023\032\145\055\143\157\155\155\145\162\143\145\040\155\157\156
\151\164\157\162\151\156\147\040\107\155\142\110\061\052\060\050
\006\003\125\004\013\023\041\107\114\117\102\101\114\124\122\125
\123\124\040\103\145\162\164\151\146\151\143\141\164\151\157\156
\040\123\145\162\166\151\143\145\061\031\060\027\006\003\125\004
\003\023\020\107\114\117\102\101\114\124\122\125\123\124\040\062
\060\061\065\060\202\002\040\060\015\006\011\052\206\110\206\367
\015\001\001\001\005\000\003\202\002\015\000\060\202\002\010\002
\202\002\001\000\324\246\227\250\362\364\220\021\103\255\264\202
\106\101\361\057\221\157\143\242\315\015\040\334\275\014\070\212
\145\112\012\053\072\250\164\251\167\241\213\216\362\057\201\367
```

\204\030\315\255\353\142\266\222\175\340\101\345\116\124\070\067  
\202\357\313\340\355\317\273\312\314\243\113\367\133\376\270\174  
\247\010\155\313\103\304\114\042\024\146\343\235\003\271\167\041  
\253\104\153\041\107\043\310\040\372\052\313\221\166\035\165\154  
\370\233\351\017\046\351\103\057\232\040\005\150\030\307\216\231  
\205\055\101\007\246\144\216\130\341\215\225\200\244\115\137\365  
\002\330\201\171\333\325\347\337\242\042\375\024\247\147\026\354  
\331\130\114\312\251\335\352\032\216\251\010\144\117\121\041\266  
\162\242\116\377\120\161\275\073\145\344\275\177\123\021\256\337  
\020\071\173\135\366\107\160\027\367\103\221\003\172\141\045\137  
\054\374\370\211\021\074\354\071\124\026\111\304\041\232\161\340  
\171\213\166\035\166\075\007\131\270\007\261\214\334\307\315\116  
\341\373\255\103\115\077\100\357\041\142\057\061\104\116\151\307  
\157\042\313\253\124\113\350\302\372\021\150\254\310\156\016\336  
\154\305\047\226\011\121\002\115\001\266\127\277\062\050\325\011  
\103\226\367\304\210\265\371\124\376\032\072\152\267\054\265\044  
\144\373\112\170\162\303\374\331\117\310\116\043\271\051\330\015  
\241\110\101\223\002\155\277\022\205\233\306\305\140\055\360\221  
\374\231\375\040\224\236\161\143\253\325\111\253\220\354\207\071  
\205\177\215\205\314\013\350\333\113\073\016\374\302\166\175\106  
\347\071\046\236\337\125\337\036\204\371\101\066\046\154\002\131  
\053\216\373\274\351\037\047\044\142\004\147\204\341\077\330\235  
\030\116\226\240\045\356\312\050\003\117\002\121\317\367\065\067  
\151\244\264\326\326\325\036\031\103\047\026\037\107\121\356\112  
\011\114\021\132\266\133\075\141\350\073\020\276\326\106\346\364  
\034\375\270\105\275\174\372\165\132\354\341\122\043\015\216\037  
\206\227\123\221\134\233\233\050\326\216\345\156\047\255\040\214  
\247\301\101\251\227\067\213\054\352\156\030\005\227\366\316\003  
\122\361\275\171\064\233\100\307\043\222\164\363\157\355\243\351  
\131\360\125\113\002\001\003\243\143\060\141\060\017\006\003\125  
\035\023\001\001\377\004\005\060\003\001\001\377\060\016\006\003  
\125\035\017\001\001\377\004\004\003\002\001\006\060\035\006\003  
\125\035\016\004\026\004\024\313\260\335\075\214\074\337\142\054  
\053\146\074\236\074\351\025\155\161\264\327\060\037\006\003\125  
\035\043\004\030\060\026\200\024\313\260\335\075\214\074\337\142  
\054\053\146\074\236\074\351\025\155\161\264\327\060\015\006\011  
\052\206\110\206\367\015\001\001\013\005\000\003\202\002\001\000  
\242\175\125\004\146\356\026\024\274\202\201\207\045\031\071\142  
\364\376\073\037\341\300\163\000\161\312\165\251\342\163\361\305  
\015\101\243\135\216\301\055\331\145\133\331\211\342\360\216\305  
\240\175\275\313\314\106\123\037\137\355\040\266\002\052\326\023  
\362\235\175\121\112\100\125\161\255\236\354\166\352\105\040\216  
\252\372\172\103\232\160\147\176\023\336\230\350\313\215\335\037  
\254\064\322\241\265\355\376\270\347\026\317\370\321\070\060\215  
\064\211\322\316\175\201\322\036\377\121\030\123\066\223\334\011  
\313\010\026\270\010\327\132\060\220\212\012\371\057\265\317\304  
\315\124\162\052\306\275\001\347\130\013\156\006\100\264\011\316  
\264\216\263\232\351\211\221\224\254\172\124\341\373\343\204\054



```
\203\240\117\376\353\350\301\364\353\266\046\323\070\304\055\255
\254\105\200\064\155\041\075\135\205\072\342\173\376\124\267\335
\350\205\124\313\244\361\253\051\120\170\327\044\265\243\057\236
\257\021\146\256\030\270\375\135\050\317\100\327\125\340\054\353
\122\061\150\103\146\005\227\222\273\305\361\041\054\375\022\144
\061\231\103\157\213\235\113\140\376\024\136\122\263\043\250\341
\230\172\356\024\311\241\342\314\077\166\041\142\375\153\015\331
\264\112\225\346\156\133\172\044\303\323\306\326\037\242\353\067
\153\116\243\337\142\353\353\016\112\010\277\353\030\210\373\107
\032\255\302\121\303\325\174\367\037\053\263\310\112\120\016\151
\130\040\142\001\112\133\312\143\226\046\042\256\366\351\234\100
\254\147\003\235\235\151\025\302\300\370\135\247\044\261\047\074
\277\005\342\253\242\312\311\260\055\176\243\301\061\040\106\041
\145\222\335\312\336\337\223\033\274\155\057\137\251\026\244\127
\207\054\162\232\132\202\147\321\104\342\075\011\012\201\214\036
\020\375\306\064\150\354\377\167\141\166\177\046\367\333\374\022
\106\022\252\300\321\370\171\205\242\002\314\213\252\244\255\154
\024\300\275\374\150\256\104\175\042\371\012\105\135\354\004\346
\372\343\244\305\346\371\262\031\303\331\214\250\223\173\072\212
\151\073\122\023\074\035\063\002\116\226\100\237\271\225\375\223
\027\063\301\311\013\366\375\275\151\020\365\255\051\373\343\332
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "GLOBALTRUST 2015"

#

Issuer: CN=GLOBALTRUST 2015,OU=GLOBALTRUST Certification Service,O=e-commerce monitoring  
GmbH,L=Wien,ST=Wien,C=AT

# Serial Number: 0 (0x0)

# Subject: CN=GLOBALTRUST 2015,OU=GLOBALTRUST Certification Service,O=e-commerce monitoring  
GmbH,L=Wien,ST=Wien,C=AT

# Not Valid Before: Thu Jun 11 00:00:00 2015

# Not Valid After: Sun Jun 10 00:00:00 2040

# Fingerprint (MD5): da:5a:b9:da:8e:0a:38:d4:82:63:03:9d:6c:96:6c:ed

# Fingerprint (SHA1): 46:5b:26:be:be:71:06:dd:85:44:c1:13:9d:9f:a2:57:00:c1:d7:bd

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "GLOBALTRUST 2015"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\106\133\046\276\276\161\006\335\205\104\301\023\235\237\242\127
\000\301\327\275
```

END

```

CKA_CERT_MD5_HASH MULTILINE_OCTAL
\332\132\271\332\216\012\070\324\202\143\003\235\154\226\154\355
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\227\061\013\060\011\006\003\125\004\006\023\002\101\124
\061\015\060\013\006\003\125\004\010\023\004\127\151\145\156\061
\015\060\013\006\003\125\004\007\023\004\127\151\145\156\061\043
\060\041\006\003\125\004\012\023\032\145\055\143\157\155\155\145
\162\143\145\040\155\157\156\151\164\157\162\151\156\147\040\107
\155\142\110\061\052\060\050\006\003\125\004\013\023\041\107\114
\117\102\101\114\124\122\125\123\124\040\103\145\162\164\151\146
\151\143\141\164\151\157\156\040\123\145\162\166\151\143\145\061
\031\060\027\006\003\125\004\003\023\020\107\114\117\102\101\114
\124\122\125\123\124\040\062\060\061\065
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\001\000
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "Microsoft ECC Product Root Certificate Authority 2018"
# Issuer: CN=Microsoft ECC Product Root Certificate Authority 2018,O=Microsoft
  Corporation,L=Redmond,ST=Washington,C=US
# Serial Number:14:98:26:66:dc:7c:cd:8f:40:53:67:7b:b9:99:ec:85
# Subject: CN=Microsoft ECC Product Root Certificate Authority 2018,O=Microsoft
  Corporation,L=Redmond,ST=Washington,C=US
# Not Valid Before: Tue Feb 27 20:42:08 2018
# Not Valid After: Fri Feb 27 20:50:46 2043
# Fingerprint (MD5): 1f:12:4e:de:13:e0:6a:02:3c:d7:c0:9a:4f:48:c3:d6
# Fingerprint (SHA1): 06:f1:aa:33:0b:92:7b:75:3a:40:e6:8c:df:22:e3:4b:cb:ef:33:52
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Microsoft ECC Product Root Certificate Authority 2018"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\224\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\023\060\021\006\003\125\004\010\023\012\127\141\163\150\151
\156\147\164\157\156\061\020\060\016\006\003\125\004\007\023\007
\122\145\144\155\157\156\144\061\036\060\034\006\003\125\004\012
\023\025\115\151\143\162\157\163\157\146\164\040\103\157\162\160
\157\162\141\164\151\157\156\061\076\060\074\006\003\125\004\003

```

\023\065\115\151\143\162\157\163\157\146\164\040\105\103\103\040  
\120\162\157\144\165\143\164\040\122\157\157\164\040\103\145\162  
\164\151\146\151\143\141\164\145\040\101\165\164\150\157\162\151  
\164\171\040\062\060\061\070

END

CKA\_ID

UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\224\061\013\060\011\006\003\125\004\006\023\002\125\123  
\061\023\060\021\006\003\125\004\010\023\012\127\141\163\150\151  
\156\147\164\157\156\061\020\060\016\006\003\125\004\007\023\007  
\122\145\144\155\157\156\144\061\036\060\034\006\003\125\004\012  
\023\025\115\151\143\162\157\163\157\146\164\040\103\157\162\160  
\157\162\141\164\151\157\156\061\076\060\074\006\003\125\004\003  
\023\065\115\151\143\162\157\163\157\146\164\040\105\103\103\040  
\120\162\157\144\165\143\164\040\122\157\157\164\040\103\145\162  
\164\151\146\151\143\141\164\145\040\101\165\164\150\157\162\151  
\164\171\040\062\060\061\070

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\020\024\230\046\146\334\174\315\217\100\123\147\173\271\231  
\354\205

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\043\060\202\002\250\240\003\002\001\002\002\020\024  
\230\046\146\334\174\315\217\100\123\147\173\271\231\354\205\060  
\012\006\010\052\206\110\316\075\004\003\003\060\201\224\061\013  
\060\011\006\003\125\004\006\023\002\125\123\061\023\060\021\006  
\003\125\004\010\023\012\127\141\163\150\151\156\147\164\157\156  
\061\020\060\016\006\003\125\004\007\023\007\122\145\144\155\157  
\156\144\061\036\060\034\006\003\125\004\012\023\025\115\151\143  
\162\157\163\157\146\164\040\103\157\162\160\157\162\141\164\151  
\157\156\061\076\060\074\006\003\125\004\003\023\065\115\151\143  
\162\157\163\157\146\164\040\105\103\103\040\120\162\157\144\165  
\143\164\040\122\157\157\164\040\103\145\162\164\151\146\151\143  
\141\164\145\040\101\165\164\150\157\162\151\164\171\040\062\060  
\061\070\060\036\027\015\061\070\060\062\062\067\062\060\064\062  
\060\070\132\027\015\064\063\060\062\062\067\062\060\065\060\064  
\066\132\060\201\224\061\013\060\011\006\003\125\004\006\023\002  
\125\123\061\023\060\021\006\003\125\004\010\023\012\127\141\163  
\150\151\156\147\164\157\156\061\020\060\016\006\003\125\004\007  
\023\007\122\145\144\155\157\156\144\061\036\060\034\006\003\125  
\004\012\023\025\115\151\143\162\157\163\157\146\164\040\103\157  
\162\160\157\162\141\164\151\157\156\061\076\060\074\006\003\125  
\004\003\023\065\115\151\143\162\157\163\157\146\164\040\105\103  
\103\040\120\162\157\144\165\143\164\040\122\157\157\164\040\103  
\145\162\164\151\146\151\143\141\164\145\040\101\165\164\150\157

\162\151\164\171\040\062\060\061\070\060\166\060\020\006\007\052  
\206\110\316\075\002\001\006\005\053\201\004\000\042\003\142\000  
\004\307\021\026\052\166\035\126\216\276\271\142\145\324\303\316  
\264\360\303\060\354\217\155\327\156\071\274\310\111\253\253\270  
\343\103\170\325\201\006\135\357\307\175\237\316\326\263\220\165  
\336\014\260\220\336\043\272\310\321\076\147\340\031\251\033\206  
\061\036\137\064\055\356\027\375\025\373\176\047\212\062\241\352  
\311\217\311\176\030\313\057\073\054\110\172\175\246\364\001\007  
\254\243\201\274\060\201\271\060\016\006\003\125\035\017\001\001  
\377\004\004\003\002\001\206\060\017\006\003\125\035\023\001\001  
\377\004\005\060\003\001\001\377\060\035\006\003\125\035\016\004  
\026\004\024\103\357\160\207\270\235\277\354\210\031\334\306\304  
\153\165\015\165\064\063\010\060\020\006\011\053\006\001\004\001  
\202\067\025\001\004\003\002\001\000\060\145\006\003\125\035\040  
\004\136\060\134\060\006\006\004\125\035\040\000\060\122\006\014  
\053\006\001\004\001\202\067\114\203\175\001\001\060\102\060\100  
\006\010\053\006\001\005\005\007\002\001\026\064\150\164\164\160  
\072\057\057\167\167\167\056\155\151\143\162\157\163\157\146\164  
\056\143\157\155\057\160\153\151\157\160\163\057\104\157\143\163  
\057\122\145\160\157\163\151\164\157\162\171\056\150\164\155\000  
\060\012\006\010\052\206\110\316\075\004\003\003\003\151\000\060  
\146\002\061\000\241\300\111\104\135\062\125\047\314\076\220\156  
\045\042\235\044\133\233\121\065\307\221\111\111\052\243\371\157  
\117\034\315\335\234\341\265\127\311\236\302\042\105\233\006\025  
\160\034\105\277\002\061\000\305\323\050\353\162\307\076\260\254  
\047\011\177\142\075\140\171\345\222\361\105\052\271\245\002\344  
\140\273\376\172\053\234\140\247\265\231\024\362\260\276\360\273  
\005\226\126\126\217\301\150

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "Microsoft ECC Product Root Certificate Authority 2018"

# Issuer: CN=Microsoft ECC Product Root Certificate Authority 2018,O=Microsoft Corporation,L=Redmond,ST=Washington,C=US

# Serial Number:14:98:26:66:dc:7c:cd:8f:40:53:67:7b:b9:99:ec:85

# Subject: CN=Microsoft ECC Product Root Certificate Authority 2018,O=Microsoft Corporation,L=Redmond,ST=Washington,C=US

#

Not Valid Before: Tue Feb 27 20:42:08 2018

# Not Valid After: Fri Feb 27 20:50:46 2043

# Fingerprint (MD5): 1f:12:4e:de:13:e0:6a:02:3c:d7:c0:9a:4f:48:c3:d6

# Fingerprint (SHA1): 06:f1:aa:33:0b:92:7b:75:3a:40:e6:8c:df:22:e3:4b:cb:ef:33:52

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

```

CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Microsoft ECC Product Root Certificate Authority 2018"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\006\361\252\063\013\222\173\165\072\100\346\214\337\042\343\113
\313\357\063\122
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\037\022\116\336\023\340\152\002\074\327\300\232\117\110\303\326
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\224\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\023\060\021\006\003\125\004\010\023\012\127\141\163\150\151
\156\147\164\157\156\061\020\060\016\006\003\125\004\007\023\007
\122\145\144\155\157\156\144\061\036\060\034\006\003\125\004\012
\023\025\115\151\143\162\157\163\157\146\164\040\103\157\162\160
\157\162\141\164\151\157\156\061\076\060\074\006\003\125\004\003
\023\065\115\151\143\162\157\163\157\146\164\040\105\103\103\040
\120\162\157\144\165\143\164\040\122\157\157\164\040\103\145\162
\164\151\146\151\143\141\164\145\040\101\165\164\150\157\162\151
\164\171\040\062\060\061\070
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\024\230\046\146\334\174\315\217\100\123\147\173\271\231
\354\205
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "emSign Root CA - G2"
# Issuer: CN=emSign Root CA - G2,O=eMudhra Technologies Limited,OU=emSign PKI,C=IN
# Serial Number:86:4d:bf:0f:e3:5e:d7:7d:8e:d8
# Subject: CN=emSign Root CA - G2,O=eMudhra Technologies Limited,OU=emSign PKI,C=IN
# Not Valid Before: Sun Feb 18 18:30:00 2018
# Not Valid
After: Wed Feb 18 18:30:00 2043
# Fingerprint (MD5): 63:ac:61:e5:f7:da:aa:05:80:53:bd:e4:ab:fd:bb:30
# Fingerprint (SHA1): 1e:65:77:b9:cf:70:d0:17:ca:e1:bd:a1:35:1d:47:25:a9:73:c0:6d
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "emSign Root CA - G2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

```

CKA\_SUBJECT MULTILINE\_OCTAL

\060\147\061\013\060\011\006\003\125\004\006\023\002\111\116\061  
\023\060\021\006\003\125\004\013\023\012\145\155\123\151\147\156  
\040\120\113\111\061\045\060\043\006\003\125\004\012\023\034\145  
\115\165\144\150\162\141\040\124\145\143\150\156\157\154\157\147  
\151\145\163\040\114\151\155\151\164\145\144\061\034\060\032\006  
\003\125\004\003\023\023\145\155\123\151\147\156\040\122\157\157  
\164\040\103\101\040\055\040\107\062

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

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END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

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CKA\_VALUE MULTILINE\_OCTAL

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END

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CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "emSign Root CA - G2"

# Issuer: CN=emSign Root CA - G2,O=eMudhra Technologies Limited,OU=emSign PKI,C=IN

# Serial Number:86:4d:bf:0f:e3:5e:d7:7d:8e:d8

# Subject: CN=emSign Root CA - G2,O=eMudhra Technologies Limited,OU=emSign PKI,C=IN

# Not Valid Before: Sun Feb 18 18:30:00 2018

# Not Valid After: Wed Feb 18 18:30:00 2043

# Fingerprint (MD5): 63:ac:61:e5:f7:da:aa:05:80:53:bd:e4:ab:fd:bb:30

# Fingerprint (SHA1): 1e:65:77:b9:cf:70:d0:17:ca:e1:bd:a1:35:1d:47:25:a9:73:c0:6d

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN

CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "emSign Root CA - G2"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

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END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

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END

CKA\_ISSUER MULTILINE\_OCTAL

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CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

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END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING

CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "emSign Root CA - C2"

# Issuer: CN=emSign Root CA - C2,O=eMudhra Inc,OU=emSign PKI,C=US

# Serial Number:2f:0a:b7:6b:0d:cb:4a:af:27:58

# Subject: CN=emSign Root CA - C2,O=eMudhra Inc,OU=emSign PKI,C=US

# Not Valid Before: Sun Feb 18 18:30:00 2018

# Not Valid After: Wed Feb 18 18:30:00 2043

# Fingerprint (MD5): eb:24:3b:fa:70:63:c8:e1:cd:5f:0e:ea:c8:97:2f:21

# Fingerprint (SHA1): bc:a2:18:80:74:c3:14:7e:16:f4:c4:8c:59:10:a8:9e:f7:52:f4:79

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "emSign Root CA - C2"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

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CKA\_ID

UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

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\254\240\213\312\016\015\361\026\116\253\004\352\343\175\134\011  
\172\134\042\377\020\042\262\210\307\074\225\120\277\325\265\315  
\122\050\036\237\204\102\017\370\061\000\266\324\326\310\137\144  
\150\212\200\176\127\170\112\343\177\133\377\016\335\171\117\061  
\330\317\034\227\123\206\322\163\337\156\160\021\227\221\217\063  
\273\311\202\056\073\322\073\150\341\047\214\203\241\314\001\155  
\304\201\276\172\265\007\015\057\002\075\123\311\231\234\333\321  
\201\103\053\220\010\013

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate  
# Trust for "emSign Root CA - C2"  
# Issuer: CN=emSign Root CA - C2,O=eMudhra Inc,OU=emSign PKI,C=US  
# Serial Number:2f:0a:b7:6b:0d:cb:4a:af:27:58  
# Subject: CN=emSign Root CA - C2,O=eMudhra Inc,OU=emSign PKI,C=US  
# Not Valid Before: Sun Feb 18 18:30:00 2018  
# Not Valid After: Wed Feb 18 18:30:00 2043  
# Fingerprint (MD5): eb:24:3b:fa:70:63:c8:e1:cd:5f:0e:ea:c8:97:2f:21  
# Fingerprint (SHA1):

bc:a2:18:80:74:c3:14:7e:16:f4:c4:8c:59:10:a8:9e:f7:52:f4:79  
CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST  
CKA\_TOKEN CK\_BBOOL CK\_TRUE  
CKA\_PRIVATE CK\_BBOOL CK\_FALSE  
CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE  
CKA\_LABEL UTF8 "emSign Root CA - C2"  
CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL  
\274\242\030\200\164\303\024\176\026\364\304\214\131\020\250\236  
\367\122\364\171

END  
CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL  
\353\044\073\372\160\143\310\341\315\137\016\352\310\227\057\041  
END

CKA\_ISSUER MULTILINE\_OCTAL  
\060\126\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\023\060\021\006\003\125\004\013\023\012\145\155\123\151\147\156  
\040\120\113\111\061\024\060\022\006\003\125\004\012\023\013\145  
\115\165\144\150\162\141\040\111\156\143\061\034\060\032\006\003  
\125\004\003\023\023\145\155\123\151\147\156\040\122\157\157\164  
\040\103\101\040\055\040\103\062

END  
CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL  
\002\012\057\012\267\153\015\313\112\257\047\130  
END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST  
CKA\_TRUST\_EMAIL\_PROTECTION  
CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST  
CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR  
CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate  
# Certificate "Microsoft ECC TS Root Certificate Authority 2018"  
# Issuer: CN=Microsoft ECC TS Root Certificate Authority 2018,O=Microsoft Corporation,L=Redmond,ST=Washington,C=US  
# Serial Number: 15:38:75:e1:64:7e:d1:b0:47:b4:ef:af:41:12:82:45

```
# Subject: CN=Microsoft ECC TS Root Certificate Authority 2018,O=Microsoft
Corporation,L=Redmond,ST=Washington,C=US
# Not Valid Before: Tue Feb 27 20:51:34 2018
# Not Valid After: Fri Feb 27 21:00:12 2043
# Fingerprint (MD5): 37:94:29:58:86:2a:06:e6:bb:cf:d7:ab:59:c7:f2:3c
# Fingerprint (SHA1): 31:f9:fc:8b:a3:80:59:86:b7:21:ea:72:95:c6:5b:3a:44:53:42:74
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Microsoft ECC TS Root Certificate Authority 2018"
CKA_CERTIFICATE_TYPE
CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\217\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\023\060\021\006\003\125\004\010\023\012\127\141\163\150\151
\156\147\164\157\156\061\020\060\016\006\003\125\004\007\023\007
\122\145\144\155\157\156\144\061\036\060\034\006\003\125\004\012
\023\025\115\151\143\162\157\163\157\146\164\040\103\157\162\160
\157\162\141\164\151\157\156\061\071\060\067\006\003\125\004\003
\023\060\115\151\143\162\157\163\157\146\164\040\105\103\103\040
\124\123\040\122\157\157\164\040\103\145\162\164\151\146\151\143
\141\164\145\040\101\165\164\150\157\162\151\164\171\040\062\060
\061\070
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\217\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\023\060\021\006\003\125\004\010\023\012\127\141\163\150\151
\156\147\164\157\156\061\020\060\016\006\003\125\004\007\023\007
\122\145\144\155\157\156\144\061\036\060\034\006\003\125\004\012
\023\025\115\151\143\162\157\163\157\146\164\040\103\157\162\160
\157\162\141\164\151\157\156\061\071\060\067\006\003\125\004\003
\023\060\115\151\143\162\157\163\157\146\164\040\105\103\103\040
\124\123\040\122\157\157\164\040\103\145\162\164\151\146\151\143
\141\164\145\040\101\165\164\150\157\162\151\164\171\040\062\060
\061\070
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\025\070\165\341\144\176\321\260\107\264\357\257\101\022
\202\105
END
CKA_VALUE MULTILINE_OCTAL
\060\202\003\027\060\202\002\236\240\003\002\001\002\002\020\025
\070\165\341\144\176\321\260\107\264\357\257\101\022\202\105\060
\012\006\010\052\206\110\316\075\004\003\003\060\201\217\061\013
\060\011\006\003\125\004\006\023\002\125\123\061\023\060\021\006
```

\003\125\004\010\023\012\127\141\163\150\151\156\147\164\157\156  
\061\020\060\016\006\003\125\004\007\023\007\122\145\144\155\157  
\156\144\061\036\060\034\006\003\125\004\012\023\025\115\151\143  
\162\157\163\157\146\164\040\103\157\162\160\157\162\141\164\151  
\157\156\061\071\060\067\006\003\125\004\003\023\060\115\151\143  
\162\157\163\157\146\164\040\105\103\103\040\124\123\040\122\157  
\157\164\040\103\145\162\164\151\146\151\143\141\164\145\040\101  
\165\164\150\157\162\151\164\171\040\062\060\061\070\060\036\027  
\015\061\070\060\062\062\067\062\060\065\061\063\064\132\027\015  
\064\063\060\062\062\067\062\061\060\060\061\062\132\060\201\217  
\061\013\060\011\006\003\125\004\006\023\002\125\123\061\023\060  
\021\006\003\125\004\010\023\012\127\141\163\150\151\156\147\164  
\157\156\061\020\060\016\006\003\125\004\007\023\007\122\145\144  
\155\157\156\144\061\036\060\034\006\003\125\004\012\023\025\115  
\151\143\162\157\163\157\146\164\040\103\157\162\160\157\162\141  
\164\151\157\156\061\071\060\067\006\003\125\004\003\023\060\115  
\151\143\162\157\163\157\146\164\040\105\103\103\040\124\123\040  
\122\157\157\164\040\103\145\162\164\151\146\151\143\141\164\145  
\040\101\165\164\150\157\162\151\164\171\040\062\060\061\070\060  
\166\060\020\006\007\052\206\110\316\075\002\001\006\005\053\201  
\004\000\042\003\142\000\004\336\315\273\160\040\361\045\040\264  
\224\350\327\264\073\017\156\207\335\253\254\317\115\100\057\201  
\063\153\131\011\030\326\207\015\046\043\234\264\215\225\235\166  
\237\245\271\006\102\346\255\066\262\304\263\256\172\074\010\325  
\313\235\072\136\105\041\154\013\343\040\365\233\302\335\104\063  
\343\102\271\352\362\050\102\222\252\376\014\007\312\212\023\231  
\073\142\000\355\332\363\065\243\201\274\060\201\271\060\016\006  
\003\125\035\017\001\001\377\004\004\003\002\001\206\060\017\006  
\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060\035  
\006\003\125\035\016\004\026\004\024\350\107\310\102\232\260\235  
\256\157\013\050\073\230\025\217\343\261\350\200\262\060\020\006  
\011\053\006\001\004\001\202\067\025\001\004\003\002\001\000\060  
\145\006\003\125\035\040\004\136\060\134\060\006\006\004\125\035  
\040\000\060\122\006\014\053\006\001\004\001\202\067\114\203\175  
\001\001\060\102\060\100\006\010\053\006\001\005\005\007\002\001  
\026\064\150\164\164\160\072\057\057\167\167\167\056\155\151\143  
\162\157\163\157\146\164\056\143\157\155\057\160\153\151\157\160  
\163\057\104\157\143\163\057\122\145\160\157\163\151\164\157\162  
\171\056\150\164\155\000\060\012\006\010\052\206\110\316\075\004  
\003\003\003\147\000\060\144\002\060\024\206\120\300\046\032\353  
\352\241\024\167\072\133\337\143\071\245\063\307\120\100\325\153  
\065\153\017\264\337\175\126\271\341\245\235\170\031\202\241\103  
\156\032\327\130\243\125\003\102\333\002\060\030\224\264\036\072  
\215\144\372\014\047\033\207\023\112\322\267\072\000\224\306\362  
\345\143\277\257\343\372\334\223\325\347\106\232\153\201\151\076  
\002\337\121\015\217\050\161\101\211\221\057

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

```
CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRUST_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRUST_AFTER CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Trust for "Microsoft ECC TS Root Certificate Authority 2018"
# Issuer: CN=Microsoft ECC TS Root Certificate Authority 2018,O=Microsoft
Corporation,L=Redmond,ST=Washington,C=US
#
# Serial Number:15:38:75:e1:64:7e:d1:b0:47:b4:ef:af:41:12:82:45
# Subject: CN=Microsoft ECC TS Root Certificate Authority 2018,O=Microsoft
Corporation,L=Redmond,ST=Washington,C=US
# Not Valid Before: Tue Feb 27 20:51:34 2018
# Not Valid After: Fri Feb 27 21:00:12 2043
# Fingerprint (MD5): 37:94:29:58:86:2a:06:e6:bb:cf:d7:ab:59:c7:f2:3c
# Fingerprint (SHA1): 31:f9:fc:8b:a3:80:59:86:b7:21:ea:72:95:c6:5b:3a:44:53:42:74
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Microsoft ECC TS Root Certificate Authority 2018"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\061\371\374\213\243\200\131\206\267\041\352\162\225\306\133\072
\104\123\102\164
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\067\224\051\130\206\052\006\346\273\317\327\253\131\307\362\074
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\217\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\023\060\021\006\003\125\004\010\023\012\127\141\163\150\151
\156\147\164\157\156\061\020\060\016\006\003\125\004\007\023\007
\122\145\144\155\157\156\144\061\036\060\034\006\003\125\004\012
\023\025\115\151\143\162\157\163\157\146\164\040\103\157\162\160
\157\162\141\164\151\157\156\061\071\060\067\006\003\125\004\003
\023\060\115\151\143\162\157\163\157\146\164\040\105\103\103\040
\124\123\040\122\157\157\164\040\103\145\162\164\151\146\151\143
\141\164\145\040\101\165\164\150\157\162\151\164\171\040\062\060
\061\070
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\025\070\165\341\144\176\321\260\107\264\357\257\101\022
\202\105
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
```

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "GlobalSign Code Signing Root E45"

# Issuer: CN=GlobalSign Code Signing Root E45,O=GlobalSign nv-sa,C=BE

#

Serial Number:76:53:fe:ae:18:26:43:6f:69:f5:1c:c2:77:16:f2:5e

# Subject: CN=GlobalSign Code Signing Root E45,O=GlobalSign nv-sa,C=BE

# Not Valid Before: Wed Mar 18 00:00:00 2020

# Not Valid After: Sat Mar 18 00:00:00 2045

# Fingerprint (MD5): 1c:65:05:d0:f3:fb:48:c5:29:e4:c4:3e:4d:f8:8d:22

# Fingerprint (SHA1): 79:aa:50:5e:dd:09:b3:21:e3:6d:57:91:0a:5d:f5:a9:fb:85:cc:57

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "GlobalSign Code Signing Root E45"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\123\061\013\060\011\006\003\125\004\006\023\002\102\105\061  
\031\060\027\006\003\125\004\012\023\020\107\154\157\142\141\154  
\123\151\147\156\040\156\166\055\163\141\061\051\060\047\006\003  
\125\004\003\023\040\107\154\157\142\141\154\123\151\147\156\040  
\103\157\144\145\040\123\151\147\156\151\156\147\040\122\157\157  
\164\040\105\064\065

END

CKA\_ID UTF8 "0"

CKA\_ISSUER

MULTILINE\_OCTAL

\060\123\061\013\060\011\006\003\125\004\006\023\002\102\105\061  
\031\060\027\006\003\125\004\012\023\020\107\154\157\142\141\154  
\123\151\147\156\040\156\166\055\163\141\061\051\060\047\006\003  
\125\004\003\023\040\107\154\157\142\141\154\123\151\147\156\040  
\103\157\144\145\040\123\151\147\156\151\156\147\040\122\157\157  
\164\040\105\064\065

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\166\123\376\256\030\046\103\157\151\365\034\302\167\026  
\362\136

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\002\042\060\202\001\251\240\003\002\001\002\002\020\166  
\123\376\256\030\046\103\157\151\365\034\302\167\026\362\136\060  
\012\006\010\052\206\110\316\075\004\003\003\060\123\061\013\060  
\011\006\003\125\004\006\023\002\102\105\061\031\060\027\006\003  
\125\004\012\023\020\107\154\157\142\141\154\123\151\147\156\040  
\156\166\055\163\141\061\051\060\047\006\003\125\004\003\023\040  
\107\154\157\142\141\154\123\151\147\156\040\103\157\144\145\040



\123\151\147\156\151\156\147\040\122\157\157\164\040\105\064\065  
\060\036\027\015\062\060\060\063\061\070\060\060\060\060\060\060  
\132\027\015\064\065\060\063\061\070\060\060\060\060\060\060\132  
\060\123\061\013\060\011\006\003\125\004\006\023\002\102\105\061  
\031\060\027\006\003\125\004\012\023\020\107\154\157\142\141\154  
\123\151\147\156\040\156\166\055\163\141\061\051\060\047\006\003  
\125\004\003\023\040\107\154\157\142\141\154\123\151\147\156\040  
\103\157\144\145\040\123\151\147\156\151\156\147\040\122\157\157  
\164\040\105\064\065\060\166\060\020\006\007\052\206\110\316\075  
\002\001\006\005\053\201\004\000\042\003\142\000\004\166\031\155  
\003\265\365\204\043\253\062\152\056\141\335\204\045\057\357\350  
\171\047\211\203\303\203\165\363\266\170\152\010\155\242\255\041  
\052\002\220\006\354\232\100\234\172\206\221\271\130\205\310\050  
\232\056\013\367\342\166\251\337\262\275\251\303\351\051\031\171  
\010\262\120\320\302\305\235\012\141\014\343\135\067\006\112\134  
\376\204\275\300\200\204\372\113\125\043\340\342\076\243\102\060  
\100\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001  
\206\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001  
\001\377\060\035\006\003\125\035\016\004\026\004\024\247\237\335  
\323\124\315\333\370\154\277\046\154\016\344\327\133\157\200\314  
\102\060\012\006\010\052\206\110\316\075\004\003\003\003\147\000  
\060\144\002\060\154\214\126\266\305\067\256\055\220\053\170\355  
\261\036\106\010\322\303\112\050\357\170\031\010\216\044\064\106  
\117\207\161\141\137\251\021\112\157\062\253\034\321\122\173\252  
\072\352\345\232\002\060\125\053\167\057\316\370\077\233\150\112  
\332\327\250\113\105\015\176\262\153\366\154\332\261\025\342\274  
\110\031\167\213\127\301\135\024\327\101\000\314\046\122\320\040  
\270\031\117\226\347\232

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "GlobalSign Code Signing Root E45"

# Issuer: CN=GlobalSign

Code Signing Root E45,O=GlobalSign nv-sa,C=BE

# Serial Number:76:53:fe:ae:18:26:43:6f:69:f5:1c:c2:77:16:f2:5e

# Subject: CN=GlobalSign Code Signing Root E45,O=GlobalSign nv-sa,C=BE

# Not Valid Before: Wed Mar 18 00:00:00 2020

# Not Valid After: Sat Mar 18 00:00:00 2045

# Fingerprint (MD5): 1c:65:05:d0:f3:fb:48:c5:29:e4:c4:3e:4d:f8:8d:22

# Fingerprint (SHA1): 79:aa:50:5e:dd:09:b3:21:e3:6d:57:91:0a:5d:f5:a9:fb:85:cc:57

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

```

CKA_LABEL UTF8 "GlobalSign Code Signing Root E45"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\171\252\120\136\335\011\263\041\343\155\127\221\012\135\365\251
\373\205\314\127
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\034\145\005\320\363\373\110\305\051\344\304\076\115\370\215\042
END
CKA_ISSUER MULTILINE_OCTAL
\060\123\061\013\060\011\006\003\125\004\006\023\002\102\105\061
\031\060\027\006\003\125\004\012\023\020\107\154\157\142\141\154
\123\151\147\156\040\156\166\055\163\141\061\051\060\047\006\003
\125\004\003\023\040\107\154\157\142\141\154\123\151\147\156\040
\103\157\144\145\040\123\151\147\156\151\156\147\040\122\157\157
\164\040\105\064\065
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\166\123\376\256\030\046\103\157\151\365\034\302\167\026
\362\136
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "GlobalSign Code Signing Root R45"
# Issuer: CN=GlobalSign Code Signing Root R45,O=GlobalSign nv-sa,C=BE
# Serial Number:76:53:fe:ac:75:46:48:93:f5:e5:d7:4a:48:3a:4e:f8
# Subject: CN=GlobalSign Code Signing Root R45,O=GlobalSign nv-sa,C=BE
# Not Valid Before: Wed Mar 18 00:00:00 2020
# Not Valid After: Sat Mar 18 00:00:00 2045
# Fingerprint (MD5): e9:4f:b5:48:71:20:8c:00:df:70:f7:08:ac:47:08:5b
#
Fingerprint (SHA1): 4e:fc:31:46:0c:61:9e:ca:e5:9c:1b:ce:2c:00:80:36:d9:4c:84:b8
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "GlobalSign Code Signing Root R45"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\123\061\013\060\011\006\003\125\004\006\023\002\102\105\061
\031\060\027\006\003\125\004\012\023\020\107\154\157\142\141\154
\123\151\147\156\040\156\166\055\163\141\061\051\060\047\006\003
\125\004\003\023\040\107\154\157\142\141\154\123\151\147\156\040
\103\157\144\145\040\123\151\147\156\151\156\147\040\122\157\157

```

\164\040\122\064\065

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\123\061\013\060\011\006\003\125\004\006\023\002\102\105\061  
\031\060\027\006\003\125\004\012\023\020\107\154\157\142\141\154  
\123\151\147\156\040\156\166\055\163\141\061\051\060\047\006\003  
\125\004\003\023\040\107\154\157\142\141\154\123\151\147\156\040  
\103\157\144\145\040\123\151\147\156\151\156\147\040\122\157\157  
\164\040\122\064\065

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\020\166\123\376\254\165\106\110\223\365\345\327\112\110\072  
\116\370

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\162\060\202\003\132\240\003\002\001\002\002\020\166  
\123\376\254\165\106\110\223\365\345\327\112\110\072\116\370\060  
\015\006\011\052\206\110\206\367\015\001\001\014\005\000\060\123  
\061\013\060\011\006\003\125\004\006\023\002\102\105\061\031\060  
\027\006\003\125\004\012\023\020\107\154\157\142\141\154\123\151  
\147\156\040\156\166\055\163\141\061\051\060\047\006\003\125\004  
\003\023\040\107\154\157\142\141\154\123\151\147\156\040\103\157  
\144\145\040\123\151\147\156\151\156\147\040\122\157\157\164\040  
\122\064\065\060\036\027\015\062\060\060\063\061\070\060\060\060  
\060\060\060\132\027\015\064\065\060\063\061\070\060\060\060\060  
\060\060\132\060\123\061\013\060\011\006\003\125\004\006\023\002  
\102\105\061\031\060\027\006\003\125\004\012\023\020\107\154\157  
\142\141\154\123\151\147\156\040\156\166\055\163\141\061\051\060  
\047\006\003\125\004\003\023\040\107\154\157\142\141\154\123\151  
\147\156\040\103\157\144\145\040\123\151\147\156\151\156\147\040  
\122\157\157\164\040\122\064\065\060\202\002\042\060\015\006\011  
\052\206\110\206\367\015\001\001\001\005\000\003\202\002\017\000  
\060\202\002\012\002\202\002\001\000\266\055\305\060\335\172\350  
\253\220\075\003\162\260\072\113\231\026\141\262\345\377\245\147  
\035\067\034\345\176\354\223\203\252\204\365\243\103\233\230\105  
\212\270\143\127\135\233\000\210\004\045\351\370\150\222\113\202  
\330\113\311\112\003\363\250\177\152\217\212\141\047\275\241\104  
\320\375\365\077\042\302\243\117\221\215\263\005\262\050\202\221  
\135\373\131\210\005\013\227\006\302\230\370\054\247\063\044\356  
\120\072\101\314\360\240\260\173\035\115\322\250\130\070\226\351  
\337\371\033\221\273\213\020\054\322\307\103\035\242\011\164\241  
\200\257\173\346\063\012\014\131\153\216\274\364\253\132\227\173  
\177\256\125\373\204\360\200\376\204\114\327\342\272\275\304\165  
\241\157\275\141\020\164\104\262\230\007\342\164\253\377\150\334  
\154\046\076\351\037\345\340\004\207\255\060\323\014\215\003\174  
\125\270\026\160\134\044\170\040\045\353\147\147\210\253\272\116

\064\230\153\160\021\336\070\312\324\276\241\300\234\341\337\036  
\002\001\330\073\341\147\103\204\266\317\374\164\267\057\204\243  
\277\272\011\067\075\147\154\261\105\134\031\141\253\101\203\365  
\254\035\353\167\015\106\107\163\316\277\275\225\225\355\235\053  
\210\020\376\372\130\350\247\127\341\263\317\250\132\351\007\045  
\233\022\304\236\200\162\075\223\334\214\224\337\073\104\346\046  
\200\374\322\303\003\360\214\014\322\105\326\056\347\217\230\236  
\346\004\356\102\156\147\176\102\026\161\142\347\004\371\140\306  
\144\241\266\234\201\041\116\053\306\155\150\224\206\306\231\164  
\163\147\061\172\221\362\324\214\171\156\174\246\273\176\106\157  
\115\305\205\022\053\317\232\042\104\010\250\205\067\316\007\141  
\127\006\027\022\044\300\304\061\163\241\230\065\127\107\176\020  
\072\105\331\055\244\121\220\230\251\240\007\067\304\145\032\252  
\034\153\026\167\367\247\227\354\077\031\060\231\157\061\373\352  
\100\262\347\322\304\372\311\320\360\120\166\164\131\372\215\155  
\027\062\276\370\351\176\003\364\347\207\165\232\324\112\221\054  
\205\003\023\002\053\102\200\362\211\152\066\317\310\114\240\316  
\236\370\313\215\255\026\247\323\336\325\233\030\247\306\222\072  
\361\202\143\361\056\016\044\144\337\002\003\001\000\001\243\102  
\060\100\060\016\006\003\125\035\017\001\001\377\004\004\003\002  
\001\206\060\017\006\003\125\035\023\001\001\377\004\005\060\003  
\001\001\377\060\035\006\003\125\035\016\004\026\004\024\037\000  
\277\106\200\012\374\170\071\267\245\264\103\331\126\120\273\316  
\226\073\060\015\006\011\052\206\110\206\367\015\001\001\014\005  
\000\003\202\002\001\000\136\053\272\164\227\064\104\137\166\110  
\050\100\204\223\356\001\156\351\241\263\326\200\045\346\173\344  
\274\011\221\075\017\374\166\255\327\324\060\040\273\217\140\320  
\221\326\034\362\234\357\170\032\053\224\062\002\301\044\226\122  
\122\002\320\363\321\374\362\233\071\156\231\341\037\216\103\101  
\175\232\036\133\311\135\232\204\374\046\346\207\363\164\162\046  
\255\244\033\331\075\073\152\122\240\074\011\036\057\036\173\263  
\063\264\105\307\367\254\261\257\223\140\255\166\256\270\262\025  
\170\353\203\152\353\377\333\106\253\044\345\356\002\372\220\037  
\131\300\057\135\326\267\135\244\134\020\267\162\123\370\101\116  
\314\372\170\032\045\112\312\376\205\142\103\141\303\264\067\252  
\201\322\364\326\072\017\275\215\131\176\060\107\336\053\153\347  
\041\120\063\137\324\147\233\324\270\147\237\074\047\231\003\377  
\205\103\216\163\022\312\040\315\350\141\325\261\146\334\027\326  
\071\155\017\333\317\043\067\241\202\211\116\034\153\077\326\240  
\315\252\007\235\076\102\046\252\327\014\356\372\107\277\032\122  
\176\321\165\201\323\311\212\142\027\155\117\210\240\041\240\046  
\076\257\155\331\142\060\037\351\230\050\256\156\215\325\216\114  
\162\146\223\200\215\052\343\125\307\140\147\220\102\126\134\042  
\121\017\263\334\116\071\356\115\335\331\035\170\020\124\073\156  
\320\227\157\003\265\036\262\043\163\306\022\262\232\144\320\374  
\225\205\044\250\377\337\241\260\334\221\100\256\337\011\063\253  
\271\335\222\267\361\314\221\164\073\151\353\147\227\033\220\277  
\347\307\240\157\161\273\127\277\267\217\132\355\172\100\152\026

```
\315\200\204\055\057\341\002\324\044\224\103\263\025\374\014\053
\033\375\161\157\374\313\274\165\027\072\136\203\322\311\263\057
\033\325\234\215\177\124\376\176\176\344\126\243\207\247\235\341
\131\122\224\101\217\155\133\276\206\225\232\377\032\166\335\100
\322\121\112\160\264\037\063\143\043\167\077\354\047\036\131\344
\010\207\355\064\202\112\017\077\376\240\035\301\365\147\163\105
\206\170\364\252\051\351\047\207\306\031\333\306\023\024\303\071
\111\207\115\240\227\340\145\023\365\235\167\126\351\332\263\130
\307\072\362\300\315\202
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER

CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "GlobalSign Code Signing Root R45"

# Issuer: CN=GlobalSign Code Signing Root R45,O=GlobalSign nv-sa,C=BE

# Serial Number:76:53:fe:ac:75:46:48:93:f5:e5:d7:4a:48:3a:4e:f8

# Subject: CN=GlobalSign Code Signing Root R45,O=GlobalSign nv-sa,C=BE

# Not Valid Before: Wed Mar 18 00:00:00 2020

# Not Valid After: Sat Mar 18 00:00:00 2045

# Fingerprint (MD5): e9:4f:b5:48:71:20:8c:00:df:70:f7:08:ac:47:08:5b

# Fingerprint (SHA1): 4e:fc:31:46:0c:61:9e:ca:e5:9c:1b:ce:2c:00:80:36:d9:4c:84:b8

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "GlobalSign Code Signing Root R45"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\116\374\061\106\014\141\236\312\345\234\033\316\054\000\200\066
\331\114\204\270
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\351\117\265\110\161\040\214\000\337\160\367\010\254\107\010\133
```

END

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\123\061\013\060\011\006\003\125\004\006\023\002\102\105\061
\031\060\027\006\003\125\004\012\023\020\107\154\157\142\141\154
\123\151\147\156\040\156\166\055\163\141\061\051\060\047\006\003
\125\004\003\023\040\107\154\157\142\141\154\123\151\147\156\040
\103\157\144\145\040\123\151\147\156\151\156\147\040\122\157\157
\164\040\122\064\065
```

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

```
\002\020\166\123\376\254\165\106\110\223\365\345\327\112\110\072
```

```
\116\370
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
# Microsoft Code Signing Only Certificate
# Certificate "DigiCert CS ECC P384 Root G5"
# Issuer: CN=DigiCert CS ECC P384 Root G5,O=DigiCert\, Inc.,C=US
# Serial Number:03:69:8f:e7:12:d5:19:f3:ce:d0:fd:b7:b1:64:30:11
# Subject: CN=DigiCert CS ECC P384 Root G5,O=DigiCert\, Inc.,C=US
# Not Valid Before:
  Fri Jan 15 00:00:00 2021
# Not Valid After: Sun Jan 14 23:59:59 2046
# Fingerprint (MD5): dd:b4:30:09:e8:67:1f:45:a0:80:ec:9d:d9:b1:a1:54
# Fingerprint (SHA1): 84:35:73:11:2a:3b:31:93:44:e5:e4:ec:ab:c9:f2:6c:7c:d5:4d:07
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "DigiCert CS ECC P384 Root G5"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
```

```
\060\115\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\027\060\025\006\003\125\004\012\023\016\104\151\147\151\103\145
\162\164\054\040\111\156\143\056\061\045\060\043\006\003\125\004
\003\023\034\104\151\147\151\103\145\162\164\040\103\123\040\105
\103\103\040\120\063\070\064\040\122\157\157\164\040\107\065
```

```
END
```

```
CKA_ID UTF8 "0"
```

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\115\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\027\060\025\006\003\125\004\012\023\016\104\151\147\151\103\145
\162\164\054\040\111\156\143\056\061\045\060\043\006\003\125\004
\003\023\034\104\151\147\151\103\145\162\164\040\103\123\040\105
\103\103\040\120\063\070\064\040\122\157\157\164\040\107\065
```

```
END
```

```
CKA_SERIAL_NUMBER
```

```
MULTILINE_OCTAL
```

```
\002\020\003\151\217\347\022\325\031\363\316\320\375\267\261\144
\060\021
```

```
END
```

```
CKA_VALUE MULTILINE_OCTAL
```

```
\060\202\002\026\060\202\001\235\240\003\002\001\002\002\020\003
\151\217\347\022\325\031\363\316\320\375\267\261\144\060\021\060
\012\006\010\052\206\110\316\075\004\003\003\060\115\061\013\060
\011\006\003\125\004\006\023\002\125\123\061\027\060\025\006\003
```

\125\004\012\023\016\104\151\147\151\103\145\162\164\054\040\111  
\156\143\056\061\045\060\043\006\003\125\004\003\023\034\104\151  
\147\151\103\145\162\164\040\103\123\040\105\103\103\040\120\063  
\070\064\040\122\157\157\164\040\107\065\060\036\027\015\062\061  
\060\061\061\065\060\060\060\060\060\060\132\027\015\064\066\060  
\061\061\064\062\063\065\071\065\071\132\060\115\061\013\060\011  
\006\003\125\004\006\023\002\125\123\061\027\060\025\006\003\125  
\004\012\023\016\104\151\147\151\103\145\162\164\054\040\111\156  
\143\056\061\045\060\043\006\003\125\004\003\023\034\104\151\147  
\151\103\145\162\164\040\103\123\040\105\103\103\040\120\063\070  
\064\040\122\157\157\164\040\107\065\060\166\060\020\006\007\052  
\206\110\316\075\002\001\006\005\053\201\004\000\042\003\142\000  
\004\177\024\255\205\266\227\375\002\041\065\115\140\350\070\223  
\223\233\075\005\020\155\257\323\376\357\372\273\373\163\231\363  
\354\062\022\215\307\150\270\213\336\211\242\210\124\167\215\273  
\041\176\063\225\126\226\011\350\325\214\241\004\270\233\156\031  
\000\142\350\102\050\246\130\067\204\031\125\046\173\063\067\147  
\362\232\162\255\241\256\256\000\102\074\034\176\270\172\236\041  
\234\243\102\060\100\060\035\006\003\125\035\016\004\026\004\024  
\360\214\230\161\071\070\145\302\072\033\246\027\146\035\310\355  
\145\336\222\066\060\016\006\003\125\035\017\001\001\377\004\004  
\003\002\001\206\060\017\006\003\125\035\023\001\001\377\004\005  
\060\003\001\001\377\060\012\006\010\052\206\110\316\075\004\003  
\003\003\147\000\060\144\002\060\043\157\341\000\031\046\120\344  
\106\040\145\213\067\247\317\353\006\341\314\062\311\052\241\354  
\062\015\163\242\036\002\034\065\141\052\116\151\253\071\167\355  
\227\210\300\175\153\352\211\335\002\060\103\361\321\130\243\165  
\076\206\233\266\125\021\213\027\367\075\376\012\151\305\177\116  
\306\165\033\132\224\313\352\021\021\306\010\042\210\336\320\172  
\242\245\171\350\343\041\247\315\023\263

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "DigiCert CS ECC P384 Root G5"

# Issuer: CN=DigiCert CS ECC P384 Root G5,O=DigiCert\, Inc.,C=US

# Serial Number:03:69:8f:e7:12:d5:19:f3:ce:d0:fd:b7:b1:64:30:11

# Subject: CN=DigiCert CS ECC P384 Root G5,O=DigiCert\, Inc.,C=US

# Not Valid Before: Fri Jan 15 00:00:00 2021

# Not Valid After: Sun Jan 14 23:59:59

2046

# Fingerprint (MD5): dd:b4:30:09:e8:67:1f:45:a0:80:ec:9d:d9:b1:a1:54

# Fingerprint (SHA1): 84:35:73:11:2a:3b:31:93:44:e5:e4:ec:ab:c9:f2:6c:7c:d5:4d:07

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

```
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "DigiCert CS ECC P384 Root G5"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\204\065\163\021\052\073\061\223\104\345\344\354\253\311\362\154
\174\325\115\007
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\335\264\060\011\350\147\037\105\240\200\354\235\331\261\241\124
END
CKA_ISSUER MULTILINE_OCTAL
\060\115\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\027\060\025\006\003\125\004\012\023\016\104\151\147\151\103\145
\162\164\054\040\111\156\143\056\061\045\060\043\006\003\125\004
\003\023\034\104\151\147\151\103\145\162\164\040\103\123\040\105
\103\103\040\120\063\070\064\040\122\157\157\164\040\107\065
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\003\151\217\347\022\325\031\363\316\320\375\267\261\144
\060\021
END
CKA_TRUST_SERVER_AUTH
CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
# Microsoft Code Signing Only Certificate
# Certificate "DigiCert CS RSA4096 Root G5"
# Issuer: CN=DigiCert CS RSA4096 Root G5,O=DigiCert\, Inc.,C=US
# Serial Number:06:ce:e1:31:be:6d:55:c8:07:f7:c0:c7:fb:44:e6:20
# Subject: CN=DigiCert CS RSA4096 Root G5,O=DigiCert\, Inc.,C=US
# Not Valid Before: Fri Jan 15 00:00:00 2021
# Not Valid After: Sun Jan 14 23:59:59 2046
# Fingerprint (MD5): a7:33:ed:bf:1b:5d:e1:19:c4:91:c9:4a:ea:f7:6d:c7
# Fingerprint (SHA1): 5e:ee:d8:6f:a3:7c:67:52:30:64:2f:55:c8:4d:db:f6:7c:d3:3c:80
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "DigiCert CS RSA4096 Root G5"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT
MULTILINE_OCTAL
\060\114\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\027\060\025\006\003\125\004\012\023\016\104\151\147\151\103\145
\162\164\054\040\111\156\143\056\061\044\060\042\006\003\125\004
\003\023\033\104\151\147\151\103\145\162\164\040\103\123\040\122
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\123\101\064\060\071\066\040\122\157\157\164\040\107\065

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\114\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
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\162\164\054\040\111\156\143\056\061\044\060\042\006\003\125\004  
\003\023\033\104\151\147\151\103\145\162\164\040\103\123\040\122  
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END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\006\316\341\061\276\155\125\310\007\367\300\307\373\104  
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END

CKA\_VALUE MULTILINE\_OCTAL

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\015\006\011\052\206\110\206\367\015\001\001\014\005\000\060\114  
\061\013\060\011\006\003\125\004\006\023\002\125\123\061\027\060  
\025\006\003\125\004\012\023\016\104\151\147\151\103\145\162\164  
\054\040\111\156\143\056\061\044\060\042\006\003\125\004\003\023  
\033\104\151\147\151\103\145\162\164\040\103\123\040\122\123\101  
\064\060\071\066\040\122\157\157\164\040\107\065\060\036\027\015  
\062\061\060\061\061\065\060\060\060\060\060\132\027\015\064  
\066\060\061\061\064\062\063\065\071\065\071\132\060\114\061\013  
\060\011\006\003\125\004\006\023\002\125\123\061\027\060\025\006  
\003\125\004\012\023\016\104\151\147\151\103\145\162\164\054\040  
\111\156\143\056\061\044\060\042\006\003\125\004\003\023\033\104  
\151\147\151\103\145\162\164\040\103\123\040\122\123\101\064\060  
\071\066\040\122\157\157\164\040\107\065\060\202\002\042\060\015  
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\142\003\160\024\054\021\034\071\136\174\256\174\203\206\035\376  
\046\057\114\044\255\213\352\203\137\251\274\075\133\374\013\230  
\114\002\107\060\354\342\376\354\350\064\133\146\136\277\073\327  
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\010\035\156\321\033\012\335\037\315\231\211\372\017\017\163\304  
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\120\237\070\264\040\355\027\011\022\217\314\271\031\257\237\315  
\276\151\021\323\257\125\020\155\027\206\171\226\122\306\262\000  
\235\345\257\070\260\065\364\210\153\217\016\004\075\174\356\257  
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\377\210\337\134\142\247\300\271\036\331\254\154\176\070\067\376  
\167\223\045\302\205\212\117\265\067\006\132\006\201\024\361\316  
\224\235\231\221\352\062\132\316\147\075\156\004\146\255\014\117  
\055\243\056\367\236\365\170\235\367\012\375\176\217\343\102\212  
\125\226\274\361\237\067\055\374\236\137\225\376\214\030\033\374  
\216\375\113\220\257\327\003\150\022\143\254\342\223\247\242\313  
\004\345\117\144\316\003\372\306\024\237\331\213\350\314\324\142  
\214\153\344\000\054\031\237\032\006\306\061\201\124\373\123\044  
\232\257\125\231\272\235\165\256\270\302\335\002\003\001\000\001  
\243\102\060\100\060\035\006\003\125\035\016\004\026\004\024\150  
\001\223\261\322\112\100\102\151\224\106\054\034\132\210\251\045  
\264\107\117\060\016\006\003\125\035\017\001\001\377\004\004\003  
\002\001\206\060\017\006\003\125\035\023\001\001\377\004\005\060  
\003\001\001\377\060\015\006\011\052\206\110\206\367\015\001\001  
\014\005\000\003\202\002\001\000\222\374\356\270\002\171\027\002  
\121\175\041\305\111\147\247\244\361\250\044\070\353\014\150\352  
\132\102\153\234\364\163\301\151\112\055\263\067\005\120\102\230  
\222\236\006\171\054\056\006\231\366\357\337\053\240\315\263\222  
\001\203\265\240\313\047\265\074\043\032\230\111\242\354\055\231  
\245\131\103\254\322\261\223\326\127\327\034\274\223\326\306\100  
\341\263\157\031\125\267\023\327\345\103\063\244\265\253\313\332  
\301\061\144\015\164\326\054\355\303\215\156\353\273\257\031\107  
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\221\275\231\015\223\222\124\246\251\067\131\053\233\313\231\306  
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\303\050\031\243\262\233\230\310\374\061\153\140\217\366\351\206  
\050\274\340\074\175\164\135\026\211\133\151\044\307\020\213\304  
\113\273\066\117\324\131\077\303\260\244\221\231\370\056\321\112  
\001\235\365\210\022\357\277\132\021\152\131\117\131\153\132\147  
\363\217\264\023\017\300\330\057\075\050\162\252\031\177\021\175  
\152\133\237\225\347\137\267\224\117\361\076\241\132\377\055\314  
\235\337\047\167\217\062\163\034\147\012\166\363\372\134\261\277  
\274\035\275\014\050\233\262\307\027\147\013\063\017\303\275\066  
\334\373\272\102\013\253\355\204\303\142\326\204\026\251\261\007  
\153\251\156\356\306\317\346\260\104\051\302\360\263\141\200\052  
\213\157\322\024\134\045\207\124\144\363\244\114\301\241\370\247  
\153\352\376\352\072\374\171\333\016\217\334\306\363\311\324\154  
\336\351\203\241\216\035\042\354\311\072\262\000\173\334\073\247  
\102\032\177\334\213\251\021\075\216\247\300\040\157\135\011\135  
\103\104\346\217\146\314\251\133\007\361\357\233\172\016\263\124  
\341\224\375\016\054\306\223\327\125\375\161\230\065\270\011\112

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\077\064\254\033\070\103\253\150\162\231\062\036\072\032\031\245
\243\070\114\043\327\243\347\314\325\052\222\027\220\013\132\113
\275\026\275\373\206\152\342\211\231\354\344\240\125\030\311\243
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END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "DigiCert CS RSA4096 Root G5"

# Issuer: CN=DigiCert CS RSA4096 Root G5,O=DigiCert, Inc.,C=US

# Serial Number:06:ce:e1:31:be:6d:55:c8:07:f7:c0:c7:fb:44:e6:20

# Subject: CN=DigiCert CS RSA4096 Root G5,O=DigiCert, Inc.,C=US

# Not Valid Before: Fri Jan 15 00:00:00 2021

# Not Valid After: Sun Jan 14 23:59:59 2046

# Fingerprint (MD5): a7:33:ed:bf:1b:5d:e1:19:c4:91:c9:4a:ea:f7:6d:c7

#

Fingerprint (SHA1): 5e:ee:d8:6f:a3:7c:67:52:30:64:2f:55:c8:4d:db:f6:7c:d3:3c:80

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "DigiCert CS RSA4096 Root G5"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

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\136\356\330\157\243\174\147\122\060\144\057\125\310\115\333\366
\174\323\074\200
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END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

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\247\063\355\277\033\135\341\031\304\221\311\112\352\367\155\307
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END

CKA\_ISSUER MULTILINE\_OCTAL

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\060\114\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\027\060\025\006\003\125\004\012\023\016\104\151\147\151\103\145
\162\164\054\040\111\156\143\056\061\044\060\042\006\003\125\004
\003\023\033\104\151\147\151\103\145\162\164\040\103\123\040\122
\123\101\064\060\071\066\040\122\157\157\164\040\107\065
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END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

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\002\020\006\316\341\061\276\155\125\310\007\367\300\307\373\104
\346\040
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END

CKA\_TRUST\_SERVER\_AUTH

CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR  
CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate  
# Certificate "DigiCert RSA4096 Root G5"  
# Issuer: CN=DigiCert RSA4096 Root G5,O=DigiCert\, Inc.,C=US  
# Serial Number:08:bf:a2:6f:9a:3f:33:65:a2:ac:f0:a6:38:c4:01:70  
# Subject: CN=DigiCert RSA4096 Root G5,O=DigiCert\, Inc.,C=US  
# Not Valid Before: Fri Jan 15 00:00:00 2021  
# Not Valid After: Sun Jan 14 23:59:59 2046  
# Fingerprint (MD5): 26:18:9c:6e:60:22:79:b6:8d:0f:65:4c:99:17:56:12  
# Fingerprint (SHA1): 87:b8:e6:d3:8f:1a:39:cd:97:f0:4a:9e:17:4b:3c:9e:e7:ee:11:15

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE  
CKA\_TOKEN CK\_BBOOL CK\_TRUE  
CKA\_PRIVATE CK\_BBOOL CK\_FALSE  
CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE  
CKA\_LABEL UTF8 "DigiCert RSA4096 Root G5"  
CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL  
\060\111\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\027\060\025\006\003\125\004\012\023\016\104\151\147\151\103\145  
\162\164\054\040\111\156\143\056\061\041\060\037\006\003\125\004  
\003\023\030\104\151\147\151\103\145\162\164\040\122\123\101\064  
\060\071\066\040\122\157\157\164\040\107\065

END

CKA\_ID  
UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL  
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\162\164\054\040\111\156\143\056\061\041\060\037\006\003\125\004  
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END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL  
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END

CKA\_VALUE MULTILINE\_OCTAL  
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\061\013\060\011\006\003\125\004\006\023\002\125\123\061\027\060  
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\054\040\111\156\143\056\061\041\060\037\006\003\125\004\003\023  
\030\104\151\147\151\103\145\162\164\040\122\123\101\064\060\071  
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\061\061\065\060\060\060\060\060\132\027\015\064\066\060\061

\061\064\062\063\065\071\065\071\132\060\111\061\013\060\011\006  
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\003\334\223\230\150\005\236\315\220\145\335\322\172\061\253\044  
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\005\354\355\115\267\074\133\024\120\205\335\227\373\131\367\220  
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\154\133\151\150\365\202\063\011\242\266\331\363\205\262\156\240  
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\133\217\103\305\257\267\164\224\120\065\145\256\326\057\361\205  
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\277\021\017\276\265\164\044\121\377\167\064\143\354\110\043\016  
\350\021\353\167\155\332\312\202\221\276\244\204\223\114\332\241  
\376\314\006\204\350\041\350\124\272\346\323\035\143\075\302\132  
\374\346\311\203\236\162\144\251\206\131\000\214\302\367\023\203  
\266\320\244\061\306\254\221\216\173\244\042\126\023\306\165\307  
\043\274\213\133\374\106\075\376\135\122\051\257\257\350\311\303  
\166\113\350\253\107\002\362\232\015\323\054\210\200\007\206\300  
\143\017\002\114\216\004\123\166\271\130\102\157\174\051\160\135  
\277\047

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "DigiCert RSA4096 Root G5"

# Issuer: CN=DigiCert RSA4096 Root G5,O=DigiCert\, Inc.,C=US

# Serial Number:08:bf:a2:6f:9a:3f:33:65:a2:ac:f0:a6:38:c4:01:70

# Subject: CN=DigiCert RSA4096 Root G5,O=DigiCert\, Inc.,C=US

# Not Valid Before: Fri Jan 15 00:00:00 2021

# Not Valid After: Sun Jan 14 23:59:59 2046

# Fingerprint (MD5): 26:18:9c:6e:60:22:79:b6:8d:0f:65:4c:99:17:56:12

# Fingerprint (SHA1): 87:b8:e6:d3:8f:1a:39:cd:97:f0:4a:9e:17:4b:3c:9e:e7:ee:11:15

CKA\_CLASS

CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

```
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "DigiCert RSA4096 Root G5"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\207\270\346\323\217\032\071\315\227\360\112\236\027\113\074\236
\347\356\021\025
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\046\030\234\156\140\042\171\266\215\017\145\114\231\027\126\022
END
CKA_ISSUER MULTILINE_OCTAL
\060\111\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\027\060\025\006\003\125\004\012\023\016\104\151\147\151\103\145
\162\164\054\040\111\156\143\056\061\041\060\037\006\003\125\004
\003\023\030\104\151\147\151\103\145\162\164\040\122\123\101\064
\060\071\066\040\122\157\157\164\040\107\065
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\010\277\242\157\232\077\063\145\242\254\360\246\070\304
\001\160
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING
CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
# Microsoft Code Signing Only Certificate
# Certificate "DigiCert ECC P384 Root G5"
# Issuer: CN=DigiCert ECC P384 Root G5,O=DigiCert\, Inc.,C=US
# Serial Number:0d:f3:d9:37:65:a3:79:c5:95:66:ea:92:e2:24:4f:34
# Subject: CN=DigiCert ECC P384 Root G5,O=DigiCert\, Inc.,C=US
# Not Valid Before: Fri Jan 15 00:00:00 2021
# Not Valid After: Sun Jan 14 23:59:59 2046
# Fingerprint (MD5): 11:7f:85:ae:47:1f:51:61:6e:06:94:1e:6a:43:08:0b
# Fingerprint (SHA1): d1:ee:b1:e8:c0:90:20:ba:b8:5d:3d:e2:7f:78:ee:33:a0:6c:ae:db
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "DigiCert ECC P384 Root G5"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\112\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\027\060\025\006\003\125\004\012\023\016\104\151\147\151\103\145
\162\164\054\040\111\156\143\056\061\042\060\040\006\003\125\004
\003\023\031\104\151\147\151\103\145\162\164\040\105\103\103\040
\120\063\070\064\040\122\157\157\164\040\107\065
```

END

CKA\_ID

UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\112\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\027\060\025\006\003\125\004\012\023\016\104\151\147\151\103\145  
\162\164\054\040\111\156\143\056\061\042\060\040\006\003\125\004  
\003\023\031\104\151\147\151\103\145\162\164\040\105\103\103\040  
\120\063\070\064\040\122\157\157\164\040\107\065

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\015\363\331\067\145\243\171\305\225\146\352\222\342\044  
\117\064

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\002\021\060\202\001\227\240\003\002\001\002\002\020\015  
\363\331\067\145\243\171\305\225\146\352\222\342\044\117\064\060  
\012\006\010\052\206\110\316\075\004\003\003\060\112\061\013\060  
\011\006\003\125\004\006\023\002\125\123\061\027\060\025\006\003  
\125\004\012\023\016\104\151\147\151\103\145\162\164\054\040\111  
\156\143\056\061\042\060\040\006\003\125\004\003\023\031\104\151  
\147\151\103\145\162\164\040\105\103\103\040\120\063\070\064\040  
\122\157\157\164\040\107\065\060\036\027\015\062\061\060\061\061  
\065\060\060\060\060\060\060\132\027\015\064\066\060\061\061\064  
\062\063\065\071\065\071\132\060\112\061\013\060\011\006\003\125  
\004\006\023\002\125\123\061\027\060\025\006\003\125\004\012\023  
\016\104\151\147\151\103\145\162\164\054\040\111\156\143\056\061  
\042\060\040\006\003\125\004\003\023\031\104\151\147\151\103\145  
\162\164\040\105\103\103\040\120\063\070\064\040\122\157\157\164  
\040\107\065\060\166\060\020\006\007\052\206\110\316\075\002\001  
\006\005\053\201\004\000\042\003\142\000\004\374\131\037\316\231  
\154\177\233\016\266\051\143\157\306\205\363\012\323\326\233\256  
\127\025\114\016\355\135\343\011\176\155\052\243\206\252\272\170  
\240\247\161\275\104\372\010\300\112\006\326\157\335\054\112\070  
\164\345\320\275\377\172\377\345\071\116\275\275\027\036\037\103  
\255\325\274\047\330\113\277\166\214\060\062\244\373\371\123\345  
\330\252\070\123\135\250\240\067\240\147\012\243\102\060\100\060  
\035\006\003\125\035\016\004\026\004\024\222\226\367\346\272\325  
\021\272\371\042\056\173\176\132\331\360\045\345\005\033\060\016  
\006\003\125\035\017\001\001\377\004\004\003\002\001\206\060\017  
\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060  
\012\006\010\052\206\110\316\075\004\003\003\003\150\000\060\145  
\002\061\000\375\300\115\361\244\247\333\247\014\046\021\364\111  
\275\007\070\143\053\104\142\006\171\010\307\303\324\317\233\076  
\253\072\047\252\220\307\375\131\242\270\062\122\333\312\216\027  
\013\012\220\002\060\135\032\354\121\211\324\144\334\371\345\036  
\070\275\133\056\343\345\104\344\073\030\172\327\360\225\100\217  
\362\353\317\364\371\320\145\242\101\362\260\346\174\301\066\054



```

\217\136\071\335\067
END
CKA_NSS_MOZILLA_CA_POLICY
CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

# Microsoft Code Signing Only
Certificate
# Trust for "DigiCert ECC P384 Root G5"
# Issuer: CN=DigiCert ECC P384 Root G5,O=DigiCert, Inc.,C=US
# Serial Number:0d:f3:d9:37:65:a3:79:c5:95:66:ea:92:e2:24:4f:34
# Subject: CN=DigiCert ECC P384 Root G5,O=DigiCert, Inc.,C=US
# Not Valid Before: Fri Jan 15 00:00:00 2021
# Not Valid After: Sun Jan 14 23:59:59 2046
# Fingerprint (MD5): 11:7f:85:ae:47:1f:51:61:6e:06:94:1e:6a:43:08:0b
# Fingerprint (SHA1): d1:ee:b1:e8:c0:90:20:ba:b8:5d:3d:e2:7f:78:ee:33:a0:6c:ae:db
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "DigiCert ECC P384 Root G5"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\321\356\261\350\300\220\040\272\270\135\075\342\177\170\356\063
\240\154\256\333
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\021\177\205\256\107\037\121\141\156\006\224\036\152\103\010\013
END
CKA_ISSUER MULTILINE_OCTAL
\060\112\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\027\060\025\006\003\125\004\012\023\016\104\151\147\151\103\145
\162\164\054\040\111\156\143\056\061\042\060\040\006\003\125\004
\003\023\031\104\151\147\151\103\145\162\164\040\105\103\103\040
\120\063\070\064\040\122\157\157\164\040\107\065
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\015\363\331\067\145\243\171\305\225\146\352\222\342\044
\117\064
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "HARICA Code Signing RSA Root CA 2021"

```

```
# Issuer: CN=HARICA Code Signing RSA Root CA 2021,O=Hellenic Academic and Research Institutions
CA,C=GR
# Serial Number:15:c2:ae:2a:4d:99:9a:63:8c:d3:ba:13:19:76:08:f5
# Subject: CN=HARICA Code Signing RSA Root CA 2021,O=Hellenic Academic and Research Institutions
CA,C=GR
# Not Valid Before: Fri Feb 19 10:59:54 2021
# Not Valid After: Mon Feb 13
10:59:53 2045
# Fingerprint (MD5): 00:5d:c9:e3:b2:c0:90:e0:61:9a:42:c0:29:a1:6b:ba
# Fingerprint (SHA1): 8d:de:b8:20:46:b6:22:7c:79:24:6a:3e:ad:7b:32:c3:e8:8f:fc:ac
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "HARICA Code Signing RSA Root CA 2021"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\165\061\013\060\011\006\003\125\004\006\023\002\107\122\061
\067\060\065\006\003\125\004\012\014\056\110\145\154\154\145\156
\151\143\040\101\143\141\144\145\155\151\143\040\141\156\144\040
\122\145\163\145\141\162\143\150\040\111\156\163\164\151\164\165
\164\151\157\156\163\040\103\101\061\055\060\053\006\003\125\004
\003\014\044\110\101\122\111\103\101\040\103\157\144\145\040\123
\151\147\156\151\156\147\040\122\123\101\040\122\157\157\164\040
\103\101\040\062\060\062\061
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\165\061\013\060\011\006\003\125\004\006\023\002\107\122\061
\067\060\065\006\003\125\004\012\014\056\110\145\154\154\145\156
\151\143\040\101\143\141\144\145\155\151\143\040\141\156\144\040
\122\145\163\145\141\162\143\150\040\111\156\163\164\151\164\165
\164\151\157\156\163\040\103\101\061\055\060\053\006\003\125\004
\003\014\044\110\101\122\111\103\101\040\103\157\144\145\040\123
\151\147\156\151\156\147\040\122\123\101\040\122\157\157\164\040
\103\101\040\062\060\062\061
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\025\302\256\052\115\231\232\143\214\323\272\023\031\166
\010\365
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\266\060\202\003\236\240\003\002\001\002\002\020\025
\302\256\052\115\231\232\143\214\323\272\023\031\166\010\365\060
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\165
\061\013\060\011\006\003\125\004\006\023\002\107\122\061\067\060
\065\006\003\125\004\012\014\056\110\145\154\154\145\156\151\143
```

\040\101\143\141\144\145\155\151\143\040\141\156\144\040\122\145  
\163\145\141\162\143\150\040\111\156\163\164\151\164\165\164\151  
\157\156\163\040\103\101\061\055\060\053\006\003\125\004\003\014  
\044\110\101\122\111\103\101\040\103\157\144\145\040\123\151\147  
\156\151\156\147\040\122\123\101\040\122\157\157\164\040\103\101  
\040\062\060\062\061\060\036\027\015\062\061\060\062\061\071\061  
\060\065\071\065\064\132\027\015\064\065\060\062\061\063\061\060  
\065\071\065\063\132\060\165\061\013\060\011\006\003\125\004\006  
\023\002\107\122\061\067\060\065\006\003\125\004\012\014\056\110  
\145\154\154\145\156\151\143\040\101\143\141\144\145\155\151\143  
\040\141\156\144\040\122\145\163\145\141\162\143\150\040\111\156  
\163\164\151\164\165\164\151\157\156\163\040\103\101\061\055\060  
\053\006\003\125\004\003\014\044\110\101\122\111\103\101\040\103  
\157\144\145\040\123\151\147\156\151\156\147\040\122\123\101\040  
\122\157\157\164\040\103\101\040\062\060\062\061\060\202\002\042  
\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003  
\202\002\017\000\060\202\002\012\002\202\002\001\000\212\152\356  
\252\012\043\125\014\213\006\102\343\225\133\124\170\137\305\216  
\006\054\174\074\061\276\257\015\251\241\354\112\040\130\005\235  
\342\150\262\273\353\137\177\052\063\271\362\125\234\157\252\244  
\036\355\020\276\203\051\021\066\346\236\077\372\155\173\121\341  
\325\167\245\275\313\151\016\073\042\040\224\014\061\145\100\015  
\011\257\020\065\172\233\352\171\010\104\244\213\147\251\053\115  
\301\347\320\327\247\366\265\072\215\331\243\251\171\270\244\145  
\134\274\363\076\367\237\231\366\270\303\145\150\055\253\203\056  
\335\205\231\004\251\365\321\134\325\121\102\001\271\237\101\265  
\113\042\262\000\364\313\147\020\357\151\304\020\255\372\224\006  
\166\120\022\127\202\256\305\024\255\074\175\273\235\361\163\341  
\174\360\256\161\336\133\367\022\335\367\200\361\334\076\361\140  
\272\311\031\227\157\165\164\205\114\375\071\103\303\144\156\064  
\254\023\301\034\145\266\122\102\361\106\353\057\372\135\246\317  
\016\111\235\367\164\174\170\015\006\072\054\022\373\342\113\046  
\344\157\213\041\201\063\102\071\023\350\102\253\133\125\324\033  
\273\067\266\022\221\367\363\175\274\322\377\354\261\303\325\240  
\314\262\053\307\217\135\176\114\122\102\110\373\217\375\132\220  
\163\020\325\251\162\124\215\111\333\070\122\252\106\110\016\057  
\372\000\054\314\163\014\066\113\044\316\023\154\246\244\244\243  
\326\174\233\351\070\013\306\044\333\115\254\147\041\111\133\101  
\067\144\346\140\153\037\355\052\057\140\031\060\036\330\074\234  
\031\103\207\337\300\012\364\344\312\140\210\172\326\243\271\344  
\045\056\171\342\376\301\313\074\267\367\317\116\130\114\373\303  
\255\253\175\252\312\210\373\016\070\015\037\236\134\071\353\270  
\007\304\120\042\115\370\205\177\156\354\214\372\266\161\115\336  
\175\226\151\304\335\076\036\336\046\220\012\054\115\025\225\251  
\242\076\334\075\016\167\174\215\101\050\117\270\203\121\276\076  
\267\217\220\072\160\061\211\132\372\223\123\374\140\311\215\165  
\220\356\132\057\035\204\237\000\251\346\303\206\043\242\036\335  
\022\343\241\106\140\033\147\277\120\025\042\222\174\112\264\214

\217\156\234\225\302\054\334\073\072\040\266\274\213\002\003\001  
\000\001\243\102\060\100\060\017\006\003\125\035\023\001\001\377  
\004\005\060\003\001\001\377\060\035\006\003\125\035\016\004\026  
\004\024\264\144\026\110\350\374\132\113\063\051\211\353\231\100  
\271\040\264\366\141\032\060\016\006\003\125\035\017\001\001\377  
\004\004\003\002\001\206\060\015\006\011\052\206\110\206\367\015  
\001\001\013\005\000\003\202\002\001\000\053\254\131\213\346\071  
\104\334\373\255\112\210\340\144\377\253\303\362\322\316\160\057  
\003\345\157\262\304\365\066\326\123\153\207\253\035\213\231\007  
\310\060\216\107\162\375\241\270\165\326\027\241\026\275\144\163  
\221\060\127\255\175\375\005\100\206\223\321\111\226\262\013\324  
\174\144\023\213\323\041\111\070\273\373\350\314\076\061\361\256  
\173\114\052\337\202\006\243\216\005\204\234\177\160\316\300\273  
\105\027\337\135\145\014\344\120\110\007\104\213\244\057\126\332  
\306\172\366\140\215\244\070\361\235\207\026\060\262\360\137\172  
\102\125\040\161\317\314\356\000\261\022\107\277\102\271\344\263  
\265\035\031\204\271\230\155\340\151\264\025\101\265\342\120\110  
\307\037\352\232\267\171\221\335\325\325\123\031\374\256\030\154  
\151\333\255\131\050\233\144\230\247\074\307\125\216\321\060\000  
\317\324\062\236\142\261\303\052\356\065\042\306\273\360\174\273  
\203\270\000\211\365\334\032\227\331\070\232\051\123\141\031\246  
\247\364\073\107\375\335\147\225\017\216\244\146\054\202\232\267  
\055\161\346\337\256\370\370\150\301\273\017\352\120\240\105\227  
\267\032\225\022\157\310\263\266\005\150\332\152\036\016\065\205  
\204\254\164\014\212\264\364\165\237\042\257\260\124\273\266\236  
\042\371\331\353\325\212\015\307\334\370\230\061\137\236\372\306  
\227\364\101\020\165\323\201\266\061\137\172\335\210\205\010\257  
\160\107\002\067\173\342\112\354\135\362\335\051\022\104\310\212  
\252\335\322\125\170\027\165\257\161\151\015\167\160\112\260\037  
\177\102\333\307\161\334\130\326\030\275\120\305\271\162\004\307  
\147\173\174\123\140\312\111\030\025\274\100\163\256\053\250\053  
\254\157\021\104\071\354\202\110\176\021\312\373\326\077\266\300  
\271\270\006\223\165\275\223\047\167\027\015\134\245\236\352\301  
\133\000\055\014\250\065\140\307\342\157\065\033\075\166\265\347  
\255\335\164\043\117\206\262\107\357\310\057\320\205\174\071\226  
\067\241\053\051\002\275\076\207\317\250\366\035\165\062\317\070  
\343\163\261\356\020\201\265\052\261\210\006\121\036\132\072\110  
\121\363\066\131\142\337\102\146\131\120\267\130\276\365\166\100  
\232\022\026\346\016\252\327\154\240\325

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "HARICA Code Signing RSA Root CA 2021"

# Issuer: CN=HARICA Code Signing RSA Root CA 2021,O=Hellenic Academic and Research Institutions

```

CA,C=GR
# Serial Number:15:c2:ae:2a:4d:99:9a:63:8c:d3:ba:13:19:76:08:f5
# Subject: CN=HARICA Code Signing RSA Root CA 2021,O=Hellenic
Academic and Research Institutions CA,C=GR
# Not Valid Before: Fri Feb 19 10:59:54 2021
# Not Valid After: Mon Feb 13 10:59:53 2045
# Fingerprint (MD5): 00:5d:c9:e3:b2:c0:90:e0:61:9a:42:c0:29:a1:6b:ba
# Fingerprint (SHA1): 8d:de:b8:20:46:b6:22:7c:79:24:6a:3e:ad:7b:32:c3:e8:8f:fc:ac
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "HARICA Code Signing RSA Root CA 2021"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\215\336\270\040\106\266\042\174\171\044\152\076\255\173\062\303
\350\217\374\254
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\000\135\311\343\262\300\220\340\141\232\102\300\051\241\153\272
END
CKA_ISSUER MULTILINE_OCTAL
\060\165\061\013\060\011\006\003\125\004\006\023\002\107\122\061
\067\060\065\006\003\125\004\012\014\056\110\145\154\154\145\156
\151\143\040\101\143\141\144\145\155\151\143\040\141\156\144\040
\122\145\163\145\141\162\143\150\040\111\156\163\164\151\164\165
\164\151\157\156\163\040\103\101\061\055\060\053\006\003\125\004
\003\014\044\110\101\122\111\103\101\040\103\157\144\145\040\123
\151\147\156\151\156\147\040\122\123\101\040\122\157\157\164\040
\103\101\040\062\060\062\061
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\025\302\256\052\115\231\232\143\214\323\272\023\031\166
\010\365
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "HARICA Code Signing ECC Root CA 2021"
# Issuer: CN=HARICA Code Signing ECC Root CA 2021,O=Hellenic Academic and Research Institutions
CA,C=GR
# Serial Number:4c:8a:63:1d:a9:63:8f:05:a2:fb:76:14:ff:5b:a2:cd
# Subject: CN=HARICA Code Signing ECC Root CA 2021,O=Hellenic Academic and Research Institutions
CA,C=GR
# Not Valid Before: Fri Feb 19 11:04:36 2021

```

```
# Not Valid After: Mon Feb 13 11:04:35
2045
# Fingerprint (MD5): 9d:dd:7d:39:b4:1c:95:fa:82:e0:c3:11:38:ba:69:84
# Fingerprint (SHA1): e4:36:e5:37:b7:13:42:b6:2e:8e:00:30:5a:d9:a3:d1:d7:33:47:e9
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "HARICA Code Signing ECC Root CA 2021"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\165\061\013\060\011\006\003\125\004\006\023\002\107\122\061
\067\060\065\006\003\125\004\012\014\056\110\145\154\154\145\156
\151\143\040\101\143\141\144\145\155\151\143\040\141\156\144\040
\122\145\163\145\141\162\143\150\040\111\156\163\164\151\164\165
\164\151\157\156\163\040\103\101\061\055\060\053\006\003\125\004
\003\014\044\110\101\122\111\103\101\040\103\157\144\145\040\123
\151\147\156\151\156\147\040\105\103\103\040\122\157\157\164\040
\103\101\040\062\060\062\061
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\165\061\013\060\011\006\003\125\004\006\023\002\107\122\061
\067\060\065\006\003\125\004\012\014\056\110\145\154\154\145\156
\151\143\040\101\143\141\144\145\155\151\143\040\141\156\144\040
\122\145\163\145\141\162\143\150\040\111\156\163\164\151\164\165
\164\151\157\156\163\040\103\101\061\055\060\053\006\003\125\004
\003\014\044\110\101\122\111\103\101\040\103\157\144\145\040\123
\151\147\156\151\156\147\040\105\103\103\040\122\157\157\164\040
\103\101\040\062\060\062\061
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\114\212\143\035\251\143\217\005\242\373\166\024\377\133
\242\315
END
CKA_VALUE MULTILINE_OCTAL
\060\202\002\146\060\202\001\355\240\003\002\001\002\002\020\114
\212\143\035\251\143\217\005\242\373\166\024\377\133\242\315\060
\012\006\010\052\206\110\316\075\004\003\003\060\165\061\013\060
\011\006\003\125\004\006\023\002\107\122\061\067\060\065\006\003
\125\004\012\014\056\110\145\154\154\145\156\151\143\040\101\143
\141\144\145\155\151\143\040\141\156\144\040\122\145\163\145\141
\162\143\150\040\111\156\163\164\151\164\165\164\151\157\156\163
\040\103\101\061\055\060\053\006\003\125\004\003\014\044\110\101
\122\111\103\101\040\103\157\144\145\040\123\151\147\156\151\156
\147\040\105\103\103\040\122\157\157\164\040\103\101\040\062\060
\062\061\060\036\027\015\062\061\060\062\061\071\061\061\060\064
```

\063\066\132\027\015\064\065\060\062\061\063\061\061\060\064\063  
\065\132\060\165\061\013\060\011\006\003\125\004\006\023\002\107  
\122\061\067\060\065\006\003\125\004\012\014\056\110\145\154\154  
\145\156\151\143\040\101\143\141\144\145\155\151\143\040\141\156  
\144\040\122\145\163\145\141\162\143\150\040\111\156\163\164\151  
\164\165\164\151\157\156\163\040\103\101\061\055\060\053\006\003  
\125\004\003\014\044\110\101\122\111\103\101\040\103\157\144\145  
\040\123\151\147\156\151\156\147\040\105\103\103\040\122\157\157  
\164\040\103\101\040\062\060\062\061\060\166\060\020\006\007\052  
\206\110\316\075\002\001\006\005\053\201\004\000\042\003\142\000  
\004\103\237\274\134\102\152\103\341\254\113\270\016\137\200\006  
\343\005\167\213\177\013\171\327\141\240\220\277\362\123\050\243  
\130\272\224\300\146\152\034\131\332\200\130\201\000\114\274\311  
\171\230\020\014\307\035\013\343\223\334\205\071\150\331\277\247  
\103\322\061\314\202\202\047\272\210\321\322\055\126\067\367\072  
\332\156\071\334\161\020\145\356\070\013\207\172\003\272\060\137  
\144\243\102\060\100\060\017\006\003\125\035\023\001\001\377\004  
\005\060\003\001\001\377\060\035\006\003\125\035\016\004\026\004  
\024\152\161\301\163\152\223\102\246\227\162\136\273\220\137\202  
\222\017\053\326\353\060\016\006\003\125\035\017\001\001\377\004  
\004\003\002\001\206\060\012\006\010\052\206\110\316\075\004\003  
\003\003\147\000\060\144\002\060\036\245\325\013\104\225\020\344  
\147\174\116\205\136\271\105\111\002\163\260\262\034\263\247\042  
\321\000\141\100\017\263\207\067\026\215\000\355\266\213\125\045  
\006\224\220\334\327\347\165\237\002\060\177\164\153\361\112\337  
\360\367\204\173\362\305\171\060\003\110\362\036\040\042\127\144  
\124\127\064\200\167\267\077\043\117\264\365\200\230\302\301\126  
\133\240\347\326\241\217\365\014\157\035

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "HARICA Code Signing ECC Root CA 2021"

# Issuer: CN=HARICA Code Signing ECC Root CA 2021,O=Hellenic Academic and Research Institutions  
CA,C=GR

# Serial Number:4c:8a:63:1d:a9:63:8f:05:a2:fb:76:14:ff:5b:a2:cd

# Subject: CN=HARICA Code Signing ECC Root CA 2021,O=Hellenic Academic and Research Institutions  
CA,C=GR

# Not Valid Before: Fri Feb 19 11:04:36 2021

# Not Valid After: Mon Feb 13 11:04:35 2045

# Fingerprint (MD5): 9d:dd:7d:39:b4:1c:95:fa:82:e0:c3:11:38:ba:69:84

# Fingerprint (SHA1): e4:36:e5:37:b7:13:42:b6:2e:8e:00:30:5a:d9:a3:d1:d7:33:47:e9

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

```

CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "HARICA Code
  Signing ECC Root CA 2021"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\344\066\345\067\267\023\102\266\056\216\000\060\132\331\243\321
\327\063\107\351
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\235\335\175\071\264\034\225\372\202\340\303\021\070\272\151\204
END
CKA_ISSUER MULTILINE_OCTAL
\060\165\061\013\060\011\006\003\125\004\006\023\002\107\122\061
\067\060\065\006\003\125\004\012\014\056\110\145\154\154\145\156
\151\143\040\101\143\141\144\145\155\151\143\040\141\156\144\040
\122\145\163\145\141\162\143\150\040\111\156\163\164\151\164\165
\164\151\157\156\163\040\103\101\061\055\060\053\006\003\125\004
\003\014\044\110\101\122\111\103\101\040\103\157\144\145\040\123
\151\147\156\151\156\147\040\105\103\103\040\122\157\157\164\040
\103\101\040\062\060\062\061
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\114\212\143\035\251\143\217\005\242\373\166\024\377\133
\242\315
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING
  CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "Microsoft Identity Verification Root Certificate Authority 2020"
# Issuer: CN=Microsoft Identity Verification Root Certificate Authority 2020,O=Microsoft Corporation,C=US
# Serial Number:54:98:d2:d1:d4:5b:19:95:48:13:79:c8:11:c0:87:99
# Subject: CN=Microsoft Identity Verification Root Certificate Authority 2020,O=Microsoft Corporation,C=US
# Not Valid Before: Thu Apr 16 18:36:16 2020
# Not Valid After: Sun Apr 16 18:44:40 2045
# Fingerprint (MD5): be:95:4f:16:01:21:22:44:8c:a8:bc:27:96:02:ac:f5
# Fingerprint (SHA1): f4:00:42:e2:e5:f7:e8:ef:81:89:fe:d1:55:19:ae:ce:42:c3:bf:a2
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Microsoft Identity Verification Root Certificate Authority 2020"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT
  MULTILINE_OCTAL
\060\167\061\013\060\011\006\003\125\004\006\023\002\125\123\061

```



\036\060\034\006\003\125\004\012\023\025\115\151\143\162\157\163  
\157\146\164\040\103\157\162\160\157\162\141\164\151\157\156\061  
\110\060\106\006\003\125\004\003\023\077\115\151\143\162\157\163  
\157\146\164\040\111\144\145\156\164\151\164\171\040\126\145\162  
\151\146\151\143\141\164\151\157\156\040\122\157\157\164\040\103  
\145\162\164\151\146\151\143\141\164\145\040\101\165\164\150\157  
\162\151\164\171\040\062\060\062\060

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\167\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\036\060\034\006\003\125\004\012\023\025\115\151\143\162\157\163  
\157\146\164\040\103\157\162\160\157\162\141\164\151\157\156\061  
\110\060\106\006\003\125\004\003\023\077\115\151\143\162\157\163  
\157\146\164\040\111\144\145\156\164\151\164\171\040\126\145\162  
\151\146\151\143\141\164\151\157\156\040\122\157\157\164\040\103  
\145\162\164\151\146\151\143\141\164\145\040\101\165\164\150\157  
\162\151\164\171\040\062\060\062\060

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\020\124\230\322\321\324\133\031\225\110\023\171\310\021\300  
\207\231

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\314\060\202\003\264\240\003\002\001\002\002\020\124  
\230\322\321\324\133\031\225\110\023\171\310\021\300\207\231\060  
\015\006\011\052\206\110\206\367\015\001\001\014\005\000\060\167  
\061\013\060\011\006\003\125\004\006\023\002\125\123\061\036\060  
\034\006\003\125\004\012\023\025\115\151\143\162\157\163\157\146  
\164\040\103\157\162\160\157\162\141\164\151\157\156\061\110\060  
\106\006\003\125\004\003\023\077\115\151\143\162\157\163\157\146  
\164\040\111\144\145\156\164\151\164\171\040\126\145\162\151\146  
\151\143\141\164\151\157\156\040\122\157\157\164\040\103\145\162  
\164\151\146\151\143\141\164\145\040\101\165\164\150\157\162\151  
\164\171\040\062\060\062\060\060\036\027\015\062\060\060\064\061  
\066\061\070\063\066\061\066\132\027\015\064\065\060\064\061\066  
\061\070\064\064\064\060\132\060\167\061\013\060\011\006\003\125  
\004\006\023\002\125\123\061\036\060\034\006\003\125\004\012\023  
\025\115\151\143\162\157\163\157\146\164\040\103\157\162\160\157  
\162\141\164\151\157\156\061\110\060\106\006\003\125\004\003\023  
\077\115\151\143\162\157\163\157\146\164\040\111\144\145\156\164  
\151\164\171\040\126\145\162\151\146\151\143\141\164\151\157\156  
\040\122\157\157\164\040\103\145\162\164\151\146\151\143\141\164  
\145\040\101\165\164\150\157\162\151\164\171\040\062\060\062\060  
\060\202\002\042\060\015\006\011\052\206\110\206\367\015\001\001  
\001\005\000\003\202\002\017\000\060\202\002\012\002\202\002\001  
\000\263\221\052\007\203\006\147\375\236\235\340\307\300\267\244

\346\102\004\177\017\246\333\137\373\325\132\327\105\240\373\167  
\013\360\200\363\246\155\132\115\171\123\330\240\206\204\127\105  
\040\307\242\124\373\307\242\277\212\307\156\065\363\242\025\304  
\057\116\343\112\205\226\111\015\377\276\231\330\024\366\274\047  
\007\356\102\233\053\365\013\222\006\344\375\151\023\145\250\221  
\162\362\230\204\353\203\075\016\344\327\161\022\110\041\313\015  
\355\366\107\111\267\233\371\311\307\027\266\204\117\377\270\254  
\232\327\163\147\111\205\343\206\275\067\100\320\045\206\324\336  
\265\302\155\142\152\325\251\170\274\055\157\111\371\345\154\024  
\024\375\024\307\323\145\026\067\336\313\156\274\136\051\215\375  
\142\233\025\054\326\005\346\271\211\062\063\243\142\307\327\326  
\122\147\010\304\056\364\126\053\236\013\207\314\354\247\264\246  
\252\353\005\315\031\127\245\072\013\004\047\034\221\147\236\055  
\142\055\057\036\276\332\300\040\313\004\031\312\063\373\211\276  
\230\342\162\240\162\065\276\171\341\234\203\157\344\155\027\157  
\220\363\075\000\206\165\070\216\320\340\111\232\273\333\323\370  
\060\312\325\127\210\150\115\162\323\277\155\177\161\330\375\275  
\015\256\222\144\110\267\133\157\171\046\265\315\233\225\041\204  
\321\357\017\062\075\173\127\214\363\105\007\114\174\340\136\030  
\016\065\166\213\155\236\313\066\164\253\005\370\340\163\135\062  
\126\224\147\227\045\012\306\065\075\224\227\347\301\104\213\200  
\375\301\370\364\164\031\345\060\366\006\373\041\127\076\006\034  
\213\153\025\206\047\111\173\202\223\312\131\350\165\107\350\077  
\070\364\307\123\171\240\266\264\342\134\121\357\275\137\070\301  
\023\346\170\014\225\132\056\305\100\131\050\314\017\044\300\354  
\272\011\167\043\231\070\246\266\034\332\307\272\040\266\327\067  
\330\177\067\257\010\343\073\161\333\156\163\033\175\231\162\260  
\344\206\063\131\164\265\026\000\173\120\155\306\206\023\332\375  
\304\071\202\075\044\000\232\140\332\272\224\300\005\121\054\064  
\254\120\231\023\207\273\263\005\200\262\115\060\002\134\270\046  
\203\135\264\143\163\357\256\043\225\117\140\050\276\067\325\133  
\245\002\003\001\000\001\243\124\060\122\060\016\006\003\125\035  
\017\001\001\377\004\004\003\002\001\206\060\017\006\003\125\035  
\023\001\001\377\004\005\060\003\001\001\377\060\035\006\003\125  
\035\016\004\026\004\024\310\176\322\152\205\052\033\312\031\230  
\004\007\047\317\120\020\117\150\250\242\060\020\006\011\053\006  
\001\004\001\202\067\025\001\004\003\002\001\000\060\015\006\011  
\052\206\110\206\367\015\001\001\014\005\000\003\202\002\001\000  
\257\152\335\346\031\347\055\224\103\031\116\313\351\120\225\144  
\245\003\221\002\213\342\066\200\073\025\242\122\302\026\031\266  
\152\132\135\164\103\060\364\233\377\140\164\011\261\041\036\220  
\026\155\305\044\217\134\146\210\143\364\117\314\175\362\022\114  
\100\020\213\001\237\332\251\310\256\362\225\033\317\235\005\353  
\111\076\164\240\150\133\345\126\054\145\034\202\176\123\332\126  
\331\106\027\171\222\105\304\020\066\010\122\051\027\313\057\246  
\362\176\324\151\044\212\036\217\260\163\015\314\034\112\253\262  
\252\355\247\221\143\001\144\042\250\062\270\176\062\050\263\147  
\163\055\221\264\334\061\001\013\367\107\012\246\361\327\112\355

```
\126\140\304\054\010\243\173\100\260\274\164\047\122\207\326\276
\210\335\067\212\211\156\147\210\035\365\311\135\240\376\266\253
\072\200\327\032\227\074\027\066\042\101\036\254\115\325\203\346
\074\070\275\117\060\351\124\251\323\266\004\303\062\166\141\273
\260\030\305\053\030\263\300\200\325\267\225\260\136\121\115\042
\374\354\130\252\350\330\224\264\245\056\355\222\336\347\030\174
\041\127\335\125\143\367\277\155\315\037\322\246\167\050\160\307
\342\133\072\133\010\322\133\116\310\000\226\263\341\203\066\257
\206\012\145\134\164\366\352\354\172\152\164\240\360\113\356\357
\224\243\254\120\362\207\355\327\072\060\203\311\373\175\127\276
\345\343\370\101\312\345\144\256\263\243\354\130\354\205\232\314
\357\271\352\363\126\030\271\134\163\232\257\305\167\027\203\131
\333\067\032\030\162\124\245\101\322\266\043\165\243\103\232\345
\167\174\226\171\267\101\215\277\354\334\200\240\237\321\167\165
\130\137\065\023\340\045\032\147\013\175\316\045\372\007\012\344
\141\041\330\324\034\345\007\306\066\231\364\226\320\306\025\376
\116\315\327\256\213\235\333\026\375\004\306\222\275\324\210\346
\251\243\252\273\367\144\070\073\137\314\014\320\065\276\164\031
\003\246\305\252\114\242\141\066\202\076\035\363\053\274\227\135
\333\113\170\073\055\365\073\357\140\043\350\365\354\013\043\066
\225\257\230\146\277\123\323\173\270\151\112\052\226\146\151\304
\224\306\364\137\156\254\230\170\210\200\006\134\242\262\355\242
END
```

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "Microsoft Identity Verification Root Certificate Authority 2020"

# Issuer: CN=Microsoft Identity Verification Root Certificate Authority 2020,O=Microsoft Corporation,C=US

# Serial Number:54:98:d2:d1:d4:5b:19:95:48:13:79:c8:11:c0:87:99

# Subject: CN=Microsoft Identity Verification Root Certificate Authority 2020,O=Microsoft Corporation,C=US

# Not Valid Before: Thu Apr 16 18:36:16 2020

# Not Valid After: Sun Apr 16 18:44:40 2045

# Fingerprint (MD5): be:95:4f:16:01:21:22:44:8c:a8:bc:27:96:02:ac:f5

# Fingerprint (SHA1): f4:00:42:e2:e5:f7:e8:ef:81:89:fe:d1:55:19:ae:ce:42:c3:bf:a2

CKA\_CLASS

CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Microsoft Identity Verification Root Certificate Authority 2020"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\364\000\102\342\345\367\350\357\201\211\376\321\125\031\256\316
\102\303\277\242
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\276\225\117\026\001\041\042\104\214\250\274\047\226\002\254\365

END

CKA\_ISSUER MULTILINE\_OCTAL

\060\167\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\036\060\034\006\003\125\004\012\023\025\115\151\143\162\157\163  
\157\146\164\040\103\157\162\160\157\162\141\164\151\157\156\061  
\110\060\106\006\003\125\004\003\023\077\115\151\143\162\157\163  
\157\146\164\040\111\144\145\156\164\151\164\171\040\126\145\162  
\151\146\151\143\141\164\151\157\156\040\122\157\157\164\040\103  
\145\162\164\151\146\151\143\141\164\145\040\101\165\164\150\157  
\162\151\164\171\040\062\060\062\060

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\020\124\230\322\321\324\133\031\225\110\023\171\310\021\300  
\207\231

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "Entrust Code Signing Root Certification Authority - CSBR1"

# Issuer: CN=Entrust Code Signing Root Certification Authority - CSBR1,O=Entrust, Inc.,C=US

# Serial Number: 7f:f1:a8:f9:f4:3a:e8:87:6e:2d:c6:ff:5e:43:3d:b2:ee:30:a6:43

# Subject: CN=Entrust Code Signing Root Certification Authority - CSBR1,O=Entrust, Inc.,C=US

# Not Valid Before: Fri May 07 13:26:36 2021

# Not Valid After: Sun Dec 30 13:26:36 2040

# Fingerprint (MD5): 3a:07:e2:0b:54:91:63:95:fd:01:e5:7b:71:aa:46:be

# Fingerprint (SHA1): 89:74:24:05:3a:4a:88:7a:c0:98:38:02:91:03:4d:88:5c:87:14:b9

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL

CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Entrust Code Signing Root Certification Authority - CSBR1"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\151\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\026\060\024\006\003\125\004\012\014\015\105\156\164\162\165\163  
\164\054\040\111\156\143\056\061\102\060\100\006\003\125\004\003  
\014\071\105\156\164\162\165\163\164\040\103\157\144\145\040\123  
\151\147\156\151\156\147\040\122\157\157\164\040\103\145\162\164  
\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162  
\151\164\171\040\055\040\103\123\102\122\061

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\151\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\026\060\024\006\003\125\004\012\014\015\105\156\164\162\165\163  
\164\054\040\111\156\143\056\061\102\060\100\006\003\125\004\003  
\014\071\105\156\164\162\165\163\164\040\103\157\144\145\040\123  
\151\147\156\151\156\147\040\122\157\157\164\040\103\145\162\164  
\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162  
\151\164\171\040\055\040\103\123\102\122\061

END

CKA\_SERIAL\_NUMBER

MULTILINE\_OCTAL

\002\024\177\361\250\371\364\072\350\207\156\055\306\377\136\103  
\075\262\356\060\246\103

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\242\060\202\003\212\240\003\002\001\002\002\024\177  
\361\250\371\364\072\350\207\156\055\306\377\136\103\075\262\356  
\060\246\103\060\015\006\011\052\206\110\206\367\015\001\001\015  
\005\000\060\151\061\013\060\011\006\003\125\004\006\023\002\125  
\123\061\026\060\024\006\003\125\004\012\014\015\105\156\164\162  
\165\163\164\054\040\111\156\143\056\061\102\060\100\006\003\125  
\004\003\014\071\105\156\164\162\165\163\164\040\103\157\144\145  
\040\123\151\147\156\151\156\147\040\122\157\157\164\040\103\145  
\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150  
\157\162\151\164\171\040\055\040\103\123\102\122\061\060\036\027  
\015\062\061\060\065\060\067\061\063\062\066\063\066\132\027\015  
\064\060\061\062\063\060\061\063\062\066\063\066\132\060\151\061  
\013\060\011\006\003\125\004\006\023\002\125\123\061\026\060\024  
\006\003\125\004\012\014\015\105\156\164\162\165\163\164\054\040  
\111\156\143\056\061\102\060\100\006\003\125\004\003\014\071\105  
\156\164\162\165\163\164\040\103\157\144\145\040\123\151\147\156  
\151\156\147\040\122\157\157\164\040\103\145\162\164\151\146\151  
\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171  
\040\055\040\103\123\102\122\061\060\202\002\042\060\015\006\011  
\052\206\110\206\367\015\001\001\001\005\000\003\202\002\017\000  
\060\202\002\012\002\202\002\001\000\247\201\217\367\024\105\266  
\142\103\362\330\256\323\045\136\110\117\121\277\305\175\237\120  
\034\065\321\326\176\141\052\224\031\155\047\106\244\246\032\135  
\367\124\121\152\200\042\306\250\146\165\115\124\203\311\136\150  
\033\253\366\133\144\260\255\255\040\275\124\357\106\153\155\002  
\347\105\256\165\366\216\212\271\062\056\213\270\167\034\122\115  
\171\210\137\245\072\030\311\120\054\227\047\055\277\332\000\175  
\143\177\357\062\354\106\207\143\333\232\237\303\132\041\066\173  
\371\233\325\312\240\156\162\054\374\341\361\236\160\115\010\126  
\025\157\220\253\373\110\272\271\327\301\202\170\205\145\056\177  
\265\311\300\342\024\267\067\021\101\006\342\212\340\250\366\345  
\176\266\170\005\001\303\140\355\117\007\101\056\012\023\111\343  
\220\233\177\335\275\372\254\277\144\121\321\134\233\264\365\134

\347\134\377\073\233\245\240\032\327\175\011\262\302\267\377\156  
\034\274\310\175\346\351\053\374\162\263\024\351\112\125\022\204  
\234\104\045\165\035\366\052\360\117\245\040\075\150\045\353\141  
\227\174\017\345\266\075\363\256\303\301\021\274\033\216\314\340  
\107\060\136\102\000\206\161\343\130\254\006\312\145\037\173\224  
\246\113\127\147\014\176\136\255\170\147\133\125\343\136\353\307  
\330\354\114\156\206\313\363\334\370\237\207\252\162\130\022\017  
\175\246\370\370\102\071\073\074\054\344\062\115\111\214\340\341  
\000\302\070\240\234\372\204\076\101\334\156\126\256\306\032\133  
\364\147\150\005\001\315\033\277\256\207\274\235\123\366\056\350  
\266\153\344\231\336\305\117\207\130\250\322\145\036\310\037\325  
\162\156\356\131\034\127\073\011\162\235\327\312\267\220\306\315  
\173\105\222\221\102\003\114\175\077\312\362\252\270\302\016\206  
\363\020\237\106\056\244\146\206\150\132\150\030\160\051\070\021  
\200\140\153\212\103\243\163\154\343\263\153\067\377\346\235\147  
\001\222\206\337\057\110\321\373\120\140\325\134\376\041\323\001  
\102\143\376\357\160\264\027\300\217\250\356\323\301\113\137\022  
\352\375\375\056\016\207\104\140\343\251\364\302\030\243\343\375  
\316\014\204\042\015\363\247\170\332\223\363\333\070\317\271\057  
\063\306\377\007\074\136\276\105\323\002\003\001\000\001\243\102  
\060\100\060\035\006\003\125\035\016\004\026\004\024\202\272\326  
\075\227\316\237\317\161\350\222\067\257\375\263\265\151\065\127  
\317\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001  
\001\377\060\016\006\003\125\035\017\001\001\377\004\004\003\002  
\001\206\060\015\006\011\052\206\110\206\367\015\001\001\015\005  
\000\003\202\002\001\000\022\357\070\241\210\341\241\243\326\145  
\334\107\234\363\274\334\317\254\113\214\074\032\276\053\364\367  
\320\147\027\150\206\115\160\250\362\315\320\061\002\127\175\251  
\014\212\073\127\071\236\360\156\367\044\042\005\147\321\301\226  
\301\276\321\360\370\126\147\013\336\272\327\210\233\215\327\153  
\010\166\365\130\221\331\265\303\100\123\032\244\361\205\315\077  
\000\116\077\116\223\073\170\271\322\007\122\144\014\206\151\155  
\350\124\145\126\027\350\000\123\204\212\363\333\373\263\316\013  
\125\142\217\315\114\111\006\070\177\122\303\363\034\327\075\367  
\063\312\062\255\301\251\257\157\353\021\313\356\254\121\277\260  
\046\232\172\116\043\264\112\366\151\264\102\151\326\240\215\266  
\214\107\112\073\040\067\267\101\007\357\057\040\330\146\034\151  
\227\250\154\060\174\167\103\136\153\276\046\230\203\017\072\326  
\307\160\052\026\106\055\045\124\206\143\145\127\102\367\043\101  
\351\120\152\007\103\316\116\265\351\037\150\330\330\326\011\112  
\250\350\262\374\220\147\222\344\220\046\363\107\372\326\040\373  
\211\200\342\104\163\071\367\212\206\063\013\370\252\251\347\115  
\354\334\157\325\317\061\115\253\216\037\220\100\326\174\134\202  
\017\256\027\122\161\351\254\347\115\070\355\052\330\166\171\207  
\255\027\243\114\253\267\102\127\277\006\254\345\320\115\060\351  
\125\117\343\105\312\363\340\152\041\064\215\307\237\034\243\143  
\110\222\322\226\007\276\245\107\076\302\052\231\070\247\216\332  
\041\174\121\155\334\313\075\007\351\251\275\111\324\135\065\137

```
\133\214\004\121\352\232\130\220\272\033\257\150\170\261\026\017
\224\051\073\217\233\052\217\311\040\360\161\102\114\134\115\253
\061\214\253\351\177\046\150\151\240\245\026\015\201\304\321\005
\014\303\207\146\345\007\143\252\033\116\377\262\007\101\117\245
\042\106\120\254\146\000\207\122\154\074\262\073\234\227\241\106
\264\133\336\317\302\152\131\125\007\214\243\244\321\167\065\147
\106\004\057\331\070\271\106\257\272\216\033\162\046\002\057\166
\124\357\203\302\057\054\167\160\314\167\020\222\252\003\255\312
\314\340\117\351\203\106\345\263\074\031\157\172\171\207\266\070
\232\275\102\316\244\142
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY

CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "Entrust Code Signing Root Certification Authority - CSBR1"

# Issuer: CN=Entrust Code Signing Root Certification Authority - CSBR1,O=Entrust, Inc.,C=US

# Serial Number: 7f:f1:a8:f9:f4:3a:e8:87:6e:2d:c6:ff:5e:43:3d:b2:ee:30:a6:43

# Subject: CN=Entrust Code Signing Root Certification Authority - CSBR1,O=Entrust, Inc.,C=US

# Not Valid Before: Fri May 07 13:26:36 2021

# Not Valid After: Sun Dec 30 13:26:36 2040

# Fingerprint (MD5): 3a:07:e2:0b:54:91:63:95:fd:01:e5:7b:71:aa:46:be

# Fingerprint (SHA1): 89:74:24:05:3a:4a:88:7a:c0:98:38:02:91:03:4d:88:5c:87:14:b9

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE

CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Entrust Code Signing Root Certification Authority - CSBR1"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\211\164\044\005\072\112\210\172\300\230\070\002\221\003\115\210
\134\207\024\271
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\072\007\342\013\124\221\143\225\375\001\345\173\161\252\106\276
```

END

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\151\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\026\060\024\006\003\125\004\012\014\015\105\156\164\162\165\163
\164\054\040\111\156\143\056\061\102\060\100\006\003\125\004\003
\014\071\105\156\164\162\165\163\164\040\103\157\144\145\040\123
\151\147\156\151\156\147\040\122\157\157\164\040\103\145\162\164
\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162
\151\164\171\040\055\040\103\123\102\122\061
```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\024\177\361\250\371\364\072\350\207\156\055\306\377\136\103  
\075\262\356\060\246\103

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST  
CKA\_TRUST\_EMAIL\_PROTECTION  
CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST  
CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR  
CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

Found in path(s):

\* /opt/cola/permits/1828010211\_1697890214.5470614/0/ca-certificates-2023.2.60\_v7.0.306-72.el7\_9.src.rpm-cosi-expand-archive-byEyruxa/certdata.txt

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Found in path(s):

\* /opt/cola/permits/1828010211\_1697890214.5470614/0/ca-certificates-2023.2.60\_v7.0.306-72.el7\_9.src.rpm-cosi-expand-archive-byEyruxa/nssckbi.h

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Found in path(s):

\* /opt/cola/permits/1828010211\_1697890214.5470614/0/ca-certificates-2023.2.60\_v7.0.306-72.el7\_9.src.rpm-cosi-expand-archive-byEyruxa/certdata2pem.py

## 1.797 nss-softokn 3.90.0-6.el7\_9

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\* `configure.ac`, `Makefile.am`: The original versions were derived from the ones in the XML Catalog Manager project, version 2.2.

Author: Julio Merino <jmmv@users.sourceforge.net>

\* `atf-c/ui.c`: The `format_paragraph` and `format_text` functions were derived from the ones in the Monotone project, revision 3a0982da308228d796df35f98d787c5cff2bb5b6.

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\* `atf-c++/detail/io.hpp`, `atf-c++/detail/io.cpp`, `atf-c++/detail/io_test.cpp`: These files were derived from the `file_handle`, `systembuf`, `pipe` and `pistream` classes and tests found in the Boost.Process library.

Author: Julio Merino <jmmv84@gmail.com>

\* `admin/check-style.sh`,  
`admin/check-style-common.awk`,  
`admin/check-style-cpp.awk`, `admin/check-style-shell.awk`: These files, except the first one, were first implemented in the Buildtool project. They were later adapted to be part of Boost.Process and, during that process, the shell script was created.

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  <xsl:template name="isc.copyright.format">
    <xsl:param name="text"/>
    <xsl:value-of select="$isc.copyright.leader"/>
    <xsl:value-of select="normalize-space(substring-before($text, '&#10;'))"/>
    <xsl:text>&#10;</xsl:text>
    <xsl:variable name="rest" select="substring-after($text, '&#10;')"/>
    <xsl:if test="translate($rest, '&#9;&#32;', '')">

      <xsl:call-template name="isc.copyright.format">
        <xsl:with-param name="text" select="$rest"/>
      </xsl:call-template>
    </xsl:if>
  </xsl:template>

  <xsl:variable name="isc.copyright.text">
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  <xsl:variable name="isc.copyright">
    <xsl:call-template name="isc.copyright.format">
      <xsl:with-param name="text">
        <xsl:for-each select="book/info/copyright | refentry/docinfo/copyright">
          <xsl:text>Copyright (C) </xsl:text>
          <xsl:call-template name="copyright.years">
            <xsl:with-param name="years" select="year"/>
          </xsl:call-template>
          <xsl:text> </xsl:text>
          <xsl:value-of select="holder"/>
          <xsl:value-of select="$isc.copyright.breakline"/>
          <xsl:text>&#10;</xsl:text>
        </xsl:for-each>
      </xsl:with-param>
    </xsl:call-template>
  </xsl:variable>
</xsl:stylesheet>
```

<!--

- Local variables:

- mode: sgml

- End:

-->

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# 1.799 nspr 4.35.0-1.el7\_9

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The following artifacts are EPL and ASL2.

\* org.eclipse.jetty.orbit:javax.security.auth.message

The following artifacts are EPL and CDDL 1.0.

\* org.eclipse.jetty.orbit:javax.mail.glassfish

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Oracle

The following artifacts are CDDL + GPLv2 with classpath exception.

<https://glassfish.dev.java.net/nonav/public/CDDL+GPL.html>

\* javax.servlet:javax.servlet-api

\* javax.annotation:javax.annotation-api

\* javax.transaction:javax.transaction-api

\* javax.websocket:javax.websocket-api

-----

Oracle OpenJDK

If ALPN is used to negotiate HTTP/2 connections, then the following artifacts may be included in the distribution or downloaded when ALPN module is selected.

\* java.sun.security.ssl

These artifacts replace/modify OpenJDK classes. The modifications are hosted at github and both modified and original are under GPL v2 with



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<http://openjdk.java.net/legal/gplv2+ce.html>

-----

OW2

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org.ow2.asm:asm-commons

org.ow2.asm:asm

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Apache

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org.apache.taglibs:taglibs-standard-impl

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org.mortbay.jasper:apache-jsp

org.apache.tomcat:tomcat-jasper

org.apache.tomcat:tomcat-juli

org.apache.tomcat:tomcat-jsp-api

org.apache.tomcat:tomcat-el-api

org.apache.tomcat:tomcat-jasper-el

org.apache.tomcat:tomcat-api

org.apache.tomcat:tomcat-util-scan

org.apache.tomcat:tomcat-util

org.mortbay.jasper:apache-el

org.apache.tomcat:tomcat-jasper-el

org.apache.tomcat:tomcat-el-api

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org.eclipse.jetty.toolchain:jetty-schemas

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- \* javax.servlet:javax.servlet-api
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- \* java.sun.security.ssl

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org.apache.tomcat:tomcat-jasper  
org.apache.tomcat:tomcat-juli  
org.apache.tomcat:tomcat-jsp-api  
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org.apache.tomcat:tomcat-jasper-el  
org.apache.tomcat:tomcat-api  
org.apache.tomcat:tomcat-util-scan  
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\* org.eclipse.jetty.orbit:org.eclipse.jdt.core

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\* org.eclipse.jetty.orbit:javax.security.auth.message

The following artifacts are EPL and CDDL 1.0.

\* org.eclipse.jetty.orbit:javax.mail.glassfish

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Oracle

The following artifacts are CDDL + GPLv2 with classpath exception.

<https://glassfish.dev.java.net/nonav/public/CDDL+GPL.html>

- \* javax.servlet:javax.servlet-api
- \* javax.annotation:javax.annotation-api
- \* javax.transaction:javax.transaction-api
- \* javax.websocket:javax.websocket-api

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#### Oracle OpenJDK

If ALPN is used to negotiate HTTP/2 connections, then the following artifacts may be included in the distribution or downloaded when ALPN module is selected.

- \* java.sun.security.ssl

These artifacts replace/modify OpenJDK classes. The modifications are hosted at github and both modified and original are under GPL v2 with classpath exceptions.

<http://openjdk.java.net/legal/gplv2+ce.html>

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#### OW2

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- org.ow2.asm:asm-commons
- org.ow2.asm:asm

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#### Apache

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- org.apache.taglibs:taglibs-standard-spec
- org.apache.taglibs:taglibs-standard-impl

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#### MortBay

The following artifacts are ASL2 licensed. Based on selected classes from following Apache Tomcat jars, all ASL2 licensed.

- org.mortbay.jasper:apache-jsp



org.apache.tomcat:tomcat-jasper  
org.apache.tomcat:tomcat-juli  
org.apache.tomcat:tomcat-jsp-api  
org.apache.tomcat:tomcat-el-api  
org.apache.tomcat:tomcat-jasper-el  
org.apache.tomcat:tomcat-api  
org.apache.tomcat:tomcat-util-scan  
org.apache.tomcat:tomcat-util

org.mortbay.jasper:apache-el  
org.apache.tomcat:tomcat-jasper-el  
org.apache.tomcat:tomcat-el-api

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Mortbay

The following artifacts are CDDL + GPLv2 with classpath exception.

<https://glassfish.dev.java.net/nonav/public/CDDL+GPL.html>

org.eclipse.jetty.toolchain:jetty-schemas

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Assorted

The UnixCrypt.java code implements the one way cryptography used by Unix systems for simple password protection. Copyright 1996 Aki Yoshida, modified April 2001 by Iris Van den Broeke, Daniel Deville.

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# 1.803 jetty 9.4.53.v20231009

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Eclipse

The following artifacts are EPL.

\* org.eclipse.jetty.orbit:org.eclipse.jdt.core

The following artifacts are EPL and ASL2.

\* org.eclipse.jetty.orbit:javax.security.auth.message

The following artifacts are EPL and CDDL 1.0.

\* org.eclipse.jetty.orbit:javax.mail.glassfish

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Oracle

The following artifacts are CDDL + GPLv2 with classpath exception.

<https://glassfish.dev.java.net/nonav/public/CDDL+GPL.html>

\* javax.servlet:javax.servlet-api

\* javax.annotation:javax.annotation-api

\* javax.transaction:javax.transaction-api

\* javax.websocket:javax.websocket-api

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Oracle OpenJDK

If ALPN is used to negotiate HTTP/2 connections, then the following artifacts may be included in the distribution or downloaded when ALPN module is selected.

\* java.sun.security.ssl

These artifacts replace/modify OpenJDK classes. The modifications are hosted at github and both modified and original are under GPL v2 with

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<http://openjdk.java.net/legal/gplv2+ce.html>

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OW2

The following artifacts are licensed by the OW2 Foundation according to the terms of <http://asm.ow2.org/license.html>

org.ow2.asm:asm-commons

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Apache

The following artifacts are ASL2 licensed.

org.apache.taglibs:taglibs-standard-spec

org.apache.taglibs:taglibs-standard-impl

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MortBay

The following artifacts are ASL2 licensed. Based on selected classes from following Apache Tomcat jars, all ASL2 licensed.

org.mortbay.jasper:apache-jsp

org.apache.tomcat:tomcat-jasper

org.apache.tomcat:tomcat-juli

org.apache.tomcat:tomcat-jsp-api

org.apache.tomcat:tomcat-el-api

org.apache.tomcat:tomcat-jasper-el

org.apache.tomcat:tomcat-api

org.apache.tomcat:tomcat-util-scan

org.apache.tomcat:tomcat-util

org.mortbay.jasper:apache-el

org.apache.tomcat:tomcat-jasper-el

org.apache.tomcat:tomcat-el-api

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Mortbay

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<https://glassfish.dev.java.net/nonav/public/CDDL+GPL.html>

org.eclipse.jetty.toolchain:jetty-schemas

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Assorted

The UnixCrypt.java code implements the one way cryptography used by Unix systems for simple password protection. Copyright 1996 Aki Yoshida, modified April 2001 by Iris Van den Broeke, Daniel Deville.

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\* `configure.ac`, `Makefile.am`: The original versions were derived from the ones in the XML Catalog Manager project, version 2.2.

Author: Julio Merino <jmmv@users.sourceforge.net>

\* `atf-c/ui.c`: The `format_paragraph` and `format_text` functions were derived from the ones in the Monotone project, revision 3a0982da308228d796df35f98d787c5cff2bb5b6.

Author: Julio Merino <jmmv@NetBSD.org>

\* `atf-c++/detail/io.hpp`, `atf-c++/detail/io.cpp`, `atf-c++/detail/io_test.cpp`: These files were derived from the `file_handle`, `systembuf`, `pipe` and `pistream` classes and tests found in the Boost.Process library.

Author: Julio Merino <jmmv84@gmail.com>

\* `admin/check-style.sh`,  
`admin/check-style-common.awk`,  
`admin/check-style-cpp.awk`, `admin/check-style-shell.awk`: These files, except the first one, were first implemented in the Buildtool project. They were later adapted to be part of Boost.Process and, during that process, the shell script was created.

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<!-- Generate ISC copyright comments from Docbook copyright metadata. -->

```

<xsl:stylesheet version="1.0"
  xmlns:xsl="http://www.w3.org/1999/XSL/Transform"
  xmlns:xi="http://www.w3.org/2001/XInclude"
  xmlns:db="http://docbook.org/ns/docbook">

  <xsl:template name="isc.copyright.format">
    <xsl:param name="text"/>
    <xsl:value-of select="$isc.copyright.leader"/>
    <xsl:value-of select="normalize-space(substring-before($text, '&#10;'))"/>
    <xsl:text>&#10;</xsl:text>
    <xsl:variable name="rest" select="substring-after($text, '&#10;')"/>
    <xsl:if test="translate($rest, '&#9;&#32;', ' ')">

      <xsl:call-template name="isc.copyright.format">
        <xsl:with-param name="text" select="$rest"/>
      </xsl:call-template>
    </xsl:if>
  </xsl:template>

  <xsl:variable name="isc.copyright.text">
    <xsl:text>
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      file, You can obtain one at http://mozilla.org/MPL/2.0/.
    </xsl:text>
  </xsl:variable>

  <xsl:variable name="isc.copyright">
    <xsl:call-template name="isc.copyright.format">
      <xsl:with-param name="text">
        <xsl:for-each select="book/info/copyright | refentry/docinfo/copyright">
          <xsl:text>Copyright (C) </xsl:text>
          <xsl:call-template name="copyright.years">
            <xsl:with-param name="years" select="year"/>
          </xsl:call-template>
          <xsl:text> </xsl:text>
          <xsl:value-of select="holder"/>
          <xsl:value-of select="$isc.copyright.breakline"/>
          <xsl:text>&#10;</xsl:text>
        </xsl:for-each>
      </xsl:with-param>
    </xsl:call-template>
  </xsl:variable>

```

```
<xsl:value-of
select="$isc.copyright.text"/>
  </xsl:with-param>
</xsl:call-template>
</xsl:variable>
</xsl:stylesheet>
```

<!--

- Local variables:

- mode: sgml

- End:

-->

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## 1.807 nss-softokn-freebl 3.90.0-6.el7\_9

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The following artifacts are EPL and ASL2.

- \* org.eclipse.jetty.orbit:javax.security.auth.message

The following artifacts are EPL and CDDL 1.0.

- \* org.eclipse.jetty.orbit:javax.mail.glassfish

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Oracle

The following artifacts are CDDL + GPLv2 with classpath exception.

<https://glassfish.dev.java.net/nonav/public/CDDL+GPL.html>

- \* javax.servlet:javax.servlet-api
- \* javax.annotation:javax.annotation-api
- \* javax.transaction:javax.transaction-api
- \* javax.websocket:javax.websocket-api

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Oracle OpenJDK

If ALPN is used to negotiate HTTP/2 connections, then the following artifacts may be included in the distribution or downloaded when ALPN module is selected.

- \* java.sun.security.ssl

These artifacts replace/modify OpenJDK classes. The modifications are hosted at github and both modified and original are under GPL v2 with classpath exceptions.

<http://openjdk.java.net/legal/gplv2+ce.html>

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OW2

The following artifacts are licensed by the OW2 Foundation according to the terms of <http://asm.ow2.org/license.html>

- org.ow2.asm:asm-commons
- org.ow2.asm:asm

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Apache

The following artifacts are ASL2 licensed.

org.apache.taglibs:taglibs-standard-spec  
org.apache.taglibs:taglibs-standard-impl

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MortBay

The following artifacts are ASL2 licensed. Based on selected classes from following Apache Tomcat jars, all ASL2 licensed.

org.mortbay.jasper:apache-jsp  
org.apache.tomcat:tomcat-jasper  
org.apache.tomcat:tomcat-juli  
org.apache.tomcat:tomcat-jsp-api  
org.apache.tomcat:tomcat-el-api  
org.apache.tomcat:tomcat-jasper-el  
org.apache.tomcat:tomcat-api  
org.apache.tomcat:tomcat-util-scan  
org.apache.tomcat:tomcat-util

org.mortbay.jasper:apache-el  
org.apache.tomcat:tomcat-jasper-el  
org.apache.tomcat:tomcat-el-api

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Mortbay

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<https://glassfish.dev.java.net/nonav/public/CDDL+GPL.html>

org.eclipse.jetty.toolchain:jetty-schemas

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Assorted

The UnixCrypt.java code implements the one way cryptography used by Unix systems for simple password protection. Copyright 1996 Aki Yoshida, modified April 2001 by Iris Van den Broeke, Daniel Deville.

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# 1.809 jetty 9.4.53.v20231009

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The following artifacts are EPL and ASL2.

\* org.eclipse.jetty.orbit:javax.security.auth.message

The following artifacts are EPL and CDDL 1.0.

\* org.eclipse.jetty.orbit:javax.mail.glassfish

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Oracle

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<https://glassfish.dev.java.net/nonav/public/CDDL+GPL.html>

- \* javax.servlet:javax.servlet-api
- \* javax.annotation:javax.annotation-api
- \* javax.transaction:javax.transaction-api
- \* javax.websocket:javax.websocket-api

-----

#### Oracle OpenJDK

If ALPN is used to negotiate HTTP/2 connections, then the following artifacts may be included in the distribution or downloaded when ALPN module is selected.

- \* java.sun.security.ssl

These artifacts replace/modify OpenJDK classes. The modifications are hosted at github and both modified and original are under GPL v2 with classpath exceptions.

<http://openjdk.java.net/legal/gplv2+ce.html>

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#### OW2

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- org.ow2.asm:asm-commons
- org.ow2.asm:asm

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#### Apache

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- org.apache.taglibs:taglibs-standard-spec
- org.apache.taglibs:taglibs-standard-impl

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- org.mortbay.jasper:apache-jsp



org.apache.tomcat:tomcat-jasper  
org.apache.tomcat:tomcat-juli  
org.apache.tomcat:tomcat-jsp-api  
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org.apache.tomcat:tomcat-jasper-el  
org.apache.tomcat:tomcat-api  
org.apache.tomcat:tomcat-util-scan  
org.apache.tomcat:tomcat-util

org.mortbay.jasper:apache-el  
org.apache.tomcat:tomcat-jasper-el  
org.apache.tomcat:tomcat-el-api

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org.eclipse.jetty.toolchain:jetty-schemas

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Assorted

The UnixCrypt.java code implements the one way cryptography used by Unix systems for simple password protection. Copyright 1996 Aki Yoshida, modified April 2001 by Iris Van den Broeke, Daniel Deville.

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# 1.810 jetty-security 9.4.53.v20231009

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\* javax.annotation:javax.annotation-api

\* javax.transaction:javax.transaction-api

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org.mortbay.jasper:apache-jsp

org.apache.tomcat:tomcat-jasper

org.apache.tomcat:tomcat-juli

org.apache.tomcat:tomcat-jsp-api

org.apache.tomcat:tomcat-el-api

org.apache.tomcat:tomcat-jasper-el

org.apache.tomcat:tomcat-api

org.apache.tomcat:tomcat-util-scan

org.apache.tomcat:tomcat-util

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org.eclipse.jetty.toolchain:jetty-schemas

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# 1.811 websocket-api 9.4.53.v20231009

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- \* org.eclipse.jetty.orbit:javac.security.auth.message

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- \* org.eclipse.jetty.orbit:javac.mail.glassfish

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Oracle

The following artifacts are CDDL + GPLv2 with classpath exception.

<https://glassfish.dev.java.net/nonav/public/CDDL+GPL.html>

- \* javax.servlet:javax.servlet-api
- \* javax.annotation:javax.annotation-api
- \* javax.transaction:javax.transaction-api
- \* javax.websocket:javax.websocket-api

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Oracle OpenJDK

If ALPN is used to negotiate HTTP/2 connections, then the following artifacts may be included in the distribution or downloaded when ALPN module is selected.

- \* java.sun.security.ssl

These artifacts replace/modify OpenJDK classes. The modifications are hosted at github and both modified and original are under GPL v2 with classpath exceptions.

<http://openjdk.java.net/legal/gplv2+ce.html>

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OW2

The following artifacts are licensed by the OW2 Foundation according to the terms of <http://asm.ow2.org/license.html>

- org.ow2.asm:asm-commons
- org.ow2.asm:asm

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Apache

The following artifacts are ASL2 licensed.

org.apache.taglibs:taglibs-standard-spec  
org.apache.taglibs:taglibs-standard-impl

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MortBay

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org.mortbay.jasper:apache-jsp  
org.apache.tomcat:tomcat-jasper  
org.apache.tomcat:tomcat-juli  
org.apache.tomcat:tomcat-jsp-api  
org.apache.tomcat:tomcat-el-api  
org.apache.tomcat:tomcat-jasper-el  
org.apache.tomcat:tomcat-api  
org.apache.tomcat:tomcat-util-scan  
org.apache.tomcat:tomcat-util

org.mortbay.jasper:apache-el  
org.apache.tomcat:tomcat-jasper-el  
org.apache.tomcat:tomcat-el-api

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Mortbay

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<https://glassfish.dev.java.net/nonav/public/CDDL+GPL.html>

org.eclipse.jetty.toolchain:jetty-schemas

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Assorted

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Eclipse

The following artifacts are EPL.

\* org.eclipse.jetty.orbit:org.eclipse.jdt.core

The following artifacts are EPL and ASL2.

\* org.eclipse.jetty.orbit:javax.security.auth.message

The following artifacts are EPL and CDDL 1.0.

\* org.eclipse.jetty.orbit:javax.mail.glassfish

-----  
Oracle

The following artifacts are CDDL + GPLv2 with classpath exception.

<https://glassfish.dev.java.net/nonav/public/CDDL+GPL.html>

- \* javax.servlet:javax.servlet-api
- \* javax.annotation:javax.annotation-api
- \* javax.transaction:javax.transaction-api
- \* javax.websocket:javax.websocket-api

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#### Oracle OpenJDK

If ALPN is used to negotiate HTTP/2 connections, then the following artifacts may be included in the distribution or downloaded when ALPN module is selected.

- \* java.sun.security.ssl

These artifacts replace/modify OpenJDK classes. The modifications are hosted at github and both modified and original are under GPL v2 with classpath exceptions.

<http://openjdk.java.net/legal/gplv2+ce.html>

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#### OW2

The following artifacts are licensed by the OW2 Foundation according to the terms of <http://asm.ow2.org/license.html>

- org.ow2.asm:asm-commons
- org.ow2.asm:asm

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#### Apache

The following artifacts are ASL2 licensed.

- org.apache.taglibs:taglibs-standard-spec
- org.apache.taglibs:taglibs-standard-impl

-----

#### MortBay

The following artifacts are ASL2 licensed. Based on selected classes from following Apache Tomcat jars, all ASL2 licensed.

- org.mortbay.jasper:apache-jsp

org.apache.tomcat:tomcat-jasper  
org.apache.tomcat:tomcat-juli  
org.apache.tomcat:tomcat-jsp-api  
org.apache.tomcat:tomcat-el-api  
org.apache.tomcat:tomcat-jasper-el  
org.apache.tomcat:tomcat-api  
org.apache.tomcat:tomcat-util-scan  
org.apache.tomcat:tomcat-util

org.mortbay.jasper:apache-el  
org.apache.tomcat:tomcat-jasper-el  
org.apache.tomcat:tomcat-el-api

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Mortbay

The following artifacts are CDDL + GPLv2 with classpath exception.

<https://glassfish.dev.java.net/nonav/public/CDDL+GPL.html>

org.eclipse.jetty.toolchain:jetty-schemas

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Assorted

The UnixCrypt.java code implements the one way cryptography used by Unix systems for simple password protection. Copyright 1996 Aki Yoshida, modified April 2001 by Iris Van den Broeke, Daniel Deville.

Permission to use, copy, modify and distribute UnixCrypt for non-commercial or commercial purposes and without fee is granted provided that the copyright notice appears in all copies.

## 1.813 elasticsearch 2.4.6

### 1.813.1 Available under license :

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 \* under the License.  
 \*/  
 /\*\*  
 \* <p>Encodes and decodes to and from Base64 notation.</p>  
 \* <p>Homepage: <a href="http://iharder.net/base64">http://iharder.net/base64</a>.</p>  
 \* <p>  
 \* Example:  
 \* <p>  
 \* <code>String encoded = Base64.encode( myByteArray );</code>  
 \* <br>  
 \* <code>byte[] myByteArray = Base64.decode( encoded );</code>  
 \* <p>  
 \* The <tt>options</tt> parameter, which appears in a few places, is used to pass  
 \* several pieces of information to the encoder. In the "higher level" methods such as  
 \* encodeBytes( bytes, options ) the options parameter can be used to indicate such  
 \* things as first gzipping the bytes before encoding them, not inserting linefeeds,  
 \* and encoding using the URL-safe and Ordered dialects.  
 \* <p>  
 \* Note, according to <a href="http://www.faqs.org/rfcs/rfc3548.html">RFC3548</a>,  
 \* Section 2.1, implementations should not add line feeds unless explicitly told  
 \* to do so. I've got Base64 set to this behavior now, although earlier versions  
 \* broke lines by default.  
 \* <p>  
 \* The constants defined in Base64 can be OR-ed together to combine options, so you  
 \* might make a call like this:  
 \* <p>  
 \* <code>String encoded  
 \* = Base64.encodeBytes( mybytes, Base64.GZIP | Base64.DO\_BREAK\_LINES );</code>  
 \* <p>to compress the data before encoding it and then making the output have newline characters.  
 \* <p>Also...  
 \* <code>String encoded = Base64.encodeBytes( crazyString.getBytes() );</code>  
 \* <p>  
 \* Change Log:  
 \* <ul>  
 \* <li>v2.3.7 - Fixed subtle bug when base 64 input stream contained the  
 \* value 01111111, which is an invalid base 64 character but should not  
 \* throw an ArrayIndexOutOfBoundsException either. Led to discovery of  
 \* mishandling (or potential for better handling) of other bad input  
 \* characters. You should now get an IOException if you try decoding  
 \* something that has bad characters in it.</li>

- \* <li>v2.3.6 - Fixed bug when breaking lines and the final byte of the encoded string ended in the last column; the buffer was not properly shrunk and contained an extra (null) byte that made it into the string.</li>
- \* <li>v2.3.5 - Fixed bug in { @code #encodeFromFile } where estimated buffer size was wrong for files of size 31, 34, and 37 bytes.</li>
- \* <li>v2.3.4 - Fixed bug when working with gzipped streams whereby flushing the Base64.OutputStream closed the Base64 encoding (by padding with equals signs) too soon. Also added an option to suppress the automatic decoding of gzipped streams. Also added experimental support for specifying a class loader when using the { @code #decodeToObject(java.lang.String, int, java.lang.ClassLoader) } method.</li>
- \* <li>v2.3.3 - Changed default char encoding to US-ASCII which reduces the internal Java footprint with its CharEncoders and so forth. Fixed some javadocs that were inconsistent. Removed imports and specified things like java.io.IOException explicitly inline.</li>
- \* <li>v2.3.2 - Reduced memory footprint! Finally refined the "guessing" of how big the final encoded data will be so that the code doesn't have to create two output arrays: an oversized initial one and then a final, exact-sized one. Big win when using the { @link #encodeBytesToBytes(byte[]) } family of methods (and not using the gzip options which uses a different mechanism with streams and stuff).</li>
- \* <li>v2.3.1 - Added { @link #encodeBytesToBytes(byte[], int, int, int) } and some similar helper methods to be more efficient with memory by not returning a String but just a byte array.</li>
- \* <li>v2.3 - <strong>This is not a drop-in replacement!</strong> This is two years of comments and bug fixes queued up and finally executed. Thanks to everyone who sent me stuff, and I'm sorry I wasn't able to distribute your fixes to everyone else. Much bad coding was cleaned up including throwing exceptions where necessary instead of returning null values or something similar. Here are some changes that may affect you:
  - \* <ul>
  - \* <li><em>Does not break lines, by default.</em> This is to keep in compliance with <a href="http://www.faqs.org/rfcs/rfc3548.html">RFC3548</a>.</li>
  - \* <li><em>Throws exceptions instead of returning null values.</em> Because some operations (especially those that may permit the GZIP option) use IO streams, there is a possibility of an java.io.IOException being thrown. After some discussion and thought, I've changed the behavior of the methods to throw java.io.IOExceptions rather than return null if ever there's an error. I think this is more appropriate, though it will require some changes to your code. Sorry, it should have been done this way to begin with.</li>
  - \* <li><em>Removed all references to System.out, System.err, and the like.</em> Shame on me. All I can say is sorry they were ever there.</li>
  - \* <li><em>Throws NullPointerExceptions and IllegalArgumentExceptions</em> as needed such as when passed arrays are null or offsets are invalid.</li>
  - \* <li>Cleaned up as much javadoc as I could to avoid any javadoc warnings.</li>

- \* This was especially annoying before for people who were thorough in their own projects and then had gobs of javadoc warnings on this file.</li>
- \* </ul>
- \* <li>v2.2.1 - Fixed bug using URL\_SAFE and ORDERED encodings. Fixed bug when using very small files (~&lt; 40 bytes).</li>
- \* <li>v2.2 - Added some helper methods for encoding/decoding directly from one file to the next. Also added a main() method to support command line encoding/decoding from one file to the next. Also added these Base64 dialects:
  - \* <ol>
  - \* <li>The default is RFC3548 format.</li>
  - \* <li>Calling Base64.setFormat(Base64.BASE64\_FORMAT.URLSAFE\_FORMAT) generates URL and file name friendly format as described in Section 4 of RFC3548.
    - \* <http://www.faqs.org/rfcs/rfc3548.html></li>
  - \* <li>Calling Base64.setFormat(Base64.BASE64\_FORMAT.ORDERED\_FORMAT) generates URL and file name friendly format that preserves lexical ordering as described in <http://www.faqs.org/qa/rfcc-1940.html></li>
  - \* </ol>
  - \* Special thanks to Jim Kellerman at <http://www.powerset.com/> for contributing the new Base64 dialects.
  - \* </li>
  - \* <li>v2.1 - Cleaned up javadoc comments and unused variables and methods. Added some convenience methods for reading and writing to and from files.</li>
  - \* <li>v2.0.2 - Now specifies UTF-8 encoding in places where the code fails on systems with other encodings (like EBCDIC).</li>
  - \* <li>v2.0.1 - Fixed an error when decoding a single byte, that is, when the encoded data was a single byte.</li>
  - \* <li>v2.0 - I got rid of methods that used booleans to set options. Now everything is more consolidated and cleaner. The code now detects when data that's being decoded is gzip-compressed and will decompress it automatically. Generally things are cleaner. You'll probably have to change some method calls that you were making to support the new options format (<tt>int</tt>s that you "OR" together).</li>
  - \* <li>v1.5.1 - Fixed bug when decompressing and decoding to a byte[] using <tt>decode( String s, boolean gzipCompressed )</tt>.
  - \* Added the ability to "suspend" encoding in the Output Stream so you can turn on and off the encoding if you need to embed base64 data in an otherwise "normal" stream (like an XML file).</li>
  - \* <li>v1.5 - Output stream passes on flush() command but doesn't do anything itself. This helps when using GZIP streams.
  - \* Added the ability to GZip-compress objects before encoding them.</li>
  - \* <li>v1.4 - Added helper methods to read/write files.</li>
  - \* <li>v1.3.6 - Fixed OutputStream.flush() so that 'position' is reset.</li>
  - \* <li>v1.3.5 - Added flag to turn on and off line breaks. Fixed bug in input stream where last buffer being read, if not completely full, was not returned.</li>
  - \* <li>v1.3.4 - Fixed when "improperly padded stream" error was thrown at the wrong time.</li>

```
* <li>v1.3.3 - Fixed I/O streams which were totally messed up.</li>
* </ul>
* <p>
* I am placing this code in the Public Domain. Do with it as you will.
* This software comes with no guarantees
  or warranties but with
* plenty of well-wishing instead!
* Please visit <a href="http://iharder.net/base64">http://iharder.net/base64</a>
* periodically to check for updates or to contribute improvements.
*
* @author Robert Harder
* @author rob@iharder.net
* @version 2.3.7
*/
```

Found in path(s):

```
* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/common/Base64.java
```

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*/
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* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/common/inject/internal/AbstractBindingBuilder.java
```

```
* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/common/inject/TypeConverterBindingProcessor.java
```

```
* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/common/inject/Initializer.java
```

```
*
```

```
 /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/common/inject/FactoryProxy.java
```

```
* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/common/inject/spi/ProviderBinding.java
```



\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/spi/Element.java

\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/SingleFieldInjector.java

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\*

/opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/ConfigurationException.java

\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/internal/PrivateElementsImpl.java

\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/internal/Scoping.java

\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/spi/ConstructorBinding.java

\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/spi/ProviderLookup.java

\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/internal/InstanceBindingImpl.java

\*

/opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/spi/ConvertedConstantBinding.java

\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/Initializable.java

\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/spi/InstanceBinding.java

\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/util/Modules.java

\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/spi/ExposedBinding.java

\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/spi/DefaultBindingScopingVisitor.java

\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/spi/Dependency.java

\*

/opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/spi/InjectionPoint.java

\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/internal/ProviderMethodsModule.java

\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/State.java

\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/ExposedKeyFactory.java

\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-

jar/org/elasticsearch/common/inject/internal/ProviderMethod.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-  
jar/org/elasticsearch/common/inject/internal/ErrorsException.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-  
jar/org/elasticsearch/common/inject/spi/ProviderKeyBinding.java  
\*  
/opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-  
jar/org/elasticsearch/common/inject/spi/TypeConverterBinding.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-  
jar/org/elasticsearch/common/inject/multibindings/RealElement.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-  
jar/org/elasticsearch/common/inject/SingleMethodInjector.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-  
jar/org/elasticsearch/common/inject/spi/UntargettedBinding.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-  
jar/org/elasticsearch/common/inject/spi/InjectionRequest.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-  
jar/org/elasticsearch/common/inject/LookupProcessor.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-  
jar/org/elasticsearch/common/inject/multibindings/package-info.java  
\*  
/opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-  
jar/org/elasticsearch/common/inject/MessageProcessor.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-  
jar/org/elasticsearch/common/inject/internal/ExposedBindingImpl.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-  
jar/org/elasticsearch/common/inject/Binding.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-  
jar/org/elasticsearch/common/inject/spi/BindingTargetVisitor.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-  
jar/org/elasticsearch/common/inject/spi/ProviderWithDependencies.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-  
jar/org/elasticsearch/common/inject/InjectorShell.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-  
jar/org/elasticsearch/common/inject/WeakKeySet.java  
\*  
/opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-  
jar/org/elasticsearch/common/inject/Exposed.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-  
jar/org/elasticsearch/common/inject/multibindings/Element.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-  
jar/org/elasticsearch/common/inject/spi/Elements.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-  
jar/org/elasticsearch/common/inject/PrivateBinder.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-  
jar/org/elasticsearch/common/inject/util/Types.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-  
jar/org/elasticsearch/common/inject/Initializables.java

\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/internal/FailableCache.java

\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/internal/UniqueAnnotations.java

\*

/opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/PrivateElementProcessor.java

\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/SingleMemberInjector.java

\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/InjectionRequestProcessor.java

\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/spi/LinkedKeyBinding.java

\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/spi/DefaultBindingTargetVisitor.java

\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/binder/AnnotatedElementBuilder.java

\*

/opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/internal/ConstantBindingBuilderImpl.java

\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/SingleParameterInjector.java

\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/internal/BindingBuilder.java

\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/spi/ElementVisitor.java

\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/ScopeBindingProcessor.java

\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/AbstractProcessor.java

\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/internal/MoreTypes.java

\*

/opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/BindingProcessor.java

\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/spi/ScopeBinding.java

\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/spi/PrivateElements.java

\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/multibindings/Multibinder.java

\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/PrivateModule.java

\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/spi/ProviderInstanceBinding.java

\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/assistedinject/FactoryProvider2.java

\*

/opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/Reflection.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/InheritingState.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/multibindings/MapBinder.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/spi/DefaultElementVisitor.java  
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\*/  
/\*\*  
\* Should each { @link org.elasticsearch.search.SearchHit } be returned with its  
\* version.  
\*/

Found in path(s):

\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/index/query/support/BaseInnerHitBuilder.java  
\*  
/opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/search/aggregations/metrics/tophits/TopHitsBuilder.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/action/search/SearchRequestBuilder.java  
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Found in path(s):

- \* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/internal/UntargettedBindingImpl.java
- \* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/util/Providers.java
- \* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/internal/MatcherAndConverter.java
- \*
- /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/internal/Join.java
- \* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/OutOfScopeException.java
- \* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/assistedinject/AssistedConstructor.java
- \* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/assistedinject/FactoryProvider.java
- \* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/binder/ConstantBindingBuilder.java
- \* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/spi/TypeConverter.java
- \*
- /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/ConstructorBindingImpl.java
- \* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/assistedinject/Assisted.java
- \* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/Provides.java
- \* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/Guice.java
- \* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/internal/Nullable.java
- \* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/internal/LinkedBindingImpl.java
- \* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/assistedinject/AssistedInject.java
- \*

/opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/Binder.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/assistedinject/ParameterListKey.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/assistedinject/package-info.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/assistedinject/Parameter.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/internal/LinkedProviderBindingImpl.java  
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 */
```

Found in path(s):

\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/joda/time/base/BaseDateTime.java  
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```

```

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*/

/*
* Limited security policy for scripts.
* This is what is needed for basic functionality to work.
*/
grant {

    // groovy IndyInterface
    bootstrap requires this property for indy logging
    permission java.util.PropertyPermission "groovy.indy.logging", "read";
    // groovy requires this to enable workaround for certain JVMs (https://github.com/apache/groovy/pull/137)
    permission java.util.PropertyPermission "java.vm.name", "read";
    permission java.util.PropertyPermission "groovy.use.classvalue", "read";

    // groovy JsonOutput, just allow it to read these props so it works (unsafe is not allowed)
    permission java.util.PropertyPermission "groovy.json.faststringutils.disable", "read";
    permission java.util.PropertyPermission "groovy.json.faststringutils.write.to.final.fields", "read";

    // needed by Rhino engine exception handling
    permission java.util.PropertyPermission "rhino.stack.style", "read";

    // needed IndyInterface selectMethod (setCallSiteTarget)
    // TODO: clean this up / only give it to engines that really must have it
    permission java.lang.RuntimePermission "getClassLoader";
};

```

Found in path(s):

```

*
/opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/bootstrap/untrusted.policy

```

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//// additional test framework permissions.  
//// These are mock objects and test management that we allow test framework libs  
//// to provide  
on our behalf. But tests themselves cannot do this stuff!

```
grant codeBase "${codebase.securemock-1.2.jar}" {  
  // needed to access ReflectionFactory (see below)  
  permission java.lang.RuntimePermission "accessClassInPackage.sun.reflect";  
  // needed to support creation of mocks  
  permission java.lang.RuntimePermission "reflectionFactoryAccess";  
  // needed for spy interception, etc  
  permission java.lang.reflect.ReflectPermission "suppressAccessChecks";  
};
```

```
grant codeBase "${codebase.lucene-test-framework-5.5.4.jar}" {  
  // needed by RamUsageTester  
  permission java.lang.reflect.ReflectPermission "suppressAccessChecks";  
};
```

```
grant codeBase "${codebase.randomizedtesting-runner-2.3.2.jar}" {  
  // optionally needed for access to private test methods (e.g. beforeClass)  
  permission java.lang.reflect.ReflectPermission "suppressAccessChecks";  
  // needed to fail tests on uncaught exceptions from other threads  
  permission java.lang.RuntimePermission "setDefaultUncaughtExceptionHandler";  
  
  // needed for top threads handling  
  permission org.elasticsearch.ThreadPermission "modifyArbitraryThreadGroup";  
};
```

```
grant codeBase "${codebase.junit4-ant-2.3.2.jar}" {  
  // needed for stream redirection  
  permission java.lang.RuntimePermission "setIO";  
};
```

Found in path(s):

\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/bootstrap/test-framework.policy

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Found in path(s):

\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/logging/jdk/JdkESLogger.java  
\*  
/opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/apache/lucene/queries/BlendedTermQuery.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/property/PropertyPlaceholder.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/index/fielddata/plain/GeoPointArrayIndexFieldData.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/index/query/MissingQueryBuilder.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/search/aggregations/bucket/range/date/DateRangeBuilder.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/index/query/ConstantScoreQueryBuilder.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/cluster/routing/RoutingTableValidation.java  
\*  
/opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/search/aggregations/metrics/sum/SumAggregator.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/cluster/service/PendingClusterTask.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/cluster/BasicClusterStateTaskConfig.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/action/RoutingMissingException.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/action/admin/indices/warmer/delete/TransportDeleteWarmerAction.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/indices/recovery/RecoveryResponse.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-

```

jar/org/elasticsearch/common/component/LifecycleComponent.java
*
/opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/index/analysis/SnowballAnalyzerProvider.java
* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/cluster/AckedClusterStateUpdateTask.java
* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/transport/TransportRequestHandler.java
* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/cluster/NotMasterException.java
* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/search/aggregations/bucket/range/geodistance/GeoDistanceParser.java
* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/index/analysis/WordDelimiterTokenFilterFactory.java
*
/opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/index/query/QueryBuilders.java
* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/action/admin/indices/shards/IndicesShardStoresAction.java
* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/action/indexedscripts/delete/package-info.java
* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/common/io/stream/NamedWriteableRegistry.java
* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/index/fielddata/IndexFieldDataService.java
* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/search/aggregations/bucket/significant/heuristics/ScriptHeuristic.java
* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/search/aggregations/metrics/avg/InternalAvg.java
*
/opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/action/support/broadcast/TransportBroadcastAction.java
* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/search/aggregations/pipeline/cumulativesum/CumulativeSumBuilder.java
* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/action/admin/indices/validate/query/ShardValidateQueryResponse.java
* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/common/breaker/NoopCircuitBreaker.java
* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/index/query/GeoDistanceRangeQueryParser.java
* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/search/dfs/AggregatedDfs.java
*
/opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/action/admin/indices/close/CloseIndexResponse.java
* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
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jar/org/elasticsearch/cluster/routing/allocation/decider/ClusterRebalanceAllocationDecider.java  
 \* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-  
 jar/org/elasticsearch/rest/action/cat/RestCountAction.java  
 \* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-  
 jar/org/elasticsearch/rest/action/support/RestToXContentListener.java  
 \* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-  
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 jar/org/elasticsearch/search/aggregations/bucket/filter/FilterParser.java  
 \* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-  
 jar/org/elasticsearch/search/aggregations/bucket/terms/LongTermsAggregator.java  
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 /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-  
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 \* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-  
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 \* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/transport/ActionTransportException.java  
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* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
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* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/index/analysis/PathHierarchyTokenizerFactory.java
* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/index/mapper/geo/BaseGeoPointFieldMapper.java
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* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/threadpool/ThreadPoolStats.java
* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
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* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
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/opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
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 \* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/ExceptionsHelper.java  
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 \* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/search/suggest/phrase/LaplaceScorer.java  
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jar/org/elasticsearch/action/admin/indices/stats/ShardStats.java
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\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-  
jar/org/elasticsearch/common/xcontent/XContentType.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-  
jar/org/elasticsearch/snapshots/SnapshotShardFailure.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-  
jar/org/elasticsearch/search/aggregations/bucket/significant/SignificantTerms.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-  
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\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-  
jar/org/elasticsearch/common/util/concurrent/AtomicArray.java  
\*  
/opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-  
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\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-  
jar/org/elasticsearch/action/termvectors/TermVectorsFields.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-  
jar/org/elasticsearch/action/indexedscripts/put/TransportPutIndexedScriptAction.java  
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jar/org/elasticsearch/action/admin/indices/warmer/delete/DeleteWarmerRequestBuilder.java

\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/index/settings/IndexSettingsModule.java

\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/action/admin/cluster/state/TransportClusterStateAction.java

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/opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/cluster/ClusterStateTaskListener.java

\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/bootstrap/BootstrapInfo.java

\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/transport/PortsRange.java

\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/index/query/SimpleQueryParser.java

\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/search/aggregations/support/AggregationPath.java

\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/cluster/ack/IndicesClusterStateUpdateRequest.java

\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/search/aggregations/pipeline/InternalSimpleValue.java

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\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/action/admin/indices/segments/IndexSegments.java

\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/search/aggregations/metrics/stats/StatsAggregator.java

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/opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/index/analysis/CzechAnalyzerProvider.java

\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/action/suggest/SuggestResponse.java

\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/search/aggregations/metrics/scripted/InternalScriptedMetric.java

\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/action/admin/indices/alias/get/BaseAliasesRequestBuilder.java

\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/action/admin/indices/warmer/put/PutWarmerAction.java

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 \* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-  
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jar/org/elasticsearch/common/util/SingleObjectCache.java
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* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
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* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/common/settings/loader/SettingsLoader.java
* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/index/analysis/PorterStemTokenFilterFactory.java
* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/repositories/VerificationFailure.java
*
/opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
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* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
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* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
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* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
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* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
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* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
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* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
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*
/opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
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* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
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* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
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* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/action/admin/cluster/node/stats/NodesStatsResponse.java

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\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/action/admin/indices/upgrade/get/UpgradeStatusAction.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/search/aggregations/metrics/percentiles/tdigest/TDigestState.java  
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\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/util/BigDoubleArray.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/settings/Settings.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/io/stream/StreamOutput.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/transport/support/TransportStatus.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/index/snapshots/IndexShardRepository.java  
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\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/rest/action/count/RestCountAction.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/snapshots/SnapshotState.java  
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\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/script/AbstractSearchScript.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/search/aggregations/metrics/geocentroid/GeoCentroid.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/action/admin/indices/delete/TransportDeleteIndexAction.java  
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\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/rest/BaseRestHandler.java  
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* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
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 /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-  
 jar/org/elasticsearch/index/analysis/Analysis.java  
 \* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-  
 jar/org/elasticsearch/index/translog/LegacyTranslogReaderBase.java  
 \* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-  
 jar/org/elasticsearch/index/query/ScriptQueryBuilder.java  
 \* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-  
 jar/org/elasticsearch/index/translog/TranslogCorruptedException.java  
 \* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-  
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/opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-  
jar/org/elasticsearch/tasks/TaskId.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-  
jar/org/elasticsearch/search/aggregations/pipeline/bucketmetrics/stats/StatsBucketParser.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-  
jar/org/elasticsearch/action/fieldstats/IndexConstraint.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-  
jar/org/elasticsearch/common/geo/GeoUtils.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-  
jar/org/elasticsearch/common/logging/log4j/ConsoleAppender.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-  
jar/org/elasticsearch/search/aggregations/bucket/InternalSingleBucketAggregation.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-  
jar/org/elasticsearch/action/admin/indices/recovery/RecoveryAction.java  
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/opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-  
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\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-  
jar/org/elasticsearch/indices/IndicesService.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-  
jar/org/elasticsearch/search/aggregations/AggregationPhase.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-  
jar/org/elasticsearch/common/io/FastCharArrayWriter.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-  
jar/org/elasticsearch/common/util/Comparators.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-  
jar/org/elasticsearch/client/node/NodeClient.java

\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/action/exists/ShardExistsResponse.java

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/opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/indices/IndexTemplateAlreadyExistsException.java

\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/index/LocalNodeId.java

\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/search/aggregations/support/MissingValues.java

\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/action/delete/DeleteRequestBuilder.java

\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/lucene/all/AllField.java

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\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/discovery/zen/fd/NodesFaultDetection.java

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\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/script/ClassPermission.java

\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/search/aggregations/metrics/percentiles/PercentileRanksBuilder.java

\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/action/admin/indices/mapping/put/PutMappingClusterStateUpdateRequest.java

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/opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/bootstrap/Natives.java

\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/index/snapshots/IndexShardSnapshotException.java

\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/indices/NodeIndicesStats.java

\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/TimeBasedUUIDGenerator.java

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\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/action/fieldstats/FieldStats.java

\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/action/support/tasks/BaseTasksRequest.java

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/opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/search/highlight/vectorhighlight/SourceScoreOrderFragmentsBuilder.java

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\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/search/aggregations/metrics/percentiles/hdr/AbstractInternalHDRPercentiles.java

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\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/util/concurrent/CountDown.java

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/opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/util/concurrent/AbstractRunnable.java

\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/index/query/functionscore/exp/ExponentialDecayFunctionBuilder.java

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\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/node/package-info.java

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\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-  
jar/org/elasticsearch/search/aggregations/bucket/range/date/InternalDateRange.java  
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\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-  
jar/org/elasticsearch/search/aggregations/pipeline/movavg/models/MovAvgModelParserMapper.java  
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\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-  
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\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-  
jar/org/elasticsearch/index/analysis/PortugueseAnalyzerProvider.java  
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jar/org/elasticsearch/index/query/GeoPolygonQueryBuilder.java  
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jar/org/elasticsearch/index/search/stats/StatsGroupsParseElement.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-  
jar/org/elasticsearch/action/admin/indices/get/GetIndexAction.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-  
jar/org/elasticsearch/search/aggregations/metrics/geobounds/InternalGeoBounds.java  
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jar/org/elasticsearch/cluster/metadata/MetaDataMappingService.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-  
jar/org/elasticsearch/common/lucene/search/function/FieldValueFactorFunction.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-  
jar/org/elasticsearch/common/component/AbstractComponent.java  
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/opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-  
jar/org/elasticsearch/index/similarity/SimilarityModule.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-  
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\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-  
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\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-  
jar/org/elasticsearch/common/lucene/LoggerInfoStream.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-  
jar/org/elasticsearch/rest/action/admin/indices/template/get/RestGetIndexTemplateAction.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-  
jar/org/elasticsearch/search/aggregations/metrics/percentiles/tdigest/TDigestPercentileRanksAggregator.java



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/opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/search/aggregations/bucket/range/AbstractRangeBuilder.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/cluster/block/ClusterBlocks.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/io/stream/ByteBufferInputStream.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/search/SearchException.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/index/analysis/LetterTokenizerFactory.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/snapshots/SnapshotShardsService.java  
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/opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/cluster/AbstractClusterStateTaskListener.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/index/query/SimpleQueryStringFlag.java  
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\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/search/aggregations/bucket/terms/TermsAggregatorFactory.java  
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\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/search/profile/ProfileResult.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/index/query/DisMaxQueryParser.java  
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\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/action/admin/indices/analyze/AnalyzeResponse.java  
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/opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/action/admin/indices/shards/IndicesShardStoresRequest.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/indices/InvalidAliasNameException.java

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* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/common/logging/log4j/Log4jESLogger.java
*
/opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/common/settings/SettingsException.java
* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/action/count/package-info.java
* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/monitor/os/OsService.java
* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/indices/recovery/RecoveryFailedException.java
* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/percolator/PercolatorModule.java
* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/search/aggregations/AggregationExecutionException.java
* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/search/lookup/LeafSearchLookup.java
*
/opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/index/engine/IndexFailedEngineException.java
* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/search/aggregations/metrics/scripted/ScriptedMetricAggregator.java
* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/rest/action/termvectors/RestTermVectorsAction.java
* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/common/lucene/search/FilteredCollector.java
* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/index/query/NotQueryParser.java
* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/index/translog/TruncatedTranslogException.java
* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/action/admin/cluster/validate/template/TransportRenderSearchTemplateAction.java
*
/opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/common/inject/Injectors.java
* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/rest/action/admin/indices/stats/RestIndicesStatsAction.java
* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/search/aggregations/bucket/histogram/DateHistogramBuilder.java
* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/action/admin/indices/delete/package-info.java
* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/common/cli/HelpPrinter.java
* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/rest/action/explain/RestExplainAction.java
*
/opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/index/mapper/geo/GeoPointFieldMapper.java

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\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/Version.java  
 \* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/index/query/NotQueryBuilder.java  
 \* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/action/explain/ExplainAction.java  
 \* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/index/fielddata/plain/BinaryDVAAtomicFieldData.java  
 \* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/index/engine/InternalEngine.java  
 \* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/action/admin/cluster/repositories/get/GetRepositoriesRequestBuilder.java  
 \*  
 /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/monitor/os/OsProbe.java  
 \* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/action/support/master/MasterNodeOperationRequestBuilder.java  
 \* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/action/admin/indices/stats/CommonStatsFlags.java  
 \* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/index/analysis/PatternTokenizerFactory.java  
 \* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/index/analysis/StandardHtmlStripAnalyzerProvider.java  
 \* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/search/aggregations/metrics/valuecount/ValueCount.java  
 \* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/search/query/PostFilterParseElement.java  
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 /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/recycler/DequeRecycler.java  
 \* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/index/search/child/ParentIdsFilter.java  
 \* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/io/PathUtils.java  
 \* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/search/SearchParseElement.java  
 \* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/search/aggregations/bucket/range/Range.java  
 \* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/cli/CheckFileCommand.java  
 \* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/index/analysis/KStemTokenFilterFactory.java  
 \*  
 /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/xcontent/XContentBuilderString.java  
 \* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/client/FilterClient.java  
 \* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-

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jar/org/elasticsearch/cluster/routing/allocation/decider/NodeVersionAllocationDecider.java
* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/search/SearchParseException.java
* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/action/admin/indices/upgrade/post/UpgradeRequestBuilder.java
* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/search/aggregations/bucket/missing/MissingParser.java
* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/search/aggregations/bucket/range/RangeAggregator.java
*
/opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/search/aggregations/pipeline/bucketmetrics/stats/StatsBucketPipelineAggregator.java
* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/index/analysis/IndicNormalizationFilterFactory.java
* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/common/util/BytesRefHash.java
* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/cluster/routing/OperationRouting.java
* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/indices/IndicesLifecycle.java
* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/search/aggregations/bucket/missing/Missing.java
*
/opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/action/admin/indices/open/OpenIndexResponse.java
* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/index/mapper/core/ShortFieldMapper.java
* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/search/aggregations/pipeline/movavg/SimulatedAnnealingMinimizer.java
* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/action/admin/indices/flush/package-info.java
* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/action/search/MultiSearchAction.java
* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/index/mapper/MetadataFieldMapper.java
* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/index/shard/ShardUtils.java
*
/opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/search/query/QuerySearchRequest.java
* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/search/aggregations/metrics/stats/StatsBuilder.java
* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/common/xcontent/XContentParser.java
* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/index/analysis/LimitTokenCountFilterFactory.java
* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/action/CompositeIndicesRequest.java

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\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/Nullable.java

\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/search/aggregations/bucket/BucketsAggregator.java

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/opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/action/update/TransportUpdateAction.java

\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/apache/lucene/search/postingshighlight/CustomPassageFormatter.java

\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/netty/ReleaseChannelFutureListener.java

\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/index/cache/query/none/NoneQueryCache.java

\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/index/query/QueryFilterBuilder.java

\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/transport/RequestHandlerRegistry.java

\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/action/search/SearchQueryAndFetchAsyncAction.java

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/opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/indices/store/TransportNodesListShardStoreMetaData.java

\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/index/fielddata/SortedBinaryDocValues.java

\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/collect/ImmutableOpenMap.java

\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/lucene/index/ElasticsearchDirectoryReader.java

\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/action/termvectors/MultiTermVectorsShardRequest.java

\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/search/aggregations/metrics/avg/AvgAggregator.java

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/opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/cluster/ClusterStateUpdateTask.java

\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/rest/support/RestUtils.java

\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/search/aggregations/InternalAggregation.java

\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/index/shard/VersionFieldUpgrader.java

\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/search/fetch/explain/ExplainParseElement.java

\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/action/admin/indices/stats/CommonStats.java

\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/action/admin/cluster/snapshots/get/TransportGetSnapshotsAction.java

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/opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/cluster/block/ClusterBlockException.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/index/mapper/core/NumberFieldMapper.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/http/HttpServerModule.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/action/support/master/TransportMasterNodeReadAction.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/index/fielddata/AtomicFieldData.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/index/similarity/SimilarityLookupService.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/index/engine/DeleteByQueryFailedEngineException.java  
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/opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/search/aggregations/support/format/ValueFormatter.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/xcontent/XContentLocation.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/action/search/SearchRequest.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/collect/CopyOnWriteHashMap.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/apache/lucene/store/StoreUtils.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/action/admin/cluster/settings/ClusterUpdateSettingsResponse.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/netty/OpenChannelsHandler.java  
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/opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/action/admin/cluster/reroute/ClusterRerouteAction.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/cluster/routing/allocation/decider/DisableAllocationDecider.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/index/analysis/ArabicNormalizationFilterFactory.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/search/query/TimeoutParseElement.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/index/analysis/NGramTokenFilterFactory.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/index/analysis/AnalyzerProviderFactory.java  
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/opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/search/sort/ScriptSortParser.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/action/termvectors/TermVectorsResponse.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-

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jar/org/elasticsearch/common/util/concurrent/XRejectedExecutionHandler.java
* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
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* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/bootstrap/BootstrapCLIParser.java
* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/common/netty/KeepFrameDecoder.java
* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/search/aggregations/metrics/stats/extended/ExtendedStatsAggregator.java
*
/opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/common/network/NetworkModule.java
* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/search/query/ScrollQuerySearchResult.java
* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/ResourceNotFoundException.java
* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/action/count/CountRequestBuilder.java
* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
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* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
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* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
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*
/opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
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* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/script/AbstractExecutableScript.java
* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/search/fetch/explain/ExplainFetchSubPhase.java
* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/search/aggregations/bucket/geogrid/GeoHashGridParams.java
* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/search/suggest/SuggestContextParser.java
* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/cluster/action/index/NodeIndexDeletedAction.java
*
/opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/action/admin/indices/exists/indices/IndicesExistsRequest.java
* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/rest/action/admin/cluster/shards/RestClusterSearchShardsAction.java
* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
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* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/ElasticsearchCorruptionException.java
* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/index/mapper/DocumentMapperForType.java

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\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/action/admin/indices/package-info.java

\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/index/query/TermQueryBuilder.java

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/opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/io/stream/NamedWriteableAwareStreamInput.java

\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/index/engine/IgnoreOnRecoveryEngineException.java

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\*

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Found in path(s):

\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/script/ExplainableSearchScript.java  
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Found in path(s):

\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/internal/Nullability.java  
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```

// Default security policy file.
// On startup, BootStrap reads environment and adds additional permissions
// for configured paths and network
// binding to these.

//// SecurityManager impl:
//// Must have all permissions to properly perform access checks

grant codeBase "${codebase.securesm-1.0.jar}" {
    permission java.security.AllPermission;
};

//// Very special jar permissions:
//// These are dangerous permissions that we don't want to grant to everything.

grant codeBase "${codebase.lucene-core-5.5.4.jar}" {
    // needed to allow MMapDirectory's "unmap hack" (die unmap hack, die)
    permission java.lang.RuntimePermission "accessClassInPackage.sun.misc";
    permission java.lang.reflect.ReflectPermission "suppressAccessChecks";
};

grant codeBase "${codebase.jsr166e-1.1.0.jar}" {
    // needed for LongAdder etc
    // TODO: remove this in java 8!
    permission java.lang.reflect.ReflectPermission "suppressAccessChecks";
    permission java.lang.RuntimePermission "accessClassInPackage.sun.misc";
};

//// Everything else:

grant {

    // checked by scripting engines, and before hacks and other issues in
    // third party code, to safeguard
    // these against unprivileged code like scripts.
    permission org.elasticsearch.SpecialPermission;

    // Allow connecting to the internet anywhere
    permission java.net.SocketPermission "*", "accept,connect,resolve";

    // Allow read/write to all system properties
    permission java.util.PropertyPermission "*", "read,write";

    // needed by Settings
    permission java.lang.RuntimePermission "getenv.*";

    // thread permission for the same thread group and ancestor groups

```

```

// (this logic is more strict than the JDK, see SecureSM)
permission java.lang.RuntimePermission "modifyThread";
permission java.lang.RuntimePermission "modifyThreadGroup";

// needed by ExceptionSerializationTests and RestTestCase for
// some hackish things they do. otherwise only needed by groovy
// (TODO: clean this up?)
permission java.lang.RuntimePermission "getProtectionDomain";

// likely not low hanging fruit...
permission java.lang.RuntimePermission "accessDeclaredMembers";

// needed by
HotThreads and potentially more
// otherwise can be provided only to test libraries
permission java.lang.RuntimePermission "getStackTrace";

// needed by JMX instead of getFileSystemAttributes, seems like a bug...
permission java.lang.RuntimePermission "getStoreAttributes";

// needed for jimfs and NewPathForShardsTests
// otherwise can be provided only to test libraries
permission java.lang.RuntimePermission "filesystemProvider";

// needed by plugin manager to set unix permissions
permission java.lang.RuntimePermission "accessUserInformation";

// needed by jvminfo for monitoring the jvm
permission java.lang.management.ManagementPermission "monitor";

// needed by JDKESLoggerTests
permission java.util.logging.LoggingPermission "control";
};

```

Found in path(s):

```
* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/bootstrap/security.policy
```

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- \* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/spi/TypeListener.java
- \* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/DeferredLookups.java
- \* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/TypeListenerBindingProcessor.java
- \*
- /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/MembersInjector.java
- \* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/util/package-info.java
- \* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/spi/MembersInjectorLookup.java
- \* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/EncounterImpl.java
- \* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/MembersInjectorStore.java
- \* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/internal/ComputationException.java
- \* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/spi/InjectionListener.java
- \*
- /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/MembersInjectorImpl.java
- \* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/spi/TypeListenerBinding.java
- \* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/internal/NullOutputException.java
- \* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/internal/AsynchronousComputationException.java
- \* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/internal/ExposureBuilder.java
- \* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/spi/TypeEncounter.java
- \*
- /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/ConstructorInjectorStore.java
- \* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/Lookups.java
- \* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-

jar/org/elasticsearch/common/inject/internal/ExpirationTimer.java  
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 */
```

```
/**
 * a utility method to perform a synced flush for all shards of multiple indices. see {@link
 * #attemptSyncedFlush(ShardId, ActionListener)}
 * for more details.
 */
```

Found in path(s):

\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-  
jar/org/elasticsearch/indices/flush/SyncedFlushService.java  
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\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/lucene/search/XMoreLikeThis.java  
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// special exception to prevent expressions from compiling as update or mapping scripts

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\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/script/ScriptService.java

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```
* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/common/inject/Singleton.java
* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/common/inject/matcher/AbstractMatcher.java
* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/common/inject/internal/BindingImpl.java
*
 /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/common/inject/CreationException.java
* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/common/inject/name/package-info.java
* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/common/inject/package-info.java
* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/common/inject/InternalFactoryToProviderAdapter.java
* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/common/inject/internal/ErrorHandler.java
* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/common/inject/internal/SourceProvider.java
* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/common/inject/ConstructorInjector.java
*
 /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/common/inject/internal/Errors.java
* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/common/inject/internal/package-info.java
* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
jar/org/elasticsearch/common/inject/Inject.java
* /opt/cola/permits/1834990873_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-
```

jar/org/elasticsearch/common/inject/internal/ToStringBuilder.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-  
jar/org/elasticsearch/common/inject/name/Named.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-  
jar/org/elasticsearch/common/inject/Stage.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-  
jar/org/elasticsearch/common/inject/Scope.java  
\*  
/opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-  
jar/org/elasticsearch/common/inject/internal/Stopwatch.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-  
jar/org/elasticsearch/common/inject/Module.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-  
jar/org/elasticsearch/common/inject/Injector.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-  
jar/org/elasticsearch/common/inject/internal/InternalFactory.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-  
jar/org/elasticsearch/common/inject/DefaultConstructionProxyFactory.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-  
jar/org/elasticsearch/common/inject/InjectorImpl.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-  
jar/org/elasticsearch/common/inject/Provider.java  
\*  
/opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-  
jar/org/elasticsearch/common/inject/TypeLiteral.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-  
jar/org/elasticsearch/common/inject/ImplementedBy.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-  
jar/org/elasticsearch/common/inject/ProviderToInternalFactoryAdapter.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-  
jar/org/elasticsearch/common/inject/binder/package-info.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-  
jar/org/elasticsearch/common/inject/Key.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-  
jar/org/elasticsearch/common/inject/internal/Strings.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-  
jar/org/elasticsearch/common/inject/BoundProviderFactory.java  
\*  
/opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-  
jar/org/elasticsearch/common/inject/BindingAnnotation.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-  
jar/org/elasticsearch/common/inject/Scopes.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-  
jar/org/elasticsearch/common/inject/internal/ConstructionContext.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-  
jar/org/elasticsearch/common/inject/matcher/Matchers.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-  
jar/org/elasticsearch/common/inject/spi/Message.java

\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/ConstantFactory.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/ConstructionProxyFactory.java  
\*  
/opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/matcher/package-info.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/binder/LinkedBindingBuilder.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/binder/AnnotatedBindingBuilder.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/internal/Annotations.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/internal/StackTraceElements.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/InjectorBuilder.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/name/NamedImpl.java  
\*  
/opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/matcher/Matcher.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/ProvisionException.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/internal/InternalContext.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/AbstractModule.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/ProvidedBy.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/spi/package-info.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/ContextualCallable.java  
\*  
/opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/binder/AnnotatedConstantBindingBuilder.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/name/Names.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/binder/ScopedBindingBuilder.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/ScopeAnnotation.java  
\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-jar/org/elasticsearch/common/inject/ConstructionProxy.java  
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\* /opt/cola/permits/1834990873\_1698577848.1999667/0/elasticsearch-2-4-6-sources-2-  
jar/org/apache/lucene/search/XUsageTrackingQueryCachingPolicy.java

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# Jackson JSON processor

Jackson is a high-performance, Free/Open Source JSON processing library.  
It was originally written by Tatu Saloranta (tatu.saloranta@iki.fi), and has  
been in development since 2007.

It is currently developed by a community of developers, as well as supported  
commercially by FasterXML.com.

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A list of contributors may be found from CREDITS file, which is included  
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from the source code management (SCM) system project uses.

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# 1.815 protobuf-java 3.18.3

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Found in path(s):

```
* /opt/cola/permits/1836202929_1698744808.4355462/0/protobuf-java-3-18-3-  
jar/google/protobuf/source_context.proto
```

```
* /opt/cola/permits/1836202929_1698744808.4355462/0/protobuf-java-3-18-3-jar/google/protobuf/field_mask.proto
```

\* /opt/cola/permits/1836202929\_1698744808.4355462/0/protobuf-java-3-18-3-jar/google/protobuf/duration.proto  
\*  
/opt/cola/permits/1836202929\_1698744808.4355462/0/protobuf-java-3-18-3-jar/google/protobuf/wrappers.proto  
\* /opt/cola/permits/1836202929\_1698744808.4355462/0/protobuf-java-3-18-3-jar/google/protobuf/any.proto  
\* /opt/cola/permits/1836202929\_1698744808.4355462/0/protobuf-java-3-18-3-jar/google/protobuf/empty.proto  
\* /opt/cola/permits/1836202929\_1698744808.4355462/0/protobuf-java-3-18-3-jar/google/protobuf/compiler/plugin.proto  
\* /opt/cola/permits/1836202929\_1698744808.4355462/0/protobuf-java-3-18-3-jar/google/protobuf/type.proto  
\* /opt/cola/permits/1836202929\_1698744808.4355462/0/protobuf-java-3-18-3-jar/google/protobuf/timestamp.proto  
\* /opt/cola/permits/1836202929\_1698744808.4355462/0/protobuf-java-3-18-3-jar/google/protobuf/api.proto  
\* /opt/cola/permits/1836202929\_1698744808.4355462/0/protobuf-java-3-18-3-jar/google/protobuf/struct.proto  
\* /opt/cola/permits/1836202929\_1698744808.4355462/0/protobuf-java-3-18-3-jar/google/protobuf/descriptor.proto  
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Manifest-Version: 1.0  
Automatic-Module-Name: com.google.protobuf  
Bnd-LastModified: 1663193732519  
Build-Jdk: 1.8.0\_181-google-v7  
Built-By: shaod  
Bundle-Description: Core Protocol Buffers library. Protocol Buffers are a way of encoding structured data in an efficient yet extensible format.  
Bundle-DocURL: <https://developers.google.com/protocol-buffers/>  
Bundle-License: <https://opensource.org/licenses/BSD-3-Clause>  
Bundle-ManifestVersion: 2  
Bundle-Name: Protocol Buffers [Core]  
Bundle-SymbolicName: com.google.protobuf  
Bundle-Version: 3.18.3  
Created-By: Apache Maven Bundle Plugin  
Export-Package: com.google.protobuf;version="3.18.3"  
Import-Package: sun.misc;resolution:=optional,com.google.protobuf;version="[3.18,4)"  
Require-Capability: osgi.ee;filter="(&(osgi.ee=JavaSE)(version=1.7))"  
Tool: Bnd-3.0.0.201509101326

Found in path(s):

\* /opt/cola/permits/1836202929\_1698744808.4355462/0/protobuf-java-3-18-3-jar/META-INF/MANIFEST.MF

# 1.816 amazon-kinesis-producer 0.14.11

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